



Reliability Report – 54HC138

High Speed CMOS Logic - 3-Line to 8-Line Decoder / Demultiplexer

MIL-PRF-38534 CLASS K QUALIFICATION DATAPACK

Performed by Tandex Test Labs



TANDEX

15849 Business Center Drive, Irwindale, CA 91706, U.S.A.

Phone (626) 962-7166, Fax (626) 960-6896

www.tandexlabs.com

CONTENTS:

- Certificate of Conformance
- Process Flow Chart + Mechanical Test Results
- Pre Burn-In Electrical Test Results at -55°C, 25°C, 125°C
- Post Burn-In Electrical Test Results at -55°C, 25°C, 125°C
- Scanning Electron Microscopy (SEM) analysis.





MIL-PRF-38534 CLASS K DATAPACK

Certificate of Conformance



TANDEX TEST LABS, INC.

15849 Business Center. Dr., Irwindale CA. 91706 U.S.A.

Phone: (626)962-7166 FAX: (626)960-6896

http://www.tandexlabs.com

e-mail: via web site

Certificate of Conformance

| | | |
|---|---|--|
| CUSTOMER: | SILICON SUPPLIES LIMITED | DATE: AUGUST 10, 2018 |
| | 47 WHERRY ROAD NORWICH, NR1, 1WS UNITED KINGDOM VAT GB#114 3513 56 | |
| TEST REPORT: | DDS-101-11-A | QUANTITY RECEIVED: 30 DIE |
| P.O. NUMBER: | SS139 | QUANTITY REQUIRED: 10/5/8 |
| DESCRIPTION: | CMOS LOGIC MICROCIRCUIT | QUANTITY PROCESSED: 17 |
| PART NUMBER(S): | 54HC138 | QUANTITY PASSED: 17 |
| P/N: AS RECEIVED / MFG. PART NUMBER: | 54HC138 | QUANTITY FAILED: 0 |
| LOT / DATE CODE: | 1810 LOT# 100413 WF8 | |
| MANUFACTURE: CAGE CODE: | SILICON SUPPLIES | QUANTITY SHIPPING: 17* |
| | | INCLUDES: 10 PROCESS ACCEPT 5 BOND PULL DEVICES 2 SPARES |
| TANDEX CAGE CODE: | 1FE65 | *8 DIE TRANSFERRED TO DDS-101-11-W FOR SEM. |

METHOD OF TESTING: MIL-PRF-38534 CL. K, MIL-STD-883

I hereby certify that the subject components have been processed and inspected in accordance with instructions with specifications referenced in your purchase order. Physical records and/or data pertinent to applicable military, proprietary, and/or commercial specifications are on file and available upon request for inspection at this facility.



Jessica Iraheta
QUALITY ASSURANCE



QMF 30



MIL-PRF-38534 CLASS K DATAPACK

Process Flow Chart + Mechanical Test Results



TANDEX TEST LABS INC.

QMF22B

15849 BUSINESS CENTER DRIVE, IRVINDALE, CA. 91706 PH: (626)962-7166 FAX: (626) 960-6896

PROCESS FLOW CHART

FLOW NUMBER: DDS-101-11-A REV. 0

CUSTOMER: DIE DEVICES P.O. NUMBER: SS139
 PART NUMBER: 54HC138 P/N AS RECEIVED: 54HC138
 PART TYPE: CMOS LOGIC MICROCIRCUIT DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
 DUE DATE: 7/12/18 JOB NUMBER: DDS-101-11-A
 LDC AS RECEIVED: 1810 LOT# 100413 WF8 QUANTITY RECEIVED: 30 (DIE)
 QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES QUANTITY REQUIRED: 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

| 01 | FLO | P-1015 P-1223 | FLOW PREPARED BY: <u>LSS</u> ON: <u>3/29/18</u> CONTRACTUAL AGREEMENT REVIEW Y N NOT SPECIFIED <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Q-CLAUSES <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> DPAS <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> DFAR <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> ITAR <input type="checkbox"/> <input type="checkbox"/> OTHER SPECIFIED | | | | | | | QA TANDEX 5 |
|-----|------|----------------------------------|--|-----|-----|--------|---------|---------|--------|-------------|
| 02 | QCI | | TANDEX QUALITY CONTROL INSPECTION. FLOW APPROVED BY: <u>JMI</u> ON: <u>3/29/18</u> | | | | | | | QA TANDEX 7 |
| 03 | RCV | P-1070 | VERIFY PART NUMBER. ENTER INTO INCOMING LOG. <u>X</u> CUSTOMER COUNT | 30 | | | | 3/29/18 | | QA TANDEX 5 |
| SEQ | PROC | REF # | DESCRIPTION | QTY | REJ | ACCEPT | DATE | INSP. | | |
| 04 | VIS | P-1041 | PERFORM 100% DIE VISUAL PER MIL-STD-883 METHOD 2010 AND MIL-PRF-38534 PARA C.3.3.2. EQUIPMENT USED: <u>Olympus</u> ASSET #: <u>20091</u> | 30 | 0 | 30 | 4/14/18 | | TTL 4 | |
| | | ESD MAT DUE DATE: <u>4/27/18</u> | | | | | | | | |
| 05 | ASSY | P-1029 | PACKAGE SUFFICIENT DEVICES FOR CLASS K ELEMENT EVALUATION / ELECTRICAL AND BOND PULL PER MIL-PRF-38534 REFERENCE DIE GEOMETRY FOR ORIENTATION AND PIN - OUTS. DIE ATTACH: SCREENING 10+2 EUTETIC BOND PULL 5 Lot#: <u>149555</u> Exp. Date: <u>N/A</u> SEM 8 * Package Type: 16 PIN DIP TRANSFER TO DDS-101-11-W MIL-STD-883 METHOD 2018 | | 0 | 10+2 | 5/3/18 | | TTL 30 | |
| | | ESD MAT DUE DATE: <u>5/27/18</u> | | | | | | | | |
| | | P-4010 | WIRE BOND: Utilize 1 Mil Au Wire (.001) 1 Mil Au bonder <u>MECHEL</u> Asset #: <u>20097</u> Gold Wire: Lot#: <u>9001882915</u> Exp. Date: <u>3/21/2019</u> | 17 | 0 | 17 | 5/3/18 | | TTL 30 | |

TANDEX TEST LABS INC.

QMF22B

15849 BUSINESS CENTER DRIVE, IRVINDALE, CA. 91706 PH: (626)962-7166 FAX: (626) 960-6896

PROCESS FLOW CHART

FLOW NUMBER: DDS-101-11-A REV. 0

CUSTOMER: DIE DEVICES P.O. NUMBER: SS139
 PART NUMBER: 54HC138 P/N AS RECEIVED: 54HC138
 PART TYPE: CMOS LOGIC MICROCIRCUIT DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
 DUE DATE: 7/12/18 JOB NUMBER: DDS-101-11-A
 LDC AS RECEIVED: 1810 LOT# 100413 WF8 QUANTITY RECEIVED: 30 (DIE)
 QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES QUANTITY REQUIRED: 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

| SEQ | PROC | REF # | DESCRIPTION | QTY | REJ | ACCEPT | DATE | INSP. |
|-----|------|-------|--|------|-----|--------|---------------------|-------------|
| 06 | VIS | | PERFORM 100% INTERNAL VISUAL PER MIL-STD-883 METHOD 2010 & MIL-PRF-38534 C.3.3.3, C.3.3.4.2. EQUIPMENT USED: <u>NIKON SMZ645</u> ASSET #: <u>30663</u> | 17 | 2 | 17 | 5/3/18 | TTL 30 |
| | | | ESD MAT DUE DATE: <u>5/27/18</u> | | | | | |
| 07 | SEAL | | SEAL DEVICES VACUUM BAKE: Pre Seal Bake Time: Temp: <u>125°C</u> Time: <u>24 hrs</u> Actual time in: <u>10:10am - 5/3/18</u> Actual time out: <u>11:05am - 5/4/18</u> FURNACE LDC STAMP Actual temp: <u>125°C</u> | 10+2 | 2 | 10+2 | 5/4/18 | TTL 30 |
| | | | ESD MAT DUE DATE: <u>5/27/18</u> | | | | | |
| 08 | ELEC | | PERFORM 100% ELECTRICAL VERIFICATION TEST PER MFG DATA SHEET AND MIL-PRF-38534 @ AMBIENT OPERATING TEMPERATURE GO / NO GO EQUIPMENT USED: <u>Sentray</u> ASSET #: <u>1093</u> +25°C TEST FIXTURE: <u>1377/1210</u> SOFTWARE ID: <u>4HC138</u> REV <u>NA</u> | 10+2 | 0 | 10+2 | 5/23/18 | CT4 (ANDEZ) |
| | | | ESD MAT DUE DATE: <u>1/1/</u> | | | | | |
| 09 | TEMP | | PERFORM TEMPERATURE CYCLING PER MIL-STD-883 METHOD 1010 CONDITION C & MIL-PRF-38534 C.3.3.3. TEN (10) CYCLES DATE IN TIME IN TA = -65°C +0/-10 to +150°C +15 -0 10 MINUTES AT EXTREMES DATE OUT TIME OUT | 10+2 | 0 | 10+2 | 5/23/18 7:04 AM | TTL 48 |
| | | | EQUIPMENT USED: <u>DELTA DESIGN</u> ASSET #: <u>30626</u> EQUIPMENT USED: <u>OMEGA HH309A</u> ASSET #: <u>31567</u> | 10+2 | 0 | 10+2 | 5/23/18 12:25 PM | TTL 48 |
| | | | ESD MAT DUE DATE: <u>6/27/18</u> | | | | | |
| 10 | ACCE | | PERFORM CONSTANT ACCELERATION PER MIL-PRF-38534 MIL-STD-883 METHOD 2001. Y1 DIRECTION ONLY @ 3000 G's (min) | 10+2 | 2 | 10+2 | 5/24/18 | TTL 29 |
| | | | EQUIPMENT USED: <u>TRIO Tech</u> ASSET #: <u>30260</u> | 10+2 | 2 | 10+2 | 5/24/18 | TTL 33 |
| | | | ESD MAT DUE DATE: <u>6/27/18</u> | | | | | |
| 11 | SER | | SERIALIZE S/N: <u>01-10</u> | 10+2 | 0 | 10+2 | 5/29/18 | TTL 33 |
| | | | ESD MAT DUE DATE: <u>1/1/</u> | | | | | |

TANDEX TEST LABS INC.

15849 BUSINESS CENTER DRIVE, IRWINDALE, CA. 91706 PH: (626)962-7166 FAX: (626) 960-6896

QMF22B

PROCESS FLOW CHART

FLOW NUMBER: DDS-101-11-A REV. 0

CUSTOMER: DIE DEVICES P.O. NUMBER: SS139
 PART NUMBER: 54HC138 P/N AS RECEIVED: 54HC138
 PART TYPE: CMOS LOGIC MICROCIRCUIT DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
 DUE DATE: 7/12/18 JOB NUMBER: DDS-101-11-A
 LDC AS RECEIVED: 1810 LOT# 100413 WF8 QUANTITY RECEIVED: 30 (DIE)
 QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES QUANTITY REQUIRED: 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

| SEQ | PROC | REF # | DESCRIPTION | QTY | REJ | ACCEP | DATE | INSP. |
|-----|------|-------|--|----------------------|-------------|----------------------|----------------------------------|----------------------------|
| 12 | ELEC | | PERFORM 100% ELECTRICAL VERIFICATION PER MFG DATA SHEET3 AND MIL-PRF-38534 C.3.3.4.3 @ AMBIENT, HIGH AND LOW OPERATING TEMPERATURES. READ AND RECORD. STATIC AND FUNCTIONAL TESTS +25°C -55°C +125°C EQUIPMENT USED: <u>Septra</u> ASSET#: <u>1093</u> TEST FIXTURE: <u>13777</u> SOFTWARE ID: <u>4HC138</u> REV <u>N/A</u> TEMPERATURE SOAK <u>10</u> SEC. | 10+2 10+2 10+2 | 0 0 0 | 10+2 10+2 10+2 | 5/29/18 5/29/18 5/29/18 | TTL 10 TTL 10 TTL 10 |
| 13 | BI | | PERFORM BURN IN PER BURN IN CIRCUIT PER FIGURE 1 OF DWG# 1026-16668, AND MIL-STD 883 METHOD 1015. TA = 125°C (min) T = 240 HRS (min) BURN-IN BOARD # / DESC: <u>31275</u> BURN-IN OVEN #: <u>21</u> | 12 12 | 0 0 | 12 12 | 5/31/18 5:20AM 6/11/18 5:35AM | TTL 13 TTL 13 |
| 14 | ELEC | | PERFORM POST BURN IN ELECTRICAL VERIFICATION PER MFG DATA SHEET AND MIL-PRF-38534 C.3.3.4.3 @ AMBIENT, HIGH AND LOW OPERATING TEMPERATURES. READ AND RECORD. STATIC AND FUNCTIONAL TESTS +25°C -55°C +125°C TEST +25°C WITHIN 96 HOURS EQUIPMENT USED: _____ ASSET#: _____ TEST FIXTURE: _____ SOFTWARE ID: _____ REV _____ TEMPERATURE SOAK _____ SEC. | 12 12 12 | 0 0 0 | 12 12 12 | 6/11/18 6/11/18 6/11/18 | TTL 25 TTL 25 TTL 25 |
| 15 | ER | | PER PO REQUIREMENTS: REVIEW AT POST 240 HR. BURN-IN EMAIL: ben.white@diedevices.com POST 240 HR BURN-IN ELECTRICAL TEST DATA. HOLD FOR APPROVAL TO PROCEED DATE SENT: <u>6/21/18</u> | | | | 6/21/18 | QA TANDEX 5 |

ESD MAT DUE DATE:
6/29/18

ESD MAT DUE DATE:
6/27/18

ESD MAT DUE DATE:
/ /

TANDEX TEST LABS INC.

QMF22B

15849 BUSINESS CENTER DRIVE, IRVINDALE, CA. 91706 PH: (626)962-7166 FAX: (626) 960-6896

PROCESS FLOW CHART

FLOW NUMBER: DDS-101-11-A REV. 0

CUSTOMER: DIE DEVICES P.O. NUMBER: SS139
 PART NUMBER: 54HC138 P/N AS RECEIVED: 54HC138
 PART TYPE: CMOS LOGIC MICROCIRCUIT DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
 DUE DATE: 7/12/18 JOB NUMBER: DDS-101-11-A
 LDC AS RECEIVED: 1810 LOT# 100413 WF8 QUANTITY RECEIVED: 30 (DIE)
 QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES QUANTITY REQUIRED: 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

| SEQ | PROC | REF # | DESCRIPTION | QTY | REJ | ACCEPT | DATE | INSP. |
|-------------------------------------|------|-------|---|-----|-----|--------|----------------------------|-------------------|
| 7 | SSL | | PERFORM STEADY STATE LIFE TEST PER MIL-PRF-38534 AND MIL-STD 883 METHOD 1005. TA = 125°C (min) T = 1000 HRS (min) DATE IN: 12 TIME IN: 0 DATE OUT: 12 TIME OUT: 0 BURN-IN BOARD # / DESC: <u>31281</u> BURN-IN OVEN #: <u>21</u> | 12 | 0 | 12 | 6/25/18 6:00AM | TTL 13 |
| ESD MAT DUE DATE: <u>8/27/18</u> | | | | | | | | |
| 16 | ELEC | | PERFORM POST STEADY STATE LIFE ELECTRICAL VERIFICATION PER MFG DATA SHEET AND MIL-PRF-38534 C.3.3.4.3. @ AMBIENT, HIGH AND LOW OPERATING TEMPERATURE. READ AND RECORD. STATIC AND FUNCTIONAL TESTS +25°C 12 0 12 -55°C 12 0 12 +125°C 12 0 12 <u>TEST +25°C WITHIN 96 HOURS</u> EQUIPMENT USED: _____, ASSET#: _____ TEST FIXTURE: _____ SOFTWARE ID: _____ REV _____ | 12 | 0 | 12 | 8/7/18 8/8/18 8/8/18 | CTM CTM CTM |
| ESD MAT DUE DATE: <u> / /</u> | | | | | | | | |
| 18 | DBP | | PERFORM WIRE BOND PULL PER MIL-STD-883 METHOD 2011, & MIL-PRF-38534 C.3.3.3, C3.3.5. TEN (10) WIRES, *DO NOT USE ELECTRICAL TEST SAMPLES* EQUIPMENT USED: <u>DATE</u> , ASSET #: <u>30785</u> | 5 | 0 | 5 | 7/18/18 | TTL |
| 19 | SEM | | PULLED 8 DEVICES AT SEQ. 05 AND TRANSFERRED TO: DDS-101-11-W | 8 | 0 | 8 | 4/10/18 | TTL |

TANDEX TEST LABS INC.

QMF22B

15849 BUSINESS CENTER DRIVE, IRWINDALE, CA. 91706 PH: (626)962-7166 FAX: (626) 960-6896

PROCESS FLOW CHART

FLOW NUMBER: DDS-101-11-A REV. 0

CUSTOMER: DIE DEVICES P.O. NUMBER: SS139
 PART NUMBER: 54HC138 P/N AS RECEIVED: 54HC138
 PART TYPE: CMOS LOGIC MICROCIRCUIT DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
 DUE DATE: 7/12/18 JOB NUMBER: DDS-101-11-A
 LDC AS RECEIVED: 1810 LOT# 100413 WF8 QUANTITY RECEIVED: 30 (DIE)
 QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES QUANTITY REQUIRED: 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

| SEQ | PROC | REF # | DESCRIPTION | QTY | REJ | ACCEPT | DATE | INSP. |
|-----|------|--------|---|-----|-----|--------|---------|-------------------|
| 20 | QCI | P-1073 | TANDEX QUALITY CONTROL INSPECTION. QCI TO VERIFY CAR IN SEQ. 01 IS COMPLIANT | 17 | 0 | 17 | 8/10/18 | QA TANDEX 7 |
| 21 | PKG | | USE ORIGINAL OR TANDEX PACKAGING. | 17 | 0 | 17 | 8/10/18 | QA TANDEX 7 |
| 22 | QAR | P-1213 | TANDEX QUALITY ASSURANCE REVIEW. SHIP VIA: SHIP / BILL TO: DIE DEVICES 47 WHERRY ROAD NORWICH, NRI, IWS UNITED KINGDOM VAT GB#114 3513 56 *Includes: 5 Bond Pull Samples 10 process Accepts 2 Spares ** 8 pcs transferred to DDS-101-11-W for SEM. | 17 | | | 8/10/18 | QA TANDEX 7 |

TANDEX TEST LABS
 BURN - IN MONITOR SHEET

JOB NUMBER DDS-101-11-A

TEMPERATURE TA = +125°C Min

PART NUMBER 54HC138

TEMP. METER # 31368

DATE CODE 1810 LOT# 100413 WFS

VOLTAGE VCC = +5VDC

BURN-IN TIME 240 hrs Min

VOLT METER# 31223

ΘJC = N/A

POWER SUPPLY# 31594

BOARD# 31275

OVEN# 21

| DATE | TIME | VOLTAGE | CURRENT | TEMP. | INITIAL | COMMENTS |
|---------|---------|-------------|-----------|---------|---------|----------|
| 5/31/18 | 8:20AM | VCC = +5VDC | ICC = 5mA | 125.5°C | CM | |
| 6/1/18 | 10:00AM | VCC = +5VDC | ICC = 5mA | 124.9°C | CM | |
| | | | | | | |
| | | | | | | |
| 6/4/18 | NO | DATA | TAKEN | | | |
| 6/5/18 | 5:45AM | VCC = +5VDC | ICC = 5mA | 127.0°C | CM | |
| 6/6/18 | 6:05AM | VCC = +5VDC | ICC = 5mA | 126.7°C | CM | |
| 6/7/18 | 1:36PM | VCC = +5VDC | ICC = 5mA | 126.4°C | CM | |
| 6/8/18 | 6:20AM | VCC = +5VDC | ICC = 5mA | 126.1°C | CM | |
| | | | | | | |
| | | | | | | |
| 6/11/18 | 5:35AM | VCC = +5VDC | ICC = 5mA | 126.8°C | CM | |
| | | | | | | |

TANDEX TEST LABS
 BURN - IN MONITOR SHEET

JOB NUMBER DDS-101-11-A

TEMPERATURE TA = +125°C Min

PART NUMBER 54HC138

TEMP. METER # 31368

DATE CODE 1810 LOT #100413 WFB

VOLTAGE VCC = +5VDC

BURN-IN TIME 1000hrs Min

VOLT METER# 31223

ΘJC = N/A

POWER SUPPLY# 31110

BOARD# 31281

OVEN# 21

| DATE | TIME | VOLTAGE | CURRENT | TEMP. | INITIAL | COMMENTS |
|---------|---------------|-------------|-----------|---------|---------|----------|
| 6/25/18 | 6:00AM | VCC = +5VDC | ICC = 5mA | 126.5°C | CM | |
| 6/26/18 | 7:30AM | VCC = +5VDC | ICC = 5mA | 126.9°C | CM | |
| 6/27/18 | 7:15AM | VCC = +5VDC | ICC = 5mA | 126.1°C | CM | |
| 6/28/18 | 8:55AM | VCC = +5VDC | ICC = 5mA | 126.6°C | CM | |
| 6/29/18 | 6:00AM | VCC = +5VDC | ICC = 5mA | 127.7°C | CM | |
| | | | | | | |
| | | | | | | |
| 7/2/18 | 5:30AM | VCC = +5VDC | ICC = 5mA | 127.7°C | CM | |
| 7/3/18 | 5:50AM | VCC = +5VDC | ICC = 5mA | 127.2°C | CM | |
| 7/4/18 | NO DATA TAKEN | | | | | |
| 7/5/18 | 6:30AM | VCC = +5VDC | ICC = 5mA | 127.5°C | CM | |
| 7/6/18 | 9:35AM | VCC = +5VDC | ICC = 5mA | 128.0°C | CM | |
| | | | | | | |

TANDEX TEST LABS
 BURN - IN MONITOR SHEET

PAGE 2 OF 4

JOB NUMBER DDS-101-11-A

TEMPERATURE TA = +125°C Min

PART NUMBER 54 HC 138

TEMP. METER # 31368

DATE CODE 1810 LOT# 100413 WFG

VOLTAGE VCC = +5 VDC

BURN-IN TIME 1000hrs Min

VOLT METER# 31223

ΘJC = N/A

POWER SUPPLY# 31110

BOARD# 31281

OVEN# 21

| DATE | TIME | VOLTAGE | CURRENT | TEMP. | INITIAL | COMMENTS |
|---------|---------|-------------|-----------|---------|---------|----------|
| 7/9/18 | 8:10AM | VCC = +5VDC | ICC = 5mA | 128.4°C | CM | |
| 7/10/18 | 1:10 PM | VCC = +5VDC | ICC = 5mA | 128.5°C | CM | |
| 7/11/18 | 10:00AM | VCC = +5VDC | ICC = 5mA | 127.7°C | CM | |
| 7/12/18 | 7:20AM | VCC = +5VDC | ICC = 5mA | 127.5°C | CM | |
| 7/13/18 | 6:05AM | VCC = +5VDC | ICC = 5mA | 127.9°C | CM | |
| | | | | | | |
| | | | | | | |
| 7/16/18 | 6:00AM | VCC = +5VDC | ICC = 5mA | 127.6°C | CM | |
| 7/17/18 | 6:15AM | VCC = +5VDC | ICC = 5mA | 128.0°C | CM | |
| 7/18/18 | 6:00AM | VCC = +5VDC | ICC = 5mA | 128.2°C | CM | |
| 7/19/18 | NO | DATA | TAKEN | | | |
| 7/20/18 | NO | DATA | TAKEN | | | |

TANDEX TEST LABS
 BURN - IN MONITOR SHEET

JOB NUMBER DDS-101-11-A

TEMPERATURE TA = +125°C Min

PART NUMBER 54 HC 138

TEMP. METER # 31368

DATE CODE 1810 LOT#100413 WF8

VOLTAGE VCC = +5 VDC

BURN-IN TIME 1000hrs Min

VOLT METER# 31223

ΘJC = N/A

POWER SUPPLY# 31110

BOARD# 31281

OVEN# 21

| DATE | TIME | VOLTAGE | CURRENT | TEMP. | INITIAL | COMMENTS |
|---------|----------|-------------|-----------|---------|---------|----------|
| | | | | | | |
| | | | | | | |
| 7/23/18 | NO | DATA | TAKEN | | | |
| 7/24/18 | NO | DATA | TAKEN | | | |
| 7/25/18 | 7:25 AM | VCC = +5VDC | ICC = 5mA | 126.1°C | CM | |
| 7/26/18 | 6:00 AM | VCC = +5VDC | ICC = 5mA | 126.4°C | CM | |
| 7/27/18 | 7:25 AM | VCC = +5VDC | ICC = 5mA | 126.6°C | CM | |
| | | | | | | |
| | | | | | | |
| 7/30/18 | 10:50 AM | VCC = +5VDC | ICC = 5mA | 127.8°C | CM | |
| 7/31/18 | 6:55 AM | VCC = +5VDC | ICC = 5mA | 127.6°C | CM | |
| 8/1/18 | 6:20 AM | VCC = +5VDC | ICC = 5mA | 128.8°C | CM | |
| 8/2/18 | 11:10 AM | VCC = +5VDC | ICC = 5mA | 127.3°C | CM | |

TANDEX TEST LABS
 BURN - IN MONITOR SHEET

PAGE 4 OF 4

JOB NUMBER DDS-101-11-A

TEMPERATURE TA = +125°C Min

PART NUMBER 54 HC 138

TEMP. METER# 31368

DATE CODE 1810 LOT# 100413 W#8

VOLTAGE VCC = +5 VDC

BURN-IN TIME 1000hrs Min

VOLT METER# 31223

ΘJC= N/A

POWER SUPPLY# 3110

BOARD# 31281

OVEN# 21

| DATE | TIME | VOLTAGE | CURRENT | TEMP. | INITIAL | COMMENTS |
|--------|---------|-----------|-----------|---------|---------|----------|
| 8/3/18 | 0:45 AM | VCC = +5V | ICC = 5mA | 127.3°C | CM | |
| | | | | | | |
| | | | | | | |
| 8/6/18 | 0:00 AM | VCC = +5V | ICC = 5mA | 120.1°C | CM | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

TANDEX TEST LABS TTL# DDS-101-11-A

BOND PULL

BOND STRENGTH TESTING

| | | | |
|---|------------------------|---|---|
| TTL Job No. DDS-101-11-A | Part Number 54HC138 | Part Type CMOS LOGIC MICROCIRCUIT | Date July 18, 2018 |
| Lot Date Code LOT# 100413 W# 8 1810 | Sample Qty. 5 | Serial Numbers 11-15 | Test Specifications Mil-Std-883 Method 2011 |
| Misc. | Qty Accept 5 | Qty Reject 0 | Suspect 0 |

| | | |
|------------------------|--------------------|--------------------------------|
| WIRE TYPE Au | PACKAGE/POST Au | BOND TYPE BALL BOND |
| DIE METALIZATION Al | WIRE SIZE 0.001 | MINIMUM PULL STRENGTH 2.5gm |

| S/N 11 | | | S/N 12 | | | S/N 13 | | | S/N 14 | | | S/N 15 | | | S/N | | |
|---------|-------|------|---------|-------|------|---------|-------|------|---------|-------|------|---------|-------|------|---------|-------|------|
| WIRE NO | FORCE | CODE | WIRE NO | FORCE | CODE | WIRE NO | FORCE | CODE | WIRE NO | FORCE | CODE | WIRE NO | FORCE | CODE | WIRE NO | FORCE | CODE |
| 1 | 4.5 | G | 1 | 4.5 | G | 1 | 3.0 | G | 1 | 5.0 | G | 1 | 4.0 | G | 1 | | |
| 2 | 3.5 | G | 2 | 4.5 | G | 2 | 3.0 | G | 2 | 6.0 | G | 2 | 5.5 | G | 2 | | |
| 3 | | | 3 | | | 3 | | | 3 | | | 3 | | | 3 | | |
| 4 | | | 4 | | | 4 | | | 4 | | | 4 | | | 4 | | |
| 5 | | | 5 | | | 5 | | | 5 | | | 5 | | | 5 | | |

CODE INDEX

- A. NO BREAKS UP TO _____gms.
- B. BOND LIFTS FROM DIE.
- C. BOND LIFTS FROM POST.
- D. WIRE BREAKS AT SUBSTRATE/HEAL.
- E. BOND REMOVES UNDERLYING METALLIZATION.
- F. NO CONNECTION.
- G. WIRE BREAKS AT DIE/HEAL.
- H. WIRE BREAKS AT POST/HEAL.
- J. WIRE BREAKS AT SPAN.
- X. BOND DAMAGE PRIOR TO TESTING.



TECHNICIAN STAMP:



MIL-PRF-38534 CLASS K DATAPACK

Pre Burn-In Test Results at -55°C



STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 1

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -640.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 580.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST

VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |

| | | | |
|-----|----|---------|---------|
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.970 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.810 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 110.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 114.0MV | | 260.0MV |
| 474 | 15 | 116.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.460 V | 4.400 V | |
| 209 | 10 | 4.460 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.460 V | 4.400 V | |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.270 V | 3.980 V | |
| 268 | 9 | 4.260 V | 3.980 V | |
| 274 | 10 | 4.270 V | 3.980 V | |
| 280 | 11 | 4.280 V | 3.980 V | |
| 286 | 12 | 4.280 V | 3.980 V | |
| 292 | 13 | 4.290 V | 3.980 V | |
| 298 | 14 | 4.280 V | 3.980 V | |
| 304 | 15 | 4.270 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 116.0MV | | 260.0MV |
| 420 | 9 | 118.0MV | | 260.0MV |
| 429 | 10 | 118.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 122.0MV | | 260.0MV |
| 474 | 15 | 122.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.790 V | 5.480 V | |
| 268 | 9 | 5.780 V | 5.480 V | |
| 274 | 10 | 5.790 V | 5.480 V | |
| 280 | 11 | 5.800 V | 5.480 V | |
| 286 | 12 | 5.800 V | 5.480 V | |
| 292 | 13 | 5.800 V | 5.480 V | |
| 298 | 14 | 5.790 V | 5.480 V | |
| 304 | 15 | 5.780 V | 5.480 V | |

```

-----
VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03
-----

```

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

```

-----
VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03
-----

```

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 116.0MV | | 260.0MV |
| 429 | 10 | 118.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 112.0MV | | 260.0MV |
| 465 | 14 | 122.0MV | | 260.0MV |
| 474 | 15 | 124.0MV | | 260.0MV |

```

-----
IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C
-----

```

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

```

-----
ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C
-----

```

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

```

EIR 1.....10    FCT    DCT
0000000000    PASS    PASS    EOT

```

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 2

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -690.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 610.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 620.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.970 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.810 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 110.0MV | | 260.0MV |
| 420 | 9 | 112.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 110.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 116.0MV | | 260.0MV |
| 474 | 15 | 116.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.460 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

INST # PIN MEASURED LT GT
262 7 4.280 V 3.980 V
268 9 4.270 V 3.980 V
274 10 4.280 V 3.980 V
280 11 4.280 V 3.980 V
286 12 4.280 V 3.980 V
292 13 4.280 V 3.980 V
298 14 4.280 V 3.980 V
304 15 4.260 V 3.980 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 34.00MV 100.0MV
361 12 34.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 114.0MV 260.0MV
420 9 116.0MV 260.0MV
429 10 120.0MV 260.0MV
438 11 116.0MV 260.0MV
447 12 116.0MV 260.0MV
456 13 116.0MV 260.0MV
465 14 124.0MV 260.0MV
474 15 124.0MV 260.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.970 V 5.900 V
203 9 5.970 V 5.900 V
209 10 5.970 V 5.900 V
215 11 5.980 V 5.900 V
221 12 5.970 V 5.900 V
227 13 5.970 V 5.900 V
233 14 5.970 V 5.900 V
239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

INST # PIN MEASURED LT GT
262 7 5.800 V 5.480 V
268 9 5.780 V 5.480 V
274 10 5.790 V 5.480 V
280 11 5.790 V 5.480 V
286 12 5.790 V 5.480 V
292 13 5.800 V 5.480 V

298 14 5.790 V 5.480 V
304 15 5.780 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 116.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 116.0MV | | 260.0MV |
| 447 | 12 | 118.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 126.0MV | | 260.0MV |
| 474 | 15 | 126.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 3

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -670.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.980 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 36.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.970 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.810 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 116.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 118.0MV | | 260.0MV |
| 474 | 15 | 118.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.270 V | 3.980 V | |
| 268 | 9 | 4.250 V | 3.980 V | |
| 274 | 10 | 4.270 V | 3.980 V | |
| 280 | 11 | 4.270 V | 3.980 V | |
| 286 | 12 | 4.270 V | 3.980 V | |
| 292 | 13 | 4.280 V | 3.980 V | |
| 298 | 14 | 4.270 V | 3.980 V | |
| 304 | 15 | 4.260 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 120.0MV | | 260.0MV |
| 420 | 9 | 122.0MV | | 260.0MV |
| 429 | 10 | 124.0MV | | 260.0MV |
| 438 | 11 | 120.0MV | | 260.0MV |
| 447 | 12 | 124.0MV | | 260.0MV |
| 456 | 13 | 120.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 128.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.790 V | 5.480 V | |
| 268 | 9 | 5.770 V | 5.480 V | |
| 274 | 10 | 5.790 V | 5.480 V | |
| 280 | 11 | 5.790 V | 5.480 V | |
| 286 | 12 | 5.790 V | 5.480 V | |
| 292 | 13 | 5.790 V | 5.480 V | |

298 14 5.790 V 5.480 V
304 15 5.770 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 120.0MV | | 260.0MV |
| 420 | 9 | 124.0MV | | 260.0MV |
| 429 | 10 | 122.0MV | | 260.0MV |
| 438 | 11 | 120.0MV | | 260.0MV |
| 447 | 12 | 122.0MV | | 260.0MV |
| 456 | 13 | 120.0MV | | 260.0MV |
| 465 | 14 | 130.0MV | | 260.0MV |
| 474 | 15 | 132.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 4

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -680.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.830 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.810 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 116.0MV | | 260.0MV |
| 420 | 9 | 116.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 124.0MV | | 260.0MV |
| 474 | 15 | 118.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.460 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

INST # PIN MEASURED LT GT
262 7 4.280 V 3.980 V
268 9 4.260 V 3.980 V
274 10 4.270 V 3.980 V
280 11 4.280 V 3.980 V
286 12 4.280 V 3.980 V
292 13 4.280 V 3.980 V
298 14 4.270 V 3.980 V
304 15 4.260 V 3.980 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 34.00MV 100.0MV
343 10 34.00MV 100.0MV
352 11 34.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 34.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 122.0MV 260.0MV
420 9 122.0MV 260.0MV
429 10 124.0MV 260.0MV
438 11 122.0MV 260.0MV
447 12 122.0MV 260.0MV
456 13 122.0MV 260.0MV
465 14 146.0MV 260.0MV
474 15 128.0MV 260.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.980 V 5.900 V
203 9 5.980 V 5.900 V
209 10 5.970 V 5.900 V
215 11 5.980 V 5.900 V
221 12 5.970 V 5.900 V
227 13 5.970 V 5.900 V
233 14 5.970 V 5.900 V
239 15 5.980 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

INST # PIN MEASURED LT GT
262 7 5.780 V 5.480 V
268 9 5.770 V 5.480 V
274 10 5.790 V 5.480 V
280 11 5.800 V 5.480 V
286 12 5.790 V 5.480 V
292 13 5.800 V 5.480 V

298 14 5.780 V 5.480 V
304 15 5.780 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 36.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 122.0MV | | 260.0MV |
| 420 | 9 | 124.0MV | | 260.0MV |
| 429 | 10 | 124.0MV | | 260.0MV |
| 438 | 11 | 122.0MV | | 260.0MV |
| 447 | 12 | 124.0MV | | 260.0MV |
| 456 | 13 | 122.0MV | | 260.0MV |
| 465 | 14 | 156.0MV | | 260.0MV |
| 474 | 15 | 134.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | 0 A | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 5

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -690.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 620.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.970 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.970 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.480 V | |
| 268 | 9 | 2.780 V | 2.480 V | |
| 274 | 10 | 2.790 V | 2.480 V | |
| 280 | 11 | 2.790 V | 2.480 V | |
| 286 | 12 | 2.790 V | 2.480 V | |
| 292 | 13 | 2.790 V | 2.480 V | |
| 298 | 14 | 2.790 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 110.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 112.0MV | | 260.0MV |
| 438 | 11 | 110.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 114.0MV | | 260.0MV |
| 474 | 15 | 114.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 118.0MV | | 260.0MV |
| 429 | 10 | 118.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 116.0MV | | 260.0MV |
| 465 | 14 | 122.0MV | | 260.0MV |
| 474 | 15 | 122.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.960 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.960 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.770 V | 5.480 V | |
| 268 | 9 | 5.760 V | 5.480 V | |
| 274 | 10 | 5.770 V | 5.480 V | |
| 280 | 11 | 5.770 V | 5.480 V | |
| 286 | 12 | 5.770 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |

298 14 5.770 V 5.480 V
304 15 5.760 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 116.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 116.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 116.0MV | | 260.0MV |
| 465 | 14 | 124.0MV | | 260.0MV |
| 474 | 15 | 124.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 1.000NA | | 4.000UA |
| 587 | 16 | 1.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 6

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 590.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.970 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.810 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.810 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 118.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 116.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 120.0MV | | 260.0MV |
| 465 | 14 | 122.0MV | | 260.0MV |
| 474 | 15 | 124.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 128.0MV | | 260.0MV |
| 420 | 9 | 130.0MV | | 260.0MV |
| 429 | 10 | 132.0MV | | 260.0MV |
| 438 | 11 | 128.0MV | | 260.0MV |
| 447 | 12 | 130.0MV | | 260.0MV |
| 456 | 13 | 128.0MV | | 260.0MV |
| 465 | 14 | 138.0MV | | 260.0MV |
| 474 | 15 | 138.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.750 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |

298 14 5.750 V 5.480 V
304 15 5.730 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 130.0MV | | 260.0MV |
| 420 | 9 | 132.0MV | | 260.0MV |
| 429 | 10 | 134.0MV | | 260.0MV |
| 438 | 11 | 130.0MV | | 260.0MV |
| 447 | 12 | 132.0MV | | 260.0MV |
| 456 | 13 | 130.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 21.00NA | | 4.000UA |
| 587 | 16 | 14.00NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 7

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -680.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.800 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 108.0MV | | 260.0MV |
| 429 | 10 | 108.0MV | | 260.0MV |
| 438 | 11 | 106.0MV | | 260.0MV |
| 447 | 12 | 108.0MV | | 260.0MV |
| 456 | 13 | 106.0MV | | 260.0MV |
| 465 | 14 | 114.0MV | | 260.0MV |
| 474 | 15 | 112.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

INST # PIN MEASURED LT GT
262 7 4.260 V 3.980 V
268 9 4.250 V 3.980 V
274 10 4.260 V 3.980 V
280 11 4.260 V 3.980 V
286 12 4.260 V 3.980 V
292 13 4.260 V 3.980 V
298 14 4.250 V 3.980 V
304 15 4.240 V 3.980 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 34.00MV 100.0MV
352 11 34.00MV 100.0MV
361 12 34.00MV 100.0MV
370 13 34.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 114.0MV 260.0MV
420 9 116.0MV 260.0MV
429 10 114.0MV 260.0MV
438 11 114.0MV 260.0MV
447 12 118.0MV 260.0MV
456 13 114.0MV 260.0MV
465 14 130.0MV 260.0MV
474 15 122.0MV 260.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.970 V 5.900 V
203 9 5.970 V 5.900 V
209 10 5.960 V 5.900 V
215 11 5.970 V 5.900 V
221 12 5.960 V 5.900 V
227 13 5.960 V 5.900 V
233 14 5.970 V 5.900 V
239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

INST # PIN MEASURED LT GT
262 7 5.770 V 5.480 V
268 9 5.750 V 5.480 V
274 10 5.770 V 5.480 V
280 11 5.770 V 5.480 V
286 12 5.770 V 5.480 V
292 13 5.770 V 5.480 V

298 14 5.750 V 5.480 V
304 15 5.750 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 116.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 116.0MV | | 260.0MV |
| 447 | 12 | 118.0MV | | 260.0MV |
| 456 | 13 | 116.0MV | | 260.0MV |
| 465 | 14 | 140.0MV | | 260.0MV |
| 474 | 15 | 126.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -6.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 3.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 3.000NA | | 4.000UA |
| 587 | 16 | 1.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 8

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -670.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 610.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.980 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.810 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 112.0MV | | 260.0MV |
| 465 | 14 | 116.0MV | | 260.0MV |
| 474 | 15 | 116.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.270 V | 3.980 V | |
| 268 | 9 | 4.260 V | 3.980 V | |
| 274 | 10 | 4.270 V | 3.980 V | |
| 280 | 11 | 4.280 V | 3.980 V | |
| 286 | 12 | 4.280 V | 3.980 V | |
| 292 | 13 | 4.280 V | 3.980 V | |
| 298 | 14 | 4.280 V | 3.980 V | |
| 304 | 15 | 4.260 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 118.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 118.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 124.0MV | | 260.0MV |
| 474 | 15 | 126.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.780 V | 5.480 V | |
| 268 | 9 | 5.770 V | 5.480 V | |
| 274 | 10 | 5.780 V | 5.480 V | |
| 280 | 11 | 5.790 V | 5.480 V | |
| 286 | 12 | 5.790 V | 5.480 V | |
| 292 | 13 | 5.790 V | 5.480 V | |

298 14 5.790 V 5.480 V
304 15 5.770 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 36.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 118.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 118.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 128.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 9

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -720.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -720.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -720.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -720.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -720.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -720.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -700.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 620.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.970 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.820 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.830 V | 2.480 V | |
| 286 | 12 | 2.830 V | 2.480 V | |
| 292 | 13 | 2.830 V | 2.480 V | |
| 298 | 14 | 2.830 V | 2.480 V | |
| 304 | 15 | 2.810 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 108.0MV | | 260.0MV |
| 429 | 10 | 108.0MV | | 260.0MV |
| 438 | 11 | 104.0MV | | 260.0MV |
| 447 | 12 | 106.0MV | | 260.0MV |
| 456 | 13 | 104.0MV | | 260.0MV |
| 465 | 14 | 106.0MV | | 260.0MV |
| 474 | 15 | 108.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

INST # PIN MEASURED LT GT
262 7 4.260 V 3.980 V
268 9 4.260 V 3.980 V
274 10 4.270 V 3.980 V
280 11 4.280 V 3.980 V
286 12 4.270 V 3.980 V
292 13 4.280 V 3.980 V
298 14 4.280 V 3.980 V
304 15 4.260 V 3.980 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 34.00MV 100.0MV
343 10 34.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 34.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 112.0MV 260.0MV
420 9 114.0MV 260.0MV
429 10 116.0MV 260.0MV
438 11 110.0MV 260.0MV
447 12 112.0MV 260.0MV
456 13 112.0MV 260.0MV
465 14 116.0MV 260.0MV
474 15 118.0MV 260.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.970 V 5.900 V
203 9 5.970 V 5.900 V
209 10 5.960 V 5.900 V
215 11 5.970 V 5.900 V
221 12 5.970 V 5.900 V
227 13 5.970 V 5.900 V
233 14 5.970 V 5.900 V
239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

INST # PIN MEASURED LT GT
262 7 5.780 V 5.480 V
268 9 5.770 V 5.480 V
274 10 5.780 V 5.480 V
280 11 5.790 V 5.480 V
286 12 5.790 V 5.480 V
292 13 5.800 V 5.480 V

298 14 5.790 V 5.480 V
304 15 5.770 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 36.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 120.0MV | | 260.0MV |
| 474 | 15 | 124.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 10

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -690.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 610.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 620.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.980 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.830 V | 2.480 V | |
| 286 | 12 | 2.830 V | 2.480 V | |
| 292 | 13 | 2.830 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.810 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 108.0MV | | 260.0MV |
| 429 | 10 | 108.0MV | | 260.0MV |
| 438 | 11 | 106.0MV | | 260.0MV |
| 447 | 12 | 106.0MV | | 260.0MV |
| 456 | 13 | 106.0MV | | 260.0MV |
| 465 | 14 | 108.0MV | | 260.0MV |
| 474 | 15 | 110.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

INST # PIN MEASURED LT GT
262 7 4.270 V 3.980 V
268 9 4.270 V 3.980 V
274 10 4.280 V 3.980 V
280 11 4.280 V 3.980 V
286 12 4.280 V 3.980 V
292 13 4.280 V 3.980 V
298 14 4.280 V 3.980 V
304 15 4.260 V 3.980 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 34.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 34.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 112.0MV 260.0MV
420 9 114.0MV 260.0MV
429 10 114.0MV 260.0MV
438 11 112.0MV 260.0MV
447 12 112.0MV 260.0MV
456 13 112.0MV 260.0MV
465 14 118.0MV 260.0MV
474 15 118.0MV 260.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.970 V 5.900 V
203 9 5.970 V 5.900 V
209 10 5.970 V 5.900 V
215 11 5.970 V 5.900 V
221 12 5.970 V 5.900 V
227 13 5.970 V 5.900 V
233 14 5.970 V 5.900 V
239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

INST # PIN MEASURED LT GT
262 7 5.780 V 5.480 V
268 9 5.770 V 5.480 V
274 10 5.790 V 5.480 V
280 11 5.790 V 5.480 V
286 12 5.790 V 5.480 V
292 13 5.800 V 5.480 V

298 14 5.790 V 5.480 V
 304 15 5.780 V 5.480 V

 VOL1 TEST
 VCC= 6
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

 VOL2 TEST
 VCC= 6
 VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 112.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 112.0MV | | 260.0MV |
| 465 | 14 | 120.0MV | | 260.0MV |
| 474 | 15 | 120.0MV | | 260.0MV |

 IIN TEST
 VCC= 6
 IIL/IIH LIMIT +- 0.1UA @25C/-55C
 IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

 ICC TEST
 VCC= 6
 ICC LIMIT MAX. 4.0UA @25C/-55C
 ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
 0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 11

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -690.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 610.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 620.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.970 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.800 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 106.0MV | | 260.0MV |
| 420 | 9 | 108.0MV | | 260.0MV |
| 429 | 10 | 108.0MV | | 260.0MV |
| 438 | 11 | 108.0MV | | 260.0MV |
| 447 | 12 | 108.0MV | | 260.0MV |
| 456 | 13 | 108.0MV | | 260.0MV |
| 465 | 14 | 112.0MV | | 260.0MV |
| 474 | 15 | 112.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

INST # PIN MEASURED LT GT
262 7 4.260 V 3.980 V
268 9 4.250 V 3.980 V
274 10 4.260 V 3.980 V
280 11 4.270 V 3.980 V
286 12 4.260 V 3.980 V
292 13 4.270 V 3.980 V
298 14 4.260 V 3.980 V
304 15 4.250 V 3.980 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 34.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 112.0MV 260.0MV
420 9 114.0MV 260.0MV
429 10 114.0MV 260.0MV
438 11 112.0MV 260.0MV
447 12 116.0MV 260.0MV
456 13 114.0MV 260.0MV
465 14 120.0MV 260.0MV
474 15 120.0MV 260.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.960 V 5.900 V
203 9 5.960 V 5.900 V
209 10 5.960 V 5.900 V
215 11 5.970 V 5.900 V
221 12 5.970 V 5.900 V
227 13 5.970 V 5.900 V
233 14 5.970 V 5.900 V
239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

INST # PIN MEASURED LT GT
262 7 5.780 V 5.480 V
268 9 5.760 V 5.480 V
274 10 5.780 V 5.480 V
280 11 5.780 V 5.480 V
286 12 5.780 V 5.480 V
292 13 5.780 V 5.480 V

298 14 5.780 V 5.480 V
304 15 5.760 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 122.0MV | | 260.0MV |
| 474 | 15 | 122.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 12

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.970 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.810 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.810 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 112.0MV | | 260.0MV |
| 465 | 14 | 114.0MV | | 260.0MV |
| 474 | 15 | 116.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 118.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 118.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 116.0MV | | 260.0MV |
| 465 | 14 | 122.0MV | | 260.0MV |
| 474 | 15 | 124.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.960 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.960 V | 5.900 V | |
| 221 | 12 | 5.960 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.960 V | 5.900 V | |
| 239 | 15 | 5.960 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.750 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.770 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |

298 14 5.770 V 5.480 V
304 15 5.750 V 5.480 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 116.0MV | | 260.0MV |
| 420 | 9 | 118.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 116.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 116.0MV | | 260.0MV |
| 465 | 14 | 124.0MV | | 260.0MV |
| 474 | 15 | 126.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT



MIL-PRF-38534 CLASS K DATAPACK

Pre Burn-In Test Results at 25°C



STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 1

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST

VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.810 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.800 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 122.0MV | | 260.0MV |
| 420 | 9 | 124.0MV | | 260.0MV |
| 429 | 10 | 122.0MV | | 260.0MV |
| 438 | 11 | 118.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 124.0MV | | 260.0MV |
| 474 | 15 | 128.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.460 V | 4.400 V | |

| | | | |
|-----|----|---------|---------|
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.460 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.260 V | 3.980 V | |
| 280 | 11 | 4.270 V | 3.980 V | |
| 286 | 12 | 4.270 V | 3.980 V | |
| 292 | 13 | 4.270 V | 3.980 V | |
| 298 | 14 | 4.270 V | 3.980 V | |
| 304 | 15 | 4.250 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 134.0MV | | 260.0MV |
| 429 | 10 | 134.0MV | | 260.0MV |
| 438 | 11 | 130.0MV | | 260.0MV |
| 447 | 12 | 132.0MV | | 260.0MV |
| 456 | 13 | 130.0MV | | 260.0MV |
| 465 | 14 | 136.0MV | | 260.0MV |
| 474 | 15 | 140.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.980 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.750 V | 5.480 V | |
| 274 | 10 | 5.770 V | 5.480 V | |
| 280 | 11 | 5.780 V | 5.480 V | |
| 286 | 12 | 5.770 V | 5.480 V | |
| 292 | 13 | 5.780 V | 5.480 V | |
| 298 | 14 | 5.770 V | 5.480 V | |
| 304 | 15 | 5.760 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 136.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 132.0MV | | 260.0MV |
| 447 | 12 | 134.0MV | | 260.0MV |
| 456 | 13 | 132.0MV | | 260.0MV |
| 465 | 14 | 140.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |

587 16 -3.000NA

4.000UA

| | | | |
|--------------|------|------|-----|
| EIR 1.....10 | FCT | DCT | |
| 0000000000 | PASS | PASS | EOT |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 2

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -640.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.980 V 2.900 V
209 10 2.970 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.980 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.980 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.790 V 2.480 V
268 9 2.780 V 2.480 V
274 10 2.790 V 2.480 V
280 11 2.790 V 2.480 V
286 12 2.790 V 2.480 V
292 13 2.790 V 2.480 V
298 14 2.790 V 2.480 V
304 15 2.780 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 34.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 126.0MV 260.0MV
420 9 128.0MV 260.0MV
429 10 130.0MV 260.0MV
438 11 124.0MV 260.0MV
447 12 126.0MV 260.0MV
456 13 128.0MV 260.0MV
465 14 130.0MV 260.0MV
474 15 134.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.220 V | 3.980 V | |
| 274 | 10 | 4.240 V | 3.980 V | |
| 280 | 11 | 4.240 V | 3.980 V | |
| 286 | 12 | 4.240 V | 3.980 V | |
| 292 | 13 | 4.240 V | 3.980 V | |
| 298 | 14 | 4.240 V | 3.980 V | |
| 304 | 15 | 4.220 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.720 V | 5.480 V | |
| 274 | 10 | 5.740 V | 5.480 V | |
| 280 | 11 | 5.740 V | 5.480 V | |
| 286 | 12 | 5.740 V | 5.480 V | |
| 292 | 13 | 5.740 V | 5.480 V | |
| 298 | 14 | 5.740 V | 5.480 V | |
| 304 | 15 | 5.720 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 140.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 142.0MV | | 260.0MV |
| 456 | 13 | 140.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 3

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.980 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.970 V 2.900 V
221 12 2.980 V 2.900 V
227 13 2.970 V 2.900 V
233 14 2.980 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.800 V 2.480 V
268 9 2.790 V 2.480 V
274 10 2.800 V 2.480 V
280 11 2.800 V 2.480 V
286 12 2.800 V 2.480 V
292 13 2.810 V 2.480 V
298 14 2.800 V 2.480 V
304 15 2.790 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 34.00MV 100.0MV
343 10 34.00MV 100.0MV
352 11 34.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 124.0MV 260.0MV
420 9 126.0MV 260.0MV
429 10 126.0MV 260.0MV
438 11 122.0MV 260.0MV
447 12 124.0MV 260.0MV
456 13 124.0MV 260.0MV
465 14 126.0MV 260.0MV
474 15 130.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.460 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 134.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 140.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.740 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 148.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 4

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.980 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.980 V 2.900 V
209 10 2.970 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.970 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.980 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.800 V 2.480 V
268 9 2.790 V 2.480 V
274 10 2.800 V 2.480 V
280 11 2.800 V 2.480 V
286 12 2.800 V 2.480 V
292 13 2.800 V 2.480 V
298 14 2.800 V 2.480 V
304 15 2.780 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 34.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 124.0MV 260.0MV
420 9 124.0MV 260.0MV
429 10 124.0MV 260.0MV
438 11 122.0MV 260.0MV
447 12 122.0MV 260.0MV
456 13 122.0MV 260.0MV
465 14 126.0MV 260.0MV
474 15 130.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.460 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.240 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.240 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.240 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 136.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 134.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 132.0MV | | 260.0MV |
| 465 | 14 | 140.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.740 V | 5.480 V | |
| 280 | 11 | 5.750 V | 5.480 V | |
| 286 | 12 | 5.750 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.730 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 36.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 148.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 5

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.980 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.980 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.970 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.970 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.780 V 2.480 V
268 9 2.770 V 2.480 V
274 10 2.780 V 2.480 V
280 11 2.780 V 2.480 V
286 12 2.780 V 2.480 V
292 13 2.790 V 2.480 V
298 14 2.780 V 2.480 V
304 15 2.770 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 34.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 126.0MV 260.0MV
420 9 130.0MV 260.0MV
429 10 130.0MV 260.0MV
438 11 126.0MV 260.0MV
447 12 128.0MV 260.0MV
456 13 128.0MV 260.0MV
465 14 132.0MV 260.0MV
474 15 132.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.230 V | 3.980 V | |
| 268 | 9 | 4.220 V | 3.980 V | |
| 274 | 10 | 4.220 V | 3.980 V | |
| 280 | 11 | 4.230 V | 3.980 V | |
| 286 | 12 | 4.230 V | 3.980 V | |
| 292 | 13 | 4.230 V | 3.980 V | |
| 298 | 14 | 4.230 V | 3.980 V | |
| 304 | 15 | 4.210 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 140.0MV | | 260.0MV |
| 429 | 10 | 142.0MV | | 260.0MV |
| 438 | 11 | 138.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 140.0MV | | 260.0MV |
| 465 | 14 | 146.0MV | | 260.0MV |
| 474 | 15 | 148.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.740 V | 5.480 V | |
| 268 | 9 | 5.720 V | 5.480 V | |
| 274 | 10 | 5.730 V | 5.480 V | |
| 280 | 11 | 5.740 V | 5.480 V | |
| 286 | 12 | 5.730 V | 5.480 V | |
| 292 | 13 | 5.740 V | 5.480 V | |
| 298 | 14 | 5.730 V | 5.480 V | |
| 304 | 15 | 5.720 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 36.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 144.0MV | | 260.0MV |
| 429 | 10 | 144.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 142.0MV | | 260.0MV |
| 456 | 13 | 140.0MV | | 260.0MV |
| 465 | 14 | 150.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 6

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.970 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.980 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.970 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.790 V 2.480 V
268 9 2.790 V 2.480 V
274 10 2.800 V 2.480 V
280 11 2.800 V 2.480 V
286 12 2.800 V 2.480 V
292 13 2.800 V 2.480 V
298 14 2.800 V 2.480 V
304 15 2.780 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 34.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 124.0MV 260.0MV
420 9 126.0MV 260.0MV
429 10 128.0MV 260.0MV
438 11 124.0MV 260.0MV
447 12 124.0MV 260.0MV
456 13 124.0MV 260.0MV
465 14 130.0MV 260.0MV
474 15 130.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.240 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 136.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 142.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.750 V | 5.480 V | |
| 286 | 12 | 5.750 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.730 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 140.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 138.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 140.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 150.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 7

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.980 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.980 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.970 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.810 V 2.480 V
268 9 2.810 V 2.480 V
274 10 2.810 V 2.480 V
280 11 2.820 V 2.480 V
286 12 2.820 V 2.480 V
292 13 2.820 V 2.480 V
298 14 2.810 V 2.480 V
304 15 2.800 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 34.00MV 100.0MV
334 9 34.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 34.00MV 100.0MV
370 13 34.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 118.0MV 260.0MV
420 9 118.0MV 260.0MV
429 10 120.0MV 260.0MV
438 11 116.0MV 260.0MV
447 12 118.0MV 260.0MV
456 13 116.0MV 260.0MV
465 14 120.0MV 260.0MV
474 15 122.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.260 V | 3.980 V | |
| 268 | 9 | 4.250 V | 3.980 V | |
| 274 | 10 | 4.260 V | 3.980 V | |
| 280 | 11 | 4.270 V | 3.980 V | |
| 286 | 12 | 4.260 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.260 V | 3.980 V | |
| 304 | 15 | 4.250 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----------|
| 325 | 7 | 32.00MV | | 100.00MV |
| 334 | 9 | 32.00MV | | 100.00MV |
| 343 | 10 | 34.00MV | | 100.00MV |
| 352 | 11 | 32.00MV | | 100.00MV |
| 361 | 12 | 32.00MV | | 100.00MV |
| 370 | 13 | 32.00MV | | 100.00MV |
| 379 | 14 | 32.00MV | | 100.00MV |
| 388 | 15 | 32.00MV | | 100.00MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----------|
| 411 | 7 | 128.00MV | | 260.00MV |
| 420 | 9 | 130.00MV | | 260.00MV |
| 429 | 10 | 130.00MV | | 260.00MV |
| 438 | 11 | 128.00MV | | 260.00MV |
| 447 | 12 | 130.00MV | | 260.00MV |
| 456 | 13 | 128.00MV | | 260.00MV |
| 465 | 14 | 136.00MV | | 260.00MV |
| 474 | 15 | 136.00MV | | 260.00MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.770 V | 5.480 V | |
| 268 | 9 | 5.750 V | 5.480 V | |
| 274 | 10 | 5.770 V | 5.480 V | |
| 280 | 11 | 5.770 V | 5.480 V | |
| 286 | 12 | 5.770 V | 5.480 V | |
| 292 | 13 | 5.780 V | 5.480 V | |
| 298 | 14 | 5.770 V | 5.480 V | |
| 304 | 15 | 5.750 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 36.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 130.0MV | | 260.0MV |
| 420 | 9 | 132.0MV | | 260.0MV |
| 429 | 10 | 134.0MV | | 260.0MV |
| 438 | 11 | 132.0MV | | 260.0MV |
| 447 | 12 | 134.0MV | | 260.0MV |
| 456 | 13 | 130.0MV | | 260.0MV |
| 465 | 14 | 140.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 8

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.980 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.980 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.980 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.800 V 2.480 V
268 9 2.790 V 2.480 V
274 10 2.800 V 2.480 V
280 11 2.800 V 2.480 V
286 12 2.800 V 2.480 V
292 13 2.800 V 2.480 V
298 14 2.800 V 2.480 V
304 15 2.780 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 34.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 126.0MV 260.0MV
420 9 128.0MV 260.0MV
429 10 128.0MV 260.0MV
438 11 124.0MV 260.0MV
447 12 126.0MV 260.0MV
456 13 124.0MV 260.0MV
465 14 128.0MV 260.0MV
474 15 130.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----------|
| 325 | 7 | 32.00MV | | 100.00MV |
| 334 | 9 | 32.00MV | | 100.00MV |
| 343 | 10 | 32.00MV | | 100.00MV |
| 352 | 11 | 32.00MV | | 100.00MV |
| 361 | 12 | 34.00MV | | 100.00MV |
| 370 | 13 | 32.00MV | | 100.00MV |
| 379 | 14 | 32.00MV | | 100.00MV |
| 388 | 15 | 34.00MV | | 100.00MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 136.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 142.0MV | | 260.0MV |
| 474 | 15 | 144.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.980 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.740 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 140.0MV | | 260.0MV |
| 429 | 10 | 142.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 150.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 9

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.970 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.980 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.980 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.800 V 2.480 V
268 9 2.800 V 2.480 V
274 10 2.800 V 2.480 V
280 11 2.810 V 2.480 V
286 12 2.810 V 2.480 V
292 13 2.810 V 2.480 V
298 14 2.810 V 2.480 V
304 15 2.800 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 124.0MV 260.0MV
420 9 124.0MV 260.0MV
429 10 124.0MV 260.0MV
438 11 118.0MV 260.0MV
447 12 120.0MV 260.0MV
456 13 118.0MV 260.0MV
465 14 122.0MV 260.0MV
474 15 126.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.460 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.460 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.260 V | 3.980 V | |
| 292 | 13 | 4.270 V | 3.980 V | |
| 298 | 14 | 4.260 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 134.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 130.0MV | | 260.0MV |
| 447 | 12 | 132.0MV | | 260.0MV |
| 456 | 13 | 128.0MV | | 260.0MV |
| 465 | 14 | 138.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.980 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.750 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.770 V | 5.480 V | |
| 286 | 12 | 5.770 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |
| 298 | 14 | 5.770 V | 5.480 V | |
| 304 | 15 | 5.750 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 136.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 134.0MV | | 260.0MV |
| 447 | 12 | 134.0MV | | 260.0MV |
| 456 | 13 | 132.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 10

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.980 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.970 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.980 V 2.900 V
227 13 2.970 V 2.900 V
233 14 2.980 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.790 V 2.480 V
268 9 2.790 V 2.480 V
274 10 2.800 V 2.480 V
280 11 2.810 V 2.480 V
286 12 2.800 V 2.480 V
292 13 2.810 V 2.480 V
298 14 2.800 V 2.480 V
304 15 2.790 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 34.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 124.0MV 260.0MV
420 9 124.0MV 260.0MV
429 10 124.0MV 260.0MV
438 11 122.0MV 260.0MV
447 12 122.0MV 260.0MV
456 13 122.0MV 260.0MV
465 14 126.0MV 260.0MV
474 15 130.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.260 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----------|
| 325 | 7 | 34.00MV | | 100.00MV |
| 334 | 9 | 34.00MV | | 100.00MV |
| 343 | 10 | 32.00MV | | 100.00MV |
| 352 | 11 | 32.00MV | | 100.00MV |
| 361 | 12 | 32.00MV | | 100.00MV |
| 370 | 13 | 34.00MV | | 100.00MV |
| 379 | 14 | 32.00MV | | 100.00MV |
| 388 | 15 | 32.00MV | | 100.00MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 136.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 134.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 132.0MV | | 260.0MV |
| 465 | 14 | 142.0MV | | 260.0MV |
| 474 | 15 | 144.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.980 V | 5.900 V | |

239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.740 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.770 V | 5.480 V | |
| 286 | 12 | 5.770 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 134.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 11

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.980 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.970 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.980 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.800 V 2.480 V
268 9 2.790 V 2.480 V
274 10 2.810 V 2.480 V
280 11 2.810 V 2.480 V
286 12 2.800 V 2.480 V
292 13 2.810 V 2.480 V
298 14 2.800 V 2.480 V
304 15 2.780 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 34.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 34.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 122.0MV 260.0MV
420 9 124.0MV 260.0MV
429 10 124.0MV 260.0MV
438 11 122.0MV 260.0MV
447 12 124.0MV 260.0MV
456 13 122.0MV 260.0MV
465 14 130.0MV 260.0MV
474 15 130.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.460 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.460 V | 4.400 V |
| 221 | 12 | 4.460 V | 4.400 V |
| 227 | 13 | 4.450 V | 4.400 V |
| 233 | 14 | 4.460 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.00E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 136.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 132.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 142.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.740 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.730 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 138.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |

STAT1 05/29/11 07:07
TEST PROGRAM HCL38 S/N 12

DDS-101-11-A PN 54HC138 ELECTRONICS TEST SEQ12 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

INST # PIN MEASURED LT GT
197 7 2.980 V 2.900 V
203 9 2.980 V 2.900 V
209 10 2.980 V 2.900 V
215 11 2.980 V 2.900 V
221 12 2.980 V 2.900 V
227 13 2.980 V 2.900 V
233 14 2.980 V 2.900 V
239 15 2.980 V 2.900 V

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

INST # PIN MEASURED LT GT
262 7 2.790 V 2.480 V
268 9 2.790 V 2.480 V
274 10 2.800 V 2.480 V
280 11 2.800 V 2.480 V
286 12 2.800 V 2.480 V
292 13 2.800 V 2.480 V
298 14 2.800 V 2.480 V
304 15 2.780 V 2.480 V

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 34.00MV 100.0MV
334 9 34.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 34.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

INST # PIN MEASURED LT GT
411 7 126.0MV 260.0MV
420 9 126.0MV 260.0MV
429 10 128.0MV 260.0MV
438 11 124.0MV 260.0MV
447 12 124.0MV 260.0MV
456 13 122.0MV 260.0MV
465 14 128.0MV 260.0MV
474 15 130.0MV 260.0MV

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

INST # PIN MEASURED LT GT
197 7 4.450 V 4.400 V

| | | | |
|-----|----|---------|---------|
| 203 | 9 | 4.450 V | 4.400 V |
| 209 | 10 | 4.450 V | 4.400 V |
| 215 | 11 | 4.450 V | 4.400 V |
| 221 | 12 | 4.450 V | 4.400 V |
| 227 | 13 | 4.460 V | 4.400 V |
| 233 | 14 | 4.450 V | 4.400 V |
| 239 | 15 | 4.450 V | 4.400 V |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 136.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |

239 15 5.980 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.740 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 140.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 138.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

| | | | | |
|--------------|------|------|-----|--|
| EIR 1.....10 | FCT | DCT | | |
| 0000000000 | PASS | PASS | EOT | |



MIL-PRF-38534 CLASS K DATAPACK

Pre Burn-In Test Results at +125°C



STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 1

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -540.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -540.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -530.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -530.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -540.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -540.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -500.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 450.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 450.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 450.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 450.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 450.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 450.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 450.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST

VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST

VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |

| | | | |
|-----|----|---------|---------|
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.970 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.970 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.760 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.770 V | 2.200 V | |
| 280 | 11 | 2.780 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.790 V | 2.200 V | |
| 298 | 14 | 2.780 V | 2.200 V | |
| 304 | 15 | 2.760 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 30.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 144.0MV | | 400.0MV |
| 420 | 9 | 144.0MV | | 400.0MV |
| 429 | 10 | 146.0MV | | 400.0MV |
| 438 | 11 | 140.0MV | | 400.0MV |
| 447 | 12 | 140.0MV | | 400.0MV |
| 456 | 13 | 138.0MV | | 400.0MV |
| 465 | 14 | 142.0MV | | 400.0MV |
| 474 | 15 | 146.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.210 V | 3.700 V | |
| 268 | 9 | 4.210 V | 3.700 V | |
| 274 | 10 | 4.220 V | 3.700 V | |
| 280 | 11 | 4.230 V | 3.700 V | |
| 286 | 12 | 4.230 V | 3.700 V | |
| 292 | 13 | 4.240 V | 3.700 V | |
| 298 | 14 | 4.230 V | 3.700 V | |
| 304 | 15 | 4.220 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 158.0MV | | 400.0MV |
| 420 | 9 | 158.0MV | | 400.0MV |
| 429 | 10 | 158.0MV | | 400.0MV |
| 438 | 11 | 152.0MV | | 400.0MV |
| 447 | 12 | 154.0MV | | 400.0MV |
| 456 | 13 | 150.0MV | | 400.0MV |
| 465 | 14 | 158.0MV | | 400.0MV |
| 474 | 15 | 164.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.980 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.980 V | 5.900 V | |
| 233 | 14 | 5.980 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.730 V | 5.200 V | |
| 268 | 9 | 5.720 V | 5.200 V | |
| 274 | 10 | 5.740 V | 5.200 V | |
| 280 | 11 | 5.750 V | 5.200 V | |
| 286 | 12 | 5.750 V | 5.200 V | |
| 292 | 13 | 5.750 V | 5.200 V | |
| 298 | 14 | 5.750 V | 5.200 V | |
| 304 | 15 | 5.730 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 156.0MV | | 400.0MV |
| 420 | 9 | 158.0MV | | 400.0MV |
| 429 | 10 | 160.0MV | | 400.0MV |
| 438 | 11 | 154.0MV | | 400.0MV |
| 447 | 12 | 156.0MV | | 400.0MV |
| 456 | 13 | 152.0MV | | 400.0MV |
| 465 | 14 | 162.0MV | | 400.0MV |
| 474 | 15 | 166.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 2

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -580.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 510.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 510.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 520.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.970 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.770 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.770 V | 2.200 V | |
| 280 | 11 | 2.780 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.780 V | 2.200 V | |
| 298 | 14 | 2.770 V | 2.200 V | |
| 304 | 15 | 2.750 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 144.0MV | | 400.0MV |
| 420 | 9 | 146.0MV | | 400.0MV |
| 429 | 10 | 146.0MV | | 400.0MV |
| 438 | 11 | 142.0MV | | 400.0MV |
| 447 | 12 | 144.0MV | | 400.0MV |
| 456 | 13 | 144.0MV | | 400.0MV |
| 465 | 14 | 148.0MV | | 400.0MV |
| 474 | 15 | 150.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.460 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.220 V | 3.700 V | |
| 268 | 9 | 4.210 V | 3.700 V | |
| 274 | 10 | 4.220 V | 3.700 V | |
| 280 | 11 | 4.220 V | 3.700 V | |
| 286 | 12 | 4.220 V | 3.700 V | |
| 292 | 13 | 4.220 V | 3.700 V | |
| 298 | 14 | 4.220 V | 3.700 V | |
| 304 | 15 | 4.200 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 160.0MV | | 400.0MV |
| 420 | 9 | 164.0MV | | 400.0MV |
| 429 | 10 | 166.0MV | | 400.0MV |
| 438 | 11 | 162.0MV | | 400.0MV |
| 447 | 12 | 162.0MV | | 400.0MV |
| 456 | 13 | 162.0MV | | 400.0MV |
| 465 | 14 | 170.0MV | | 400.0MV |
| 474 | 15 | 170.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.980 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.980 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.980 V | 5.900 V | |
| 227 | 13 | 5.980 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.730 V | 5.200 V | |
| 268 | 9 | 5.710 V | 5.200 V | |
| 274 | 10 | 5.720 V | 5.200 V | |
| 280 | 11 | 5.730 V | 5.200 V | |
| 286 | 12 | 5.730 V | 5.200 V | |
| 292 | 13 | 5.740 V | 5.200 V | |

298 14 5.730 V 5.200 V
 304 15 5.710 V 5.200 V

 VOL1 TEST
 VCC= 6
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

 VOL2 TEST
 VCC= 6
 VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 164.0MV | | 400.0MV |
| 420 | 9 | 168.0MV | | 400.0MV |
| 429 | 10 | 172.0MV | | 400.0MV |
| 438 | 11 | 166.0MV | | 400.0MV |
| 447 | 12 | 168.0MV | | 400.0MV |
| 456 | 13 | 166.0MV | | 400.0MV |
| 465 | 14 | 178.0MV | | 400.0MV |
| 474 | 15 | 178.0MV | | 400.0MV |

 IIN TEST
 VCC= 6
 IIL/IIH LIMIT +- 0.1UA @25C/-55C
 IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

 ICC TEST
 VCC= 6
 ICC LIMIT MAX. 4.0UA @25C/-55C
 ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
 0000000000 PASS PASS EOT
 GLOB 4
 GLOB# F.P. OCTAL LITERAL
 4 0 00000000

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 3

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -610.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 540.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.980 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.200 V | |
| 268 | 9 | 2.780 V | 2.200 V | |
| 274 | 10 | 2.790 V | 2.200 V | |
| 280 | 11 | 2.800 V | 2.200 V | |
| 286 | 12 | 2.790 V | 2.200 V | |
| 292 | 13 | 2.800 V | 2.200 V | |
| 298 | 14 | 2.800 V | 2.200 V | |
| 304 | 15 | 2.780 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 400.0MV |
| 420 | 9 | 134.0MV | | 400.0MV |
| 429 | 10 | 138.0MV | | 400.0MV |
| 438 | 11 | 132.0MV | | 400.0MV |
| 447 | 12 | 132.0MV | | 400.0MV |
| 456 | 13 | 128.0MV | | 400.0MV |
| 465 | 14 | 134.0MV | | 400.0MV |
| 474 | 15 | 134.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.460 V | 4.400 V | |
| 239 | 15 | 4.460 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.700 V | |
| 268 | 9 | 4.220 V | 3.700 V | |
| 274 | 10 | 4.240 V | 3.700 V | |
| 280 | 11 | 4.250 V | 3.700 V | |
| 286 | 12 | 4.240 V | 3.700 V | |
| 292 | 13 | 4.250 V | 3.700 V | |
| 298 | 14 | 4.240 V | 3.700 V | |
| 304 | 15 | 4.230 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 146.0MV | | 400.0MV |
| 420 | 9 | 146.0MV | | 400.0MV |
| 429 | 10 | 150.0MV | | 400.0MV |
| 438 | 11 | 146.0MV | | 400.0MV |
| 447 | 12 | 144.0MV | | 400.0MV |
| 456 | 13 | 144.0MV | | 400.0MV |
| 465 | 14 | 150.0MV | | 400.0MV |
| 474 | 15 | 152.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.980 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.980 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.980 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.200 V | |
| 268 | 9 | 5.730 V | 5.200 V | |
| 274 | 10 | 5.750 V | 5.200 V | |
| 280 | 11 | 5.750 V | 5.200 V | |
| 286 | 12 | 5.750 V | 5.200 V | |
| 292 | 13 | 5.760 V | 5.200 V | |

298 14 5.750 V 5.200 V
304 15 5.740 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 150.0MV | | 400.0MV |
| 420 | 9 | 152.0MV | | 400.0MV |
| 429 | 10 | 152.0MV | | 400.0MV |
| 438 | 11 | 150.0MV | | 400.0MV |
| 447 | 12 | 152.0MV | | 400.0MV |
| 456 | 13 | 148.0MV | | 400.0MV |
| 465 | 14 | 158.0MV | | 400.0MV |
| 474 | 15 | 158.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 4

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -620.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -580.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 520.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.970 V | 2.900 V |
| 203 | 9 | 2.970 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.780 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.780 V | 2.200 V | |
| 280 | 11 | 2.790 V | 2.200 V | |
| 286 | 12 | 2.790 V | 2.200 V | |
| 292 | 13 | 2.790 V | 2.200 V | |
| 298 | 14 | 2.790 V | 2.200 V | |
| 304 | 15 | 2.770 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 140.0MV | | 400.0MV |
| 420 | 9 | 142.0MV | | 400.0MV |
| 429 | 10 | 142.0MV | | 400.0MV |
| 438 | 11 | 136.0MV | | 400.0MV |
| 447 | 12 | 136.0MV | | 400.0MV |
| 456 | 13 | 136.0MV | | 400.0MV |
| 465 | 14 | 142.0MV | | 400.0MV |
| 474 | 15 | 142.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.220 V | 3.700 V | |
| 268 | 9 | 4.210 V | 3.700 V | |
| 274 | 10 | 4.230 V | 3.700 V | |
| 280 | 11 | 4.240 V | 3.700 V | |
| 286 | 12 | 4.230 V | 3.700 V | |
| 292 | 13 | 4.240 V | 3.700 V | |
| 298 | 14 | 4.230 V | 3.700 V | |
| 304 | 15 | 4.210 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 156.0MV | | 400.0MV |
| 420 | 9 | 158.0MV | | 400.0MV |
| 429 | 10 | 160.0MV | | 400.0MV |
| 438 | 11 | 156.0MV | | 400.0MV |
| 447 | 12 | 154.0MV | | 400.0MV |
| 456 | 13 | 156.0MV | | 400.0MV |
| 465 | 14 | 162.0MV | | 400.0MV |
| 474 | 15 | 164.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.980 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.980 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.730 V | 5.200 V | |
| 268 | 9 | 5.710 V | 5.200 V | |
| 274 | 10 | 5.730 V | 5.200 V | |
| 280 | 11 | 5.740 V | 5.200 V | |
| 286 | 12 | 5.740 V | 5.200 V | |
| 292 | 13 | 5.740 V | 5.200 V | |

298 14 5.740 V 5.200 V
304 15 5.720 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 164.0MV | | 400.0MV |
| 420 | 9 | 166.0MV | | 400.0MV |
| 429 | 10 | 168.0MV | | 400.0MV |
| 438 | 11 | 162.0MV | | 400.0MV |
| 447 | 12 | 162.0MV | | 400.0MV |
| 456 | 13 | 160.0MV | | 400.0MV |
| 465 | 14 | 170.0MV | | 400.0MV |
| 474 | 15 | 172.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 5

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -550.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 490.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.970 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.970 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.760 V | 2.200 V | |
| 268 | 9 | 2.750 V | 2.200 V | |
| 274 | 10 | 2.750 V | 2.200 V | |
| 280 | 11 | 2.760 V | 2.200 V | |
| 286 | 12 | 2.750 V | 2.200 V | |
| 292 | 13 | 2.760 V | 2.200 V | |
| 298 | 14 | 2.760 V | 2.200 V | |
| 304 | 15 | 2.740 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 150.0MV | | 400.0MV |
| 420 | 9 | 156.0MV | | 400.0MV |
| 429 | 10 | 164.0MV | | 400.0MV |
| 438 | 11 | 152.0MV | | 400.0MV |
| 447 | 12 | 152.0MV | | 400.0MV |
| 456 | 13 | 152.0MV | | 400.0MV |
| 465 | 14 | 156.0MV | | 400.0MV |
| 474 | 15 | 156.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.460 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.200 V | 3.700 V | |
| 268 | 9 | 4.180 V | 3.700 V | |
| 274 | 10 | 4.170 V | 3.700 V | |
| 280 | 11 | 4.200 V | 3.700 V | |
| 286 | 12 | 4.200 V | 3.700 V | |
| 292 | 13 | 4.200 V | 3.700 V | |
| 298 | 14 | 4.200 V | 3.700 V | |
| 304 | 15 | 4.180 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 168.0MV | | 400.0MV |
| 420 | 9 | 174.0MV | | 400.0MV |
| 429 | 10 | 192.0MV | | 400.0MV |
| 438 | 11 | 170.0MV | | 400.0MV |
| 447 | 12 | 170.0MV | | 400.0MV |
| 456 | 13 | 170.0MV | | 400.0MV |
| 465 | 14 | 178.0MV | | 400.0MV |
| 474 | 15 | 178.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.980 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.710 V | 5.200 V | |
| 268 | 9 | 5.690 V | 5.200 V | |
| 274 | 10 | 5.690 V | 5.200 V | |
| 280 | 11 | 5.710 V | 5.200 V | |
| 286 | 12 | 5.710 V | 5.200 V | |
| 292 | 13 | 5.710 V | 5.200 V | |

298 14 5.710 V 5.200 V
304 15 5.690 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 174.0MV | | 400.0MV |
| 420 | 9 | 180.0MV | | 400.0MV |
| 429 | 10 | 192.0MV | | 400.0MV |
| 438 | 11 | 176.0MV | | 400.0MV |
| 447 | 12 | 176.0MV | | 400.0MV |
| 456 | 13 | 176.0MV | | 400.0MV |
| 465 | 14 | 186.0MV | | 400.0MV |
| 474 | 15 | 186.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 6

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -600.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -600.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -600.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -600.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -600.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -600.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -570.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 510.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 510.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 510.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 510.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.980 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.770 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.770 V | 2.200 V | |
| 280 | 11 | 2.780 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.780 V | 2.200 V | |
| 298 | 14 | 2.780 V | 2.200 V | |
| 304 | 15 | 2.760 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 142.0MV | | 400.0MV |
| 420 | 9 | 146.0MV | | 400.0MV |
| 429 | 10 | 154.0MV | | 400.0MV |
| 438 | 11 | 142.0MV | | 400.0MV |
| 447 | 12 | 142.0MV | | 400.0MV |
| 456 | 13 | 142.0MV | | 400.0MV |
| 465 | 14 | 148.0MV | | 400.0MV |
| 474 | 15 | 148.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.220 V | 3.700 V | |
| 268 | 9 | 4.210 V | 3.700 V | |
| 274 | 10 | 4.210 V | 3.700 V | |
| 280 | 11 | 4.220 V | 3.700 V | |
| 286 | 12 | 4.220 V | 3.700 V | |
| 292 | 13 | 4.230 V | 3.700 V | |
| 298 | 14 | 4.220 V | 3.700 V | |
| 304 | 15 | 4.200 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 162.0MV | | 400.0MV |
| 420 | 9 | 162.0MV | | 400.0MV |
| 429 | 10 | 176.0MV | | 400.0MV |
| 438 | 11 | 160.0MV | | 400.0MV |
| 447 | 12 | 160.0MV | | 400.0MV |
| 456 | 13 | 160.0MV | | 400.0MV |
| 465 | 14 | 168.0MV | | 400.0MV |
| 474 | 15 | 170.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.980 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.730 V | 5.200 V | |
| 268 | 9 | 5.710 V | 5.200 V | |
| 274 | 10 | 5.710 V | 5.200 V | |
| 280 | 11 | 5.730 V | 5.200 V | |
| 286 | 12 | 5.730 V | 5.200 V | |
| 292 | 13 | 5.740 V | 5.200 V | |

298 14 5.730 V 5.200 V
304 15 5.710 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 168.0MV | | 400.0MV |
| 420 | 9 | 170.0MV | | 400.0MV |
| 429 | 10 | 184.0MV | | 400.0MV |
| 438 | 11 | 166.0MV | | 400.0MV |
| 447 | 12 | 168.0MV | | 400.0MV |
| 456 | 13 | 164.0MV | | 400.0MV |
| 465 | 14 | 176.0MV | | 400.0MV |
| 474 | 15 | 176.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 7

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -600.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 530.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.980 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.970 V | 2.900 V |
| 203 | 9 | 2.970 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.970 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.200 V | |
| 268 | 9 | 2.800 V | 2.200 V | |
| 274 | 10 | 2.800 V | 2.200 V | |
| 280 | 11 | 2.810 V | 2.200 V | |
| 286 | 12 | 2.810 V | 2.200 V | |
| 292 | 13 | 2.810 V | 2.200 V | |
| 298 | 14 | 2.810 V | 2.200 V | |
| 304 | 15 | 2.790 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 124.0MV | | 400.0MV |
| 420 | 9 | 126.0MV | | 400.0MV |
| 429 | 10 | 130.0MV | | 400.0MV |
| 438 | 11 | 122.0MV | | 400.0MV |
| 447 | 12 | 124.0MV | | 400.0MV |
| 456 | 13 | 122.0MV | | 400.0MV |
| 465 | 14 | 128.0MV | | 400.0MV |
| 474 | 15 | 128.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.260 V | 3.700 V | |
| 268 | 9 | 4.250 V | 3.700 V | |
| 274 | 10 | 4.260 V | 3.700 V | |
| 280 | 11 | 4.260 V | 3.700 V | |
| 286 | 12 | 4.260 V | 3.700 V | |
| 292 | 13 | 4.260 V | 3.700 V | |
| 298 | 14 | 4.260 V | 3.700 V | |
| 304 | 15 | 4.240 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 400.0MV |
| 420 | 9 | 138.0MV | | 400.0MV |
| 429 | 10 | 140.0MV | | 400.0MV |
| 438 | 11 | 136.0MV | | 400.0MV |
| 447 | 12 | 138.0MV | | 400.0MV |
| 456 | 13 | 136.0MV | | 400.0MV |
| 465 | 14 | 142.0MV | | 400.0MV |
| 474 | 15 | 144.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.980 V | 5.900 V | |
| 227 | 13 | 5.980 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.200 V | |
| 268 | 9 | 5.760 V | 5.200 V | |
| 274 | 10 | 5.770 V | 5.200 V | |
| 280 | 11 | 5.770 V | 5.200 V | |
| 286 | 12 | 5.770 V | 5.200 V | |
| 292 | 13 | 5.770 V | 5.200 V | |

298 14 5.770 V 5.200 V
304 15 5.750 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 142.0MV | | 400.0MV |
| 420 | 9 | 142.0MV | | 400.0MV |
| 429 | 10 | 146.0MV | | 400.0MV |
| 438 | 11 | 140.0MV | | 400.0MV |
| 447 | 12 | 140.0MV | | 400.0MV |
| 456 | 13 | 140.0MV | | 400.0MV |
| 465 | 14 | 148.0MV | | 400.0MV |
| 474 | 15 | 150.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 8

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -620.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -620.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -620.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -620.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -620.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -620.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -590.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 530.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.970 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.970 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.780 V | 2.200 V | |
| 268 | 9 | 2.780 V | 2.200 V | |
| 274 | 10 | 2.780 V | 2.200 V | |
| 280 | 11 | 2.790 V | 2.200 V | |
| 286 | 12 | 2.790 V | 2.200 V | |
| 292 | 13 | 2.800 V | 2.200 V | |
| 298 | 14 | 2.790 V | 2.200 V | |
| 304 | 15 | 2.770 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 400.0MV |
| 420 | 9 | 138.0MV | | 400.0MV |
| 429 | 10 | 140.0MV | | 400.0MV |
| 438 | 11 | 134.0MV | | 400.0MV |
| 447 | 12 | 134.0MV | | 400.0MV |
| 456 | 13 | 134.0MV | | 400.0MV |
| 465 | 14 | 138.0MV | | 400.0MV |
| 474 | 15 | 140.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

INST # PIN MEASURED LT GT
262 7 4.230 V 3.700 V
268 9 4.220 V 3.700 V
274 10 4.230 V 3.700 V
280 11 4.240 V 3.700 V
286 12 4.240 V 3.700 V
292 13 4.250 V 3.700 V
298 14 4.240 V 3.700 V
304 15 4.230 V 3.700 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

INST # PIN MEASURED LT GT
411 7 152.0MV 400.0MV
420 9 152.0MV 400.0MV
429 10 156.0MV 400.0MV
438 11 148.0MV 400.0MV
447 12 150.0MV 400.0MV
456 13 148.0MV 400.0MV
465 14 156.0MV 400.0MV
474 15 158.0MV 400.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.970 V 5.900 V
203 9 5.980 V 5.900 V
209 10 5.970 V 5.900 V
215 11 5.970 V 5.900 V
221 12 5.980 V 5.900 V
227 13 5.970 V 5.900 V
233 14 5.980 V 5.900 V
239 15 5.980 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

INST # PIN MEASURED LT GT
262 7 5.740 V 5.200 V
268 9 5.730 V 5.200 V
274 10 5.740 V 5.200 V
280 11 5.750 V 5.200 V
286 12 5.750 V 5.200 V
292 13 5.760 V 5.200 V

298 14 5.750 V 5.200 V
304 15 5.730 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 154.0MV | | 400.0MV |
| 420 | 9 | 158.0MV | | 400.0MV |
| 429 | 10 | 160.0MV | | 400.0MV |
| 438 | 11 | 156.0MV | | 400.0MV |
| 447 | 12 | 156.0MV | | 400.0MV |
| 456 | 13 | 152.0MV | | 400.0MV |
| 465 | 14 | 162.0MV | | 400.0MV |
| 474 | 15 | 164.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 9

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -600.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 530.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.980 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.970 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.970 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.200 V | |
| 268 | 9 | 2.790 V | 2.200 V | |
| 274 | 10 | 2.800 V | 2.200 V | |
| 280 | 11 | 2.810 V | 2.200 V | |
| 286 | 12 | 2.810 V | 2.200 V | |
| 292 | 13 | 2.810 V | 2.200 V | |
| 298 | 14 | 2.810 V | 2.200 V | |
| 304 | 15 | 2.800 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 130.0MV | | 400.0MV |
| 420 | 9 | 128.0MV | | 400.0MV |
| 429 | 10 | 134.0MV | | 400.0MV |
| 438 | 11 | 122.0MV | | 400.0MV |
| 447 | 12 | 124.0MV | | 400.0MV |
| 456 | 13 | 124.0MV | | 400.0MV |
| 465 | 14 | 126.0MV | | 400.0MV |
| 474 | 15 | 130.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.700 V | |
| 268 | 9 | 4.240 V | 3.700 V | |
| 274 | 10 | 4.250 V | 3.700 V | |
| 280 | 11 | 4.260 V | 3.700 V | |
| 286 | 12 | 4.260 V | 3.700 V | |
| 292 | 13 | 4.270 V | 3.700 V | |
| 298 | 14 | 4.260 V | 3.700 V | |
| 304 | 15 | 4.250 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 142.0MV | | 400.0MV |
| 420 | 9 | 144.0MV | | 400.0MV |
| 429 | 10 | 144.0MV | | 400.0MV |
| 438 | 11 | 136.0MV | | 400.0MV |
| 447 | 12 | 138.0MV | | 400.0MV |
| 456 | 13 | 134.0MV | | 400.0MV |
| 465 | 14 | 142.0MV | | 400.0MV |
| 474 | 15 | 146.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.980 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.980 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.200 V | |
| 268 | 9 | 5.750 V | 5.200 V | |
| 274 | 10 | 5.760 V | 5.200 V | |
| 280 | 11 | 5.780 V | 5.200 V | |
| 286 | 12 | 5.780 V | 5.200 V | |
| 292 | 13 | 5.780 V | 5.200 V | |

298 14 5.780 V 5.200 V
304 15 5.760 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 144.0MV | | 400.0MV |
| 420 | 9 | 146.0MV | | 400.0MV |
| 429 | 10 | 150.0MV | | 400.0MV |
| 438 | 11 | 140.0MV | | 400.0MV |
| 447 | 12 | 142.0MV | | 400.0MV |
| 456 | 13 | 140.0MV | | 400.0MV |
| 465 | 14 | 150.0MV | | 400.0MV |
| 474 | 15 | 152.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 10

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -570.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -570.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -570.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -570.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -570.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -570.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -540.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 480.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 480.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 480.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 480.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 480.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 480.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 480.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.970 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.970 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.770 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.770 V | 2.200 V | |
| 280 | 11 | 2.780 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.780 V | 2.200 V | |
| 298 | 14 | 2.780 V | 2.200 V | |
| 304 | 15 | 2.770 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 148.0MV | | 400.0MV |
| 420 | 9 | 146.0MV | | 400.0MV |
| 429 | 10 | 152.0MV | | 400.0MV |
| 438 | 11 | 142.0MV | | 400.0MV |
| 447 | 12 | 144.0MV | | 400.0MV |
| 456 | 13 | 144.0MV | | 400.0MV |
| 465 | 14 | 148.0MV | | 400.0MV |
| 474 | 15 | 150.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.210 V | 3.700 V | |
| 268 | 9 | 4.210 V | 3.700 V | |
| 274 | 10 | 4.210 V | 3.700 V | |
| 280 | 11 | 4.230 V | 3.700 V | |
| 286 | 12 | 4.230 V | 3.700 V | |
| 292 | 13 | 4.230 V | 3.700 V | |
| 298 | 14 | 4.230 V | 3.700 V | |
| 304 | 15 | 4.210 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 164.0MV | | 400.0MV |
| 420 | 9 | 164.0MV | | 400.0MV |
| 429 | 10 | 176.0MV | | 400.0MV |
| 438 | 11 | 160.0MV | | 400.0MV |
| 447 | 12 | 160.0MV | | 400.0MV |
| 456 | 13 | 160.0MV | | 400.0MV |
| 465 | 14 | 168.0MV | | 400.0MV |
| 474 | 15 | 168.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.980 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.980 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.720 V | 5.200 V | |
| 268 | 9 | 5.710 V | 5.200 V | |
| 274 | 10 | 5.720 V | 5.200 V | |
| 280 | 11 | 5.740 V | 5.200 V | |
| 286 | 12 | 5.740 V | 5.200 V | |
| 292 | 13 | 5.740 V | 5.200 V | |

298 14 5.740 V 5.200 V
304 15 5.710 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 168.0MV | | 400.0MV |
| 420 | 9 | 170.0MV | | 400.0MV |
| 429 | 10 | 184.0MV | | 400.0MV |
| 438 | 11 | 166.0MV | | 400.0MV |
| 447 | 12 | 166.0MV | | 400.0MV |
| 456 | 13 | 166.0MV | | 400.0MV |
| 465 | 14 | 176.0MV | | 400.0MV |
| 474 | 15 | 178.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 11

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -610.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -580.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 520.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 520.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.980 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.970 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.980 V | 2.900 V |
| 221 | 12 | 2.980 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.980 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.200 V | |
| 268 | 9 | 2.780 V | 2.200 V | |
| 274 | 10 | 2.720 V | 2.200 V | |
| 280 | 11 | 2.790 V | 2.200 V | |
| 286 | 12 | 2.790 V | 2.200 V | |
| 292 | 13 | 2.800 V | 2.200 V | |
| 298 | 14 | 2.790 V | 2.200 V | |
| 304 | 15 | 2.780 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 400.0MV |
| 420 | 9 | 136.0MV | | 400.0MV |
| 429 | 10 | 202.0MV | | 400.0MV |
| 438 | 11 | 134.0MV | | 400.0MV |
| 447 | 12 | 134.0MV | | 400.0MV |
| 456 | 13 | 136.0MV | | 400.0MV |
| 465 | 14 | 138.0MV | | 400.0MV |
| 474 | 15 | 138.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

INST # PIN MEASURED LT GT
262 7 4.240 V 3.700 V
268 9 4.220 V 3.700 V
274 10 4.210 V 3.700 V
280 11 4.240 V 3.700 V
286 12 4.240 V 3.700 V
292 13 4.250 V 3.700 V
298 14 4.240 V 3.700 V
304 15 4.220 V 3.700 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 32.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 32.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

INST # PIN MEASURED LT GT
411 7 150.0MV 400.0MV
420 9 152.0MV 400.0MV
429 10 180.0MV 400.0MV
438 11 148.0MV 400.0MV
447 12 150.0MV 400.0MV
456 13 148.0MV 400.0MV
465 14 158.0MV 400.0MV
474 15 156.0MV 400.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.970 V 5.900 V
203 9 5.980 V 5.900 V
209 10 5.980 V 5.900 V
215 11 5.970 V 5.900 V
221 12 5.970 V 5.900 V
227 13 5.970 V 5.900 V
233 14 5.970 V 5.900 V
239 15 5.970 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

INST # PIN MEASURED LT GT
262 7 5.750 V 5.200 V
268 9 5.730 V 5.200 V
274 10 5.710 V 5.200 V
280 11 5.760 V 5.200 V
286 12 5.750 V 5.200 V
292 13 5.760 V 5.200 V

298 14 5.750 V 5.200 V
304 15 5.730 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 154.0MV | | 400.0MV |
| 420 | 9 | 156.0MV | | 400.0MV |
| 429 | 10 | 176.0MV | | 400.0MV |
| 438 | 11 | 154.0MV | | 400.0MV |
| 447 | 12 | 156.0MV | | 400.0MV |
| 456 | 13 | 154.0MV | | 400.0MV |
| 465 | 14 | 164.0MV | | 400.0MV |
| 474 | 15 | 164.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 05/29/11 07:07
TEST PROGRAM HC138 S/N 12

DDS-101-11-A PN 54HC138 ELECTRICAL TEST SEQ 12 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -590.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -590.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -590.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -590.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -590.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -550.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 500.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST
VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST
VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST
VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|----|
|--------|-----|----------|----|----|

| | | | |
|-----|----|---------|---------|
| 197 | 7 | 2.980 V | 2.900 V |
| 203 | 9 | 2.980 V | 2.900 V |
| 209 | 10 | 2.970 V | 2.900 V |
| 215 | 11 | 2.970 V | 2.900 V |
| 221 | 12 | 2.970 V | 2.900 V |
| 227 | 13 | 2.980 V | 2.900 V |
| 233 | 14 | 2.970 V | 2.900 V |
| 239 | 15 | 2.980 V | 2.900 V |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.770 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.770 V | 2.200 V | |
| 280 | 11 | 2.780 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.780 V | 2.200 V | |
| 298 | 14 | 2.770 V | 2.200 V | |
| 304 | 15 | 2.760 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 148.0MV | | 400.0MV |
| 420 | 9 | 148.0MV | | 400.0MV |
| 429 | 10 | 156.0MV | | 400.0MV |
| 438 | 11 | 144.0MV | | 400.0MV |
| 447 | 12 | 142.0MV | | 400.0MV |
| 456 | 13 | 142.0MV | | 400.0MV |
| 465 | 14 | 148.0MV | | 400.0MV |
| 474 | 15 | 148.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST

VCC= 4.500
VOH2 LIMIT 3.700

INST # PIN MEASURED LT GT
262 7 4.210 V 3.700 V
268 9 4.210 V 3.700 V
274 10 4.200 V 3.700 V
280 11 4.230 V 3.700 V
286 12 4.220 V 3.700 V
292 13 4.230 V 3.700 V
298 14 4.220 V 3.700 V
304 15 4.210 V 3.700 V

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

INST # PIN MEASURED LT GT
325 7 32.00MV 100.0MV
334 9 32.00MV 100.0MV
343 10 34.00MV 100.0MV
352 11 32.00MV 100.0MV
361 12 34.00MV 100.0MV
370 13 32.00MV 100.0MV
379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

INST # PIN MEASURED LT GT
411 7 164.0MV 400.0MV
420 9 164.0MV 400.0MV
429 10 188.0MV 400.0MV
438 11 162.0MV 400.0MV
447 12 162.0MV 400.0MV
456 13 160.0MV 400.0MV
465 14 168.0MV 400.0MV
474 15 168.0MV 400.0MV

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

INST # PIN MEASURED LT GT
197 7 5.980 V 5.900 V
203 9 5.970 V 5.900 V
209 10 5.970 V 5.900 V
215 11 5.970 V 5.900 V
221 12 5.970 V 5.900 V
227 13 5.980 V 5.900 V
233 14 5.970 V 5.900 V
239 15 5.980 V 5.900 V

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

INST # PIN MEASURED LT GT
262 7 5.730 V 5.200 V
268 9 5.710 V 5.200 V
274 10 5.700 V 5.200 V
280 11 5.730 V 5.200 V
286 12 5.730 V 5.200 V
292 13 5.740 V 5.200 V

298 14 5.730 V 5.200 V
304 15 5.720 V 5.200 V

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 170.0MV | | 400.0MV |
| 420 | 9 | 172.0MV | | 400.0MV |
| 429 | 10 | 196.0MV | | 400.0MV |
| 438 | 11 | 168.0MV | | 400.0MV |
| 447 | 12 | 170.0MV | | 400.0MV |
| 456 | 13 | 166.0MV | | 400.0MV |
| 465 | 14 | 178.0MV | | 400.0MV |
| 474 | 15 | 178.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT



MIL-PRF-38534 CLASS K DATAPACK

Post Burn-In Test Results at -55°C



STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 1
DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.980 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.970 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.830 V | 2.480 V | |
| 286 | 12 | 2.830 V | 2.480 V | |
| 292 | 13 | 2.830 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.810 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 112.0MV | | 260.0MV |
| 429 | 10 | 110.0MV | | 260.0MV |
| 438 | 11 | 106.0MV | | 260.0MV |
| 447 | 12 | 106.0MV | | 260.0MV |
| 456 | 13 | 106.0MV | | 260.0MV |
| 465 | 14 | 118.0MV | | 260.0MV |
| 474 | 15 | 114.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.460 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.280 V | 3.980 V | |
| 268 | 9 | 4.270 V | 3.980 V | |
| 274 | 10 | 4.290 V | 3.980 V | |
| 280 | 11 | 4.290 V | 3.980 V | |
| 286 | 12 | 4.290 V | 3.980 V | |
| 292 | 13 | 4.290 V | 3.980 V | |
| 298 | 14 | 4.280 V | 3.980 V | |
| 304 | 15 | 4.270 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 138.0MV | | 260.0MV |
| 474 | 15 | 122.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.980 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.790 V | 5.480 V | |
| 268 | 9 | 5.780 V | 5.480 V | |
| 274 | 10 | 5.800 V | 5.480 V | |
| 280 | 11 | 5.810 V | 5.480 V | |
| 286 | 12 | 5.810 V | 5.480 V | |
| 292 | 13 | 5.810 V | 5.480 V | |
| 298 | 14 | 5.780 V | 5.480 V | |
| 304 | 15 | 5.790 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 150.0MV | | 260.0MV |
| 474 | 15 | 126.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 1.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 2
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -710.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -690.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 610.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 620.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 620.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.800 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 110.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 120.0MV | | 260.0MV |
| 474 | 15 | 116.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.460 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.280 V | 3.980 V | |
| 268 | 9 | 4.250 V | 3.980 V | |
| 274 | 10 | 4.270 V | 3.980 V | |
| 280 | 11 | 4.270 V | 3.980 V | |
| 286 | 12 | 4.270 V | 3.980 V | |
| 292 | 13 | 4.280 V | 3.980 V | |
| 298 | 14 | 4.270 V | 3.980 V | |
| 304 | 15 | 4.250 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 30.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 116.0MV | | 260.0MV |
| 420 | 9 | 124.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 120.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.790 V | 5.480 V | |
| 268 | 9 | 5.760 V | 5.480 V | |
| 274 | 10 | 5.780 V | 5.480 V | |
| 280 | 11 | 5.790 V | 5.480 V | |
| 286 | 12 | 5.780 V | 5.480 V | |
| 292 | 13 | 5.790 V | 5.480 V | |
| 298 | 14 | 5.780 V | 5.480 V | |
| 304 | 15 | 5.770 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 122.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 116.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 116.0MV | | 260.0MV |
| 465 | 14 | 132.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 1.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 1.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -4.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 3
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
 388 15 32.00MV 100.0MV

 FUNCTIONAL TEST
 VCC= 3
 VIH= 2.100 VIL= 900.0E-03

 VOH1 TEST
 VCC= 3
 VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.970 V | 2.900 V | |

 VOH2 TEST
 VCC= 3
 VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.800 V | 2.480 V | |

 VOL1 TEST
 VCC= 3
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

 VOL2 TEST
 VCC= 3
 VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 118.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 112.0MV | | 260.0MV |
| 465 | 14 | 118.0MV | | 260.0MV |
| 474 | 15 | 118.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.460 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.460 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.280 V | 3.980 V | |
| 268 | 9 | 4.250 V | 3.980 V | |
| 274 | 10 | 4.280 V | 3.980 V | |
| 280 | 11 | 4.280 V | 3.980 V | |
| 286 | 12 | 4.280 V | 3.980 V | |
| 292 | 13 | 4.280 V | 3.980 V | |
| 298 | 14 | 4.270 V | 3.980 V | |
| 304 | 15 | 4.260 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 30.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 116.0MV | | 260.0MV |
| 420 | 9 | 124.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 116.0MV | | 260.0MV |
| 447 | 12 | 118.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 128.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.800 V | 5.480 V | |
| 268 | 9 | 5.770 V | 5.480 V | |
| 274 | 10 | 5.790 V | 5.480 V | |
| 280 | 11 | 5.790 V | 5.480 V | |
| 286 | 12 | 5.790 V | 5.480 V | |
| 292 | 13 | 5.800 V | 5.480 V | |
| 298 | 14 | 5.780 V | 5.480 V | |
| 304 | 15 | 5.770 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 122.0MV | | 260.0MV |
| 429 | 10 | 118.0MV | | 260.0MV |
| 438 | 11 | 116.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 132.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -4.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 4
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -640.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.780 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.810 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.810 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 124.0MV | | 260.0MV |
| 420 | 9 | 128.0MV | | 260.0MV |
| 429 | 10 | 126.0MV | | 260.0MV |
| 438 | 11 | 120.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 120.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 138.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.200 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 132.0MV | | 260.0MV |
| 447 | 12 | 134.0MV | | 260.0MV |
| 456 | 13 | 132.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 166.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.980 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.730 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 140.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 134.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 152.0MV | | 260.0MV |
| 474 | 15 | 166.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -6.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 1.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 1.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -5.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 3.000NA | | 4.000UA |
| 587 | 16 | 1.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 5
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.790 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.800 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.800 V | 2.480 V | |
| 298 | 14 | 2.790 V | 2.480 V | |
| 304 | 15 | 2.750 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 118.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 120.0MV | | 260.0MV |
| 474 | 15 | 162.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.240 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.240 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.240 V | 3.980 V | |
| 304 | 15 | 4.190 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 116.0MV | | 260.0MV |
| 420 | 9 | 126.0MV | | 260.0MV |
| 429 | 10 | 126.0MV | | 260.0MV |
| 438 | 11 | 120.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 130.0MV | | 260.0MV |
| 474 | 15 | 174.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.960 V | 5.900 V | |
| 203 | 9 | 5.960 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.960 V | 5.900 V | |
| 221 | 12 | 5.960 V | 5.900 V | |
| 227 | 13 | 5.960 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.750 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.720 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 124.0MV | | 260.0MV |
| 429 | 10 | 126.0MV | | 260.0MV |
| 438 | 11 | 120.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 132.0MV | | 260.0MV |
| 474 | 15 | 160.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 1.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 6
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 590.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.970 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 116.0MV | | 260.0MV |
| 420 | 9 | 118.0MV | | 260.0MV |
| 429 | 10 | 118.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 116.0MV | | 260.0MV |
| 474 | 15 | 136.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.460 V | 4.400 V | |
| 209 | 10 | 4.460 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.260 V | 3.980 V | |
| 268 | 9 | 4.250 V | 3.980 V | |
| 274 | 10 | 4.270 V | 3.980 V | |
| 280 | 11 | 4.280 V | 3.980 V | |
| 286 | 12 | 4.280 V | 3.980 V | |
| 292 | 13 | 4.280 V | 3.980 V | |
| 298 | 14 | 4.270 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 120.0MV | | 260.0MV |
| 420 | 9 | 128.0MV | | 260.0MV |
| 429 | 10 | 128.0MV | | 260.0MV |
| 438 | 11 | 120.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 130.0MV | | 260.0MV |
| 474 | 15 | 150.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.980 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.780 V | 5.480 V | |
| 268 | 9 | 5.770 V | 5.480 V | |
| 274 | 10 | 5.780 V | 5.480 V | |
| 280 | 11 | 5.790 V | 5.480 V | |
| 286 | 12 | 5.800 V | 5.480 V | |
| 292 | 13 | 5.800 V | 5.480 V | |
| 298 | 14 | 5.780 V | 5.480 V | |
| 304 | 15 | 5.760 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 120.0MV | | 260.0MV |
| 420 | 9 | 130.0MV | | 260.0MV |
| 429 | 10 | 128.0MV | | 260.0MV |
| 438 | 11 | 122.0MV | | 260.0MV |
| 447 | 12 | 122.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 146.0MV | | 260.0MV |
| 474 | 15 | 154.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 5.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 5.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 4.000UA |
| 587 | 16 | -4.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 7
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -730.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -730.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -730.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -740.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -740.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -740.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -720.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 640.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 650.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 640.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 640.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 640.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 640.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 650.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.970 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.770 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 104.0MV | | 260.0MV |
| 420 | 9 | 110.0MV | | 260.0MV |
| 429 | 10 | 108.0MV | | 260.0MV |
| 438 | 11 | 104.0MV | | 260.0MV |
| 447 | 12 | 104.0MV | | 260.0MV |
| 456 | 13 | 102.0MV | | 260.0MV |
| 465 | 14 | 112.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.270 V | 3.980 V | |
| 268 | 9 | 4.250 V | 3.980 V | |
| 274 | 10 | 4.270 V | 3.980 V | |
| 280 | 11 | 4.270 V | 3.980 V | |
| 286 | 12 | 4.270 V | 3.980 V | |
| 292 | 13 | 4.280 V | 3.980 V | |
| 298 | 14 | 4.260 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 30.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 112.0MV | | 260.0MV |
| 438 | 11 | 110.0MV | | 260.0MV |
| 447 | 12 | 108.0MV | | 260.0MV |
| 456 | 13 | 108.0MV | | 260.0MV |
| 465 | 14 | 130.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.960 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.960 V | 5.900 V | |
| 239 | 15 | 5.960 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.780 V | 5.480 V | |
| 268 | 9 | 5.750 V | 5.480 V | |
| 274 | 10 | 5.780 V | 5.480 V | |
| 280 | 11 | 5.790 V | 5.480 V | |
| 286 | 12 | 5.790 V | 5.480 V | |
| 292 | 13 | 5.790 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.720 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 108.0MV | | 260.0MV |
| 447 | 12 | 110.0MV | | 260.0MV |
| 456 | 13 | 108.0MV | | 260.0MV |
| 465 | 14 | 142.0MV | | 260.0MV |
| 474 | 15 | 164.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 1.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 1.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -4.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 8
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 590.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 30.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 104.0MV | | 260.0MV |
| 420 | 9 | 110.0MV | | 260.0MV |
| 429 | 10 | 108.0MV | | 260.0MV |
| 438 | 11 | 104.0MV | | 260.0MV |
| 447 | 12 | 104.0MV | | 260.0MV |
| 456 | 13 | 104.0MV | | 260.0MV |
| 465 | 14 | 124.0MV | | 260.0MV |
| 474 | 15 | 126.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.280 V | 3.980 V | |
| 268 | 9 | 4.260 V | 3.980 V | |
| 274 | 10 | 4.280 V | 3.980 V | |
| 280 | 11 | 4.280 V | 3.980 V | |
| 286 | 12 | 4.280 V | 3.980 V | |
| 292 | 13 | 4.290 V | 3.980 V | |
| 298 | 14 | 4.260 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 116.0MV | | 260.0MV |
| 429 | 10 | 112.0MV | | 260.0MV |
| 438 | 11 | 108.0MV | | 260.0MV |
| 447 | 12 | 108.0MV | | 260.0MV |
| 456 | 13 | 108.0MV | | 260.0MV |
| 465 | 14 | 152.0MV | | 260.0MV |
| 474 | 15 | 144.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.960 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.790 V | 5.480 V | |
| 268 | 9 | 5.770 V | 5.480 V | |
| 274 | 10 | 5.780 V | 5.480 V | |
| 280 | 11 | 5.800 V | 5.480 V | |
| 286 | 12 | 5.790 V | 5.480 V | |
| 292 | 13 | 5.790 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.750 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 106.0MV | | 260.0MV |
| 420 | 9 | 118.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 108.0MV | | 260.0MV |
| 447 | 12 | 108.0MV | | 260.0MV |
| 456 | 13 | 106.0MV | | 260.0MV |
| 465 | 14 | 146.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 1.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 1.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -4.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 9
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -690.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -700.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -670.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 610.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 610.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 610.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 610.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 116.0MV | | 260.0MV |
| 429 | 10 | 112.0MV | | 260.0MV |
| 438 | 11 | 106.0MV | | 260.0MV |
| 447 | 12 | 106.0MV | | 260.0MV |
| 456 | 13 | 108.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.460 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.280 V | 3.980 V | |
| 268 | 9 | 4.260 V | 3.980 V | |
| 274 | 10 | 4.270 V | 3.980 V | |
| 280 | 11 | 4.280 V | 3.980 V | |
| 286 | 12 | 4.270 V | 3.980 V | |
| 292 | 13 | 4.280 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 122.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 112.0MV | | 260.0MV |
| 465 | 14 | 156.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.790 V | 5.480 V | |
| 268 | 9 | 5.760 V | 5.480 V | |
| 274 | 10 | 5.780 V | 5.480 V | |
| 280 | 11 | 5.790 V | 5.480 V | |
| 286 | 12 | 5.790 V | 5.480 V | |
| 292 | 13 | 5.790 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 122.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 112.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 150.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 1.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -4.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 10
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -670.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.970 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.810 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 118.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 110.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 108.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 128.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.270 V | 3.980 V | |
| 268 | 9 | 4.250 V | 3.980 V | |
| 274 | 10 | 4.270 V | 3.980 V | |
| 280 | 11 | 4.270 V | 3.980 V | |
| 286 | 12 | 4.270 V | 3.980 V | |
| 292 | 13 | 4.270 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 124.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 142.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.960 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.780 V | 5.480 V | |
| 268 | 9 | 5.750 V | 5.480 V | |
| 274 | 10 | 5.770 V | 5.480 V | |
| 280 | 11 | 5.780 V | 5.480 V | |
| 286 | 12 | 5.780 V | 5.480 V | |
| 292 | 13 | 5.780 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.730 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 114.0MV | | 260.0MV |
| 420 | 9 | 124.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 116.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 138.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 1.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 3.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 18.00NA | | 4.000UA |
| 587 | 16 | 17.00NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 11
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.980 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.980 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.970 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.820 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.820 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 108.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 112.0MV | | 260.0MV |
| 438 | 11 | 108.0MV | | 260.0MV |
| 447 | 12 | 110.0MV | | 260.0MV |
| 456 | 13 | 108.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 144.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.460 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.460 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.460 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.280 V | 3.980 V | |
| 268 | 9 | 4.270 V | 3.980 V | |
| 274 | 10 | 4.280 V | 3.980 V | |
| 280 | 11 | 4.290 V | 3.980 V | |
| 286 | 12 | 4.290 V | 3.980 V | |
| 292 | 13 | 4.290 V | 3.980 V | |
| 298 | 14 | 4.260 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 122.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 114.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 162.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.980 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.800 V | 5.480 V | |
| 268 | 9 | 5.770 V | 5.480 V | |
| 274 | 10 | 5.800 V | 5.480 V | |
| 280 | 11 | 5.800 V | 5.480 V | |
| 286 | 12 | 5.800 V | 5.480 V | |
| 292 | 13 | 5.810 V | 5.480 V | |
| 298 | 14 | 5.790 V | 5.480 V | |
| 304 | 15 | 5.750 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 110.0MV | | 260.0MV |
| 420 | 9 | 122.0MV | | 260.0MV |
| 429 | 10 | 118.0MV | | 260.0MV |
| 438 | 11 | 114.0MV | | 260.0MV |
| 447 | 12 | 114.0MV | | 260.0MV |
| 456 | 13 | 112.0MV | | 260.0MV |
| 465 | 14 | 138.0MV | | 260.0MV |
| 474 | 15 | 156.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 2.000NA | | 4.000UA |
| 587 | 16 | -2.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 12
 DDS-101-11-A PN 54HC138 TEST SEQ14 -55C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -680.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -660.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 590.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 600.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 600.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.810 V | 2.480 V | |
| 274 | 10 | 2.820 V | 2.480 V | |
| 280 | 11 | 2.830 V | 2.480 V | |
| 286 | 12 | 2.820 V | 2.480 V | |
| 292 | 13 | 2.830 V | 2.480 V | |
| 298 | 14 | 2.820 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 110.0MV | | 260.0MV |
| 420 | 9 | 114.0MV | | 260.0MV |
| 429 | 10 | 112.0MV | | 260.0MV |
| 438 | 11 | 106.0MV | | 260.0MV |
| 447 | 12 | 108.0MV | | 260.0MV |
| 456 | 13 | 106.0MV | | 260.0MV |
| 465 | 14 | 118.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.460 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.280 V | 3.980 V | |
| 268 | 9 | 4.270 V | 3.980 V | |
| 274 | 10 | 4.290 V | 3.980 V | |
| 280 | 11 | 4.290 V | 3.980 V | |
| 286 | 12 | 4.290 V | 3.980 V | |
| 292 | 13 | 4.290 V | 3.980 V | |
| 298 | 14 | 4.280 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 30.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 30.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 112.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 114.0MV | | 260.0MV |
| 438 | 11 | 112.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 134.0MV | | 260.0MV |
| 474 | 15 | 154.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.980 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.980 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.800 V | 5.480 V | |
| 268 | 9 | 5.780 V | 5.480 V | |
| 274 | 10 | 5.800 V | 5.480 V | |
| 280 | 11 | 5.810 V | 5.480 V | |
| 286 | 12 | 5.810 V | 5.480 V | |
| 292 | 13 | 5.810 V | 5.480 V | |
| 298 | 14 | 5.790 V | 5.480 V | |
| 304 | 15 | 5.760 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 110.0MV | | 260.0MV |
| 420 | 9 | 120.0MV | | 260.0MV |
| 429 | 10 | 116.0MV | | 260.0MV |
| 438 | 11 | 110.0MV | | 260.0MV |
| 447 | 12 | 112.0MV | | 260.0MV |
| 456 | 13 | 110.0MV | | 260.0MV |
| 465 | 14 | 136.0MV | | 260.0MV |
| 474 | 15 | 150.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 4.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 4.000NA | | 4.000UA |
| 587 | 16 | 3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT



MIL-PRF-38534 CLASS K DATAPACK

Post Burn-In Test Results at 25°C



STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 1
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.480 V | |
| 268 | 9 | 2.790 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.810 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.810 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 124.0MV | | 260.0MV |
| 420 | 9 | 128.0MV | | 260.0MV |
| 429 | 10 | 126.0MV | | 260.0MV |
| 438 | 11 | 122.0MV | | 260.0MV |
| 447 | 12 | 120.0MV | | 260.0MV |
| 456 | 13 | 120.0MV | | 260.0MV |
| 465 | 14 | 124.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.460 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.460 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.260 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.260 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.260 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 140.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 132.0MV | | 260.0MV |
| 447 | 12 | 132.0MV | | 260.0MV |
| 456 | 13 | 130.0MV | | 260.0MV |
| 465 | 14 | 140.0MV | | 260.0MV |
| 474 | 15 | 144.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.740 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.770 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |
| 298 | 14 | 5.770 V | 5.480 V | |
| 304 | 15 | 5.750 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 144.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 150.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 1.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 2
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 580.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.980 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.480 V | |
| 268 | 9 | 2.780 V | 2.480 V | |
| 274 | 10 | 2.790 V | 2.480 V | |
| 280 | 11 | 2.790 V | 2.480 V | |
| 286 | 12 | 2.790 V | 2.480 V | |
| 292 | 13 | 2.790 V | 2.480 V | |
| 298 | 14 | 2.790 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 126.0MV | | 260.0MV |
| 420 | 9 | 132.0MV | | 260.0MV |
| 429 | 10 | 130.0MV | | 260.0MV |
| 438 | 11 | 128.0MV | | 260.0MV |
| 447 | 12 | 126.0MV | | 260.0MV |
| 456 | 13 | 128.0MV | | 260.0MV |
| 465 | 14 | 132.0MV | | 260.0MV |
| 474 | 15 | 134.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.460 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.460 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.220 V | 3.980 V | |
| 274 | 10 | 4.240 V | 3.980 V | |
| 280 | 11 | 4.240 V | 3.980 V | |
| 286 | 12 | 4.240 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.240 V | 3.980 V | |
| 304 | 15 | 4.220 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 144.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 148.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.720 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.750 V | 5.480 V | |
| 286 | 12 | 5.750 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.720 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 146.0MV | | 260.0MV |
| 429 | 10 | 144.0MV | | 260.0MV |
| 438 | 11 | 142.0MV | | 260.0MV |
| 447 | 12 | 142.0MV | | 260.0MV |
| 456 | 13 | 142.0MV | | 260.0MV |
| 465 | 14 | 152.0MV | | 260.0MV |
| 474 | 15 | 154.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 3
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.970 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.780 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.800 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.800 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 126.0MV | | 260.0MV |
| 420 | 9 | 130.0MV | | 260.0MV |
| 429 | 10 | 128.0MV | | 260.0MV |
| 438 | 11 | 124.0MV | | 260.0MV |
| 447 | 12 | 124.0MV | | 260.0MV |
| 456 | 13 | 124.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.460 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 142.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.720 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 146.0MV | | 260.0MV |
| 429 | 10 | 142.0MV | | 260.0MV |
| 438 | 11 | 142.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 1.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 4
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.780 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.800 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.800 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 124.0MV | | 260.0MV |
| 420 | 9 | 128.0MV | | 260.0MV |
| 429 | 10 | 128.0MV | | 260.0MV |
| 438 | 11 | 124.0MV | | 260.0MV |
| 447 | 12 | 124.0MV | | 260.0MV |
| 456 | 13 | 122.0MV | | 260.0MV |
| 465 | 14 | 130.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.460 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.460 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 142.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 134.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.980 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 144.0MV | | 260.0MV |
| 429 | 10 | 142.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 150.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -2.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 5
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.480 V | |
| 268 | 9 | 2.770 V | 2.480 V | |
| 274 | 10 | 2.780 V | 2.480 V | |
| 280 | 11 | 2.780 V | 2.480 V | |
| 286 | 12 | 2.780 V | 2.480 V | |
| 292 | 13 | 2.790 V | 2.480 V | |
| 298 | 14 | 2.780 V | 2.480 V | |
| 304 | 15 | 2.770 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 126.0MV | | 260.0MV |
| 420 | 9 | 132.0MV | | 260.0MV |
| 429 | 10 | 132.0MV | | 260.0MV |
| 438 | 11 | 128.0MV | | 260.0MV |
| 447 | 12 | 128.0MV | | 260.0MV |
| 456 | 13 | 128.0MV | | 260.0MV |
| 465 | 14 | 138.0MV | | 260.0MV |
| 474 | 15 | 134.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.460 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.220 V | 3.980 V | |
| 274 | 10 | 4.230 V | 3.980 V | |
| 280 | 11 | 4.230 V | 3.980 V | |
| 286 | 12 | 4.230 V | 3.980 V | |
| 292 | 13 | 4.240 V | 3.980 V | |
| 298 | 14 | 4.220 V | 3.980 V | |
| 304 | 15 | 4.210 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 146.0MV | | 260.0MV |
| 429 | 10 | 144.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 140.0MV | | 260.0MV |
| 465 | 14 | 154.0MV | | 260.0MV |
| 474 | 15 | 150.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.740 V | 5.480 V | |
| 268 | 9 | 5.720 V | 5.480 V | |
| 274 | 10 | 5.740 V | 5.480 V | |
| 280 | 11 | 5.740 V | 5.480 V | |
| 286 | 12 | 5.740 V | 5.480 V | |
| 292 | 13 | 5.750 V | 5.480 V | |
| 298 | 14 | 5.730 V | 5.480 V | |
| 304 | 15 | 5.720 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 150.0MV | | 260.0MV |
| 429 | 10 | 146.0MV | | 260.0MV |
| 438 | 11 | 144.0MV | | 260.0MV |
| 447 | 12 | 142.0MV | | 260.0MV |
| 456 | 13 | 142.0MV | | 260.0MV |
| 465 | 14 | 162.0MV | | 260.0MV |
| 474 | 15 | 156.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 6
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -640.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.970 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.480 V | |
| 268 | 9 | 2.790 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.810 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.810 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 122.0MV | | 260.0MV |
| 420 | 9 | 126.0MV | | 260.0MV |
| 429 | 10 | 124.0MV | | 260.0MV |
| 438 | 11 | 118.0MV | | 260.0MV |
| 447 | 12 | 118.0MV | | 260.0MV |
| 456 | 13 | 118.0MV | | 260.0MV |
| 465 | 14 | 126.0MV | | 260.0MV |
| 474 | 15 | 126.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.260 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 132.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 130.0MV | | 260.0MV |
| 447 | 12 | 132.0MV | | 260.0MV |
| 456 | 13 | 128.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 142.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.770 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.750 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 144.0MV | | 260.0MV |
| 429 | 10 | 138.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 134.0MV | | 260.0MV |
| 456 | 13 | 132.0MV | | 260.0MV |
| 465 | 14 | 150.0MV | | 260.0MV |
| 474 | 15 | 148.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 7
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -640.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.970 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.780 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.800 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.800 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 124.0MV | | 260.0MV |
| 420 | 9 | 130.0MV | | 260.0MV |
| 429 | 10 | 130.0MV | | 260.0MV |
| 438 | 11 | 124.0MV | | 260.0MV |
| 447 | 12 | 124.0MV | | 260.0MV |
| 456 | 13 | 122.0MV | | 260.0MV |
| 465 | 14 | 132.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 142.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 148.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.980 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 146.0MV | | 260.0MV |
| 429 | 10 | 142.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 154.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 2.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 8
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.810 V | 2.480 V | |
| 268 | 9 | 2.800 V | 2.480 V | |
| 274 | 10 | 2.810 V | 2.480 V | |
| 280 | 11 | 2.810 V | 2.480 V | |
| 286 | 12 | 2.810 V | 2.480 V | |
| 292 | 13 | 2.820 V | 2.480 V | |
| 298 | 14 | 2.810 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 118.0MV | | 260.0MV |
| 420 | 9 | 122.0MV | | 260.0MV |
| 429 | 10 | 120.0MV | | 260.0MV |
| 438 | 11 | 118.0MV | | 260.0MV |
| 447 | 12 | 118.0MV | | 260.0MV |
| 456 | 13 | 116.0MV | | 260.0MV |
| 465 | 14 | 124.0MV | | 260.0MV |
| 474 | 15 | 124.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.460 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.260 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.260 V | 3.980 V | |
| 280 | 11 | 4.260 V | 3.980 V | |
| 286 | 12 | 4.260 V | 3.980 V | |
| 292 | 13 | 4.270 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.240 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 128.0MV | | 260.0MV |
| 420 | 9 | 134.0MV | | 260.0MV |
| 429 | 10 | 132.0MV | | 260.0MV |
| 438 | 11 | 130.0MV | | 260.0MV |
| 447 | 12 | 130.0MV | | 260.0MV |
| 456 | 13 | 128.0MV | | 260.0MV |
| 465 | 14 | 140.0MV | | 260.0MV |
| 474 | 15 | 140.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.770 V | 5.480 V | |
| 268 | 9 | 5.750 V | 5.480 V | |
| 274 | 10 | 5.770 V | 5.480 V | |
| 280 | 11 | 5.770 V | 5.480 V | |
| 286 | 12 | 5.770 V | 5.480 V | |
| 292 | 13 | 5.780 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.750 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 36.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 36.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 130.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 132.0MV | | 260.0MV |
| 447 | 12 | 134.0MV | | 260.0MV |
| 456 | 13 | 132.0MV | | 260.0MV |
| 465 | 14 | 146.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 9
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -640.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.980 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.480 V | |
| 268 | 9 | 2.790 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.800 V | 2.480 V | |
| 286 | 12 | 2.790 V | 2.480 V | |
| 292 | 13 | 2.800 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 124.0MV | | 260.0MV |
| 420 | 9 | 130.0MV | | 260.0MV |
| 429 | 10 | 128.0MV | | 260.0MV |
| 438 | 11 | 124.0MV | | 260.0MV |
| 447 | 12 | 124.0MV | | 260.0MV |
| 456 | 13 | 124.0MV | | 260.0MV |
| 465 | 14 | 130.0MV | | 260.0MV |
| 474 | 15 | 132.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.460 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.240 V | 3.980 V | |
| 304 | 15 | 4.220 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 142.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 138.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 146.0MV | | 260.0MV |
| 474 | 15 | 148.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.750 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.730 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 36.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 36.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 146.0MV | | 260.0MV |
| 429 | 10 | 142.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 140.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 152.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 1.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 1.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 10
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.480 V | |
| 268 | 9 | 2.780 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.800 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.800 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.780 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 126.0MV | | 260.0MV |
| 420 | 9 | 130.0MV | | 260.0MV |
| 429 | 10 | 128.0MV | | 260.0MV |
| 438 | 11 | 124.0MV | | 260.0MV |
| 447 | 12 | 126.0MV | | 260.0MV |
| 456 | 13 | 122.0MV | | 260.0MV |
| 465 | 14 | 128.0MV | | 260.0MV |
| 474 | 15 | 128.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.240 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.250 V | 3.980 V | |
| 298 | 14 | 4.240 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 142.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 144.0MV | | 260.0MV |
| 474 | 15 | 146.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.980 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.730 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 260.0MV |
| 420 | 9 | 144.0MV | | 260.0MV |
| 429 | 10 | 142.0MV | | 260.0MV |
| 438 | 11 | 140.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 150.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 1.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 1.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 2.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 1.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 11
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.970 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.800 V | 2.480 V | |
| 268 | 9 | 2.790 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.800 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.800 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 122.0MV | | 260.0MV |
| 420 | 9 | 128.0MV | | 260.0MV |
| 429 | 10 | 124.0MV | | 260.0MV |
| 438 | 11 | 122.0MV | | 260.0MV |
| 447 | 12 | 122.0MV | | 260.0MV |
| 456 | 13 | 122.0MV | | 260.0MV |
| 465 | 14 | 130.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.250 V | 3.980 V | |
| 268 | 9 | 4.240 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.250 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 132.0MV | | 260.0MV |
| 420 | 9 | 140.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 136.0MV | | 260.0MV |
| 447 | 12 | 134.0MV | | 260.0MV |
| 456 | 13 | 134.0MV | | 260.0MV |
| 465 | 14 | 146.0MV | | 260.0MV |
| 474 | 15 | 144.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.980 V | 5.900 V | |
| 227 | 13 | 5.980 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.760 V | 5.480 V | |
| 268 | 9 | 5.740 V | 5.480 V | |
| 274 | 10 | 5.760 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.760 V | 5.480 V | |
| 298 | 14 | 5.750 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 260.0MV |
| 420 | 9 | 142.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 138.0MV | | 260.0MV |
| 447 | 12 | 138.0MV | | 260.0MV |
| 456 | 13 | 138.0MV | | 260.0MV |
| 465 | 14 | 152.0MV | | 260.0MV |
| 474 | 15 | 152.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 1.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 1.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 12
DDS-101-11-A PN 54HC138 TEST SEQ14 +25C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -660.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -630.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 580.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 570.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 570.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.970 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.790 V | 2.480 V | |
| 268 | 9 | 2.790 V | 2.480 V | |
| 274 | 10 | 2.800 V | 2.480 V | |
| 280 | 11 | 2.810 V | 2.480 V | |
| 286 | 12 | 2.800 V | 2.480 V | |
| 292 | 13 | 2.810 V | 2.480 V | |
| 298 | 14 | 2.800 V | 2.480 V | |
| 304 | 15 | 2.790 V | 2.480 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 122.0MV | | 260.0MV |
| 420 | 9 | 126.0MV | | 260.0MV |
| 429 | 10 | 124.0MV | | 260.0MV |
| 438 | 11 | 120.0MV | | 260.0MV |
| 447 | 12 | 122.0MV | | 260.0MV |
| 456 | 13 | 120.0MV | | 260.0MV |
| 465 | 14 | 126.0MV | | 260.0MV |
| 474 | 15 | 130.0MV | | 260.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.460 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.460 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.980

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.240 V | 3.980 V | |
| 268 | 9 | 4.230 V | 3.980 V | |
| 274 | 10 | 4.250 V | 3.980 V | |
| 280 | 11 | 4.250 V | 3.980 V | |
| 286 | 12 | 4.260 V | 3.980 V | |
| 292 | 13 | 4.260 V | 3.980 V | |
| 298 | 14 | 4.250 V | 3.980 V | |
| 304 | 15 | 4.230 V | 3.980 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |

388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 132.0MV | | 260.0MV |
| 420 | 9 | 138.0MV | | 260.0MV |
| 429 | 10 | 136.0MV | | 260.0MV |
| 438 | 11 | 134.0MV | | 260.0MV |
| 447 | 12 | 134.0MV | | 260.0MV |
| 456 | 13 | 132.0MV | | 260.0MV |
| 465 | 14 | 142.0MV | | 260.0MV |
| 474 | 15 | 144.0MV | | 260.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.480

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.750 V | 5.480 V | |
| 268 | 9 | 5.730 V | 5.480 V | |
| 274 | 10 | 5.750 V | 5.480 V | |
| 280 | 11 | 5.760 V | 5.480 V | |
| 286 | 12 | 5.760 V | 5.480 V | |
| 292 | 13 | 5.770 V | 5.480 V | |
| 298 | 14 | 5.760 V | 5.480 V | |
| 304 | 15 | 5.740 V | 5.480 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 260.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 260.0MV |
| 420 | 9 | 144.0MV | | 260.0MV |
| 429 | 10 | 140.0MV | | 260.0MV |
| 438 | 11 | 138.0MV | | 260.0MV |
| 447 | 12 | 136.0MV | | 260.0MV |
| 456 | 13 | 136.0MV | | 260.0MV |
| 465 | 14 | 150.0MV | | 260.0MV |
| 474 | 15 | 150.0MV | | 260.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -100.0NA | 100.0NA |
| 508 | 1 | 2.000NA | -100.0NA | 100.0NA |
| 513 | 2 | -4.000NA | -100.0NA | 100.0NA |
| 516 | 2 | 1.000NA | -100.0NA | 100.0NA |
| 521 | 3 | -4.000NA | -100.0NA | 100.0NA |
| 524 | 3 | 2.000NA | -100.0NA | 100.0NA |
| 529 | 4 | -4.000NA | -100.0NA | 100.0NA |
| 532 | 4 | 1.000NA | -100.0NA | 100.0NA |
| 537 | 5 | -4.000NA | -100.0NA | 100.0NA |
| 540 | 5 | 2.000NA | -100.0NA | 100.0NA |
| 545 | 6 | -4.000NA | -100.0NA | 100.0NA |
| 548 | 6 | 2.000NA | -100.0NA | 100.0NA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -3.000NA | | 4.000UA |
| 587 | 16 | -3.000NA | | 4.000UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT



MIL-PRF-38534 CLASS K DATAPACK

Post Burn-In Test Results at +125°C



STAT1 06/11/11 06:49
TEST PROGRAM HC138 S/N 1
DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -620.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 550.0MV | 100.0MV | 1.500 V |

FUNCTIONAL TEST

VCC= 2
VIH= 1.500 VIL= 500.0E-03

VOH1 TEST

VCC= 2
VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

VOL1 TEST

VCC= 2
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.770 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.780 V | 2.200 V | |
| 280 | 11 | 2.790 V | 2.200 V | |
| 286 | 12 | 2.790 V | 2.200 V | |
| 292 | 13 | 2.790 V | 2.200 V | |
| 298 | 14 | 2.780 V | 2.200 V | |
| 304 | 15 | 2.740 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 400.0MV |
| 420 | 9 | 144.0MV | | 400.0MV |
| 429 | 10 | 140.0MV | | 400.0MV |
| 438 | 11 | 134.0MV | | 400.0MV |
| 447 | 12 | 134.0MV | | 400.0MV |
| 456 | 13 | 134.0MV | | 400.0MV |
| 465 | 14 | 148.0MV | | 400.0MV |
| 474 | 15 | 176.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.200 V | 3.700 V | |
| 268 | 9 | 4.180 V | 3.700 V | |
| 274 | 10 | 4.200 V | 3.700 V | |
| 280 | 11 | 4.210 V | 3.700 V | |
| 286 | 12 | 4.210 V | 3.700 V | |
| 292 | 13 | 4.220 V | 3.700 V | |
| 298 | 14 | 4.210 V | 3.700 V | |
| 304 | 15 | 4.160 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |

388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 154.0MV | | 400.0MV |
| 420 | 9 | 164.0MV | | 400.0MV |
| 429 | 10 | 158.0MV | | 400.0MV |
| 438 | 11 | 152.0MV | | 400.0MV |
| 447 | 12 | 152.0MV | | 400.0MV |
| 456 | 13 | 150.0MV | | 400.0MV |
| 465 | 14 | 160.0MV | | 400.0MV |
| 474 | 15 | 200.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.960 V | 5.900 V | |
| 203 | 9 | 5.960 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.960 V | 5.900 V | |
| 221 | 12 | 5.960 V | 5.900 V | |
| 227 | 13 | 5.960 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.960 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.690 V | 5.200 V | |
| 268 | 9 | 5.670 V | 5.200 V | |
| 274 | 10 | 5.700 V | 5.200 V | |
| 280 | 11 | 5.710 V | 5.200 V | |
| 286 | 12 | 5.710 V | 5.200 V | |
| 292 | 13 | 5.720 V | 5.200 V | |
| 298 | 14 | 5.710 V | 5.200 V | |
| 304 | 15 | 5.650 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 160.0MV | | 400.0MV |
| 420 | 9 | 174.0MV | | 400.0MV |
| 429 | 10 | 168.0MV | | 400.0MV |
| 438 | 11 | 158.0MV | | 400.0MV |
| 447 | 12 | 160.0MV | | 400.0MV |
| 456 | 13 | 158.0MV | | 400.0MV |
| 465 | 14 | 168.0MV | | 400.0MV |
| 474 | 15 | 208.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -3.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 1.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 1.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 2
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -580.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -550.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 500.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 490.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 490.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.970 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.710 V | 2.200 V | |
| 268 | 9 | 2.700 V | 2.200 V | |
| 274 | 10 | 2.710 V | 2.200 V | |
| 280 | 11 | 2.720 V | 2.200 V | |
| 286 | 12 | 2.720 V | 2.200 V | |
| 292 | 13 | 2.720 V | 2.200 V | |
| 298 | 14 | 2.720 V | 2.200 V | |
| 304 | 15 | 2.690 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 150.0MV | | 400.0MV |
| 420 | 9 | 160.0MV | | 400.0MV |
| 429 | 10 | 158.0MV | | 400.0MV |
| 438 | 11 | 152.0MV | | 400.0MV |
| 447 | 12 | 154.0MV | | 400.0MV |
| 456 | 13 | 152.0MV | | 400.0MV |
| 465 | 14 | 156.0MV | | 400.0MV |
| 474 | 15 | 162.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.180 V | 3.700 V | |
| 268 | 9 | 4.150 V | 3.700 V | |
| 274 | 10 | 4.170 V | 3.700 V | |
| 280 | 11 | 4.180 V | 3.700 V | |
| 286 | 12 | 4.170 V | 3.700 V | |
| 292 | 13 | 4.180 V | 3.700 V | |
| 298 | 14 | 4.180 V | 3.700 V | |
| 304 | 15 | 4.150 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 168.0MV | | 400.0MV |
| 420 | 9 | 182.0MV | | 400.0MV |
| 429 | 10 | 178.0MV | | 400.0MV |
| 438 | 11 | 170.0MV | | 400.0MV |
| 447 | 12 | 172.0MV | | 400.0MV |
| 456 | 13 | 172.0MV | | 400.0MV |
| 465 | 14 | 178.0MV | | 400.0MV |
| 474 | 15 | 188.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.690 V | 5.200 V | |
| 268 | 9 | 5.660 V | 5.200 V | |
| 274 | 10 | 5.680 V | 5.200 V | |
| 280 | 11 | 5.690 V | 5.200 V | |
| 286 | 12 | 5.690 V | 5.200 V | |
| 292 | 13 | 5.700 V | 5.200 V | |
| 298 | 14 | 5.690 V | 5.200 V | |
| 304 | 15 | 5.660 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 36.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 172.0MV | | 400.0MV |
| 420 | 9 | 190.0MV | | 400.0MV |
| 429 | 10 | 186.0MV | | 400.0MV |
| 438 | 11 | 176.0MV | | 400.0MV |
| 447 | 12 | 178.0MV | | 400.0MV |
| 456 | 13 | 178.0MV | | 400.0MV |
| 465 | 14 | 186.0MV | | 400.0MV |
| 474 | 15 | 198.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 1.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 1.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 3
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -610.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 540.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.980 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.780 V | 2.200 V | |
| 268 | 9 | 2.760 V | 2.200 V | |
| 274 | 10 | 2.780 V | 2.200 V | |
| 280 | 11 | 2.780 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.780 V | 2.200 V | |
| 298 | 14 | 2.780 V | 2.200 V | |
| 304 | 15 | 2.760 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 142.0MV | | 400.0MV |
| 420 | 9 | 150.0MV | | 400.0MV |
| 429 | 10 | 144.0MV | | 400.0MV |
| 438 | 11 | 140.0MV | | 400.0MV |
| 447 | 12 | 142.0MV | | 400.0MV |
| 456 | 13 | 140.0MV | | 400.0MV |
| 465 | 14 | 144.0MV | | 400.0MV |
| 474 | 15 | 148.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.220 V | 3.700 V | |
| 268 | 9 | 4.190 V | 3.700 V | |
| 274 | 10 | 4.210 V | 3.700 V | |
| 280 | 11 | 4.220 V | 3.700 V | |
| 286 | 12 | 4.220 V | 3.700 V | |
| 292 | 13 | 4.220 V | 3.700 V | |
| 298 | 14 | 4.220 V | 3.700 V | |
| 304 | 15 | 4.190 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 162.0MV | | 400.0MV |
| 420 | 9 | 172.0MV | | 400.0MV |
| 429 | 10 | 164.0MV | | 400.0MV |
| 438 | 11 | 158.0MV | | 400.0MV |
| 447 | 12 | 162.0MV | | 400.0MV |
| 456 | 13 | 158.0MV | | 400.0MV |
| 465 | 14 | 164.0MV | | 400.0MV |
| 474 | 15 | 184.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.710 V | 5.200 V | |
| 268 | 9 | 5.680 V | 5.200 V | |
| 274 | 10 | 5.710 V | 5.200 V | |
| 280 | 11 | 5.710 V | 5.200 V | |
| 286 | 12 | 5.710 V | 5.200 V | |
| 292 | 13 | 5.720 V | 5.200 V | |
| 298 | 14 | 5.720 V | 5.200 V | |
| 304 | 15 | 5.670 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 166.0MV | | 400.0MV |
| 420 | 9 | 180.0MV | | 400.0MV |
| 429 | 10 | 172.0MV | | 400.0MV |
| 438 | 11 | 166.0MV | | 400.0MV |
| 447 | 12 | 168.0MV | | 400.0MV |
| 456 | 13 | 166.0MV | | 400.0MV |
| 465 | 14 | 172.0MV | | 400.0MV |
| 474 | 15 | 216.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 1.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 1.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 4
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -610.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 550.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.780 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.780 V | 2.200 V | |
| 280 | 11 | 2.790 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.790 V | 2.200 V | |
| 298 | 14 | 2.790 V | 2.200 V | |
| 304 | 15 | 2.760 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 400.0MV |
| 420 | 9 | 142.0MV | | 400.0MV |
| 429 | 10 | 140.0MV | | 400.0MV |
| 438 | 11 | 134.0MV | | 400.0MV |
| 447 | 12 | 134.0MV | | 400.0MV |
| 456 | 13 | 134.0MV | | 400.0MV |
| 465 | 14 | 140.0MV | | 400.0MV |
| 474 | 15 | 144.0MV | | 400.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.220 V | 3.700 V | |
| 268 | 9 | 4.200 V | 3.700 V | |
| 274 | 10 | 4.210 V | 3.700 V | |
| 280 | 11 | 4.230 V | 3.700 V | |
| 286 | 12 | 4.220 V | 3.700 V | |
| 292 | 13 | 4.230 V | 3.700 V | |
| 298 | 14 | 4.220 V | 3.700 V | |
| 304 | 15 | 4.200 V | 3.700 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 152.0MV | | 400.0MV |
| 420 | 9 | 162.0MV | | 400.0MV |
| 429 | 10 | 158.0MV | | 400.0MV |
| 438 | 11 | 152.0MV | | 400.0MV |
| 447 | 12 | 154.0MV | | 400.0MV |
| 456 | 13 | 152.0MV | | 400.0MV |
| 465 | 14 | 160.0MV | | 400.0MV |
| 474 | 15 | 166.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.720 V | 5.200 V | |
| 268 | 9 | 5.690 V | 5.200 V | |
| 274 | 10 | 5.720 V | 5.200 V | |
| 280 | 11 | 5.730 V | 5.200 V | |
| 286 | 12 | 5.730 V | 5.200 V | |
| 292 | 13 | 5.730 V | 5.200 V | |
| 298 | 14 | 5.730 V | 5.200 V | |
| 304 | 15 | 5.700 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 160.0MV | | 400.0MV |
| 420 | 9 | 172.0MV | | 400.0MV |
| 429 | 10 | 164.0MV | | 400.0MV |
| 438 | 11 | 158.0MV | | 400.0MV |
| 447 | 12 | 160.0MV | | 400.0MV |
| 456 | 13 | 158.0MV | | 400.0MV |
| 465 | 14 | 168.0MV | | 400.0MV |
| 474 | 15 | 176.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 1.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 1.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 5
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -610.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 550.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 36.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.760 V | 2.200 V | |
| 268 | 9 | 2.750 V | 2.200 V | |
| 274 | 10 | 2.760 V | 2.200 V | |
| 280 | 11 | 2.760 V | 2.200 V | |
| 286 | 12 | 2.760 V | 2.200 V | |
| 292 | 13 | 2.760 V | 2.200 V | |
| 298 | 14 | 2.760 V | 2.200 V | |
| 304 | 15 | 2.740 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 144.0MV | | 400.0MV |
| 420 | 9 | 154.0MV | | 400.0MV |
| 429 | 10 | 152.0MV | | 400.0MV |
| 438 | 11 | 144.0MV | | 400.0MV |
| 447 | 12 | 146.0MV | | 400.0MV |
| 456 | 13 | 146.0MV | | 400.0MV |
| 465 | 14 | 152.0MV | | 400.0MV |
| 474 | 15 | 154.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.200 V | 3.700 V | |
| 268 | 9 | 4.180 V | 3.700 V | |
| 274 | 10 | 4.190 V | 3.700 V | |
| 280 | 11 | 4.200 V | 3.700 V | |
| 286 | 12 | 4.190 V | 3.700 V | |
| 292 | 13 | 4.200 V | 3.700 V | |
| 298 | 14 | 4.200 V | 3.700 V | |
| 304 | 15 | 4.170 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 162.0MV | | 400.0MV |
| 420 | 9 | 178.0MV | | 400.0MV |
| 429 | 10 | 174.0MV | | 400.0MV |
| 438 | 11 | 166.0MV | | 400.0MV |
| 447 | 12 | 166.0MV | | 400.0MV |
| 456 | 13 | 166.0MV | | 400.0MV |
| 465 | 14 | 176.0MV | | 400.0MV |
| 474 | 15 | 182.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.700 V | 5.200 V | |
| 268 | 9 | 5.660 V | 5.200 V | |
| 274 | 10 | 5.690 V | 5.200 V | |
| 280 | 11 | 5.700 V | 5.200 V | |
| 286 | 12 | 5.700 V | 5.200 V | |
| 292 | 13 | 5.700 V | 5.200 V | |
| 298 | 14 | 5.690 V | 5.200 V | |
| 304 | 15 | 5.660 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 168.0MV | | 400.0MV |
| 420 | 9 | 188.0MV | | 400.0MV |
| 429 | 10 | 182.0MV | | 400.0MV |
| 438 | 11 | 174.0MV | | 400.0MV |
| 447 | 12 | 176.0MV | | 400.0MV |
| 456 | 13 | 174.0MV | | 400.0MV |
| 465 | 14 | 184.0MV | | 400.0MV |
| 474 | 15 | 196.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 1.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | 0 A | | 160.0UA |
| 587 | 16 | 0 A | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 6
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -620.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 550.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.970 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.970 V | 2.900 V | |
| 239 | 15 | 2.970 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.780 V | 2.200 V | |
| 268 | 9 | 2.770 V | 2.200 V | |
| 274 | 10 | 2.790 V | 2.200 V | |
| 280 | 11 | 2.800 V | 2.200 V | |
| 286 | 12 | 2.790 V | 2.200 V | |
| 292 | 13 | 2.800 V | 2.200 V | |
| 298 | 14 | 2.800 V | 2.200 V | |
| 304 | 15 | 2.750 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 400.0MV |
| 420 | 9 | 138.0MV | | 400.0MV |
| 429 | 10 | 136.0MV | | 400.0MV |
| 438 | 11 | 128.0MV | | 400.0MV |
| 447 | 12 | 130.0MV | | 400.0MV |
| 456 | 13 | 126.0MV | | 400.0MV |
| 465 | 14 | 132.0MV | | 400.0MV |
| 474 | 15 | 186.0MV | | 400.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.220 V | 3.700 V | |
| 268 | 9 | 4.210 V | 3.700 V | |
| 274 | 10 | 4.220 V | 3.700 V | |
| 280 | 11 | 4.230 V | 3.700 V | |
| 286 | 12 | 4.230 V | 3.700 V | |
| 292 | 13 | 4.240 V | 3.700 V | |
| 298 | 14 | 4.230 V | 3.700 V | |
| 304 | 15 | 4.190 V | 3.700 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

| | | | |
|-----|----|---------|---------|
| 379 | 14 | 34.00MV | 100.0MV |
| 388 | 15 | 32.00MV | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 148.0MV | | 400.0MV |
| 420 | 9 | 156.0MV | | 400.0MV |
| 429 | 10 | 154.0MV | | 400.0MV |
| 438 | 11 | 144.0MV | | 400.0MV |
| 447 | 12 | 144.0MV | | 400.0MV |
| 456 | 13 | 144.0MV | | 400.0MV |
| 465 | 14 | 152.0MV | | 400.0MV |
| 474 | 15 | 198.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.710 V | 5.200 V | |
| 268 | 9 | 5.700 V | 5.200 V | |
| 274 | 10 | 5.720 V | 5.200 V | |
| 280 | 11 | 5.740 V | 5.200 V | |
| 286 | 12 | 5.730 V | 5.200 V | |
| 292 | 13 | 5.740 V | 5.200 V | |
| 298 | 14 | 5.730 V | 5.200 V | |
| 304 | 15 | 5.660 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 156.0MV | | 400.0MV |
| 420 | 9 | 170.0MV | | 400.0MV |
| 429 | 10 | 164.0MV | | 400.0MV |
| 438 | 11 | 152.0MV | | 400.0MV |
| 447 | 12 | 156.0MV | | 400.0MV |
| 456 | 13 | 152.0MV | | 400.0MV |
| 465 | 14 | 166.0MV | | 400.0MV |
| 474 | 15 | 224.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 1.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 7
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -600.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 530.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.980 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.760 V | 2.200 V | |
| 268 | 9 | 2.740 V | 2.200 V | |
| 274 | 10 | 2.760 V | 2.200 V | |
| 280 | 11 | 2.770 V | 2.200 V | |
| 286 | 12 | 2.770 V | 2.200 V | |
| 292 | 13 | 2.770 V | 2.200 V | |
| 298 | 14 | 2.770 V | 2.200 V | |
| 304 | 15 | 2.740 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 146.0MV | | 400.0MV |
| 420 | 9 | 152.0MV | | 400.0MV |
| 429 | 10 | 152.0MV | | 400.0MV |
| 438 | 11 | 144.0MV | | 400.0MV |
| 447 | 12 | 144.0MV | | 400.0MV |
| 456 | 13 | 144.0MV | | 400.0MV |
| 465 | 14 | 150.0MV | | 400.0MV |
| 474 | 15 | 156.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 4.500
VIH= 3.150 VIL= 1.350

VOH1 TEST
VCC= 4.500
VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

VOH2 TEST
VCC= 4.500
VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.190 V | 3.700 V | |
| 268 | 9 | 4.170 V | 3.700 V | |
| 274 | 10 | 4.180 V | 3.700 V | |
| 280 | 11 | 4.200 V | 3.700 V | |
| 286 | 12 | 4.200 V | 3.700 V | |
| 292 | 13 | 4.190 V | 3.700 V | |
| 298 | 14 | 4.200 V | 3.700 V | |
| 304 | 15 | 4.170 V | 3.700 V | |

VOL1 TEST
VCC= 4.500
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 166.0MV | | 400.0MV |
| 420 | 9 | 176.0MV | | 400.0MV |
| 429 | 10 | 174.0MV | | 400.0MV |
| 438 | 11 | 166.0MV | | 400.0MV |
| 447 | 12 | 168.0MV | | 400.0MV |
| 456 | 13 | 166.0MV | | 400.0MV |
| 465 | 14 | 174.0MV | | 400.0MV |
| 474 | 15 | 184.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.960 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.960 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.690 V | 5.200 V | |
| 268 | 9 | 5.660 V | 5.200 V | |
| 274 | 10 | 5.680 V | 5.200 V | |
| 280 | 11 | 5.700 V | 5.200 V | |
| 286 | 12 | 5.700 V | 5.200 V | |
| 292 | 13 | 5.700 V | 5.200 V | |
| 298 | 14 | 5.700 V | 5.200 V | |
| 304 | 15 | 5.670 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 174.0MV | | 400.0MV |
| 420 | 9 | 186.0MV | | 400.0MV |
| 429 | 10 | 184.0MV | | 400.0MV |
| 438 | 11 | 174.0MV | | 400.0MV |
| 447 | 12 | 176.0MV | | 400.0MV |
| 456 | 13 | 174.0MV | | 400.0MV |
| 465 | 14 | 184.0MV | | 400.0MV |
| 474 | 15 | 198.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 8
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -630.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -610.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 530.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 530.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.980 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
 388 15 34.00MV 100.0MV

 FUNCTIONAL TEST
 VCC= 3
 VIH= 2.100 VIL= 900.0E-03

 VOH1 TEST
 VCC= 3
 VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.970 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

 VOH2 TEST
 VCC= 3
 VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.780 V | 2.200 V | |
| 268 | 9 | 2.780 V | 2.200 V | |
| 274 | 10 | 2.780 V | 2.200 V | |
| 280 | 11 | 2.790 V | 2.200 V | |
| 286 | 12 | 2.790 V | 2.200 V | |
| 292 | 13 | 2.790 V | 2.200 V | |
| 298 | 14 | 2.790 V | 2.200 V | |
| 304 | 15 | 2.760 V | 2.200 V | |

 VOL1 TEST
 VCC= 3
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

 VOL2 TEST
 VCC= 3
 VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 136.0MV | | 400.0MV |
| 420 | 9 | 140.0MV | | 400.0MV |
| 429 | 10 | 140.0MV | | 400.0MV |
| 438 | 11 | 134.0MV | | 400.0MV |
| 447 | 12 | 136.0MV | | 400.0MV |
| 456 | 13 | 134.0MV | | 400.0MV |
| 465 | 14 | 140.0MV | | 400.0MV |
| 474 | 15 | 150.0MV | | 400.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.220 V | 3.700 V | |
| 268 | 9 | 4.200 V | 3.700 V | |
| 274 | 10 | 4.210 V | 3.700 V | |
| 280 | 11 | 4.220 V | 3.700 V | |
| 286 | 12 | 4.220 V | 3.700 V | |
| 292 | 13 | 4.230 V | 3.700 V | |
| 298 | 14 | 4.220 V | 3.700 V | |
| 304 | 15 | 4.190 V | 3.700 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 32.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 154.0MV | | 400.0MV |
| 420 | 9 | 164.0MV | | 400.0MV |
| 429 | 10 | 162.0MV | | 400.0MV |
| 438 | 11 | 154.0MV | | 400.0MV |
| 447 | 12 | 156.0MV | | 400.0MV |
| 456 | 13 | 154.0MV | | 400.0MV |
| 465 | 14 | 162.0MV | | 400.0MV |
| 474 | 15 | 178.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.720 V | 5.200 V | |
| 268 | 9 | 5.690 V | 5.200 V | |
| 274 | 10 | 5.710 V | 5.200 V | |
| 280 | 11 | 5.720 V | 5.200 V | |
| 286 | 12 | 5.720 V | 5.200 V | |
| 292 | 13 | 5.720 V | 5.200 V | |
| 298 | 14 | 5.720 V | 5.200 V | |
| 304 | 15 | 5.680 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 36.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 162.0MV | | 400.0MV |
| 420 | 9 | 174.0MV | | 400.0MV |
| 429 | 10 | 174.0MV | | 400.0MV |
| 438 | 11 | 162.0MV | | 400.0MV |
| 447 | 12 | 164.0MV | | 400.0MV |
| 456 | 13 | 162.0MV | | 400.0MV |
| 465 | 14 | 172.0MV | | 400.0MV |
| 474 | 15 | 194.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 9
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -620.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 560.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.980 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.980 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.970 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.970 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.770 V | 2.200 V | |
| 268 | 9 | 2.760 V | 2.200 V | |
| 274 | 10 | 2.770 V | 2.200 V | |
| 280 | 11 | 2.770 V | 2.200 V | |
| 286 | 12 | 2.770 V | 2.200 V | |
| 292 | 13 | 2.770 V | 2.200 V | |
| 298 | 14 | 2.770 V | 2.200 V | |
| 304 | 15 | 2.720 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 134.0MV | | 400.0MV |
| 420 | 9 | 140.0MV | | 400.0MV |
| 429 | 10 | 140.0MV | | 400.0MV |
| 438 | 11 | 132.0MV | | 400.0MV |
| 447 | 12 | 134.0MV | | 400.0MV |
| 456 | 13 | 134.0MV | | 400.0MV |
| 465 | 14 | 140.0MV | | 400.0MV |
| 474 | 15 | 174.0MV | | 400.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.440 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.200 V | 3.700 V | |
| 268 | 9 | 4.180 V | 3.700 V | |
| 274 | 10 | 4.190 V | 3.700 V | |
| 280 | 11 | 4.210 V | 3.700 V | |
| 286 | 12 | 4.200 V | 3.700 V | |
| 292 | 13 | 4.210 V | 3.700 V | |
| 298 | 14 | 4.200 V | 3.700 V | |
| 304 | 15 | 4.150 V | 3.700 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 148.0MV | | 400.0MV |
| 420 | 9 | 158.0MV | | 400.0MV |
| 429 | 10 | 160.0MV | | 400.0MV |
| 438 | 11 | 150.0MV | | 400.0MV |
| 447 | 12 | 150.0MV | | 400.0MV |
| 456 | 13 | 150.0MV | | 400.0MV |
| 465 | 14 | 160.0MV | | 400.0MV |
| 474 | 15 | 206.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.960 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.710 V | 5.200 V | |
| 268 | 9 | 5.690 V | 5.200 V | |
| 274 | 10 | 5.700 V | 5.200 V | |
| 280 | 11 | 5.720 V | 5.200 V | |
| 286 | 12 | 5.710 V | 5.200 V | |
| 292 | 13 | 5.710 V | 5.200 V | |
| 298 | 14 | 5.710 V | 5.200 V | |
| 304 | 15 | 5.670 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 152.0MV | | 400.0MV |
| 420 | 9 | 166.0MV | | 400.0MV |
| 429 | 10 | 168.0MV | | 400.0MV |
| 438 | 11 | 154.0MV | | 400.0MV |
| 447 | 12 | 156.0MV | | 400.0MV |
| 456 | 13 | 154.0MV | | 400.0MV |
| 465 | 14 | 170.0MV | | 400.0MV |
| 474 | 15 | 194.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 10
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -620.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 560.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 550.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
 388 15 32.00MV 100.0MV

 FUNCTIONAL TEST
 VCC= 3
 VIH= 2.100 VIL= 900.0E-03

 VOH1 TEST
 VCC= 3
 VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.970 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

 VOH2 TEST
 VCC= 3
 VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.770 V | 2.200 V | |
| 268 | 9 | 2.760 V | 2.200 V | |
| 274 | 10 | 2.770 V | 2.200 V | |
| 280 | 11 | 2.780 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.780 V | 2.200 V | |
| 298 | 14 | 2.770 V | 2.200 V | |
| 304 | 15 | 2.730 V | 2.200 V | |

 VOL1 TEST
 VCC= 3
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

 VOL2 TEST
 VCC= 3
 VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 400.0MV |
| 420 | 9 | 144.0MV | | 400.0MV |
| 429 | 10 | 146.0MV | | 400.0MV |
| 438 | 11 | 138.0MV | | 400.0MV |
| 447 | 12 | 138.0MV | | 400.0MV |
| 456 | 13 | 138.0MV | | 400.0MV |
| 465 | 14 | 142.0MV | | 400.0MV |
| 474 | 15 | 170.0MV | | 400.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.200 V | 3.700 V | |
| 268 | 9 | 4.180 V | 3.700 V | |
| 274 | 10 | 4.200 V | 3.700 V | |
| 280 | 11 | 4.210 V | 3.700 V | |
| 286 | 12 | 4.210 V | 3.700 V | |
| 292 | 13 | 4.210 V | 3.700 V | |
| 298 | 14 | 4.200 V | 3.700 V | |
| 304 | 15 | 4.160 V | 3.700 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |

| | | | |
|-----|----|---------|---------|
| 379 | 14 | 34.00MV | 100.0MV |
| 388 | 15 | 34.00MV | 100.0MV |

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 158.0MV | | 400.0MV |
| 420 | 9 | 168.0MV | | 400.0MV |
| 429 | 10 | 168.0MV | | 400.0MV |
| 438 | 11 | 158.0MV | | 400.0MV |
| 447 | 12 | 158.0MV | | 400.0MV |
| 456 | 13 | 156.0MV | | 400.0MV |
| 465 | 14 | 166.0MV | | 400.0MV |
| 474 | 15 | 196.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.960 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.960 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.970 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.690 V | 5.200 V | |
| 268 | 9 | 5.670 V | 5.200 V | |
| 274 | 10 | 5.690 V | 5.200 V | |
| 280 | 11 | 5.700 V | 5.200 V | |
| 286 | 12 | 5.700 V | 5.200 V | |
| 292 | 13 | 5.700 V | 5.200 V | |
| 298 | 14 | 5.690 V | 5.200 V | |
| 304 | 15 | 5.650 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 164.0MV | | 400.0MV |
| 420 | 9 | 176.0MV | | 400.0MV |
| 429 | 10 | 178.0MV | | 400.0MV |
| 438 | 11 | 164.0MV | | 400.0MV |
| 447 | 12 | 166.0MV | | 400.0MV |
| 456 | 13 | 164.0MV | | 400.0MV |
| 465 | 14 | 176.0MV | | 400.0MV |
| 474 | 15 | 202.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 11
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -650.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -610.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 550.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.980 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.980 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.980 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.980 V | 2.900 V | |
| 203 | 9 | 2.980 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.980 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.770 V | 2.200 V | |
| 268 | 9 | 2.760 V | 2.200 V | |
| 274 | 10 | 2.770 V | 2.200 V | |
| 280 | 11 | 2.770 V | 2.200 V | |
| 286 | 12 | 2.780 V | 2.200 V | |
| 292 | 13 | 2.780 V | 2.200 V | |
| 298 | 14 | 2.770 V | 2.200 V | |
| 304 | 15 | 2.720 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 32.00MV | | 100.0MV |
| 379 | 14 | 32.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 138.0MV | | 400.0MV |
| 420 | 9 | 146.0MV | | 400.0MV |
| 429 | 10 | 146.0MV | | 400.0MV |
| 438 | 11 | 140.0MV | | 400.0MV |
| 447 | 12 | 140.0MV | | 400.0MV |
| 456 | 13 | 140.0MV | | 400.0MV |
| 465 | 14 | 148.0MV | | 400.0MV |
| 474 | 15 | 200.0MV | | 400.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.450 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.200 V | 3.700 V | |
| 268 | 9 | 4.180 V | 3.700 V | |
| 274 | 10 | 4.200 V | 3.700 V | |
| 280 | 11 | 4.210 V | 3.700 V | |
| 286 | 12 | 4.210 V | 3.700 V | |
| 292 | 13 | 4.210 V | 3.700 V | |
| 298 | 14 | 4.200 V | 3.700 V | |
| 304 | 15 | 4.160 V | 3.700 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 32.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 32.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 158.0MV | | 400.0MV |
| 420 | 9 | 168.0MV | | 400.0MV |
| 429 | 10 | 170.0MV | | 400.0MV |
| 438 | 11 | 158.0MV | | 400.0MV |
| 447 | 12 | 162.0MV | | 400.0MV |
| 456 | 13 | 160.0MV | | 400.0MV |
| 465 | 14 | 174.0MV | | 400.0MV |
| 474 | 15 | 202.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.970 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.960 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.690 V | 5.200 V | |
| 268 | 9 | 5.670 V | 5.200 V | |
| 274 | 10 | 5.680 V | 5.200 V | |
| 280 | 11 | 5.690 V | 5.200 V | |
| 286 | 12 | 5.700 V | 5.200 V | |
| 292 | 13 | 5.700 V | 5.200 V | |
| 298 | 14 | 5.690 V | 5.200 V | |
| 304 | 15 | 5.640 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 34.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 164.0MV | | 400.0MV |
| 420 | 9 | 178.0MV | | 400.0MV |
| 429 | 10 | 180.0MV | | 400.0MV |
| 438 | 11 | 166.0MV | | 400.0MV |
| 447 | 12 | 170.0MV | | 400.0MV |
| 456 | 13 | 166.0MV | | 400.0MV |
| 465 | 14 | 186.0MV | | 400.0MV |
| 474 | 15 | 210.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 1.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT

STAT1 06/11/11 06:49
 TEST PROGRAM HC138 S/N 12
 DDS-101-11-A PN 54HC138 TEST SEQ14 +125C

 CONTINUITY TEST

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|----------|
| 55 | 1 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 2 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 3 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 4 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 5 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 6 | -640.0MV | -1.500 V | -100.0MV |
| 55 | 7 | -610.0MV | -1.500 V | -100.0MV |
| 65 | 9 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 10 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 11 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 12 | 550.0MV | 100.0MV | 1.500 V |
| 65 | 13 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 14 | 540.0MV | 100.0MV | 1.500 V |
| 65 | 15 | 550.0MV | 100.0MV | 1.500 V |

 FUNCTIONAL TEST
 VCC= 2
 VIH= 1.500 VIL= 500.0E-03

 VOH1 TEST
 VCC= 2
 VOH LIMIT 1.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 1.970 V | 1.900 V | |
| 203 | 9 | 1.970 V | 1.900 V | |
| 209 | 10 | 1.970 V | 1.900 V | |
| 215 | 11 | 1.970 V | 1.900 V | |
| 221 | 12 | 1.970 V | 1.900 V | |
| 227 | 13 | 1.970 V | 1.900 V | |
| 233 | 14 | 1.970 V | 1.900 V | |
| 239 | 15 | 1.970 V | 1.900 V | |

 VOL1 TEST
 VCC= 2
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 34.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

FUNCTIONAL TEST
VCC= 3
VIH= 2.100 VIL= 900.0E-03

VOH1 TEST
VCC= 3
VOH LIMIT 2.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 2.970 V | 2.900 V | |
| 203 | 9 | 2.970 V | 2.900 V | |
| 209 | 10 | 2.980 V | 2.900 V | |
| 215 | 11 | 2.980 V | 2.900 V | |
| 221 | 12 | 2.980 V | 2.900 V | |
| 227 | 13 | 2.970 V | 2.900 V | |
| 233 | 14 | 2.980 V | 2.900 V | |
| 239 | 15 | 2.980 V | 2.900 V | |

VOH2 TEST
VCC= 3
VOH2 LIMIT 2.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 2.760 V | 2.200 V | |
| 268 | 9 | 2.760 V | 2.200 V | |
| 274 | 10 | 2.760 V | 2.200 V | |
| 280 | 11 | 2.770 V | 2.200 V | |
| 286 | 12 | 2.770 V | 2.200 V | |
| 292 | 13 | 2.770 V | 2.200 V | |
| 298 | 14 | 2.760 V | 2.200 V | |
| 304 | 15 | 2.720 V | 2.200 V | |

VOL1 TEST
VCC= 3
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 32.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 32.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 3
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 132.0MV | | 400.0MV |
| 420 | 9 | 138.0MV | | 400.0MV |
| 429 | 10 | 140.0MV | | 400.0MV |
| 438 | 11 | 132.0MV | | 400.0MV |
| 447 | 12 | 132.0MV | | 400.0MV |
| 456 | 13 | 132.0MV | | 400.0MV |
| 465 | 14 | 146.0MV | | 400.0MV |
| 474 | 15 | 204.0MV | | 400.0MV |

 FUNCTIONAL TEST
 VCC= 4.500
 VIH= 3.150 VIL= 1.350

 VOH1 TEST
 VCC= 4.500
 VOH LIMIT 4.400

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 4.450 V | 4.400 V | |
| 203 | 9 | 4.450 V | 4.400 V | |
| 209 | 10 | 4.450 V | 4.400 V | |
| 215 | 11 | 4.450 V | 4.400 V | |
| 221 | 12 | 4.450 V | 4.400 V | |
| 227 | 13 | 4.450 V | 4.400 V | |
| 233 | 14 | 4.450 V | 4.400 V | |
| 239 | 15 | 4.440 V | 4.400 V | |

 VOH2 TEST
 VCC= 4.500
 VOH2 LIMIT 3.700

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 4.200 V | 3.700 V | |
| 268 | 9 | 4.190 V | 3.700 V | |
| 274 | 10 | 4.200 V | 3.700 V | |
| 280 | 11 | 4.210 V | 3.700 V | |
| 286 | 12 | 4.210 V | 3.700 V | |
| 292 | 13 | 4.210 V | 3.700 V | |
| 298 | 14 | 4.190 V | 3.700 V | |
| 304 | 15 | 4.160 V | 3.700 V | |

 VOL1 TEST
 VCC= 4.500
 VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 32.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |

379 14 34.00MV 100.0MV
388 15 34.00MV 100.0MV

VOL2 TEST
VCC= 4.500
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 148.0MV | | 400.0MV |
| 420 | 9 | 156.0MV | | 400.0MV |
| 429 | 10 | 158.0MV | | 400.0MV |
| 438 | 11 | 146.0MV | | 400.0MV |
| 447 | 12 | 148.0MV | | 400.0MV |
| 456 | 13 | 146.0MV | | 400.0MV |
| 465 | 14 | 168.0MV | | 400.0MV |
| 474 | 15 | 216.0MV | | 400.0MV |

FUNCTIONAL TEST
VCC= 6
VIH= 4.200 VIL= 1.800

VOH1 TEST
VCC= 6
VOH LIMIT 5.900

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 197 | 7 | 5.970 V | 5.900 V | |
| 203 | 9 | 5.960 V | 5.900 V | |
| 209 | 10 | 5.970 V | 5.900 V | |
| 215 | 11 | 5.970 V | 5.900 V | |
| 221 | 12 | 5.970 V | 5.900 V | |
| 227 | 13 | 5.970 V | 5.900 V | |
| 233 | 14 | 5.970 V | 5.900 V | |
| 239 | 15 | 5.960 V | 5.900 V | |

VOH2 TEST
VCC= 6
VOH2 LIMIT 5.200

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|---------|----|
| 262 | 7 | 5.700 V | 5.200 V | |
| 268 | 9 | 5.680 V | 5.200 V | |
| 274 | 10 | 5.700 V | 5.200 V | |
| 280 | 11 | 5.720 V | 5.200 V | |
| 286 | 12 | 5.720 V | 5.200 V | |
| 292 | 13 | 5.720 V | 5.200 V | |
| 298 | 14 | 5.700 V | 5.200 V | |
| 304 | 15 | 5.670 V | 5.200 V | |

VOL1 TEST
VCC= 6
VOL LIMIT 100.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 325 | 7 | 32.00MV | | 100.0MV |
| 334 | 9 | 34.00MV | | 100.0MV |
| 343 | 10 | 34.00MV | | 100.0MV |
| 352 | 11 | 34.00MV | | 100.0MV |
| 361 | 12 | 34.00MV | | 100.0MV |
| 370 | 13 | 34.00MV | | 100.0MV |
| 379 | 14 | 34.00MV | | 100.0MV |
| 388 | 15 | 32.00MV | | 100.0MV |

VOL2 TEST
VCC= 6
VOL2 LIMIT 400.0E-03

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 411 | 7 | 152.0MV | | 400.0MV |
| 420 | 9 | 164.0MV | | 400.0MV |
| 429 | 10 | 166.0MV | | 400.0MV |
| 438 | 11 | 152.0MV | | 400.0MV |
| 447 | 12 | 154.0MV | | 400.0MV |
| 456 | 13 | 152.0MV | | 400.0MV |
| 465 | 14 | 178.0MV | | 400.0MV |
| 474 | 15 | 196.0MV | | 400.0MV |

IIN TEST
VCC= 6
IIL/IIH LIMIT +- 0.1UA @25C/-55C
IIL/IIH LIMIT +- 1.0UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----------|---------|
| 505 | 1 | -4.000NA | -1.000UA | 1.000UA |
| 508 | 1 | 2.000NA | -1.000UA | 1.000UA |
| 513 | 2 | -4.000NA | -1.000UA | 1.000UA |
| 516 | 2 | 2.000NA | -1.000UA | 1.000UA |
| 521 | 3 | -4.000NA | -1.000UA | 1.000UA |
| 524 | 3 | 2.000NA | -1.000UA | 1.000UA |
| 529 | 4 | -4.000NA | -1.000UA | 1.000UA |
| 532 | 4 | 2.000NA | -1.000UA | 1.000UA |
| 537 | 5 | -4.000NA | -1.000UA | 1.000UA |
| 540 | 5 | 2.000NA | -1.000UA | 1.000UA |
| 545 | 6 | -4.000NA | -1.000UA | 1.000UA |
| 548 | 6 | 2.000NA | -1.000UA | 1.000UA |

ICC TEST
VCC= 6
ICC LIMIT MAX. 4.0UA @25C/-55C
ICC LIMIT MAX. 160UA @+125C

| INST # | PIN | MEASURED | LT | GT |
|--------|-----|----------|----|---------|
| 580 | 16 | -10.00UA | | 160.0UA |
| 587 | 16 | -10.00UA | | 160.0UA |

EIR 1.....10 FCT DCT
0000000000 PASS PASS EOT



MIL-PRF-38534 CLASS K DATAPACK

Scanning Electron Microscopy (SEM) analysis



TANDEX TEST LABS, INC.

15849 Business Ctr. Dr. Irwindale CA. 91706

Phone: (626)-962-7166 Fax: (626)-960-6896

SCANNING ELECTRON MICROSCOPE ANALYSIS

DIE DEVICES

TTL Job # DDS-101-11-W

Date: June 28, 2018

Part Number: 54HC138

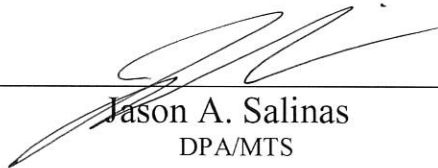
Part Type: CMOS LOGIC MICROCIRCUIT

Lot: Lot# 100413 D/C: 1810 WFR# 8

Quantity: Eight (8)

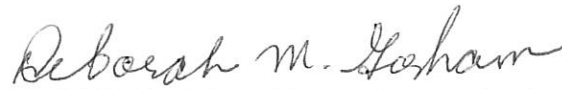
Purchase Order: SS139

Submitted by: _____



Jason A. Salinas
DPA/MTS

Approved by: _____



Deborah M. Gorham

Quality Assurance

TANDEX TEST LABS TTL Job # DDS-101-11-W

Summary

Eight (8) CMOS Logic Microcircuit P/N: 54HC138 were submitted by Die Devices for Scanning Electron Microscopy Analysis. This Analysis was performed in accordance with Mil-Std-883, Method 2018.6 The devices were assigned sample number 1 through 8 by Tandex Test Labs.

1. **Plasma Etching** Carbon Tetraflouride Gas 92% and 8% Oxygen was used to remove the glassivation. This etching is destructive and uneven in the rates of glass removal in various areas of the die.
2. **SEM Inspection** was performed on all eight devices. All eight devices revealed adequate metallization coverage and met the requirements of MIL-STD-883, Method 2018.6. See DPA form on page 3 and figures 1 through 3, for typical photographs.

Conclusion: This lot is acceptable for use.

TANDEX TEST LABS TTL Job # DDS-101-11-W
SEM EXAMINATION

| | | | |
|---|----------------------------|---|---|
| TTL Job No. DDS-101-11-W | Part Number 54HC138 | Part Type CMOS Logic Microcircuit | Date June 25, 2018 |
| Lot Date Code: WFR# 8 Lot# 100413 D/C: 1810 | Sample Qty. 8 | Serial Numbers 1 - 8 | Test Specifications Mil-Std-883 Method 2018.6 |
| Misc. ID No. | Qty. Accept 8 | Qty. Reject 0 | Qty. Suspect 0 |

Notes:

| S/N | Investigation Findings / Comments | A/R/S |
|-----|-----------------------------------|-------|
| 1 | No Anomalies | A |
| 2 | No Anomalies | A |
| 3 | No Anomalies | A |
| 4 | No Anomalies | A |
| 5 | No Anomalies | A |
| 6 | No Anomalies | A |
| 7 | No Anomalies | A |
| 8 | No Anomalies | A |

Each sample was inspected for the general metallization condition at a magnification between 1,000 X and 6,000 X over 25% of the total metallization (unless specified differently). Each sample was inspected from four (4) viewing directions at a magnification between 5,000 X and 20,000 X

Inspection required Yes: No: Devices constructed with expanded Metallization Yes: No:

Sample Glassivated Yes: No: Dual Level Metallization Yes: No:

Glassivation Removed Using: PLASMA ETCHING

Beam accelerating voltage 10kV to 20kV Viewing angle 45 deg



Technician Stamp:

TANDEX TEST LABS TTL Job # DDS-101-11-W

Photodocumentation

TANDEX TEST LABS TTL Job # DDS-101-11-W

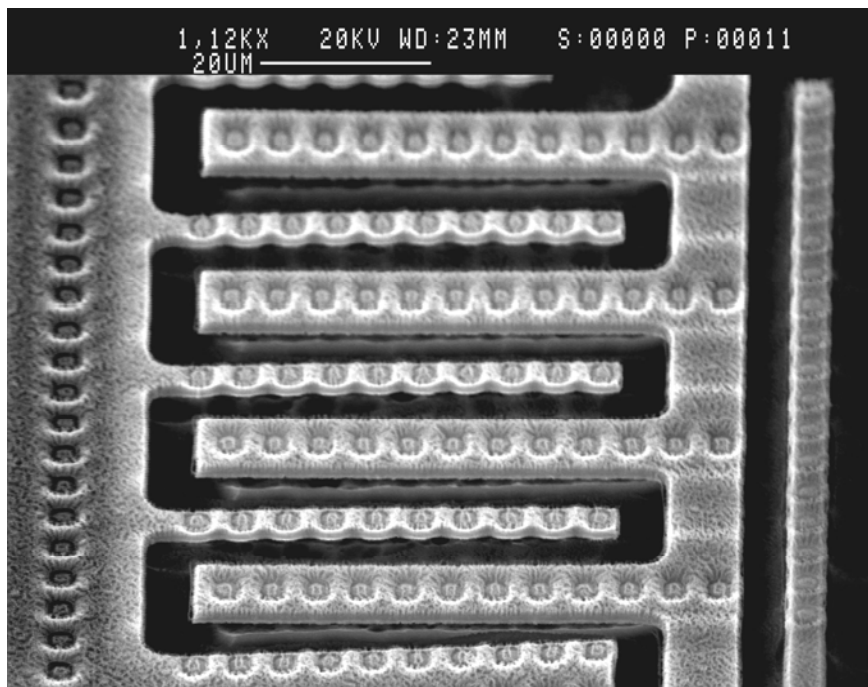


Fig: 1

Mag: 1,120X

S/N: 5

Description: SEM photograph of general metallization.

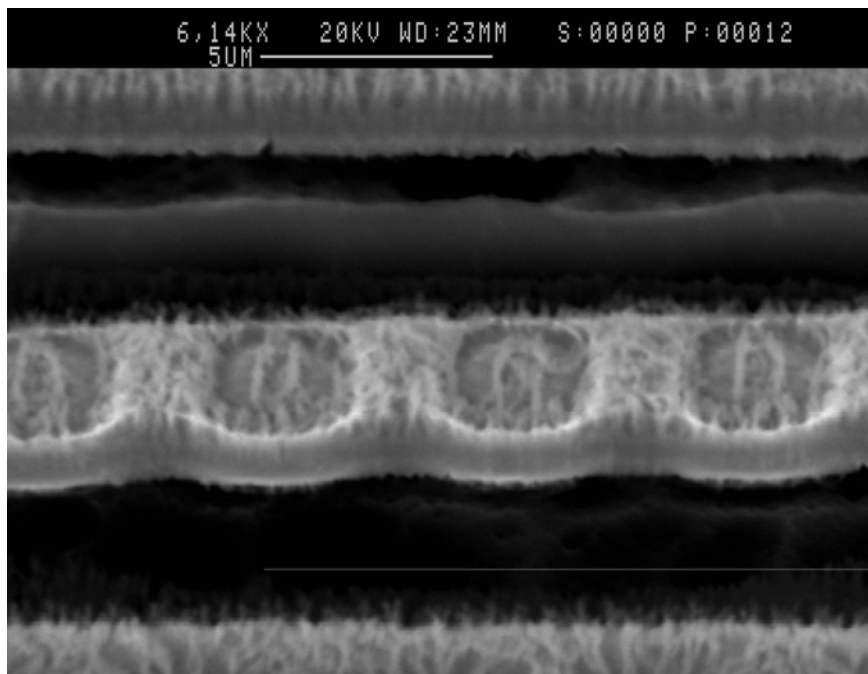


Fig: 2

Mag: 6,140X

S/N: 5

Description: SEM photograph of metallization typical step.

TANDEX TEST LABS TTL Job # DDS-101-11-W

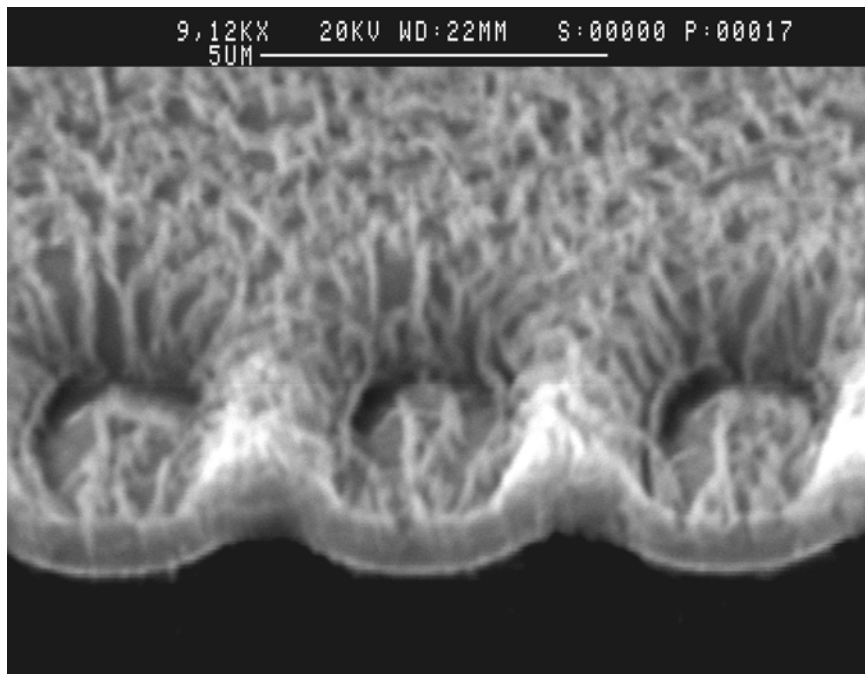


Fig: 3

Mag: 9,120X

S/N: 5

Description: SEM photograph of typical contact window device.

TANDEX TEST LABS, INC.

15849 Business Center. Dr., Irwindale CA. 91706

Phone: (626)962-7166 FAX: (626)960-6896

<http://www.tandexlabs.com>

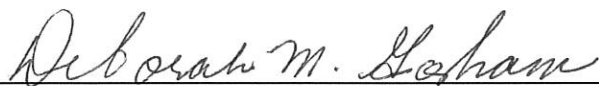
e-mail: via web site

Certificate of Conformance

| | | |
|------------------|--|-----------------------|
| CUSTOMER: | Silicon Supplies Limited 47 Wherry Road Norwich, NR1, 1WS United Kingdom Vat GB# 114 3513 56 | DATE: June 28, 2018 |
| TEST REPORT: | DDS-101-11-W | QUANTITY REQUIRED: 8 |
| P.O. NUMBER: | SS139 | QUANTITY PROCESSED: 8 |
| DESCRIPTION: | CMOS LOGIC MICROCIRCUIT | QUANTITY PASSED: 8 |
| PART NUMBER(S): | 54HC138 | QUANTITY FAILED: 0 |
| MFG PART NUMBER | 54HC138 | QUANTITY SHIPPING: 8 |
| LOT / DATE CODE: | LOT# 100413 WFR# 8 D/C: 1810 | |
| MFG: | SILICON SUPPLIES | |

METHOD OF TESTING: MIL-STD-883 METHOD 2018.6

I hereby certify that the subject components have been processed and inspected in accordance with instructions with specifications referenced in your purchase order. Physical records and/or data pertinent to applicable military, proprietary, and/or commercial specifications are on file and available upon request for inspection at this facility.





Deborah M. Gorham
QUALITY ASSURANCE