g GE Energy	**Functional Testing Specification**
Parts & Repair Operation ***Louisville, KY***	**LOU-GED-DS200DMCB**

Test Procedure for a DS200/215DMCB IOS Main Control Card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	JLM	2/22/2005
B	Update Test Procedure Section 6.2, added picture of test fixture, & change header.	C. Wade	8/31/2006
C	Added the location of a Malta Freeport Terminal PDF file for downloading to their cards from a MM2000 computer.	C. Wade	4/5/2007
D	Added note on RAM chips U10 & U11 (Do not use Samsung RAM current replacement is Toshiba).	C. Wade	12/12/2007
E	Added special note on the DLAN replacement of U40.	C. Wade	3/18/2009
F	Rewrote and consolidated entire procedure due to redundant tests performed.	J. Barton	7/23/2010
G	Added picture of test fixture	J. Barton	12/4/2010

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DATE	**DATE**	**DATE**	**DATE**
2/22/2005	7/26/2010	12/4/2010	2-24-2005

Functional test procedure for a DS200/215DMCB IOS Main Control Card

1. SCOPE

1.1 This is a functional testing procedure for a DS200/215DMCB IOS Main Control 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 GEH-6122 IOS+/IEI INTELLIGENT OPERATOR STATION Instructions
3.1.2 GEH-5999 IOS 2000 HARDWARE & DIAGNOSTICS Manual
3.1.3 DS200DMCB Schematics and ECN's

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 or cracked
4.2.1.2 Terminal strips / connectors broken or cracked
4.2.1.3 Loose wires
4.2.1.4 Components visually damaged
4.2.1.5 Capacitors leaking
4.2.1.6 Solder joints damaged or cold
4.2.1.7 Circuit board burned or de-laminated
4.2.1.8 Printed wire runs 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	H188629	IOS-2 Test Station
1	H033779	ATE (ATE1-B)
1	H188594	ATE DMCB FIXTURE
1		MM2000 CPU

6. Pre-Test Inspection:

6.1 Special Note: **Replace RAM chips in location's U10 & U11 if the vendor is Samsung, current replacement is Toshiba. 12/11/2007.**

6.2 Special Note: If DLAN hybrid does not have plastic support, insure that it is replaced with the new unit, IS205DLANH1A.

6.2.1 Check the board to make sure it is of the latest revision, G1AKG. There were several revisions released by the factory that pertained to reliability, and if your unit under test isn't at the latest revision, go ahead and upgrade it. Attached to this procedure are the ECN's related to each step of the upgrade process. Do this regardless of whether it's a Carol Stream board or another customer.

6.3 Test Procedure:

6.3.1 Test the unit on the ATE1-B system, following all instructions provided by the system.

6.3.2 Install the unit under test into the IOS rack. Be sure all ribbon cable connections including Genius module are in place, as well as the serial data cable for the PC, the ARCPL connector, and the power wires and SWA1 & SWA2 wires.

6.3.2.1 Make sure jumpers are as follows: JP1-2, 6-7, & 11-12 are ON; JP3-4, 8, 13, 14-18, & 22 are1-2; JP21 is on the 512 setting, and as for JP9-11, JP10 being ON means that pins of JP9 and JP11 closest to U42 will be connected together. Let the jumper for JP11 sit on the remaining post connected to nothing for the time being.

6.3.3 Install Firmware # **DS200DMCBF1CJC (**This is the latest revision for factory firmware, and will be used to test I/O and Genius communications.)

6.3.4 On the PC sitting at the IOS Test Station, call up the program under the icon "IOS Menu". The first "IOS/IEI Menu Utility" menu to come up should have "**Card/Core Test & Load**"

6.3.5 Another menu will appear, the Test Utility Menu, select option #6 "**Download Core IOS**". [enter], You will be prompted with a series of questions, to which you will answer the following:

6.3.5.1 "Is the core model", type **Y** (for yes), hit [enter],

6.3.5.1.1 "ENTER DIXXX", type **DI123,** [enter],

6.3.5.2 next series of questions answer:

6.3.5.2.1 Is DMCB a G1 Card?

6.3.5.2.1.1 Y, [enter],

6.3.5.2.2 Is this a no button unit?

6.3.5.2.2.1 N [enter],

6.3.5.2.3 Is this a 32 push button unit?

6.3.5.2.3.1 Y, [enter],

6.3.5.2.4 Is a Genius card present?

6.3.5.2.4.1 Y, [enter],

6.3.5.2.5 Is a IOEA card present?

6.3.5.2.5.1 N, [enter],

6.3.5.2.6 Is HARDWARD CONFIGURATION OK?

6.3.5.2.6.1 Y, [enter], [enter], [enter], You should then observe the download transmission appear across the screen. If it comes back with "**SERIAL TIMEOUT**", you have a problem with the serial comm., which has previously tested on the ATE test.

6.3.5.2.6.2 Unit with go into a software reset

6.3.6 Observe the default displays of "IOS" and the 10 sec. count down displays

6.3.7 Testing of the ARCNET, (DLAN was tested on ATE test)

6.3.8 Set up IOS for DROP 13

6.3.8.1 Reset unit and press both "ENTER" and "CLR" on IOS push buttons,

6.3.8.2 A Drop menu will appear, by letting go of the "ENTER" button while still depressing the "CLR" button hit the "INCREASE" / "INC" button till "13 is displayed.

6.3.8.3 Let go of the "CLR" button and hit the "ENTER" button, the IOS will display a Ser Download Req with a blinking "Drop 13" displayed. (Unit is now ready for a download to drop 13.)

6.3.9 Switch to the "MM2000" - MALTA FREE PORT COMPUTER", which is running a lynix-based software. (Follow any commands needed to get to boot screen, may need to go from diag. listing by exiting screen with File and exit)
Note: more info can be found at n:\IOS\IOS mm2000 info.pdf

6.3.10 A blue screen with "username:" should appear.

6.3.10.1 Enter "tim" [enter],

6.3.11 Password: "savorani" [enter]

6.3.12 System should come up with a “Crane Tool Management Screen” screen

6.3.13 Arrow over to “Tool Interface Manager”

6.3.13.1 [enter]

6.3.14 arrow over to “IOS”

6.3.14.1 [enter]

6.3.15 arrow down to “Download to IOS”

6.3.15.1.1 [enter]

6.3.15.2 at “Direction”

6.3.15.2.1 hit F2 and [enter],

6.3.15.2.2 should display “t”

6.3.15.2.3 arrow down to “System”

6.3.15.2.4 hit F2 and [enter], should display “NKB607”

6.3.15.2.5 arrow down to “Network”

6.3.15.2.6 hit F2 and [enter], should display “DLANP” (this is the ARCNET TEST)

6.3.15.2.7 arrow down to “IOS Device”

6.3.15.2.8 hit F2 and [enter],

6.3.15.2.9 arrow down to “BSIOS 3004 Drop 13…” [enter]

6.3.15.2.10 should display IOS Device “BSIOS” Drop number “13”… and file bsios.h01

6.3.15.2.11 for the next options just by-pass by hitting [enter], [enter], [enter], system will go to a black screen and start downloading to IOS, IOS should go to a off-line state.

6.3.15.2.11.1 If a “Download Aborted” message comes up, verify IOS is set for DROP 13 by following step: 6.5.8 – 6.5.8.3

6.3.15.2.12 After a completed load, display should read “Emergency Stop” and BSIOS FLT

6.3.15.2.13 [enter] will return computer back to the “Download IOS screen”.

6.3.16 If unit came in as a **DS215DMCBG1AZZ01A or B, or *G1AZZ03A or B**, then it is to go out with **CJC** rev. firmware.

6.3.17 If unit came in with the suffix **G1AZZ02A or B**, and/or it has (DOS) at the end of the model description, then it is to go out with **BBD** rev. firmware.

6.3.18 Recomplete steps 6.5.4 thru 6.5.6

6.4 ***TEST COMPLETE ***

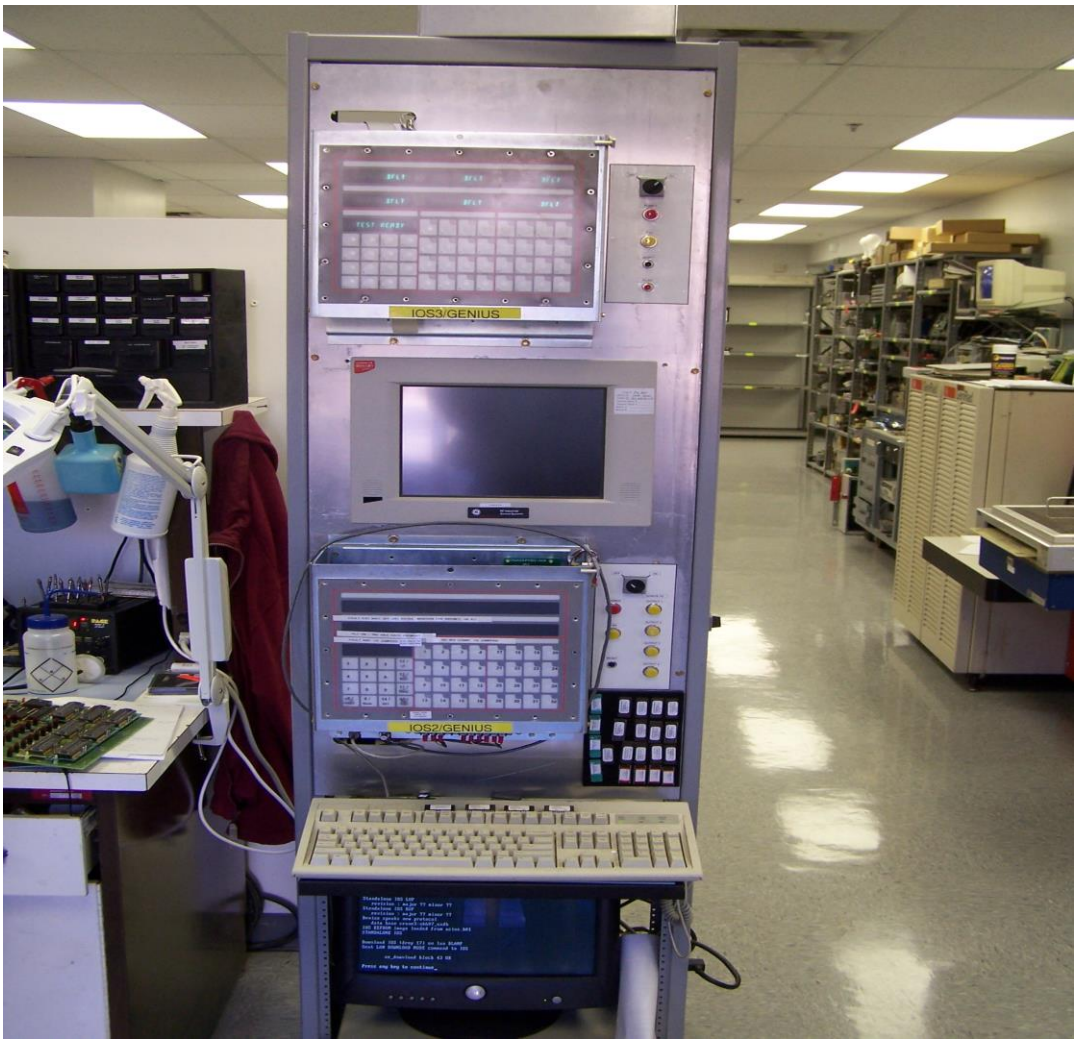
7. NOTES

7.1 To Shutdown the MALTA computer (not necessary but helpful info) At the command prompt “system vt001/>” type “reboot –ah” [enter], (takes about a minute to complete, unit is ready to shutdown)

7.2 For Malta Freeport Terminal Cards see MM2000.pdf sheet in test instruction directory.

8. Attachments

8.1



IOS-2 Genius Test Fixture
H188629