g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-IS215ACLx**

Test Procedure for a IS215ACLA or ACLI SBS processor card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	R. Duvall	11/05/09
B	Minor wording changes for new computer in fixture, step 6.2.32	F. Howard	8/25/2012
C			

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
Robert Duvall	F. Howard		Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
11/05/09	8/25/2012		11/5/2009

1. SCOPE

1.1 This is a functional testing procedure for a IS215ACLx SBS processor 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 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 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, 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	H188666	Innovation Series Drive test rack w/DSPX
1		Test PC loaded with Toolbox and Hyperterminal
1		DB9 to mini 9 serial cable
1		Ethernet crossover cable

6. TESTING PROCESS

6.1 Setup

6.1.1 UUT (Unit Under Test) connections

6.1.1.1 Short JP1 pins 1 & 2 for at least two minutes before installing card into test rack.

6.1.1.2 Write down serial number of card.

6.1.1.3 Install card into test rack with power off.

6.1.1.4 Attach serial cable from PC com:1 to card com:1.

6.1.1.5 Attach UDH (Unit Data Highway) Ethernet cable to ENET port of card.

6.1.1.6 Attach Ethernet crossover cable between INSYNC A & B connectors of card.

6.1.2 1.1.10Attach PC com:2 to DSPX HS serial port via adapter.

6.2 Testing Procedure

6.2.1 Open Hyperterm session on PC. (Com:1, 9600,N,8,1) and connect.

6.2.2 Open Hyperterm session on PC. (Com:2, 19200,N,8,1) and connect.

6.2.3 Apply power to test rack and observe both Hyperterm windows.

6.2.4 **CMOS clear and reload**

6.2.5 On Com:1 window (ACLI)

6.2.6 Verify the following items appear at the beginning of the session.

6.2.6.1 "INVALID CMOS CHECKSUM! USING DEFAULTS"

6.2.6.2 "Low RAM : 640K"

6.2.6.3 "Extended RAM : 007M"

6.2.7 **Serial ID verification**

6.2.8 On Com:2 window (DSPX)

6.2.8.1 Verify that the UUT card is listed and the serial number matches card being tested.

6.2.9 Disconnect the terminal session with the UUT but do not close the window.

6.2.10 **Serial Communications and flash load via SLOADER**

6.2.11 Open the GE Serial Loader program.

6.2.12 Select the "IS215ACLI" platform.

6.2.13 Set the TCP/IP settings as follows:

6.2.13.1 Computer Name: SIM60

6.2.13.2 IP Address: 192.168.101.60

6.2.13.3 Subnet Mask: 255.255.255.0

6.2.13.4 Default Gateway: Enabled

6.2.13.5 Router IP: 192.168.101.60

6.2.14 Check the following commands and select “Start Commands”

6.2.14.1 Configure TCP/IP

6.2.14.2 Load Flash File System

6.2.14.3 Display Summary Information

6.2.15 Cycle power on the UUT when prompted.

6.2.16 Verify the “Active” and “Flash” LEDs illuminate on the UUT during the load procedure.

6.2.16.1 Note: This step will take 5-10 minutes

6.2.17 When prompted, cycle power on the UUT and acknowledge the message box on the display.

6.2.18 Verify “OK” and “Active” LEDs are lit on UUT and “Status” LEDs are scrolling two at a time in a clockwise pattern.

6.2.19 Minimize the SLOADER application and open a DOS Command Prompt window.

6.2.20 **Ethernet connection and file transfer**

6.2.21 From the DOS command prompt, enter the following commands:

6.2.21.1 cd\

6.2.21.2 ping 192.168.101.60

6.2.21.3 (verify a reply was received)

6.2.21.4 ftp 192.168.101.60

6.2.21.5 (this will start the FTP application and make a connection to the UUT via the Ethernet port)

6.2.21.6 Enter user name: root

6.2.21.7 Password: ge

6.2.21.8 (prompt should change to ftp>)

6.2.21.9 type binary

6.2.21.10 (this will set transfer mode to binary)

6.2.21.11 send c:\ist.1

6.2.21.12 (this transfers the INSYNC loop test program from the PC to the UUT)

6.2.21.13 quit

6.2.22 Minimize the DOS command window.

6.2.23 **ISBUS interface testing**

6.2.24 Open the Com:1 Hyperterm window and reconnect to the UUT.

6.2.25 Cycle power on the UUT and observe Hyperterm windows.

6.2.26 Verify that there were no errors reported on either Hyperterm window.

6.2.27 At the Login prompt enter: “root”

6.2.28 At the Password prompt enter: “ge”

6.2.29 Verify prompt changes to “#” – You are now logged into the UUT.

6.2.30 Type “ls” to list files on the UUT.

6.2.31 Verify there is a file named “ist” listed.

6.2.32 Type “ist.1 –x” (space between 1 and the dash) and watch LEDs on INSYNC connectors to verify all four illuminate.

6.2.33 Check display for any failures in the loop test.

6.2.34 **Ram Testing**

6.2.35 Type “nvtest” to test UUT ram. (This test takes 12 minutes)

6.2.36 Verify no errors were displayed during test.

6.2.37 Cycle power on UUT.

6.2.38 **GE Toolbox test – Active Comm, DP ram, VXI Interface**

6.2.39 Open the GE “Toolbox” application and load the following file:

6.2.40 ACL60

6.2.41 If opening for the first time, enter the following information

- **6.2.41.1** Select 4: Full Drive Access
- **6.2.41.2** Password = gesalem9
- **6.2.41.3** User ID = your initials

6.2.42 Once the ACL60 window opens, perform the following operation to download to the UUT:

- **6.2.42.1** Select Device/Download/Product code (Runtime)
- **6.2.42.2** Filename = select.dnl
- **6.2.42.3** Only the following should be selected:
  - **6.2.42.3.1** Monitor
  - **6.2.42.3.2** Utility
  - **6.2.42.3.3** ACL
- **6.2.42.4** Select OK

6.2.43 File will download to UUT

6.2.44 Cycle power when prompted for REBOOT

6.2.45 Select YES and YES at the two prompts

6.2.46 After reboot select:

- **6.2.46.1** Device/Online
- **6.2.46.2** Select Device/Download/Application Code

6.2.47 Verify all boxes are checked.

6.2.48 When complete, verify a single status LED is cycling in a counter clockwise pattern.

6.2.49 If toolbox shows minor differences then cycle power.

6.2.50 Reconnect Toolbox and verify green EQUAL in bottom right corner.

6.2.51 Let run online for at least 10 minutes before shutting down.

6.3 ***TEST COMPLETE ***

7. NOTES

7.1 None at this time.

8. ATTACHMENTS

8.1 None at this time.