g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-IS200TVBA**

Test Procedure for an IS200TVBA Mark VIe Vibration Input Card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release. Covers versions H1 and H2 of this card.	J. Francis	01/10/2014
B	Added notes and procedures for H2 version, Step 6.1.1	M. Starling	10/16/2014
C			

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DATE	**DATE**	**DATE**	**DATE**
01/10/2014	10/16/2014		6/10/2014

1. SCOPE

1.1 This is a functional testing procedure for an **IS200TVBAH1A & H2A** MARK Vie Vibration Input Cards.

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	H188922	Mark Vie Simplex Test Rack with computer
1	DMM	Fluke Digital Multi-meter or equal

6. TESTING PROCESS

6.1 Testing Procedure

Note: The following tests assume you are familiar with using ToolboxST. You will need to perform downloads at least twice for UUT to be setup fully. You should also wait for approximately 3 minutes in between downloads for rack and UUT to reboot.

6.1.1 If you are testing an **H2** version perform the following checks at **6.1.1.1** before installing unit in rack. If testing an **H1** version skip ahead to **6.1.2**.

6.1.1.1 Check the following connections for 10K Ohms resistance +/- 1%.

6.1.1.1.1 **JA1-3** TO **P1** CENTER PIN, **JA1-7** TO **P2** CENTER PIN,
JA1-11 TO **P3** CENTER PIN, **JA1-23** TO **P4** CENTER PIN,
JB1-3 TO **P5** CENTER PIN, **JB1-7** TO **P6** CENTER PIN,
JB1-11 TO **P7** CENTER PIN, **JB1-23** TO **P8** CENTER PIN,
JC1-3 TO **P9** CENTER PIN, **JC1-7** TO **P10** CENTER PIN,
JC1-11 TO **P11** CENTER PIN, **JC1-23** TO **P12** CENTER PIN,
JD1-1 TO **P13** CENTER PIN, **JD1-5** TO **P14** CENTER PIN,

6.1.1.1.2 With one meter lead connected to **JD1-3**, check for 10K Ohms resistance +/- 1% at each BNC shield, **P1** THROUGH **P14**.

6.1.2 Turn “OFF” SW6 on JPDD card, just above NTRON Switches on front of test rack.

6.1.3 Remove test card (GOLD card) from test rack. Set all jumpers on UUT to default as indicated by the silk screen. Install UUT into test rack.

6.1.4 Turn “ON” SW6 on JPDD card. Wait for test rack to fully boot, approximately 3 minutes.

6.1.5 Both LED’s at TOP (furthest away from connector) on all 3 WNPS cards should illuminate.

6.1.6 All N24Vxx LED’s should also illuminate. For G1/H1/S1 version of the TVBA card LED labeled N24V14 will not illuminate as this circuit was not installed on the G1/H1/S1 version of this card.

6.1.7 Open **ToolboxST** and open “**UCSAH1A_Simplex_Vle**” by double-clicking on it and click the “ONLINE” button in the toolbar.

6.1.8 Click on the “HARDWARE” tab, then click on the “+” sign next to the “Simplex” group under the “Distributed IO” icon. This will show you all of the modules setup in the rack. The PVIB module should have a red circle with an X through it, indicating no communications.

6.1.9 Double click on the "X" on the PVIB Module. This will bring up a configuration box to enter the serial number of the UUT and hardware form. Click "OK" button when done.

6.1.10 From the menu, Download Controller Setup by going to **Device->Download->Download Wizard.** Follow instructions in dialog boxes that follow.

Note: The following portions of the test assume you are familiar with using ToolboxST. You will need to perform downloads at least twice for UUT to be setup fully. You should also wait for approximately 3 minutes in between downloads for rack and UUT to reboot.

6.1.11 Click on the "GAP 9 - 12" tab to the right of the PVIB icon. Should display the "LIVE VALUES" in green.

6.1.12 PULL open clamp labeled "GAP9-12" open. Values should turn RED and display greater than 99. PUSH closed same clamp, values should turn green and display less than 88.

6.1.13 Click on the "GAP 4 - 8" tab to the right of the PVIB icon. Should display the "LIVE VALUES" in green.

6.1.14 PULL open clamp labeled "GAP 4- 8" open. Values should turn RED and display greater than 99. PUSH closed same clamp, values should turn green and display less than 88.

6.1.15 Click on the "GAP 1 - 3" tab to the right of the PVIB icon. Should display the "LIVE VALUES" in green.

6.1.16 PULL open clamp labeled "GAP 1 - 3" open. Values should turn RED and display greater than 99. PUSH closed same clamp, values should turn green and display less than 88.

6.1.17 Click on the "KPH" tab to the right of the PVIB icon. Should display the "LIVE VALUES" in green.

6.1.18 PULL open clamp labeled "GAP9-12" open. Values should turn RED and display greater than 99. PUSH closed same clamp, values should turn green and display less than 88.

6.1.19 Clicking through all of the tabs should show all GREEN (OK) live values.

6.1.20 If you are testing an **H2** version perform the following checks. If testing an **H1** version skip ahead to **6.1.21**

6.1.20.1 Make sure the 4 yellow LEDs on connectors installed on JA1, JB1 and JC1, and the 2 yellow LEDs on connector JD1 are flashing.

6.1.20.2 Close the gap on GAP1-3. Verify the first 3 yellow LEDs on connector JA1 are off. Open the gap and verify all LEDs are on.

6.1.20.3 Close the gap on GAP4-8. Verify the bottom yellow LED on connector JA1 and all 4 LEDs on JB1 are off. Open the gap and verify all LEDs are on.

6.1.20.4 Close the gap on GAP9-12. Verify all yellow LEDs on connectors JC1 and JD1 off. Open the gap and verify all LEDs are on.

6.1.20.5 Place GAP1-3, GAP4-8 and GAP9-12 gaps within normal operating range. All yellow LEDs should be flashing. In PVIB diagnostics screen verify alarms will clear.

6.1.21 Let unit run online for at least 48 hours.

6.1.22 After testing has been completed successfully, remove UUT, reinstall GOLD card, and verify successfully operation in ToolboxST.

6.1.23 Verify card ID chip information prior to completing job.

6.2 ***TEST COMPLETE ***

7. NOTES

7.1 Live View screens will be forthcoming and tests will be amended as needed.

8. ATTACHMENTS

8.1 None at this time.