



GE Energy

Functional Testing Specification

Parts & Repair Services
Louisville, KY

LOU-GED-531X123PCHACG1

Test Procedure for a 531X123PCHACG1 power interface card.

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	G. Chandler	8/17/2011
B	Added step 7.1.1, to replace all 15 ohm, 2 watt, WW resistors on all revisions, if applicable.	C. Wade	11/22/2013
C			

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PREPARED BY G. Chandler	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL <i>Charlie Wade</i>
DATE 8/17/2011	DATE	DATE	DATE 8/18/2011

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1. SCOPE

1.1 This is a functional testing procedure for a 531X123PCHACG1 power interface 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 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 site specific SRA's 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, cracked, or loosely connected

4.2.1.2 Terminal strips / connectors - broken or cracked

4.2.1.3 Components - visually damaged

4.2.1.4 Capacitors - bloated or leaking

4.2.1.5 Solder joints - damaged or cold

4.2.1.6 Circuit board - burned or de-laminated

4.2.1.7 Printed wire runs / Traces - 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	H188947	120VAC Center Tap Transformer
1		Variac
1		Firing Box
1		Fluke 85 Multimeter or Equivalent
1		Scope

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6. Modifications/Upgrades

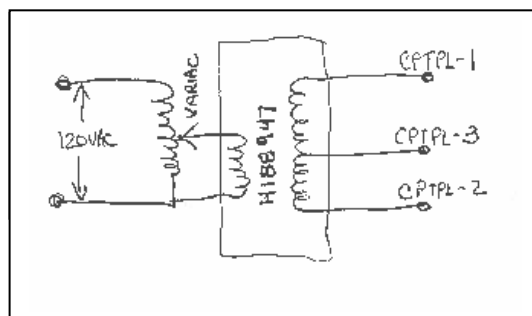
6.1 Check Orange Book for any modifications or upgrades.

7. Testing Process

7.1 Setup

- 7.1.1 Before testing card, replace all 15 ohm, 2 watt, WW resistors, part number is 104X123CC009. In past repairs, we have found half to have broken or cracked resistors.
- 7.1.2 Place jumper JP1 in the 1-2 position.
- 7.1.3 Connect circuit below and adjust variac for 37VAC at CPTPL-1 to CPTPL-2. (120VAC input adjustable by the variac for 37VAC output).

7.1.4



7.2 Testing Procedure

- 7.2.1 Verify +24VDC (+-5%) between test points +24V and PCOM.
- 7.2.2 Verify 0VDC (<0.2VDC) at test points FP1 & FP2 with common at PCOM.
- 7.2.3 Move Jumper JP1 to the 2-3 position.
- 7.2.4 Verify +24VDC (+-5%) at test points FP1 and FP2 with common at PCOM.

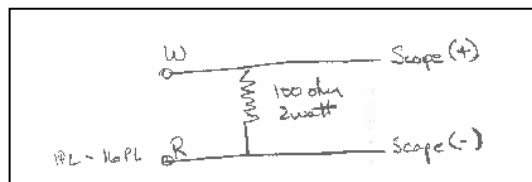
7.2.5 With the UUT, in the condition of the previous step, and using table 1, apply a neg non-isolated pulse from the SCR firing box to the UUT.

Input Table 1 Output

Neg	Com	Scope(+)	Scope (-)
5SAPL-1	PCOM	1PL-W	1PL-R
5SAPL-3	PCOM	2PL-W	2PL-R
5SAPL-5	PCOM	3PL-W	3PL-R
5SAPL-7	PCOM	4PL-W	4PL-R
5SAPL-9	PCOM	5PL-W	5PL-R
5SAPL-10	PCOM	6PL-W	6PL-R
5SBPL-1	PCOM	11PL-W	11PL-R
5SBPL-3	PCOM	12PL-W	12PL-R
5SBPL-5	PCOM	13PL-W	13PL-R
5SBPL-7	PCOM	14PL-W	14PL-R
5SBPL-9	PCOM	15PL-W	15PL-R
5SBPL-10	PCOM	16PL-W	16PL-R

7.2.5.1 Set the scope at 5VP/div at 2ms and trigger to line. Each output connector (1PL-16PL) at the time of measurement should have a 100 ohm 2 watt resistor load connected between R&W.

7.2.5.2 At the outputs you should observe a 13V P-P (+-10%) pos pulse train, which is variable with the SCR firing control box.



7.2.6 Disconnect all power and remove connections from the UUT.

7.2.7 Continue to next page.

7.2.8 Using an ohmmeter and table 2 verify < 1 ohm resistance between points.

Table 2				
From	TO	TO	TO	Expected Value
1-5PL	1-5APL	10-5FAPL	10-5FBPL	<1 ohm from any point
2-5PL	2-5APL	TP-DFP		<1 ohm from any point
3-5PL	3-5APL	9-5FAPL	9-5FBPL	<1 ohm from any point
4-5PL	4-5APL	TP-PCOM		<1 ohm from any point
5-5PL	5-5APL	7-5FAPL	7-5FBPL	<1 ohm from any point
6-5PL	6-5APL	TP-DFP		<1 ohm from any point
7-5PL	7-5APL	5-5FAPL	5-5FBPL	<1 ohm from any point
8-5PL	8-5APL	TP-PCOM		<1 ohm from any point
9-5PL	9-5APL	3-5FAPL	3-5FBPL	<1 ohm from any point
10-5PL	10-5APL	TP-DFP		<1 ohm from any point
11-5PL	11-5APL	1-5FAPL	1-5FBPL	<1 ohm from any point
12-5PL	12-5APL	TP-PCOM		<1 ohm from any point
13-5PL	13-5APL	1-5RAPL	1-5RBPL	<1 ohm from any point
14-5PL	14-5APL	TP-DFP		<1 ohm from any point
15-5PL	15-5APL	3-5RAPL	3-5RBPL	<1 ohm from any point
16-5PL	16-5APL	TP-PCOM		<1 ohm from any point
17-5PL	17-5APL	5-5RAPL	5-5RBPL	<1 ohm from any point
18-5PL	18-5APL	TP-DFP		<1 ohm from any point
19-5PL	19-5APL	7-5RAPL	7-5RBPL	<1 ohm from any point
20-5PL	20-5APL	TP-PCOM		<1 ohm from any point
21-5PL	21-5APL	9-5RAPL	9-5RBPL	<1 ohm from any point
22-5PL	22-5APL	TP-DFP		<1 ohm from any point
23-5PL	23-5APL	10-5RAPL	10-5RBPL	<1 ohm from any point
24-5PL	24-5APL	TP-PCOM		<1 ohm from any point
25	3.378M ohm (+-5%) to spade P2			
26	3.378M ohm (+-5%) to spade P1			

7.3 ***TEST COMPLETE***

8. Note

8.1 None at this time.

9. Attachments

9.1 None at this time.