 <div> <div>GE Energy Services</div> <div> Parts &amp; Repair Services  Louisville, KY </div> </div>		<b>Functional Testing Specification</b>	
		<b>LOU-GED-DS3800NHVx</b>	
<b>Test Procedure for a High Voltage Card</b>			
<b>DOCUMENT REVISION STATUS: Determined by the last entry in the "REV" and "DATE" column</b>			
REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release written for DS3800NHVK. Entered references to DS3800NHVG as an example for adding other NHV cards to this procedure.	R. Duvall	07/19/02
B	Added information pertaining to DS3800NHVG.	D. Laemmle	10/14/02
C	Added information pertaining to DS3800NHVB	D. Laemmle	10/25/02
D	Added information pertaining to DS3800NHVN	R. Duvall	11/01/02
E	Added information pertaining to DS3800NHVJ	D. Laemmle	11/02/02
F	Added information pertaining to DS3800NHVM	D. Laemmle	12/17/02
G	Added information pertaining to DS3800NHVL	D. Laemmle	5/15/03
H	Added information pertaining to DS3800NHVA	D. Laemmle	9/29/03
I	Corrected table in firing circuit for NHVL card	S. Pharris	4/20/04
J	Corrected tables for NHVM	D. Laemmle	5/20/04
K	Corrected Attenuator test for NHVN	D. Laemmle	6/08/04
L	Added information pertaining to DS3800NHVE, corrected DS3800NHVM, and change header	D. Laemmle Glenn Chandler	6/22/07
K	Corrected test point B circuit #1 step 6.2.5.7	Frank Howard	03/13/08
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<b>PREPARED BY</b> R. Duvall	<b>REVIEWED BY</b> D. Laemmle	<b>REVIEWED BY</b>	<b>QUALITY APPROVAL</b> Charlie Wade
<b>DATE</b> 07/19/02	<b>DATE</b> 10/14/02	<b>DATE</b>	<b>DATE</b> 6/22/2007

## 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 **UUT documentation folder**

### 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		115 VAC line cord
1		28 VDC Power Supply
1		SCR Firing Box
1		Digital Thermometer (only cards with temperature sensor ckt)

## 6. TESTING PROCESS

### 6.1 Setup ( NHVK & NHVN )

**6.1.1** Connect berg jumpers J1 and J2 to H position and connect JJ-1 to JH-1 and JJ-2 to JH-2 to get values in attenuator test.

**6.1.2 (NHVJ)** Connect JJ-1 to JH-1, JJ-2 to JH-2, JJ-3 to JH-3, JJ-4 to JH-4, JJ-5 to JH-5 to get values in table. Component test C6-C11 and R45-R50. Temporarily remove the berg jumpers J1-J5 and check the value of R20-R24 for 10K +/- 1%.

**6.1.3 (NHVM)** Connect berg jumpers J1-J5 to H position and stab jumpers WJJ1-WJJ5 to WJH1-WJH5 respectively to get values in attenuator test. (Table 1). Component test C18-C23 (.22uf) and R74-R85 (80 ohms; 40 ohms in ckt)

**6.1.4 (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)**

<b>DS3800NHVK &amp; N</b>	<b>Point A</b>	<b>Point B</b>	<b>Value</b>
Circuit # 1	JA-7	JA-10	40 K $\pm$ .2%
Circuit # 2	JA-7	JA-9	20 K $\pm$ .1%
Circuit # 3	JA-9	JA-10	20 K $\pm$ .1%
Circuit # 4	JB-7	JA-7	996 K $\pm$ .4%
Circuit # 5	JC-1	JA-10	996 K $\pm$ .4%
Circuit # 6	JB-7	JC-1	2012 K $\pm$ 1%

<b>DS3800NHVG</b>	<b>Point A</b>	<b>Point B</b>	<b>Value</b>
Circuit # 1	JE-8	JA-32	996K $\pm$ .4%
Circuit # 2	JG-8	JA-21	996K $\pm$ .4%
Circuit # 3	JH-1	JA-27	996K $\pm$ .4%
Circuit # 4	JJ-3	JA-19	996K $\pm$ .4%
Circuit # 5	JK-3	JA-28	996K $\pm$ .4%
Circuit # 6	JH-8	JA-29	996K $\pm$ .4%
Circuit # 7	JK-8	JA-23	996k $\pm$ .4%
Circuit # 8	JA-30	JA-23	10k $\pm$ .1%
Circuit # 9	JA-30	JA-29	10k $\pm$ .1%
Circuit # 10	JA-30	JA-28	10k $\pm$ .1%
Circuit # 11	JA-30	JA-19	10K $\pm$ .1%
Circuit # 12	JA-30	JA-27	10K $\pm$ .1%
Circuit # 13	JA-30	JA-21	10K $\pm$ .1%
Circuit # 14	JA-30	JA-32	10K $\pm$ .1%
Circuit # 15	JA-30	JE-8	1.006 meg $\pm$ .5%
JT-1 to above pins			Open
	JF-3	JT-1	Open
<b>DS3800NHVJ</b>	<b>Point A</b>	<b>Point B</b>	<b>Value</b>
Circuit # 1	JA-02	JA-07	10K $\pm$ 1%
Circuit # 2	JA-02	JA-06	10k $\pm$ 1%
Circuit # 3	JA-02	JA-05	10K $\pm$ 1%
Circuit # 4	JA-02	JA-04	10K $\pm$ 1%
Circuit # 5	JA-02	JA-03	10K $\pm$ 1%
Circuit # 6	JA-03	JC-05	996K $\pm$ .4%
Circuit # 7	JA-04	JC-08	996K $\pm$ .4%
Circuit # 8	JA-05	JD-08	996K $\pm$ .4%

Circuit # 9	JA-07	JF	996K +/- .4%	
Circuit # 10	JA-06	JE-08	996K +/- .4%	
<b>DS3800NHVM</b>	<b>Point A</b>	<b>Point B</b>	<b>Value</b>	
Circuit #1	JH-1	JH-3	20K +/- 1%	
Circuit # 2	JH-1	JH-4	20K +/- 1%	
Circuit # 3	JH-1	JH-5	20K +/- 1%	
Circuit # 4	JH-1	JH-6	20K +/- 1%	
Circuit # 5	JH-1	JH-7	20K +/- 1%	
Circuit # 6	JH-3	JK-6	996K +/- .4%	
Circuit # 7	JH-4	JA-5	996K +/- .4%	
Circuit # 8	JH-5	JB-5	996K +/- .4%	
Circuit # 9	JH-6	JC-5	996K +/- .4%	
Circuit # 10	JH-7	JK-1	996K +/- .4%	
<b>DS3800NHVL</b>	<b>Point A</b>	<b>Point B</b>	<b>Value</b>	
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%	
<b>DS3800NHVE</b>	<b>Point A</b>	<b>Point B</b>	<b>Value</b>	<b>Point B</b>
Circuit # 1	JA-5	JA-2	20K +/- .2%	Bergs:BJ1-BJ5 to H Pos
Circuit # 2	JA-3	JA-2		
Circuit # 3	JA-6	JA-2		
Circuit # 4	JA-7	JA-2		
Circuit # 5	JA-4	JA-2		
Circuit # 1	JA-5	JA-2	10K +/- .1%	Bergs:BJ1-BJ5 to L Pos
Circuit # 2	JA-3	JA-2		
Circuit # 3	JA-6	JA-2		

Circuit # 4	JA-7	JA-2		
Circuit # 5	JA-4	JA-2		
Circuit # 1	JM1	JA4	996K +/- .4%	Jumper J1 to JH1
Circuit # 2	JN1	JA5		Jumper J2 to JH2
Circuit # 3	JP1	JA6		Jumper J3 to JH3
Circuit # 4	JQ1	JA3		Jumper J4 to JH4
Circuit # 5	JR1	JA7		Jumper J5 to JH5
Circuit # 1	JM1	JA4	498K +/- .2%	Jumper J1 to JL1
Circuit # 2	JN1	JA5		Jumper J2 to JL2
Circuit # 3	JP1	JA6		Jumper J3 to JL3
Circuit # 4	JQ1	JA3		Jumper J4 to JL4
Circuit # 5	JR1	JA7		Jumper J5 to JL5
	<b>TABLE 1</b>			

**6.2.1.1** Using the DMM verify the resistor values in table 1.

## **6.2.2 Attenuator Resistor Test (Voltage) NHVA**

**6.2.2.1** To test the attenuator resistors, 10.000VDC+/- 1 mv is input with the polarity indicated and the output is read from output pin listed to JT (COM).

IN (+)	IN (-)	Output	Nom. Voltage	Max. Range
JD2-1	JD2-6	JB-1	+31.9 mv	+31.7 to +32.2 mv
		JA-27	+31.9 mv	+31.7 to +32.2 mv
		JB-6	-63.8 mv	-63.4 to -64.2 mv
JD2-6	JD2-11	JB-6	+63.8 mv	+ 63.4 to +64.2 mv
		JB-17	-31.9 mv	-31.7 to -32.2 mv
		JA-28	-31.9 mv	-31.7 to -32.2 mv
JD2-11	JD2-1	JB-1	-47.9 mv	-47.5 to -48.2 mv
		JA-27	-47.9 mv	-47.5 to -48.2 mv
		JB-17	+47.9 mv	+47.5 to +48.2 mv
		JA-28	+47.9 mv	+47.5 to +48.2 mv

JD1-1	JD1-7	JB-10	+47.8 mv	+47.5 to + 48.1 mv
		JA-32	+47.8 mv	+47.5 to +48.1 mv
		JB-13	-47.8 mv	-47.5 to –48.2 mv
		JA-29	-47.8 mv	-47.5 to –48.1 mv

### 6.2.3 Attenuator Resistor Test (Voltage) NHVB

**6.2.3.1** To test the attenuator resistors, 10.000VDC+/- 1 mv is input with the polarity indicated and the output is read from output pin listed to JT (COM).

IN (+)	IN (-)	Output	Nom. Voltage	Max. Range
JD2-1	JD2-11	JA-28	-61.2 mv	-58.3 to –64.1 mv
		JA-17	+30.8 mv	+29.1 to +32.1 mv
		JA-27	+30.8 mv	+29.1 to +32.1 mv
JD2-6	JD2-11	JA-19	+45.8 mv	+ 44.1 to +47.7 mv
		JA-28	-45.8 mv	-44.1 to -47.7 mv
JD2-11	JD2-1	JA-28	+61.2 mv	+53.3 to +64.1 mv
		JA-27	-30.8 mv	-29.1 to –32.1 mv
		JA-17	-30.8 mv	-29.1 to –32.1 mv
JD1-1	JD1-7	JA-23	+45.9 mv	+44.8 to +47.0 mv
		JA-21	-45.9 mv	-44.8 to –47.0 mv
		JA-32	+45.9 mv	+44.8 to + 47.0 mv
		JA-29	-45.9 mv	-44.8 to –47.0 mv

**6.2.4 CT INPUT TEST: (NHVG)**

(Caution: Do not leave power applied for extended period for this test: 1-2 seconds)

**6.2.4.1** Connect a voltmeter from JA34 (+) to JA33 (ACOM).

Apply +22VDC thru a 10 ohm 10 watt resistor to JC1 with the low side connected to JC2. The voltage at JA34 should go to +16.4 +/- .5VDC. Reverse input polarity and the output at JA34 should be the same. Remove power.

**6.2.4.2** Move (+) input to JC4 and low side to JC3 and apply +22VDC. JA34 should go to +16.4 +/- .5VDC Reverse input polarity and JA34 should still read +16.4 +/- .5VDC. Remove input power.**6.2.5 CT INPUT TEST: (NHVA, NHVB)****6.2.5.1** Connect a 28-ohm 2W resistor across the daughter board terminals 1A and ACOM. Connect a scope across the resistor. Apply an isolated 6.3VAC (USE AN ISOLATION TRANSFORMER WITH THE VARIAC ) to JC-1-JC-6. See a full wave waveform of only positive peaks approx. 7.7volts high.**6.2.5.2** Move the AC input to JC-2 – JC-3 and see the same waveform.**6.2.5.3** Move the AC input to JC-4 – JC-5 and see the same waveform. Disconnect the input, resistor and scope.**6.2.5.4 CT CLAMP TEST: (NHVA)****6.2.5.4.1** Apply +28V through a 180 ohm 2 watt resistor to JA34 (+) and JA30 (-). The voltage at JA34 (+) to JA30 (com) must be 16V +/- 2V.



**6.2.5.5 CT CLAMP TEST: (NHVB)**

**6.2.5.5.1** Apply +28V through a 180 ohm 2 watt resistor to JA34 (+) and JA20 (-). The voltage at JA34 (+) to JA20 (com) must be 16V +/- 2V.

**6.2.5.6 Neon Lamp Test**

**6.2.5.7** Connect the AC line cord per table 2 and apply power to check each neon. Neon glows dimly on 120 VAC.

<b>DS3800NHVA</b>	<b>Point A</b>	<b>Point B</b>	<b>Neon</b>
Circuit # 1	JL-2	JE-2	P1
Circuit # 2	JM-2	JF-3	P2
Circuit # 3	JN-4	JG-4	P3
Circuit # 4	JP-2	JH-1	N1
Circuit # 5	JR-1	JJ-3	N2
Circuit # 6	JS-7	JK-3	N3
<b>DS3800NHVK &amp; N</b>	<b>Point A</b>	<b>Point B</b>	<b>Neon</b>
Circuit # 1	JB-1	JB-7	DS1
Circuit # 2	JB-7	JC-8	DS2

<b>DS3800NHVB</b>	<b>Point A</b>	<b>Point B</b>	<b>Neon</b>
Circuit # 1	JE-8	JE-2	DS1
Circuit # 2	JF-8	JF-3	DS-3
Circuit # 3	JG-8	JG-2	DS-5
Circuit # 4	JH-8	JH-1	DS-2
Circuit # 5	JJ-8	JJ-3	DS-4
Circuit # 6	JK-8	JK-3	DS-6

DS3800NHVM	Point A	Point B	Neon
Circuit # 1	JA-5	JA-10	P1
Circuit # 2	JB-5	JB-10	P2
Circuit # 3	JC-5	JC-10	P3
Circuit # 4	JD-8	JD-3	P4
Circuit # 5	JE-8	JE-3	P5
Circuit # 6	JF-8	JF-3	P6

Table 2

### 6.2.6 Temperature Sensor test ( NHVG )

**6.2.6.1** Apply N15 (-15+/- .1VDC) to JA18 with ACOM to JA31. Wait 2 or 3 minutes for the sensors to stabilize, then measure the test room ambient temperature near the card under test with a test thermometer (+/- ½ degree C.) Determine the calibration setpoint from Table 1 and adjust R2 until the voltage at JA16 is within +/- .010VDC of the setpoint value. NOTE: M1 AND M2

Temp. Range From	Temp. Range TO	Cal. Setpoint
18°C (64.4°F)	19°C (66.1°F)	-3.980 VDC
19°C (66.2°F)	20°C (67.9°F)	-3.995 VDC
20°C (68.0°F)	21°C (69.7°F)	-4.008 VDC
21°C (69.8°F)	22°C (71.5°F)	-4.022 VDC
22°C (71.6°F)	23°C (73.3°F)	-4.035 VDC
23°C (73.4°F)	24°C (75.1°F)	-4.049 VDC
24°C (75.2°F)	25°C (76.9°F)	-4.063 VDC
25°C (77.0°F)	26°C (78.7°F)	-4.078 VDC
26°C (78.8°F)	27°C (80.5°F)	-4.090 VDC
27°C (80.6°F)	28°C (82.3°F)	-4.104 VDC

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Table 2A

MUST BE SHIELDED FROM ALL AIR DRAFTS TO  
INSURE PROPER CALIBRATION. ALSO VERIFY  
M1 AND M2 ARE MOUNTED CORRECTLY PER  
DS3800NHVG SH. 6BB.

**6.2.6.2** Adjust R3 for 0 +/- .005VDC between JA15 and JA16.

Connect a 1K +/- 1% resistor from JA17 to JA 18. Wait 2  
minutes for sensors to settle.

**6.2.6.3** Read the voltage between JA15 and JA16 for .27 +/-  
.05VDC. Remove power and connections.

**6.2.7 Firing Circuit & LED Test**

**6.2.7.1** For the specific model being tested, use the information  
in table 3 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.

**6.2.7.2** Using the information in table 3, probe each of the  
circuits positive input with the power supply common  
and verify that the LED for each circuit illuminates to  
full brightness.

6.2.7.3 TABLE 3

<b>DS3800NHVA</b>	<b>SCR Box COM</b>	<b>SCR Box NEG</b>	<b>Scope +</b>	<b>Scope -</b>	<b>28 VDC +</b>	<b>Notes</b>
Circuit # 1	JA-3	JA-22	JL-3	JL-2	JA-1	1,2
Circuit # 2	JA-3	JA-4	JE-1	JE-2	JA-1	1,2
Circuit # 3	JA-3	JA-24	JM-1	JM-2	JA-1	1,2
Circuit # 4	JA-3	JA-6	JF-1	JF-3	JA-1	1,2
Circuit # 5	JA-3	JA-26	JN-5	JN-4	JA-1	1,2
Circuit # 6	JA-3	JA-8	JG-3	JG-4	JA-1	1,2
Circuit # 7	JA-3	JA-16	JP-3	JP-2	JA-1	1,2
Circuit # 8	JA-3	JA-10	JH-2	JH-1	JA-1	1,2
Circuit # 9	JA-3	JA-18	JR-2	JR-1	JA-1	1,2
Circuit # 10	JA-3	JA-12	JJ-1	JJ-3	JA-1	1,2
Circuit # 11	JA-3	JA-20	JS-8	JS-7	JA-1	1,2
Circuit # 12	JA-3	JA-14	JK-2	JK-3	JA-1	1,2
<b>DS3800NHVB</b>	<b>SCR Box COM</b>	<b>SCR Box NEG</b>	<b>Scope +</b>	<b>Scope -</b>	<b>28 VDC +</b>	<b>Notes</b>
Circuit # 1	JA-3	JA-4	JE-1	JE-2	JA-1	1
Circuit # 2	JA-3	JA-6	JF-1	JF-3	JA-1	1
Circuit # 3	JA-3	JA-8	JG-3	JG-2	JA-1	1
Circuit # 4	JA-3	JA-10	JH-2	JH-1	JA-1	1
Circuit # 5	JA-3	JA-12	JJ-1	JJ-3	JA-1	1
Circuit # 6	JA-3	JA-14	JK-2	JK-3	JA-1	1

<b>DS3800NHVK &amp; DS3800NHVN</b>	<b>SCR Box COM</b>	<b>SCR Box NEG</b>	<b>Scope +</b>	<b>Scope -</b>	<b>28 VDC +</b>	<b>Notes</b>
Circuit # 1	JA-19	JA-20	JD-2	JD-1	JA-13 or 14	1
Circuit # 2	JA-17	JA-18	JE-8	JE-7	JA-13 or 14	1
Circuit # 3	JA-2	JA-1	JH-8	JH-7	JA-13 or 14	1
Circuit # 4	JA-3	JA-4	JK-2	JK-1	JA-13 or 14	1

DS3800NHVG	SCR Box COM	SCR Box NEG	Scope +	Scope -	28 VDC +	Notes
Circuit # 1	JA-3	JA-4	JE-1	JE-2	JA-1	1,2
Circuit # 2	JA-5	JA-6	JF-1	JF-3	JA-1	1,2
Circuit # 3	JA-7	JA-8	JG-3	JG-2	JA-1	1,2
Circuit # 4	JA-10	JA-9	JH-2	JH-1	JA-1	1,2
Circuit # 5	JA-12	JA-11	JJ-1	JJ-3	JA-1	1,2
Circuit # 6	JA-14	JA-13	JK-2	JK-3	JA-1	1,2

DS3800NHVJ	SCR Box COM	SCR Box NEG	Scope +	Scope -	28 VDC +	Notes
Circuit # 1	JA-11	JA-12	JC-1	JC-2	JA-9	1,2
Circuit # 2	JA-13	JA-14	JD-1	JD-2	JA-9	1,2
Circuit # 3	JA-15	JA-16	JE-1	JE-2	JA-9	1,2

DS3800NHVM	SCR Box COM	SCR Box NEG	Scope +	Scope -	28 VDC +	Notes
Circuit # 1	JH-11	JH-12	JA-12	JA-11	JH-10	1,2
Circuit # 2	JH-13	JH-14	JB-12	JB-11	JH-10	1,2
Circuit # 3	JH-15	JH-16	JC-12	JC-11	JH-10	1,2
Circuit # 4	JH-17	JH-18	JD-1	JD-2	JH-10	1,2
Circuit # 5	JH-19	JH-20	JE-1	JE-2	JH-10	1,2
Circuit # 6	JH-21	JH-20	JF-1	JF-2	JH-10	1,2
Circuit # 7	JH-23	JH-24	JD-9	JD-10	JH-10	1,2
Circuit # 8	JH-25	JH-26	JE-9	JE-10	JH-10	1,2
Circuit # 9	JH-27	JH-28	JF-9	JF-10	JH-10	1,2
Circuit # 10	JH-29	JH-30	JA-4	JA-3	JH-10	1,2
Circuit # 11	JH-31	JH-32	JB-4	JB-3	JH-10	1,2
Circuit # 12	JH-33	JH-34	JC-4	JC-3	JH-10	1,2

<b>DS3800NHVL</b>	<b>SCR Box COM</b>	<b>SCR Box NEG</b>	<b>Scope +</b>	<b>Scope -</b>	<b>28 VDC +</b>	<b>Notes</b>
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
<b>DS3800NHVE</b>	<b>SCR Box COM</b>	<b>SCR Box NEG</b>	<b>Scope +</b>	<b>Scope -</b>	<b>28 VDC +</b>	<b>Notes</b>
Circuit # 1	JA-11	JA-12	JC-1	JC-2	JA-9	1,2
Circuit # 2	JA-13	JA-14	JD-1	JD-3	JA-9	1,2
Circuit # 3	JA-15	JA-16	JE-3	JE-4	JA-9	1,2
Circuit # 4	JA-17	JA-18	JF-3	JF-5	JA-9	1,2
Circuit # 5	JA-19	JA-20	JG-2	JG-5	JA-9	1,2
Circuit # 6	JA-21	JA-22	JJ-4	JJ-5	JA-9	1,2

**TABLE**

**3**

**Note 1:** NHVK, NHVG, NHVB, NHVJ, NHVL, NHVA, and NHVE amplitude is 17 volts. NHVN and NHVM, output is 12 Volts.

**Note 2:** 28 VDC COM to SCR Box COM

### **6.3 \*\*\*TEST COMPLETE \*\*\* SEAL POTS ON TEMP SENSOR**

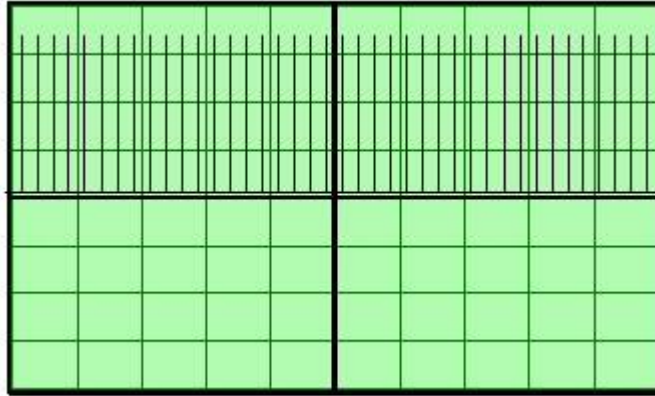
#### **CARDS**

## **7. NOTES**

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

8. Oscilloscope Verification Examples:

**Fig. 1**



**DS3800NHVK**

**17V Peak 5V/Div**

**.5ms/Div**