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<b>TITLE:</b> <b>DS3800NMED TEST PROCEDURE</b>		<b>PROCEDURE:</b> <b>LOU-GED-DS3800NMED-B</b>

### 1. INTRODUCTORY DESCRIPTION

- A. This procedure establishes the methods for testing a DS3800NMEC Field Exciter Card.
- B. Environmental ranges: 70 +/- 10 Deg. F. with 20-75% R.H.
- C. Unit warm-up/stabilization period requirement: None
- D. Personnel using this procedure are expected to have a high degree of confidence and expertise in related testing and calibration procedures.
- E. Procedures not explained here are considered to be understood as common practice.

### 2. TEST EQUIPMENT VERIFICATION

- A. Verify the accuracy of the standard(s) used in the repair/calibration process by evidence of recent calibration labeling affixed to the test equipment.
- B. All measurement standards used in this procedure shall be traceable to the NATIONAL INSTITUTE of STANDARDS and TECHNOLOGY (N.I.S.T.) and shall have the accuracy, stability, range and resolution required for the intended use.
- C. Unless otherwise specified, the collective uncertainty of the Measurement Standard(s) shall not exceed twenty five percent of the acceptable tolerance for each characteristic being calibrated.
- D. All deviations shall be documented.

### 3. EQUIPMENT CLEANING

- A. All equipment clean will be performed as instructed in the GEES SOP Sec. 14.0


### 4. EQUIPMENT INSPECTION

- A. The following criteria should be used as a guideline or basis for the inspection process of the this unit:
  - 1. Wires broken or cracked.
  - 2. Terminal strips / connectors broken or cracked.
  - 3. Loose wires.
  - 4. Components visually damaged.
  - 5. Capacitors leaking.
  - 6. Solder joint, cold.
  - 7. Circuit board discolored or burned.
  - 8. Printed wire runs burned or damaged.

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5. **REVISION HISTORY**

Revision	Date	Initials	Reason for Revision
A	06/08/98	JDS	Initial Release
B	06/10/02	RKD	Added section 5 & 6
C			
D			
E			
F			
G			
H			
I			
J			
K			

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## 6. REFERENCE DOCUMENTATION

- Reference: GEK
- Factory Procedure #

## 7. THEORY OF OPERATION

- Refer DS3800NMED and DS3800NEPB
- DS3820PMM\_


## 8. TEST EQUIPMENT TO BE USED

- Inductive load (BLUE CART) Fixture # 381X162
- Fluke 85 or equivalent
- Oscilloscope 2215 or equivalent
- PMM test stand Fixture # H033722
- 


## 9. FINAL TEST AND OPERATION PROCESS

- Any question about what a switch is doing ref to Special Information sect 8 of this procedure
- SETUP on DS3800DMEC (Note jumper is IN when to the right and OUT when left)
- J1E IN
- J2E (NOT USED)
- J3E IN
- J4E IN
- J5E / J6E TO J5E
- J7E IN
- J8E IN
- J9E IN
- J10E IN
- J11E IN
- J12E IN
- J13E IN
- J14E / J15E / J16E TO J15E
- J17E / J18E TO J18E
- J19E IN
- J20E IN


R203 (DMEC) = 18 K OHMS  
 R264 (DMEC) = 100 k OHMS  
 R36 (DMEC) = 220 k OHMS  
 C5 (DMEC) = JUMPER  
 R100 (DEPB) = 10 K OHMS  
 R101 (DEPB) = 18.2 K OHMS  
 J1 (NEPB) = NR

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- J21E / J22E / J23E TO J22E
- J24E / J25E / J26E TO J25E
- J27E IN
- J28E IN
- J29E / J30E TO J29E
- J31E OUT (Located on DS3800NMED)
- J35E /J36E TO 36E (Located on DS3800DMEC)
- Turn pots (R1-R15) on DS3800DMEC to 50.
- Connect all cables to DS3800NMED.
- Verify DS3800NEPB and DS3800DMEB are in the marked slots and connected. Verify that Molex connectors with white labels are connected to JG and JF on DS3800NEPB.
- Connect TB2 (FPOS) to RED jack on Inductive Load.
- Connect TB2 (FN) to BLACK 36 ohms jack.
- Verify E-stop is pushed in on Test Panel.
- Plug AC power cord into 240 VAC.
- Connect Multimeter to RED and BLACK jacks of Inductive Load. Set to volts.
- To setup Test Panel turn DELAY RESET left and all others to the right.
- Turn R9 TOL full CCW
- Twist E-stop to the right, Test meter will come on and FLOSS LED's on DS3800DMEC will flash.
- Check all power supply voltages at test points on DS3800NMED and verify they are within 0.1 VDC ACOM=TP14 P15=TP11 P5=TP12 N15=TP13
- Verify with a multimeter (set to ohms) that the saddle clamps next to relay are open between the two (Relays contacts open when a fault has occurred).
- Push RESET on DS3800DMEC (SW1). FLOSS LED's will go out.
- Verify with a multimeter set to ohms that the saddle clamps next to relay measure 0 ohms between the two.
- Turn TEST IA to pos. (located on test panel) and MOV LED will come on solid.
- Turn Test Meter switch to IF.
- Adjust R3 MIN FLD so that IF reads + 10 VDC +/- .1 VDC.
- Adjust R1 IF CAL in the CCW and CW direction. Test Meter should vary +/- .4 VDC
- Adjust R1 IF CAL to + 10 VDC +/- .1 VDC
- The Field voltage will be approx. + 30 to 34 VDC (inductive load meter)
- With an Oscilloscope measure from ground(ACOM) to pin 1 of U7 (NMED G10)
- Adjust R19 on DS3800NMEC for 16 Vpp . The waveform will be a triangle with a frequency of 60 Hz.

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- Turn Test Meter switch to IA.
- Turn TACH to ON on Test Panel
- Adjust R4 (IA CAL DMEC) for approx. -7 VDC +/- .1 VDC.
- Turn Test Meter switch to SUM I.
- Adjust R7 (%MD DMEC) fully CCW then CW for approx. -9 VDC +/- .2 VDC. This adjustment is very jittery.
- Turn Test Meter switch to IF meter will read approx. +10 VDC +/- .4 VDC.
- Turn Test Meter switch to I NEG
- I NEG will read - 6.5 VDC +/- .2 VDC
- Turn Test Meter switch to I POS.
- I POS. will read 0 VDC
- Turn Test Meter switch to CEMF
- Test Meter will read approx. + 5 VDC
- Adjust R10 CEMF CAL CW and CCW
- Return R10 CEMF CAL to 50 and verify MOV LED is on
- Test Meter will vary from + 2 to + 14 VDC +/- .3 VDC
- Monitor Field Volts and turn R6 CMPD CW and CCW Field Volts will vary +/- 2 VDC
- Push E-Stop in turn R9 TOL fully CW
- Verify that when E-Stop is on (PULLED OUT) it take approx. 120 seconds for ALM LED to come on and after 10 additional seconds TOL LED comes on
- Push E-Stop in (OFF)
- Turn R9 TOL full CCW
- Turn and pull E-Stop to the right (ON)
- Press RESET
- All faults will clear and MOV LED will be on
- Turn R2 IA CAL to 80
- Turn R8 IOC CCW until IOC LED comes on and relay clicks
- Turn R8 IOC to 50
- Turn R2 back to 60
- Press RESET
- END OF TEST

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**10. SPECIAL INFORMATION**

- DELAY RESET - (NOT USED ON NMED)
- FLD PRESET - WHEN ON SETS FLD TO VALUE DETERMINED BY R15 PRESET.
- TACH ON/OFF - TAKES VOLTAGE OFF INPUT JH4
- FLT MASK - INHIBITS TOL LED
- RESET - EXTERNAL RESET ON INPUT JH20
- F-REF ON/OFF - TURNS ON/OFF INPUT TO TB1 FREF
- F-REF 5V/10V - CHANGES INPUT VOLTAGE TO TB1 FREF
- TACH POL. - CHANGES INPUT VOLTAGE TO JH4 FROM +/-
- MOTOR FWD/REV CHANGES FLD POLARITY
- SUICIDE - CAUSES OUPUT TO INCREASE .MUST CYCLE POWER TO CORRECT
- CEMF ON/OFF - APPLIES INPUT TO JH15
- TEST IA - TURNS ON INPUT TO MN

**TEST WRITTEN BY:      David Smith    DATE: 6-08-98**

**TEST VERIFIED BY:      Darren E. Johnson    DATE: 6-08-98**