| g GE Energy Services<br><br>*Parts & Repair Services*<br>*Louisville, KY* | **Functional Testing Specification**<br><br>**LOU-GED-DS3800NHVL** |
|---|---|

## Test Procedure for a High Voltage Card

**DOCUMENT REVISION STATUS: Determined by the last entry in the "REV" and "DATE" column**

| REV. | DESCRIPTION | SIGNATURE | REV. DATE |
|---|---|---|---|
| A | Initial release rewritten for DS3800NHVL. | G. Chandler | 3/27/2008 |
| B | Clarified step 6.2.2.2, added "SCR box Negative Input" | G. Chandler | 2/7/2013 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |



| PREPARED BY | REVIEWED BY | REVIEWED BY | QUALITY APPROVAL |
|---|---|---|---|
| G. Chandler | | | Charlie Wade |
| **DATE** | **DATE** | **DATE** | **DATE** |
| 3/27/2008 | | | 3/27/2008 |

© COPYRIGHT GENERAL ELECTRIC COMPANY
Hard copies are uncontrolled and are for reference only.
PROPRIETARY INFORMATION – THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF GENERAL ELECTRIC COMPANY AND MAY NOT BE USED OR DISCLOSED TO OTHERS, EXCEPT WITH THE WRITTEN PERMISSION OF GENERAL ELECTRIC COMPANY.

## Functional test procedure for High Voltage Card

### 1. SCOPE

**1.1** This is a functional testing procedure for a High Voltage Card

### 2. STANDARDS OF QUALITY

**2.1** Refer to the current revision of the IPC-A-610 standard for workmanship standards.

### 3. APPLICABLE DOCUMENTS

**3.1** The following document(s) shall form part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue shall apply.

**3.1.1** Check the board's electronic folder for more information.

### 4. ENGINEERING REQUIREMENTS

**4.1** Equipment Cleaning

**4.1.1** Equipment should be clean and free of debris prior to applying power unless performing an initial check. Refer to the local documented procedures for cleaning guidelines.

**4.2** Equipment Inspection

**4.2.1** Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:

**4.2.1.1** Wires broken or cracked
**4.2.1.2** Terminal strips / connectors broken or cracked
**4.2.1.3** Loose wires
**4.2.1.4** Components visually damaged
**4.2.1.5** Capacitors leaking
**4.2.1.6** Solder joints damaged or cold
**4.2.1.7** Circuit board burned or de-laminated
**4.2.1.8** Printed wire runs burned or damaged

### 5. EQUIPMENT REQUIRED

**5.1** The following equipment is required to perform the process requirements. Equipment may be substituted provided that all accuracy's and test ratios are equivalent or better.

| Qty | Reference # | Description |
|---|---|---|
| 1 | | Fluke 85 DMM (or Equivalent) |
| 1 | | O-Scope |
| 1 | | 28 VDC Power Supply |
| 1 | | SCR Firing Box |

## 6. TESTING PROCESS

### 6.1 Setup

**6.1.1 (NHVL)** Remove R70 & R71 (if present) in saddle clamps. Measure ohms JA-28 to JA-29 to be 75 to 125 ohms as R27 is adjusted through its range. Reinstall resistors. Component test R58 – R62 for 26 ohms in circuit. Component test C13 – C18, CR19 – CR24, and CR37, CR38.Measure JA-29 to terminal JK to be 0 ohms.

### 6.2 Testing Procedure

#### 6.2.1 Attenuator Resistor Test (Resistive)

| | | | |
|---|---|---|---|
| **DS3800NHVL** | **Point A** | **Point B** | **Value** |
| Circuit # 1 | JA-3 | JD-4 | 996K +/- 1% |
| Circuit # 2 | JA-12 | JG-4 | 996K +/- 1% |
| Circuit # 3 | JA-16 | JE-4 | 996K +/- 1% |
| Circuit # 4 | JA-21 | JH-4 | 996K +/- 1% |
| Circuit # 5 | JA-34 | JF-4 | 996k +/- 1% |
| Circuit # 6 | JA-25 | JJ-4 | 996K +/- 1% |
| Circuit # 7 | JA-6 | ATTA0 | 20K +/- 1% |
| Circuit # 8 | JA-6 | ATTA1 | 20K +/- 1% |
| Circuit # 9 | JA-6 | ATTB0 | 20K +/- 1% |
| Circuit # 10 | JA-6 | ATTB1 | 20K +/- 1% |
| Circuit # 11 | JA-6 | ATTC0 | 20k +/- 1% |
| Circuit # 12 | JA-6 | ATTC1 | 20K +/- 1% |

Table 1

### 6.3 Firing Circuit & LED Test

**6.3.1** Use the information in table 2 to apply a non-isolated negative pulse from the SCR Firing box to each circuit and verify with the scope a controllable pulse train output on each circuit. (Reference Figure 1). See notes 1&2 for amplitude.

**6.3.2** Using the information in table 2, probe each of the circuits' (SCR box negative input) with the power supply common and verify that the LED for each circuit illuminates to full brightness.

| DS3800NHVL | SCR Box COM | SCR Box NEG | Scope + | Scope - | 28 VDC + | Notes |
|---|---|---|---|---|---|---|
| Circuit # 1 | JA-2 | JA-1 | JD-1 | JD-2 | JA-5 | 1,2 |
| Circuit # 2 | JA-13 | JA-14 | JE-1 | JE-2 | JA-5 | 1,2 |
| Circuit # 3 | JA-31 | JA-32 | JF-1 | JF-2 | JA-5 | 1,2 |
| Circuit # 4 | JA-9 | JA-10 | JG-1 | JG-2 | JA-5 | 1,2 |
| Circuit # 5 | JA-20 | JA-19 | JH-1 | JH-2 | JA-5 | 1,2 |
| Circuit # 6 | JA-24 | JA-23 | JJ-1 | JJ-2 | JA-5 | 1,2 |

Table 2

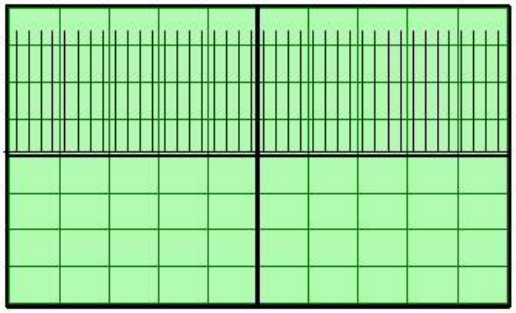
Note 1: NHVL amplitude is 17 volts. Note 2: 28 VDC COM to SCR Box COM

### 6.4 ******TEST COMPLETE ******

## 7. NOTES

**7.1** Output voltages (Waveforms) of gate circuits are measured with output unloaded.

Oscilloscope Verification Examples Fig. 1



DS3800NHVL 17V Peak 5V/Div .5ms/Div