

GE Energy

## Functional Testing Specification

## Parts & Repair Services Louisville, KY

**LOU-GED-IS200TFBA**

## Test Procedure for a IS200TFBAH1A

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

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<b>LOU-GED-IS200TFBA</b> <b>REV. A</b>	<b>g</b>  <b>GE Energy</b> <i>Parts &amp; Repair Services</i> <i>Louisville, KY</i>	<b>Page 2 of 6</b>
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## 1. SCOPE

1.1 This is a functional testing procedure for an IS200TFBAH1A 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		Fluke 87 or equal
1	H188632	DS2020EXPS Test Fixture
1		TDS2012B O-scope or equal
1	H188973	Precision Power Supply for 0-5 VDC

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## 6. Modifications/Upgrades

- 6.1** Check Orange Book for any upgrades. IS200TFBAH1ACB is the highest level that can be achieved with an ABB fab board. Any higher revision will require an ACC fab. Highest level at the time of writing this procedure is a IS200TFBAH1ACD.

## 7. Testing Process

### 7.1 Setup

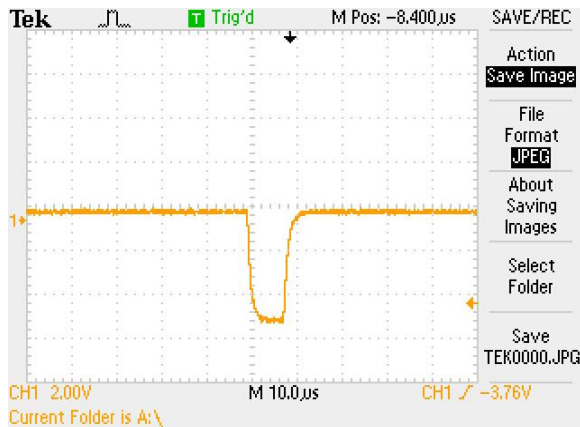
- 7.1.1** Gather all listed equipment and make ready for use as instructed in the Testing Procedure. You will need several Banana / Clip leads and Banana / Banana leads.



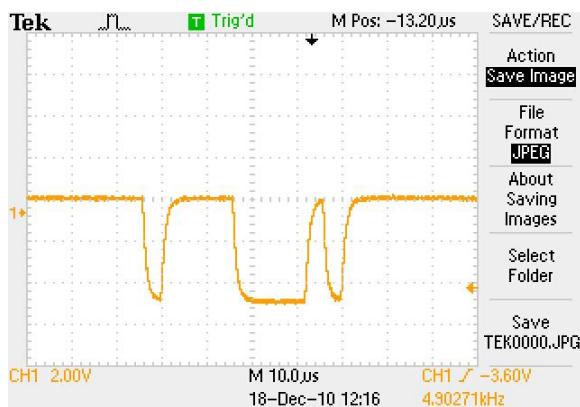
**Note: The precision power supply listed for this test (H188973) is capable of +/- 0-10 VDC. You will only need +0-5 VDC for this test. Make sure the polarity switch is set to the + position.**

### 7.2 Testing Procedure

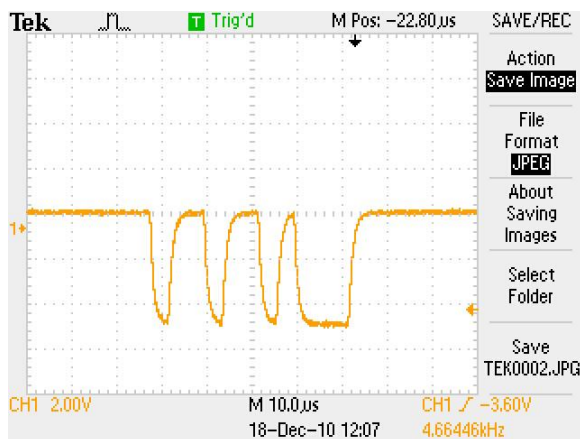
- 7.2.1** Check for continuity between J1-1 and J2-1, between J1-2 and J2-2 and between J1-3 and J2-3.
- 7.2.2** Connect GDPA cards 1GDPL and 2GDPL outputs to the TFBA cards J1 and J2 connectors. Apply power to the GDPA.
- 7.2.3** Check that the Green DS1 LED is on and the Fiber-optic transmitter is illuminated.
- 7.2.4** Check for 5 VDC between DCOM (TP5) and P5 (TP4).
- 7.2.5** Check for unregulated positive 15 VDC between DCOM (TP5) and P15 (TP6) ~ +16 VDC.
- 7.2.6** Check for unregulated negative 15 VDC between DCOM (TP5) and N15 (TP7) ~ -16 VDC.
- 7.2.7** Check for 5 VDC between DCOM (TP5) and J3-1. Check for 5 VDC between DCOM (TP5) and J3-3.
- 7.2.8** Connect commons of O-scope, power supply and DMM to DCOM (TP5) on TFBA card.
- 7.2.9** Connect positive side of O-scope to OTX (TP3).
- 7.2.10** Connect positive side of power supply to J3-2. Tie J3-4 to DCOM.
- 7.2.11** Connect positive side of DMM to TMP1 (TP1). TPM1 should mirror the power supply output. If it does not, check for problems in the related Op-amp circuits.
- 7.2.12** Set the voltage as follows and observe the following waveforms.



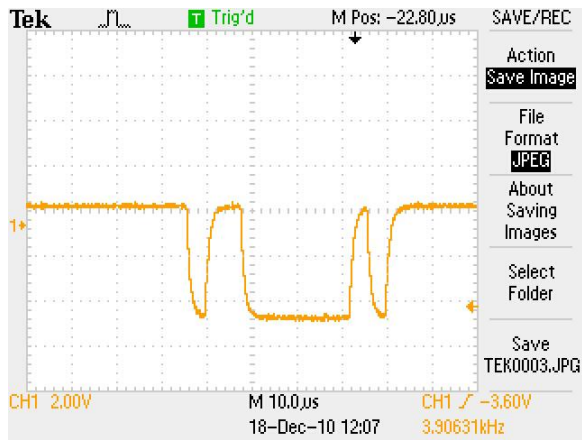
0.0 VDC



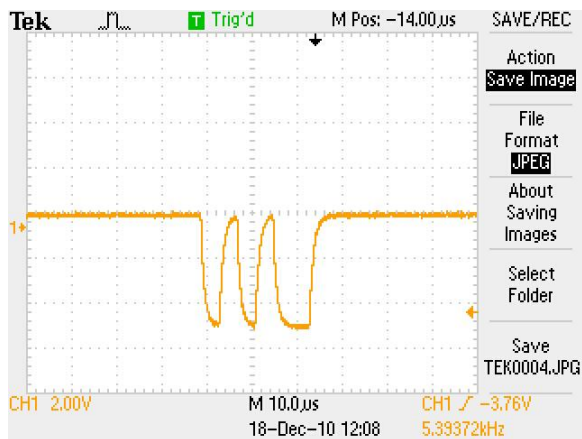
0.6 VDC



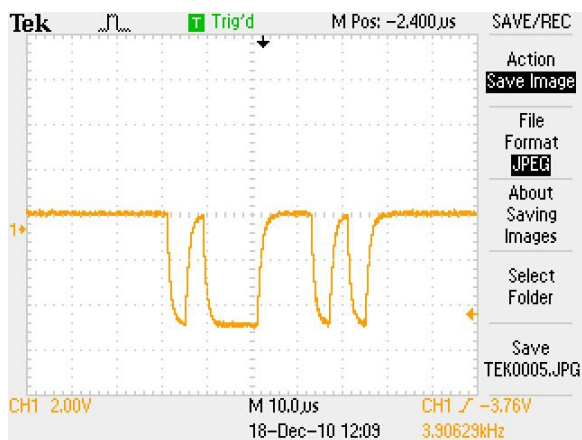
1.5 VDC



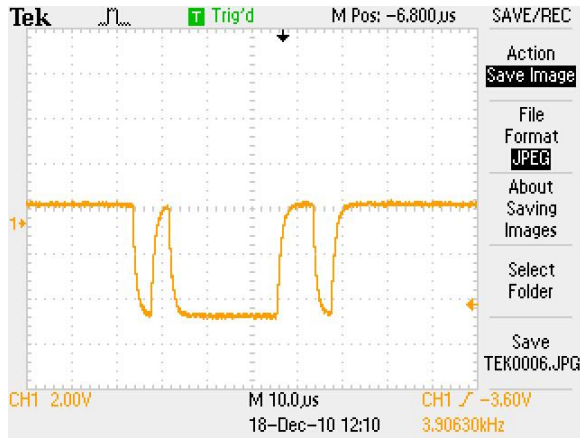
2.5 VDC



3.5 VDC



4.5 VDC



5.0VDC

**7.2.13** Connect positive side of power supply to J3-4. Tie J3-2 to DCOM.

**7.2.14** Connect positive side of DMM to TMP2 (TP2). TPM2 should mirror the power supply output. If it does not, check for problems in the related Op-amp circuits.

**7.2.15** Repeat the above test steps. Checking the voltage and observing the waveforms.

**7.3 Post Testing Burn-in** Required ☐ Yes ☒ No



**Note:** Although post test burn-in is not required, it is a good idea to allow the unit to adequately warm up during monitoring and checking for stability.

**7.4 \*\*\*TEST COMPLETE\*\*\***

## 8. Notes

**8.1** We have the firmware for this card on the server shopfloor/firmware/44s/770225/002/a

## 9. Attachments

**9.1** None at this time.