g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-IS200ISBBG1**

Test Procedure for a printed circuit board.

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	M. Starling	6/04/2009
B	Updated procedure for new RS232 to RS422 Converter	M. Starling	1/29/2010
C			

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
M Starling			Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
6/4/2009			6/9/2009

1. SCOPE

1.1 This is a functional testing procedure for a IS200ISBBH1A 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 None at this time

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	REF NUM	DESCRIPTION
1		Fluke DMM
1		30 Volt Bench Power Supply
1	H188796	ISBB Test Box and Cables
1	H188854	ICP 7520A RS-232 to RS-422 Converter

6. TESTING PROCESS

6.1 Setup

6.1.1 Set bench power supply for 24 volts DC and power down.

6.1.2 Connect grey 9-pin serial cable from the COM port on your bench PC, to the RS-232 connection on the 7520A RS-422 converter.

6.1.3 Connect the orange 10-pin connector to the opposite side of the 7520A RS-422 converter.

6.1.4 Connect red Ethernet cable to P1 on UUT.

6.1.5 Connect switchbox to P2 and P3 of UUT, set switch to TEST 1 position.

6.1.6 Set jumper JP1 on UUT to the 2-3 position.

6.1.7 Connect Red(+) and Black(-) banana jack connectors to the power supply set up in step 6.1.1. Be sure to hook up with proper polarity.

6.2 Testing Procedure

6.2.1 Turn on 24 Volt DC power supply. You should hear the relays click and the ACTIVE (DS2) LED should illuminate.

6.2.2 Open HyperTerminal; J:\IS2\IS200I\ISBB\HyperTerminal Test\ISBB.ht

6.2.3 On HyperTerminal, make sure you are connected.

6.2.4 Using your computer keypad type anything, random letters and numbers, a message, whatever. What's important is that whatever you type appears on the HyperTerminal screen, and that it is legible. Make sure the text contains no strange or partial characters. Note: If you do not get a return, either the card is defective or there is a communications problem with Com Port, cable or the converter. There is a green 10-pin connector, connected in parallel with the orange 10-pin connector attached to the 7520A RS-422 converter. This connector is set up for data loopback. Use this connector to verify the RS-422 link to HyperTerminal. DC power should be on to perform loopback tests.

6.2.5 Disconnect and close HyperTerminal, you are finished with it, if everything has passed to this point.

6.2.6 Remove red Ethernet cable from P1 connector.

6.2.7 Place switchbox in the TEST 2 position.

6.2.8 Move jumper JP1 to the 1-2 position. When you change the jumper you will hear the relay click, and the green ACTIVE (DS2) LED will go out.

6.2.9 On the switchbox, use your DMM and make sure you have a closed condition between P2-3 and P3-3. You should also have a closed condition between P2-6 and P3-6. If the continuity reading is higher than .2 Ohms after subtracting lead resistance, then relays should be replaced.

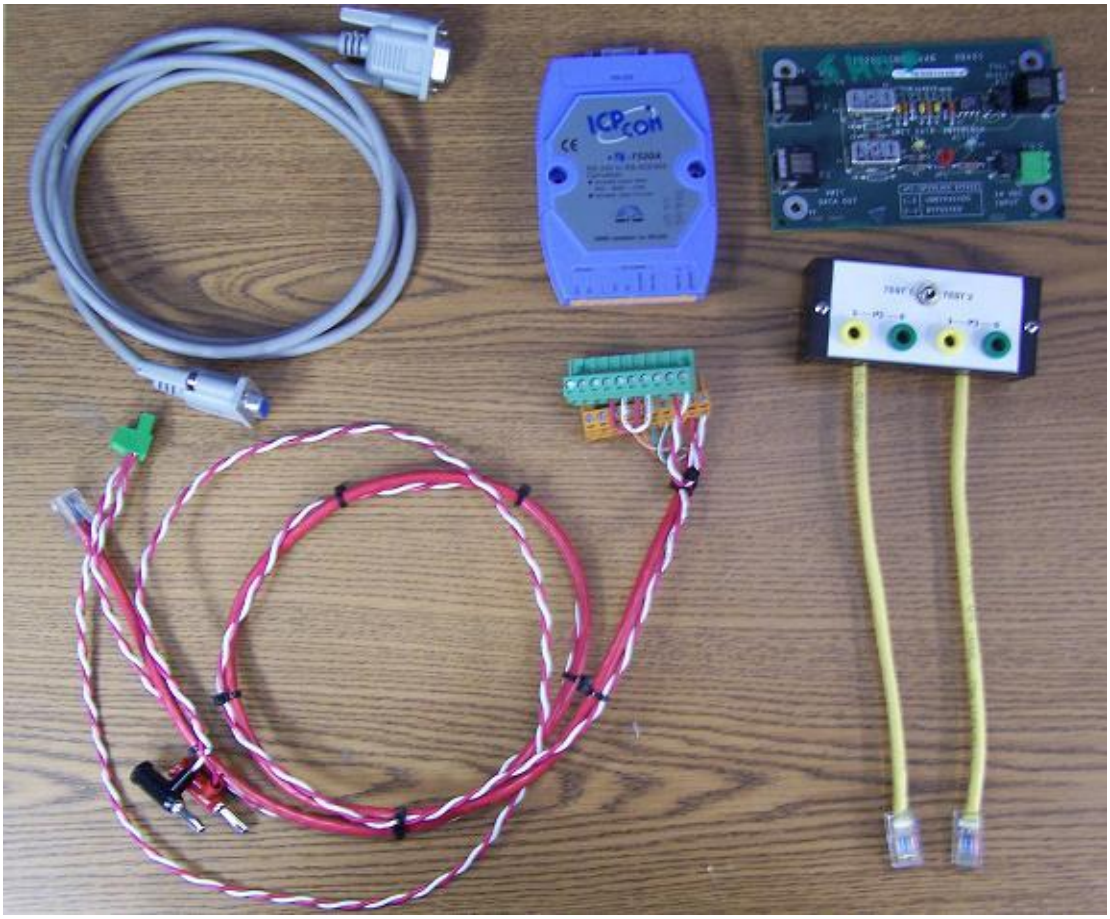
6.2.10 Move jumper JP1 back to the 2-3 position. The green ACTIVE (DS2) LED will come back on. Check for an open condition between P2-3 and P3-3. You should also have an open condition between P2-6 and P3-6.

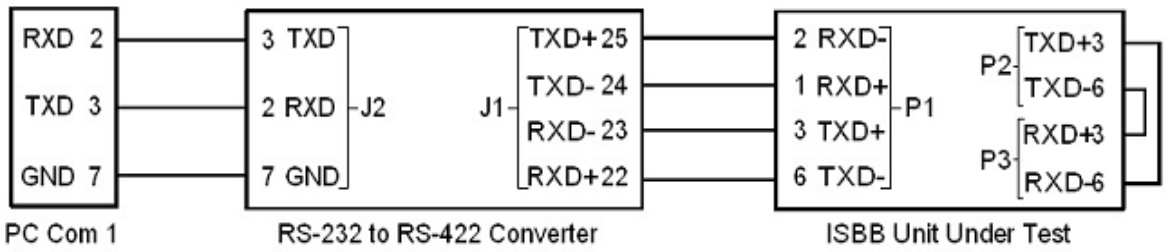
6.2.11 Remove power and all cables.

6.3 ******TEST COMPLETE ******

7. ATTACHMENTS

7.1 These pieces are required for test.





Test Communications Routing

8. NOTES

8.1 None at this time?