Page 1 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

Distribution: Quality, EL Assembly, Manufacturing (1)

- The following document is a procedure to assemble, test, and calibrate a Wakeup TX Module for the EA_MOBILE Gas/Water/Electric Interrogator, FCC ID G8JEAMOBILE1.
- MUST assemble in an ESD safe environment and must wear an ESD wrist strap.
- It's recommended that this document be printed in color.
- Reference 5D26056G01 Assembly, Wakeup TX and gather materials list on GKS.

Procedures

For Assembly of Assembly of Wakeup TX Module.

1 Assembly

- 1. Connect cable (7S1939H002) to the right angle SMA conttection on the back of the Wakeup TX PCBA (5D25958G01). Torque to 4 ± 1 in-lb with 5/16" pre-calibrated SMA torque wrench, such as Fairview Microwave 74Z-0-0-79 or Mountz 06003B-106. Note that the wrench is only calibrated in ONE DIRECTION, and the wrench must be applied accordingly. Also, grab the torque wrench only at the "load point line" (notch around end of handle) or you will apply more torque than rated.
- 2. Feed cable through slot in the heat sink, as shown below.



Page 2 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

3. Attach the heat sink to the PCB with (8) #4-40 truss-head screws, $\frac{1}{4}$ " long (52807P050). Torque all the screws to 3 ± 1 in-lb. The resulting assembly is shown below (ignore scratches on the heatsink; picture taken of prototype):



Page 3 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

4. Using best ESD control practices, retrieve an RA30H4047M1 Power Amplifier (PA) module, and cut the 4 pins of the PA to a length of 0.270", as shown below.

Uncut:



Cut to length:



Page 4 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

5. Using Wakefield Type 126 Non-Silicone Thermal Joint Compound, coat both the heat sink and PA areas shown below with a thin layer, using a Q-tip or similar spreader. DO NOT COAT the entire PA and heatsink area! The PA must make electrical contact with the heatsink on the left end.



- 6. Align the PA such that its 4 pins are centered laterally on the PCB pads.
- 7. Position a PA Ground Strap (1B11997H01) on top of the PA and the PCBA so that one notch lines up with the right-side PA heat sink hole, and the other notch lines up with the hole to the right of the PA.
- Fasten the PA and ground strap using three (3) #4-40 truss-head screws, ¼" long (52807P050). Torque all three screws to 3 ± 1 in-lb. A close-up of the resulting assembly is shown below:



Page 5 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

- 9. Using a flat-blade screwdriver or spudger, gently bend the 4 PA leads so that they rest on the pads on the PCB.
- 10. Solder all 4 PA leads to the PCB. The resulting assembly is shown below:



11. Clean all flux residue from around the pads using flux remover or IPA. Be careful not to bend the leads of the inductor between the two large capacitors.

Page 6 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

2 <u>Test</u>

2.1 Power Up

1. Set power supply to 13.6V at 5A current limit. Attach power supply cable with an ammeter or power analyzer in line to the green connector.



2.2 Voltage, Current and Signal Checks

1. Check that PCBA doesn't pull over 500 mA at 13.6V initially. A power analyzer in line with the power supply is useful for this purpose (example below shows the board pulling 270 mA), or an ammeter can be used.

It is normal for the board to pull less current as it warms up. After a 2-minute warmup, values under 300 mA are typical.



If the PCBA pulls more than 500 mA, there is a short somewhere on the board, and the board should be given to Engineering to follow up with the contract manufacturer.

Page 7 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

- 2. Using a DMM, check for 3.3V ± 0.2V with respect to GND (attaching at power input is OK) at the following places:
 - a) U10 (switching regulator) pin 3;
 - OSC1 pin 5; b)
 - c) "North" end of C112 (next to U18, DDS);

 - d) U9 (RF detector) via just "southwest" of R28;
 e) "South" end of C74 ("northwest" of U12, Microcontroller).



d) e) c)

Page 8 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

- 3. Using a DMM, check for $1.8V \pm 0.1V$ w/r/t GND at following places:
 - a) At the "north" end of C127 ("south" of U18), an 0402-size capacitor (DVDD_1.8V)
 b) At the "north" end of C132 ("south" of U18), a larger 2012-size capacitor (AVDD_1.8V)



b) C132 a) C127

Page 9 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

4. Check for $9V \pm 0.3V$ w/r/t GND at the following places:

- "East" end of C192 ("Northeast" of large regulator); a)

- b) R4/C8 junction near amplifier U3;
 c) R3/C5 junction near amplifier U2;
 d) R5/C11 junction near amplifier U4.



Page 10 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

- 5. Using an oscilloscope with frequency measurement, check for 100 MHz +/- 200 Hz at the following places:

 - a) Pin 1 of OSC1; sine wave >= 1.2V p-p
 b) L13/C100 junction, sine wave of >= 500 mV p-p (this checks for correct values for L12 & L13)



a) OSC1 pin1

b) L13/C100 junction

Page 11 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

- 6. Using an oscilloscope with frequency measurement:
 - a) check for 50 MHz square wave, >= 880 mV p-p, swinging about 1.15V DC level at "East" end of C101. (50 MHz because it's one side of a differential output)



a) C101 /

Page 12 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

- 7. Using an oscilloscope with frequency measurement:
 - a) check for 10 MHz +/- 100 Hz square wave at 3.3V \pm 0.2V p-p at TP12.



a) TP12 /

8. If tests have been successful to this point, continue to next section, JTAG Programming.

Page 13 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

2.3 Firmware Programming via JTAG

1. Connect the 20-pin JTAG connector from the ARM-USB-OCD device to the 30-pin connector P0 as shown below. Note that 10 of the pins of P0 are not involved in JTAG programming.



2. Connect mini-B USB cable to the PCBA, and be sure the other end (A type connector) is plugged into the test PC.



If the computer beeps, the board's USB device probably attached correctly (enumerated). Even if the beep does not occur, go to the next step.

Page 14 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

3. On the PC, double-click the **Find USB Serial WUTX** script's icon to find COM port number. If a "COM" number is listed in the resulting window, this confirms that the board was enumerated correctly on the USB bus. The example below shows COM port number 27. If enumeration does not occur (no COM number listed), try rebooting the PC and trying again. If that fails, set the PCBA aside and contact Engineering.



4. The software that controls the JTAG programmer, OpenOCD, may continue running through the programming and checkout of multiple Wakeup TX PCBA's. Skip this step if OpenOCD is running.

If OpenOCD is not running, do the following.

First, double-click the OpenOCD icon.



OpenOCD will open a status window like the following:



The last line, containing the phrase

stm32.cpu: hardware has 6 breakpoints, 4 watchpoints

...is the key indicator that the JTAG programmer has made contact with the CPU on the PCBA. If this phrase is not seen, disconnect the ARM-USB-OCD device both from the Wakeup TX PCA, as well as the ARM-USB-OCD's USB connection, and reconnect them, with USB being connected first. Close the OpenOCD status window and repeat this step. Contact Engineering if reconnecting does not help.

Page 15 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

You may now minimize the OpenOCD status window.

Now, double-click the OpenOCD RealTerm icon.



This will bring up OpenOCD's terminal window, so that commands can be sent to it. Press <ENTER> after the cursor starts flashing. The > prompt should appear:

Dpen0CD				
Display Post Qisplay As C Auci Auci Ann Heatoacel L Heat Heatoacel L Heat Heatoacel L Heat Heatoacel L Heat Heatoacel L House Heatoacel L House Heatoacel Heatoacel L House Heatoacel Heato	Capture Pris Send Esho Pro Hald Duples preduce mode preduce mode Data Sames Dynes [2 3] Fisiple Solds Temmind Fore [2 3] Temmind Fore [2 3] Temmind Fore [2 3] Temmind Fore [2 3]	a DC DC 2 DOHac Mac E Scutback	∖n Cler	Image: Status Status Connected RND (2) T-TO (3) CTS (3) DCD (11) DCD (11) DCD (11) DCM (3) BREAK Ensr
Tou san use Active	X automation to control mel	Cher Count 38	OPS:0 Port: 127	.0.0.1:23

The > prompt indicates that connection with OpenOCD has been made. If this does not happen, click the Port tab, and click Open, then click Open again (this cycles the port connection). Press Enter again. If no prompt appears, seek help from Engineering.

5. Flash the microcontroller with firmware by using the

source f

command in the OpenOCD terminal window, and press <ENTER>. See below.



Page 16 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

The phrase "wrote xxxxx bytes from file" is the important part. The other particulars may be different, but this phrase indicates the firmware was written successfully.

Another indication that the firmware was programmed correctly are the state of the two LEDs on the PCBA.

The "north" LED should be RED or blinking RED/YELLOW, and the other LED should be OFF, as shown below:



RED or blinking RED/ YELLOW

2.4 Post-Firmware Configuration and Checks

1. If you did not remember the COM port number from the last section, double-click the **Find USB Serial WUTX** script to find the PCBA's COM port number. The example below shows COM port number 27.



2. Start RealTerm or other ANSI terminal emulator, select COM port at 4800 baud, and open the port number from the step above. Hit <ENTER> and make sure that you get the WUTX> prompt. Type **SS** and hit <ENTER> you should see something like the following:

Page 17 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

🖶 WUTX_COM30_4800			
			<u>^</u>
MUTX>SS			
	F 00 00		
WUIX revD NU S/N F/W $00.3.60$ Nov 6 2012 1	5:23:03		
Clock = 1000.0 HW2 Refclk 50.0 HW2 Drive = 16382/16383 Aux DAC 127/255 PSK = GAUSSIAN INVERTED Bitrate 3125bpc Dev = 3125 Hz (p-p) OCX0 I = 363 mA (DUEN WARM1			10
PA Tomp = 24.75 C (OK) Fan = M/A RPH [AUIO] drive=20500 Bias = 0.00 (m/AH=4.31, i=4.31) Drain U = 13.857 U Drain I = 0.0 A ALC = 0 M GOAL = 41.1 dBm (12.882W)			
CPU Temp = 23.67 C			
TX = OFF			
			~
Display Port Capture Pins Send Echo Port 12C 1	2C-2 12CMisc Misc	1	n Clear Freeze
Baud [4800 V Bot] 27 V Dean Bits Party Dean Bits Stop Bits Odd C Fore Odd C Fore C Stats C Ibit 2 bits C Ibits C Ibit 2 bits C Ibits C	Spy Change are Flow Control cevier Xon Char. [17 ansmit Xoff Char. [19 Raw Raw		Status Disconnect RVD [2] TXD [3]
You can use ActiveX automation to control me!	Char Count: 1182	CPS:0	Port: 27 4800 8N1 None

- 3. Check voltage across R102; should be $1/10^{\text{th}}$ of OXCO current as listed above. For example, for 303 mA as shown above, the voltage across R102 should be $30 \pm 10 \text{ mV}$.
- 4. Now that the firmware is running, the RF detector can be checked:
 - a. Check for <0.5V on TP4, lower left of U9 (RF detector). If the voltage is higher, the board is faulty. Contact Engineering for repair advice.
 - b. Check for <0.5V on TP2, lower right of U9 (RF detector). If the voltage is higher, the board is faulty. Contact Engineering for repair advice.

Page 18 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	



a) TP4 b) TP2

Page 19 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

5. On the terminal emulator, type the command

CAL, SN, *n*

where n is the serial number of the board. Serial numbers should be kept in a spreadsheet so they are unique. The result will look like the following:

22<81		
	2012 15.22.02	
TA FEOD NO 628 F29 00.3.68 NOV 6	2012 15-23-03	
NG Genter = 451.35 MHz Clock = 1000.0 MHz Refclk = 50.0 MHz PLL5 Drive = 16382/16393		
Aux DAC= 127/255 FSK = GAUSSIAN INVERTED		
Bitrate= 3125bps Dev = 3125 Hz (p-p)		
30 I - 383 MA LOUER VARM1		
Tenp = 24.25 C (ON) Fan = N/A RPM [AUI0] driva= Biaz = 0.60 (n/AM=4.31, i=4.3 Brain U= 13.857 U Brain I = 0.6 A ALC = 0N CONL = 41 1 dBa (12.8820)	29500 31>	
U Tano = 22 62 C		
= OFF		
TY COL PN 1		
2N = 1 Ini	Serial Number	
SN = 1 Univ of investion has changed. Please	t Serial Number	
SN = 1 Uni onfiguration has changed. Please :	t Serial Number SAUE.	
SN - 1 Uni onfiguration has changed. Please ! TRX	t Serial Munber SAVE.	
IN 2002 2014 SN = 1 Uni Infiguration has changed. Please ! TX>	t Serial Munber SAVE.	
8N = 1 Uni nfiguration has changed. Please : TXX	t Serial Number SAUE.	
BN = I Uni BN = I Uni nfiguration hat changed. Please : TRD	t Serial Number SAUE.	
SN = 1 Uni nfiguration has changed. Please 1 TX> uplay Pot Capture Pris Send Echo Pot	t Berial Number ANDE.	\n Clear Freeze
SN - 1 Uni nfiguration has changed. Please t TX2 uppy Pot Cupture Prn. Send EchoPot	1 Serial Number SAUE.	<u>yn</u> <u>Clenri Fireeze</u>
SN = I Uni IN = I Uni IN Signeration has changed. Please I TR2] uplay Pot Copture Post Send Echo Pot guad F000 → Dost 27 →	L Serial Number SAUE. LE 125.2 1204ac Mac Sees Sel V Darge V	jn Claar Freeze State Boorne Rob Ca
SN - 1 Uni onfiguration has changed. Please (TEV) uplay Port Clearer Port Send EchoPort and Ferro Port Send Ferro Port Port Port Send Ferro Port Send Ferro Port	LS Erial Number SAUE. LC LCC2 LCMas Mas Solman Pag Cond Solman Pag Cond	\n] Cleari Freeze] Statu □Diocome □ F00 (2) □ D0 (2)
SN = 1 Uni IN =	LSC 12C2 12DMac Mac Dens Say During Ord Schwar Reg Cond Cherry Say During Ord Cherry Sa	کرمان کر کرد کامار - ۲۵۵۵ - ۲۵۵۵ - ۲۵۵۵ - ۲۵۵۹ - ۲۵۵۹ - ۲۵۵۹ - ۲۵۵۹ - ۲۵۹۹ - ۲۵۹۹ - ۲۵۹۹ - ۲۵۹۹ - ۲۵۹۹ - ۲۵۹۹ - ۲۵۹۹ - ۲۵۹۹ - ۲۵۹۹
SN - 1 Unit IN - 1 Unit Infiguration has changed. Please : TR2 uplay Port Cupture Prit Send EchoPort aud Entro - Earl 27 Port	LS Erical Number SAUE: LSC 12C-2 12DMac Mac Deen Sey Control Schware Pag Control Revenue Van Dar 17 Tranumt Xat Onar 19	\n] <u>Cleari</u> Freeze]
SN = 1 Unit of Squeation has changed. Please 1 TR2 uslay Port Capture Port Send Scho Port and 6000 w port 27 w Pay Data Ber Son Data 22 bits Control Capture Port 2 bits Son Data 2 bits Control Capture Port 2 bits Son Data 2 bits S	E Serial Number SUF. IZC 12C2 12DMac Mac Been Ser Dan Dr. Schwar Reg Control P Tenewer Son Dar [17 Tenewer Son Dar [17 Tenewer Son Dar [17]	کرم Cleari Freeze
INFORMATION AND AND AND AND AND AND AND AND AND AN	L Serial Number SUUT- 12C 12C2 12DMac Mac 12C 12C2 12DMac Mac 5-bhave Peg Contol 5-bhave Peg Contol 17 17 17 Transit Xar Chac 19	\n Cleari Freaze _ Star - Pro 2: - Pro 2:
INFORMATION I IN - 1 Unit Inf Squration has changed. Please I INP INP INP INP INP INP INP IN	LC IZC2 IZCMac Mac Bann Sey Cond Schwar Feg Cond Transmit Xell Oke 19 Server Scholar 17 Transmit Xell Oke 19 Stransmit Xell Oke 19	\n] Clenni Freezel → Diacon → Dia
BK = 1 Unit Inf Equivation has changed. Please 1 Inf Equivatio	E Serie J Number SUF. SUF. ICC (ICC-2) IZOMac Mac Series Series Content Schwas Page Content Factor Series Content Factor Series Content Series Content	Image: Share Share Share Share Processes Processes Product Product Product Product Product Product Stare Product Product Product Stare Product Stare Product Stare Product

Page 20 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

6. On the terminal emulator, type the following commands, pressing <ENTER> after each line:

CAL, AUTOT ALC, OFF SAVE

The result should look like:

Ps WUTX_COM30_4800				
CTU = 1714	CPU	Temperature ADC Value a	t CTO	^
PDIQ = 18 DDSF = 467	PA D Hz DDS	rain Current Quiescent Center Frequency Correc	ADC Value tion	
0I = 550 00 = 0FF	mA OCXO OCXO	Warm Current Threshold Cold Override	L	
PBG1 = 0 r PBG2 = 1998 r	mU∕V PA B mV∕V PA B	ias Gain, Pin 1 ias Gain, Pin 2		
PDVG = 5082353 J PDIG = 1076417 J	μU∕U PAD µA∕A PAD	rain Voltage Sense Gair rain Current Sense Gair		
PUFG = 37886158 PUFC = 37.0 c	деnt dB PA P	s∕dB PA Power Se ower Sense Forward Cour	ense Forwar oling	d ADC Slope
PURG = 37886158 PURC = 37.0	dB PA P	s∕dB PA Power Se ower Sense Reverse Coup	ense Revers oling	e ADC Slope
PUW = 1.6:1 PTH = 2.0 PTO = 0.0 PTS = 89.0 PTW = 65.0	PAU PAO PAO PAT PAS PAW	SWR Warning Threshold vertemperature Hysteres emperature Offset (Heat hutdown Temperature arning Temperature	is sink Corre	ction)
SN = 1	Unit	Serial Number		
TD = 0.04	dB TRAC	E Cal Deadband		
Configuration has changed	d. Please S	AVE.		
WUTX>ALC,OFF				
PA ALC = OFF				
WUTX>SAVE				
Flash erased, writing (34	412/4096 byt	es used)		
Configuration saved Resetting WUTX>				~
Display Port Capture Pins Se	end Echo Port	12C 12C-2 12CMisc Misc	<u>\n</u>	Clear Freeze
Baud 4800 Port 27 Image: Control topic to				
You can use ActiveX automation to contr	ol me!	Char Count:8210	CPS:0 Po	rt: 27 4800 8N1 None

- 7. Now type **SS** and press <ENTER>.
- 8. Check that PA & CPU temperatures are within ±2 degrees C of each other, and are within ±3 degrees C of ambient temperature
- 9. Command: **BIAS**, **4** check for 4±0.01V on PA pin 2 with respect to the case of the PA; no oscillation on bias rising, fall, or stable
- 10. Command: BI AS, O

Page 21 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

- 11. Connect the Wakeup TX PCBA's SMA cable through a power attenuator or coupler to a spectrum analyzer. Be sure the attenuator or coupler can withstand up to 15 Watts of RF power at 451 MHz.
- 12. Configure the the spectrum analyzer:
 - a. Center Frequency: 451.35 MHz
 - b. Span: 12.5 kHz
 - c. Resolution bandwidth (RBW) and video bandwidth (VBW): 300 Hz.

1 kHz is OK for RBW and VBW if the analyzer does not support 300 Hz, but all screen shots below are based on 300 Hz RBW & VBW.

- d. Reference level: 45 dBm. Set the reference offset to account for the attenuation of the attenuator and/or the coupling loss of the coupler.
- 13. Command: CW

Check for $451.35 \text{ MHz} \pm 1 \text{ kHz}$, > 11.5 dBm, with NO MEASURABLE SPURS from 12.5 kHz span to 400 MHz span. Using 10 Hz bandwidth at 12.5 kHz span and freq counter, measure carrier frequency. e.g., 451.349985

- 14. Command: *CAL,AUTOF*, freq from above. This calibrates the transmitter center frequency. e.g., *CAL,AUTOF*, *451.349985M*
- 15. Command: SAVE
- Disconnect all cables from board. Trim leads of 3.3V regulator. Install SMA cable and heat sink. Solder on PA. Re-connect cables.
- 17. Command: *CAL*,*AUTOP* This command calibrates the RF output power curve for the transmitter.

The unit will transmit a signal. Read the dBm from the power meter, type it into the terminal window, and press <ENTER>.

Repeat for all of the points requested. Below is an example session:

```
WUTX>CAL, AUTOPWR
Automatic RF power detector calibration
         Enter power meter reading in dBm:
                                          in dBm:
          Enter
                 power
                        meter reading
                                                    42
         Enter power meter reading in dBm:
Enter power meter reading in dBm:
                                                    35
  of
                                         in dBm:
in dBm:
                 power
                        meter reading
meter reading
                  OFF
PRESEN
                            µcnts/dB
dB
                37281063
PROPOSED
                37930218
                            µcnts/dB
                             dB
Accept? (Y/N): Y
PVFG, PVFC, PVRG, PVRC changed, please SAVE.
```

Page 22 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

WUTX>SAVE

Flash erased, writing (3412/4096 bytes used) Configuration saved Resetting... WUTX>

The Wakeup Transmitter unit is now fully assembled, calibrated, and tested.

Rev	DCN	Author	Reviewer	Date	Description
1	103-225	S. Bragg	M.Holman	12/10/12	Draft 0
1	103-225	S. Bragg	M.Holman	12/17/12	Draft 1

Page 23 of 23	Elster	Document # 103-225
	OPERATOR INSTRUCTION SHEET	
	Issued by: Manufacturing	Draft 1
	Wakeup TX Module Assy/Cal/Test Procedure	

Mountz Service Locations Eastern Service Center 19051 Underwood Rd. Foley, AL 36535 Phone: (251) 943-4125 Fax: (251) 943-4979