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

Test Procedure for an IS2020DDIA or IC752SPL011 Digital Display Interface

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	John Madden	4-24-07
B	Defined correct path to open program in section 6.2.2.	Frank Howard	8/9/2007
C	Added Comment about J6 of the interface plate	C. Wade	4/7/2009

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
John Madden			Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
April 24, 2007			8/9/2007

1. SCOPE

1.1 This is a functional testing procedure for an Innovation Series Digital Display 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 N:\Design Folders\Innovation\Innovation DDI\Test screen print.doc

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		Fluke 87 DMM (or Equivalent)
1		Cable tester (if unit came in with cables)
1		Innovation Series Drive test station PC, with Control Systems Solutions Toolbox loaded on it

6. TESTING PROCESS

6.1 Setup

Note: Follow the testing Procedure 6.2 for setup instructions as you go. These devices may also be listed under other model numbers than the ones listed at the beginning of this test. If you come across other listings, please add them to this test and let the quality rep know so we can correctly catalog this test to them.

6.2 Testing Procedure

6.2.1 Plug one end of the PS2 serial cable into PL6 (could also be J6 of the interface plate), and the other end into J10 of the Innovation Series drive backplane. If drive is powered up, you should see the unit under test light up and go through it's "POST" startup routine, indicating it's flash revision, the GE meatball logo, and eventually a four horizontal graphs indicating motor amps, voltage, power, etc. The unit must have its screen backlit to pass this test. Many times that's all that's wrong with these units, but since we have no replacement parts as of the writing of this test, the best you can hope for is to find a unit in Legacy stock to rob a display board from. "Current policy forbids reuse of any used parts that have already been in the field with another customer to be installed into freshly repaired units". Salem QA rejects are exempt, because technically they are new units. But, these units are getting scarce. Pretty much, if the unit fails to light up, or doesn't boot up properly and reach the motor status bar graph screen, there isn't much you can do with it except maybe replace it with a complete (FUNCTIONING) unit from Legacy stock. Or RLR it.

6.2.2 If the unit powers up correctly, the next step is to flash it. On the PC, in GE Control Systems Solutions Toolbox program, open up the SIM 60 file. As of this date there are two SIM 60 listed, but only one opens into INNOVATION SERIES CONTROLLER, which is the one you want. Once there, click on "**Device**", then "**Download to Drive**", and then "**DDI Runtime**". It will prompt you to be sure you want to download, click "Yes". If the unit takes the flash and reboots properly, you have succeeded. It should return once again to the bar graph screen indicating motor conditions. Refer to the document listed in step 3.1.1 for a visual of what you're looking for, or use the screen print attached below.

6.2.3 If the unit came in with any cables, they need to be tested to be sure that they aren't the reason the unit was sent in in the first place. For the null modem cable that attaches to

the rear of the faceplate, simply remove it from the faceplate and plug it into a cable tester that is capable of reading a 9 pin D-shell connector cable. You will notice that pins 2 & 3 cross over from one end to the other, as well as pins 7 & 8. This is typical. Pins 4 & 6 should have no connection, and pins 1, 5, & 9 will connect straight through. As for the PS2 "mouse" style cable that the unit uses for power and communications, the best way to check it is to use it for your testing in step 6.1.1. It is possible for someone to send a unit in that had a bad serial cable, and you may find a "no trouble found" with the unit itself, only because the serial cable was bad.

6.2.4 Be sure to re-install the 9-pin D-shell null modem cable to the faceplate as it was found. You are finished.

6.3 Post Testing Burn-in **Required** ___ **Yes** _**X**_ **No**

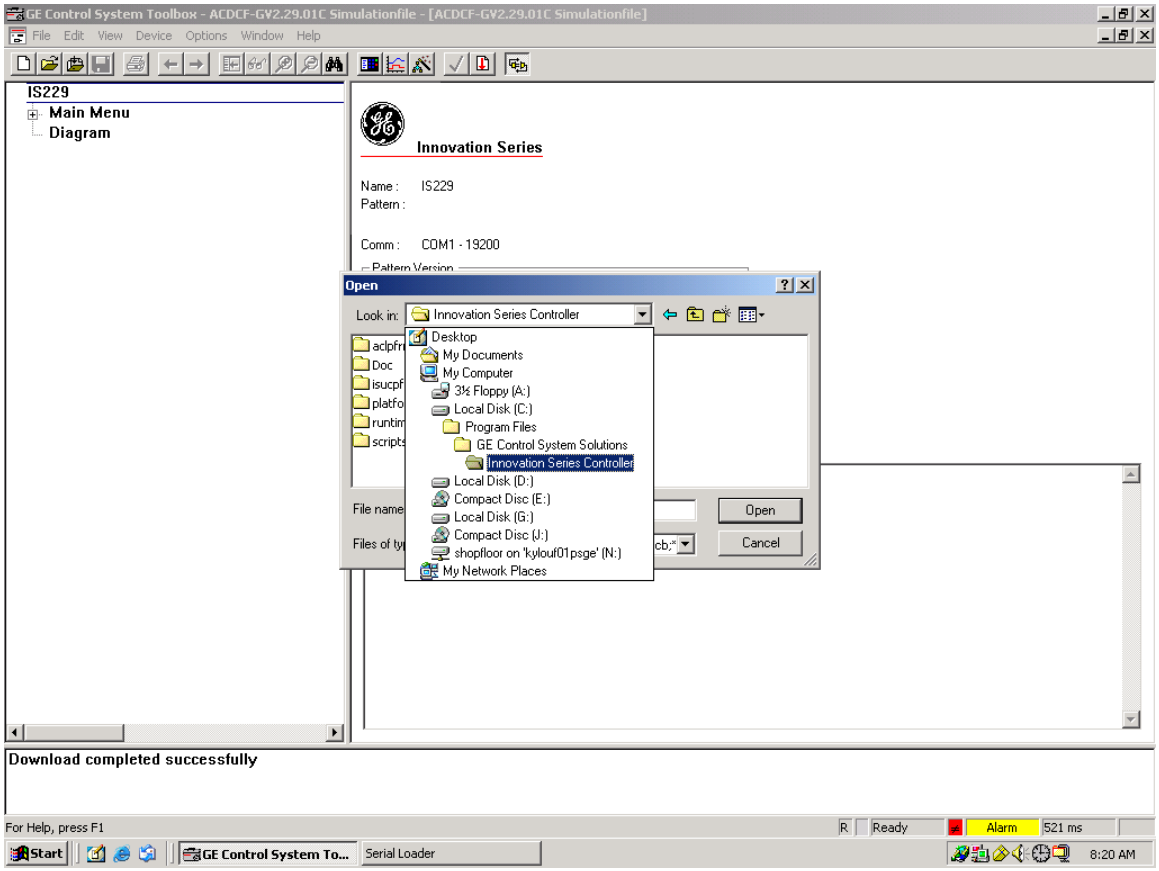
6.4 ***TEST COMPLETE ***

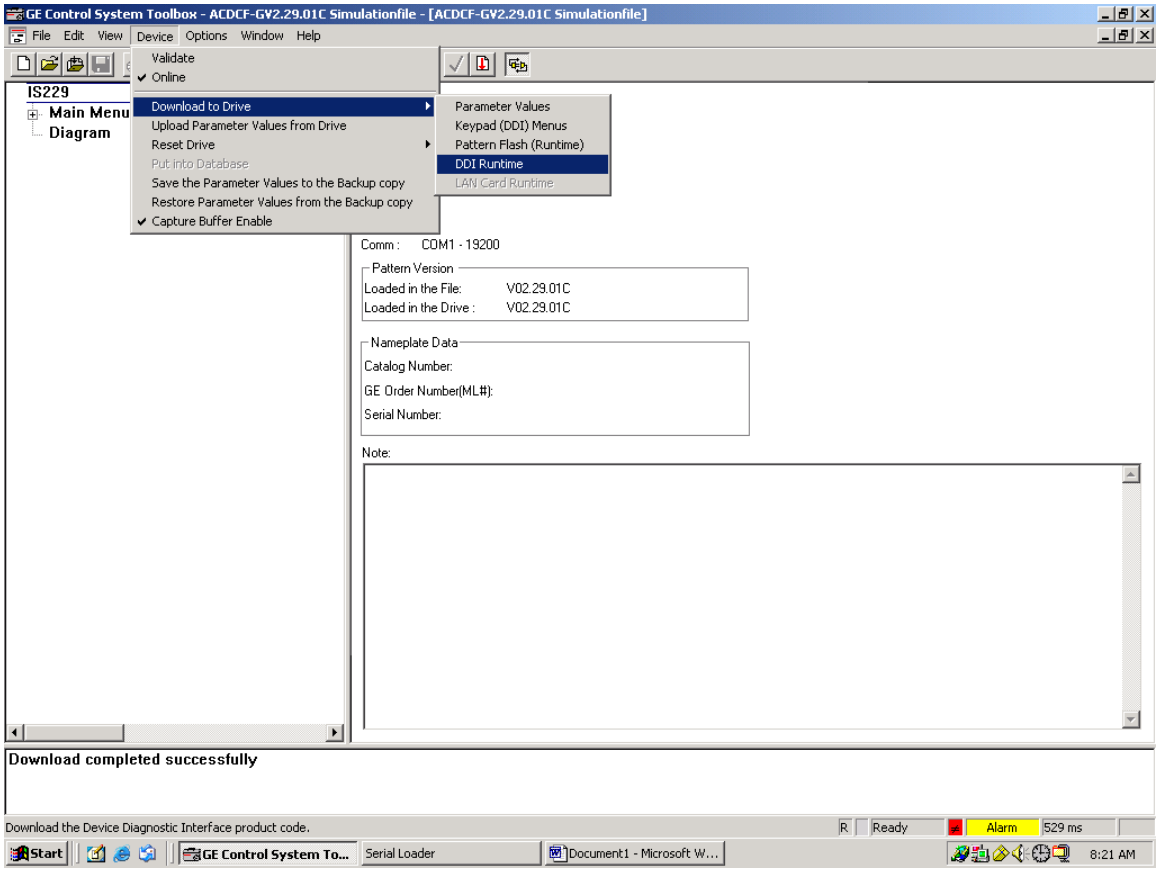
7. NOTES

7.1 None at this time

8. ATTACHMENTS

8.1 See Screen Print Below:





8.2