g		GE Energy	Funct	ional Testing Sp	ecification	
Parts & Repair Services Louisville, KY				LOU-GED-278A2181VRP3		
Test Procedure for a ISA Bus card used in a HMI Computer						
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LOU-GED-278A2181VRP3
REV. A

GE Energy
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Page 2 of 5

1. SCOPE

1.1 This is a functional testing procedure for a ISA Bus card used in a HMI Computer.

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	H190117	Mark V Turbine Control Panel
1	H190115	HMI Computer ISA Bus (Gas Version) Machine

g

LOU-GED-278A2181VRP3 REV. A

GE Energy Parts & Repair Services Louisville, KY Page 3 of 5

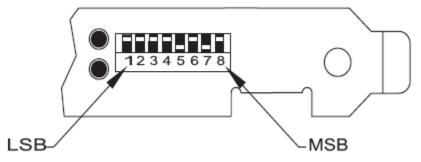
6. <u>Testing Process</u>

6.1 Setup

6.1.1 NOTE: This procedure is to test the ARCNET ISA Card in an ALREADY configured HMI (H190115 Computer) with settings and drivers for the card pre-installed.

6.2 Testing

- 6.2.1 Setup HMI (H190115) with monitor and keyboard
- 6.2.2 Install ISA ARCNET card 278A2181VRP3 into HMI H190115 has already been configured to handle this card. This card can be installed in any computer as long as it has an available PCI slot (If none available, simply remove one of the NIC ETHERNET cards) and can be configured to handle this card.
- **6.2.3** You can change to ANY address but there cannot be any identical address on the network. Suggest putting at address FF (with all switches in the Open position).



- **6.2.4** Above fig. card is set for address AF.
- **6.2.5** Power up HMI, Once unit has booted open A DOS prompt window
 - **6.2.5.1** Type "arcwho"
- **6.2.6** Should see this HMI with address FF (or the address you set it for)
- **6.2.7** And other nodes on the network, below, verify the LEDS also blink RX/TX

```
Microsoft(R) Vindows NT(IN)
(G) Copyright 1985-1996 Hicrosoft Corp.

C:\>arcwho

Network #1: A StageLink using device AnetDev8 with 268 reconfigurati

MY ADDRESS: 1E

NODES FOUND: F8 3F 3C

C:\>_
```

GE Energy
Parts & Repair Services
Louisville, KY

LOU-GED-278A2181VRP3 REV. A

- **6.2.8** The above screenshot is showing: 1E (GAS HMI) ARCNET address.
- **6.2.9** Your HMI "FF" will be at the reading "MY ADDRESS: FF"
- 6.2.10 Also it should read: "NODES FOUND: 1E F8 3F 3C"
 - **6.2.10.1** Where: 1E = GAS HMI
 - **6.2.10.2** F8 = STEAM HMI
 - **6.2.10.3** 3F = C CORE
 - 6.2.10.4 3C = D CORE
- **6.2.11** Verify the Mark V D core is power up and at A4 or greater.
- **6.2.12** Type "eeprom down t2 d format".
- **6.2.13** Press enter.
- **6.2.14** Type "Y" for yes.
- **6.2.15** Verify format was completed by comparing screenshot below.
- **6.2.16** Type "eeprom down t2 d user" and press enter.
- **6.2.17** Verify D core accepted the files by comparing screenshot below

g

LOU-GED-278A2181VRP3 REV. A

GE Energy Parts & Repair Services Louisville, KY

Page 5 of 5

```
Command Prompt
::\>eeprom down t2 d format
ARNING - Downloading FORMAT will lose all data in the unit's EEPROM
         including totalizer data (TOTD).
Do you wish to continue with the download? (Y or N): y
          OK - 0x01F8 bytes downloaded from file F:\UNIT2\FORMAT_B.AP1.
 FORMAT
C:\>eeprom down t2 d user
  SEQ
          OK - 0x001C bytes downloaded from file F:\UNIT2\SEQ_B.AP1
  CONST

    0x0004 bytes downloaded from file F:\UNIT2\CONST_B.AP1.

  IOCFG

    0x053F bytes downloaded from file F:\UNIT2\IOCFG_D

  UBBL
             - 0x0000 bytes downloaded from file
  HIST
             - 0x007A bytes downloaded from file
  EPA
              - 0x0012 bytes downloaded from file
                                                   F:\UNI
   MAOUT
              - 0x0004 bytes downloaded from file
           OK - 0x0000 bytes downloaded from file
   EVENT
                                                   F:\UNIT2\EUENT
              - 0x0004 bytes downloaded from file F:\UNIT2\CHNG
   CHNG
   BOI
              - 0x0000 bytes downloaded from file F:\UNIT2\BOI
            OK - 0x0000 bytes downloaded from file F:\UNIT2\TOTT
   TOTT
            OK - 0x0006 bytes downloaded from file F:\UNIT2\CBLR
   CBLR
  C:\>
```

- **6.2.18** Reboot/Reset D core and verify it comes up to A7 via SLCC screen readout.
- **6.2.19** You can open up a Cimplicity screen and also see the HMI and MkV panel or whatever network you may be connected to if desired.
- **6.2.20** Power down HMI, remove (UUT) card, and re-installed original.

6.3 Burn-in time for card

- **6.3.1** Normal burn-in for card should be one (1) hour.
- 6.3.2 All Revitalization Cards shall be burned-in for three (3) hours, check text box in SAP to determine if they fall into this category.

6.4 ***TEST COMPLETE ***

7. Notes

7.1 Reference PCI ARCNET Card FAQs, Version 1.8, dated 8/22/2003 for more information setting the PCI card for the HMI.

8. Attachments

8.1 None at this time.