ABB	**Functional Testing Specification**
Parts & Repair Operations ***Louisville, KY***	**LOU-GED-DS3800HPTK**

Test Procedure for a control card.

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Glenn Chandler	6/19/2007
B	Added special note on solder with stab-on connectors.	C. Wade	11/19/2008
C	Added steps 6.2.5 and 6.2.6.	J. Hardin	5/26/2011
D	Modified step 6.1.2	J. Wychulis	11/9/2020

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
Glenn Chandler	Jill Hardin		Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
06/19/2007	05/26/2011		6/20/2007

1. SCOPE

1.1 This is a functional testing procedure for a HPTK 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 Shop documentation for DS3800HPTK and Tech notes by Darren Johnson dated 3/5/1997

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		28VDC Power Supply
1		70 DC Power Supply (variable)
1		Oscilloscope
1		SCR Firing Box
1		1 ohm 10 watt load resistor

6. TESTING PROCESS

Special Note: Before testing remove solder from stab on connectors and resolder connectors. This will insure a good connection at these points. Per D. Smith & C. Wade

6.1 Setup

6.1.1 See special note section 7

6.1.2 Connect PCOM (PC1), DCOM (JA2).

6.1.3 Connect +70VDC to P70.

6.1.4 Connect (-) side of 70VDC to PC1.

6.1.5 Connect +28VDC JA4.

6.1.6 Connect (-) side of 28VDC to PC1.

6.1.7 Connect firing box output (GND) to TP3.

6.1.8 Connect firing box output (NEG) to TP1.

6.1.9 Connect a 1 ohm 10W non-inductive resistor between PL1 and PC2. See picture of load in notes.

6.1.10 Connect a 27K ohm resistor between JA5 and JA4.

6.1.11 Connect oscilloscope leads across 1 ohm resistor (-) to PL1 side.

6.1.12 Connect DVM to measure DC volts (+) to JA5 (-) to PC1.

6.2 Testing Procedure

6.2.1 Apply power to card. Note: The card will make a little noise, this is normal

6.2.2 The DVM at this point should read 0VDC.

6.2.3 Slowly decrease the 70VDC supply. At approximately < 64VDC the DVM should switch from 0VDC to 28VDC. Normally it does this at around 62VDC. IF it doesn't, adjust R22 until it does. The 28VDC should return to 0VDC when the supply is returned to 70VDC.

6.2.4 Return power supplies to 70VDC. Turn on SCR firing box. Adjust scope to 5V/div and 2.5ms SEC/div. Set Trig to AC line. Observe wave form in figure 3A. CR7 should be lit.

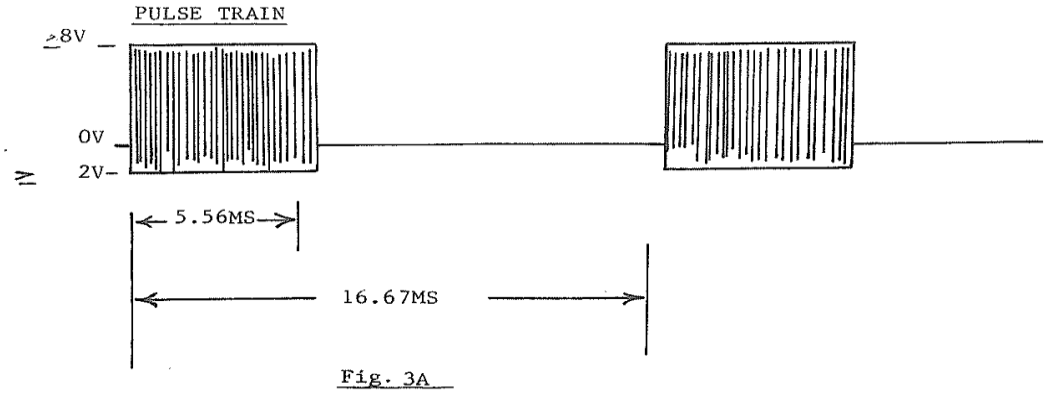


Fig. 3A

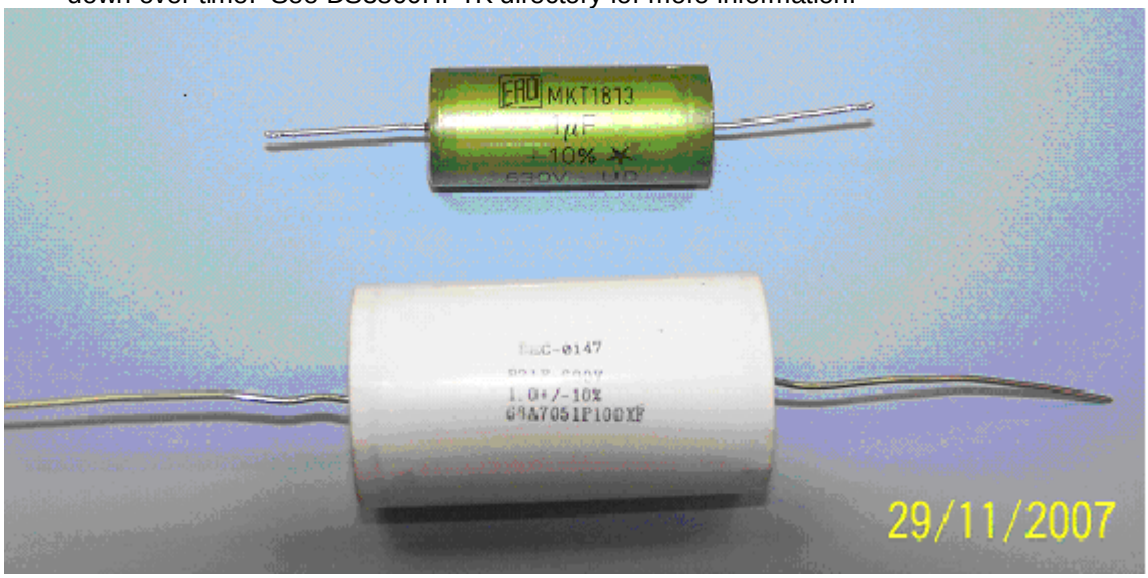
6.2.5 Power Down.

6.2.6 **Be sure to seal R22 after completion of test.**

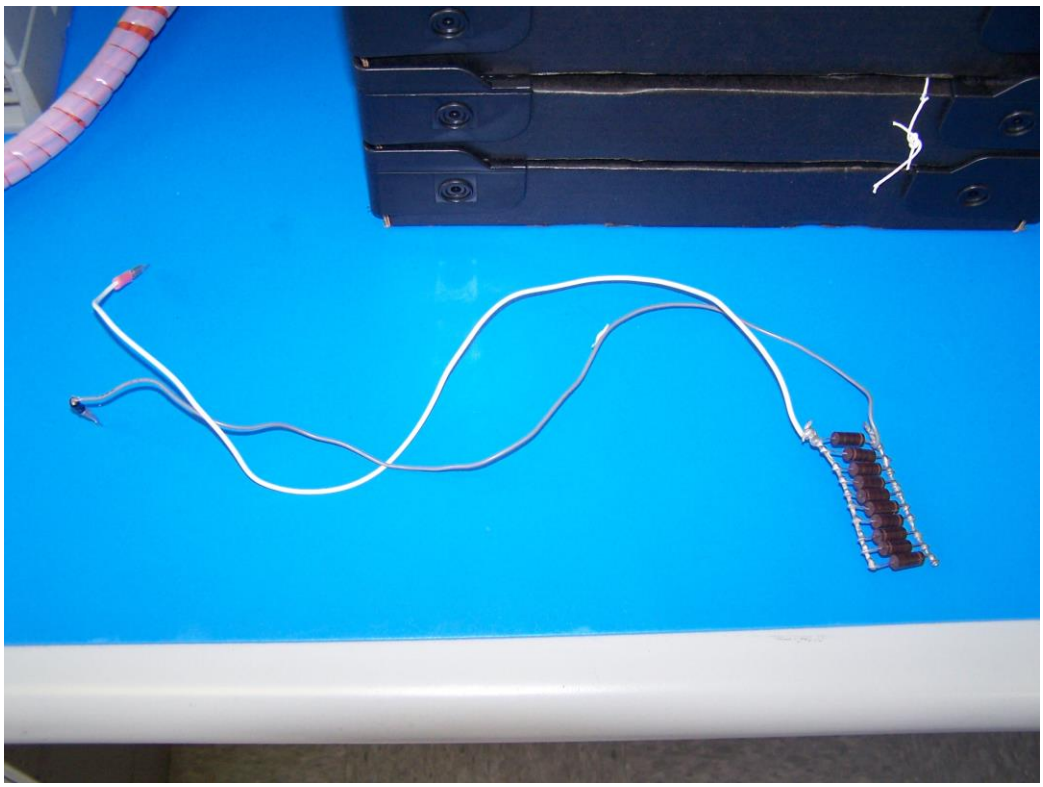
6.3 ***TEST COMPLETE ***

7. NOTES

7.1 If you encounter any of these green style Mylar capacitors on your card, replace them. You should be using the larger white Mylar capacitor. It is believe that the green caps are breaking down over time. See DS3800HPTK directory for more information.



7.2 Picture of 1 ohm 10 watt load resistor.



8. ATTACHMENTS

8.1 None at this time