g GE Industrial Systems	**Functional Testing Specification**
Renewal Services ***Louisville,KY***	**LOU–GED-4136J56**

Test Procedure for a 4136J56G0001 Card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release, re-write of Salem Procedure	D. Laemmle	3/20/03
B			
C			

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
D. Laemmle			Robert Dwall
DATE	**DATE**	**DATE**	**DATE**
3/20/03			3/20/03

Functional test procedure for a 4136J56G0001 Card

1. SCOPE

1.1 This is a functional testing procedure for a 4136J56G0001 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

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 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		Fluke 85 DMM (or Equivalent)

6. TESTING PROCESS

6.1 Setup

6.1.1 Hook up power supplies and S1-S10 per the test setup drawing. Hook up the 500 ohm resistors from pins 38 to 41 to 26v per drawing but leave the other pins open.

6.1.2 Follow the test steps and the chart, operating the switches and checking the voltages on the pins corresponding to the LED state. Frequencies are checked on the Fluke on DC hertz.

✍ **Note: When the test calls for a particular LED to be on or off, check the voltage at the pin the LED is connected to per the test drawing. Pin low – LED on. Pin high – LED off. Blinking slow or fast can be determined by watching the voltage change rate of a pin that is to be flashing slow or fast.**

6.2 Testing Procedure

6.2.1 See Attached. Follow the test steps and the test table, operating the switches and checking the voltages on the pins corresponding to the LED indicated.

6.3 ***TEST COMPLETE ***

7. NOTES

PC BOARD TEST

ASSEMBLY DRAWING 4136J56G1

PC BOARD DRAWING

SCHEMATIC DRAWING 4136J25

TEST KIT 4136J56

1.0 INSPECTION					
.1 Identification		.3 Solder/Wire		.5 Key Slot	7 & 19
.2 Comp./Conn.		.4 Temp. Cycle		.6	
				.7	

REMARKS: Added step 4.6 JAW 2/26/85

2.0 SET-UP

2.1 CONNECT UP +5, +15, +26, AND COM TO TEST KIT.

2.2 SET ALL SWITCHES OFF.

2.3 PLUG BOARD INTO TEST KIT.

HOOK UP 500 Ω RESISTORS PER DRAWING. HOOK UP SWITCHES ALSO. LEAVE OTHER WIRES OPEN. PIN LOW = LED ON PIN HIGH = LED OFF

3.0 TEST

3.1 CONNECT A 1K RESISTOR FROM COMMON TO THE FOLLOWING PINS, ONE AT A TIME. THE VOLTAGE AT EACH PIN WILL BE +.4 TO ~~+.65~~ +0.75 VDC.
PINS 5, (9), 10, 11, (12), 23, 24, 26, 28

3.2 CONNECT A 1K RESISTOR FROM COMMON TO THE FOLLOWING PINS, ONE AT A TIME. THE VOLTAGE AT EACH PIN WILL BE +.5 TO +.8 VDC.
PINS (8), (13), (14), 15. Remove resistor.

4.0 FREQUENCY ADJUST

4.1 TURN S5 ON.

4.2 TURN S7 ON, THEN OFF. ALL LEDS OUT.

4.3 TURN S6 ON, THEN OFF. LED 3 ON.

4.4 TURN S1 ON. ADJ R16 FOR 13 HZ AT PIN 32.

4.5 TURN S1 OFF. S2 ON. ADJ R15 FOR 130 HZ AT PIN 32.

4.6 TURN S5 OFF. 13 HZ AT PIN 32. TURN S5 ON.

5.0 CHANNEL CHECKS

5.1 TURN S5 OFF. S2 OFF.

SET SWITCHES PER FOLLOWING TABLE AND CHECK THAT ONLY THE LEDS CALLED FOR ARE ON, OR TURNING OFF AND ON.

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SWITCHES	LOW ON	LOW ON	BLINKING SLOW	BLINKING FAST	ON
S6 ON, THAN OFF	39 LOW L3				
S1 ON	7 LOW L2	38 LOW L3	32 VARYING L1 SLOW		
S1 OFF, S2 ON	7 L2	38 L3		32 VAR FAST L1	
S2 OFF, S3 ON	32 L1	38 L3	7 L2		
S3 OFF, S4 ON	32 L1	38 L3		7 L2	
S4 OFF	38 L3	7 + 32 GO HIGH (4.2V)			
S7 ON, THEN OFF	- NONE -	39 GOES HIGH (2.5V)			
S8 ON, THEN OFF	39 L6				
S1 ON	6 L5	39 L6	33 L4		
S1 OFF, S2 ON	6 L5	39 L6		33 L4	
S2 OFF, S3 ON	33 L4	39 L6	6 L5		
S3 OFF, S4 ON	33 L4	39 L6		6 L5	
S4 OFF	39 L6	6 + 33 GO HIGH (4.2V)			
S7 ON, THEN OFF	- NONE -	39 GOES HIGH (2.5V)			
S9 ON, THEN OFF	40 L9				
S1 ON	41 L8	40 L9	35 L7		
S1 OFF, S2 ON	41 L8	40 L9		35 L7	
S2 OFF, S3 ON	35 L7	40 L9	41 L8		
S3 OFF, S4 ON	35 L7	40 L9		41 L8	
S4 OFF	40 L9	4 + 35 GO HIGH (4.2V)			
S7 ON, THEN OFF	- NONE -	40 GOES HIGH (2.5V)			
S10 ON, THEN OFF	41 L12	1 L13			
S1 ON	29 L11	41 L12	34 L10		1 L13
S1 OFF, S2 ON	29 L11	41 L12		34 L10	1 L13
S2 OFF, S3 ON	34 L10	41 L12	29 L11		1 L13
S3 OFF, S4 ON	34 L10	41 L12		29 L11	1 L13
S4 OFF	41 L12	1 L13	29+34 GO HIGH (4.2V)		
S7 ON, THEN OFF	- NONE -	41 GOES HIGH (2.5V)			

6.0 CURRENT CHECK

6.1 READ ACROSS THE +5 VDC CURRENT TEST JACK _____ VDC