

## Section 1-6

### FAX Telnet

**In this section of the class we will connect to the FAX Ethernet ports and go through the important screens of the FAX GUI and a TELNET session. Also ways that these can be used to troubleshoot will also be discussed.**



Front Ethernet port is shipped as DHCP Server (Not for connecting to your LAN). To connect make sure the PC is set for DHCP in IP properties.

Default IP address of 192.168.117.88. Type this address into web browser of your choice – GatesAir prefers Firefox. Internet Explorer seems to have issues displaying all of the screens, may need to clear cache

Can get GUI or Telnet session via either Ethernet port

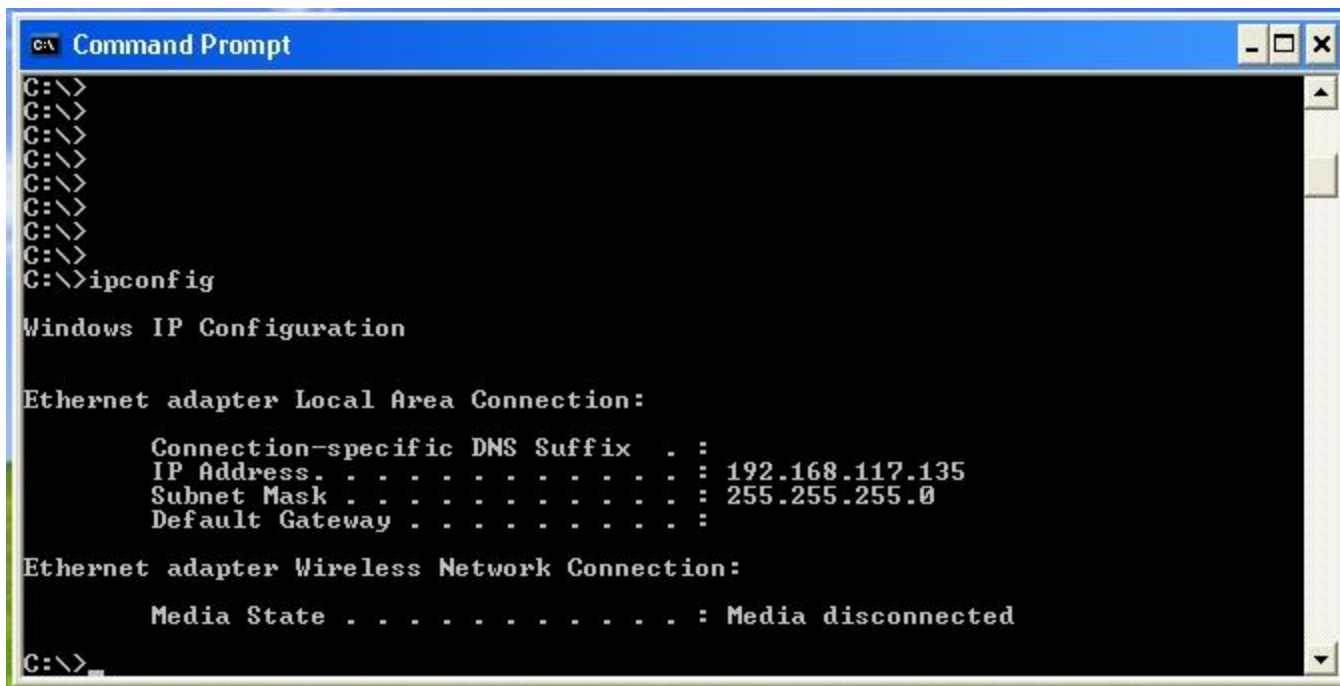
## **Old Logins in () circa August 2013**

There are 5 possible logins: netadmin (admin) (password: harris (admin)) for changing the other four logins. The default logins from factory are admin (harris or gates) (password: admin (harris or gates)) and user2,3,4 (password pass2,3,4).

No control when logged in as netadmin

All screens can viewed without logging in – no control/config changes can be made





```
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>  
C:\>ipconfig  
  
Windows IP Configuration  
  
Ethernet adapter Local Area Connection:  
  
    Connection-specific DNS Suffix  . :  
    IP Address . . . . . : 192.168.117.135  
    Subnet Mask . . . . . : 255.255.255.0  
    Default Gateway . . . . . :  
  
Ethernet adapter Wireless Network Connection:  
  
    Media State . . . . . : Media disconnected  
  
C:\>
```

To open a telnet session, depending on the version of windows, open Command Prompt window. Sometimes the computer will not allow a telnet session and IPCONFIG is a command that can be used to releases and renew your IP address. Above window shows ipconfig screen, this shows that the transmitter has assigned the computer address 192.168.117.135, this may vary on each transmitter. It may also show an ip address of your wireless, do not confuse them



```
Command Prompt
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>ipconfig /release

Windows IP Configuration

No operation can be performed on Wireless Network Connection while it has its media disconnected.

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . :
    IP Address . . . . . : 0.0.0.0
    Subnet Mask . . . . . : 0.0.0.0
    Default Gateway . . . . . :

Ethernet adapter Wireless Network Connection:

    Media State . . . . . : Media disconnected

C:\>
```

Above window shows the ipconfig /release. The IP address is now empty on the wired ethernet adapter.



```
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>ipconfig /renew

Windows IP Configuration

No operation can be performed on Wireless Network Connection while it has its me
dia disconnected.

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . :
    IP Address. . . . .               : 192.168.117.135
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         :

Ethernet adapter Wireless Network Connection:

    Media State . . . . .             : Media disconnected

C:\>
```

Above window shows the ipconfig /renew. The IP address is now populated on the wired ethernet adapter.

Use these commands if first unable to get a telnet session to open.



```
Tera Term Web 3.1 - 137.237.245.120 VT
File Edit Setup Web Control Window Help
*****
* ColdFire uModule: Ver 0278, Oct 4 2013,10:49:12 Page 1/7 *
*****
* 1:09:28PM SysUpTime: 421291 ** Ethernet *
* Wednesday, October 30, 2013 *****
***** (1) #1 MAC Addr: 00-00-C3-B7-17-A4 *
* Boot Rev: 0035, Mar 29 2010,14:51:06 ** (2) #1 Mode: STATIC *
* CPLD Rev: N/A ** (3) #1 IP Addr: 192.168.117.88 *
* FPGA Rev: N/A ** (4) #2 MAC Addr: 00-00-C3-B7-17-A5 *
* Board Rev:D.0 ** (5) #2 Mode: STATIC *
***** (6) #2 IP Addr: 137.237.245.120 *
* Analog Inputs ** (7) #2 Netmask: 255.255.255.224 *
***** (8) #2 Gateway: 137.237.245.97 *
* (S) Update Settings *
*****
* 1. Temp: 0847 34.80C ** EEPROM-Main: 8987 Enet: 94 *
* 2. +5.0VDC: 1479 4.17V ** FLASH: 49 Unit: 95 *
* 3. +3.3VDC: 1800 3.29V *****
* 4. +1.8VDC: 1806 1.81V ** (r) Restore Setup (h) Set TX S.N. *
* 5. N/A: 2374 2.37V ** (u) Set User (l) Restore Login *
* 6. N/A: 0000 0.00V ** (t) Set Date/Time *
* 7. N/A: 0000 0.00V ** (f) Store Factory *
* 8. N/A: 0410 0.41V ** (z) Debug Mode:OFF (b) BIT Mode:OFF *
*****
* TX Model:FAX 20K SN: *****
```

Telnet screen 1. To open a telnet session use the following command from Command Prompt window:

telnet 192.168.117.88; Password – harris (harrismfg-old) (admin-OLDER) Can use terminal program such as Teraterm Pro

Top line shows Coldfire  $\mu$ Module Software version (this will be the version that is upload from .s19 file obtained from GatesAir Service website) with its release date

Also shows current Date/Time

Next box shows code revs and Board Rev is Control/Display Board

Numbers and letters in () are commands that can be used for config or control of transmitter



```
C:\ Telnet 192.168.117.88
*****
* ColdFire uModule: Ver 0019, Jun 14 2
*****
* 1:24:32PM Run Time: 1639
* Monday, June 25, 2012
*****
* Boot Rev: 0035, Mar 29 2010,14:51:06
* CPLD Rev: N/A
* FPGA Rev: N/A
* Board Rev:C.0
*****
* Analog Inputs
*****
* 1. Temp: 0827 32.60C
* 2. +5.0VDC: 1637 4.61V
* 3. +3.3VDC: 1808 3.31V
* 4. +1.8VDC: 1808 1.81V
* 5. N/A: 2686 2.69V
* 6. N/A: 0000 0.00V
* 7. N/A: 0000 0.00V
* 8. N/A: 0412 0.41V
*****
* TX Model:FAX_20K SN:MSR47959-001
*****
```

Telnet Session (left half of page 1)

Analog Inputs:

1. Temp: Rear Temp on Power Supply Interface
2. +5.0VDC: 5 volts from main power supplies
3. +3.3VDC: On Control/Display (Sheet 7)
4. +1.8VDC: On Control/Display (Sheet 14)

Bottom line shows Model and serial number of transmitter



```
*****
4 2013.10:49:12                               Page 1/7 *
*****
**                               Ethernet                               *
*****
*** (1) #1 MAC Addr: 00-00-C3-B7-17-A4 *
** (2) #1 Mode: STATIC *
** (3) #1 IP Addr: 192.168.117.88 *
** (4) #2 MAC Addr: 00-00-C3-B7-17-A5 *
** (5) #2 Mode: STATIC *
*** (6) #2 IP Addr: 137.237.245.120 *
** (7) #2 Netmask: 255.255.255.224 *
*** (8) #2 Gateway: 137.237.245.97 *
** (S) Update Settings *
*****
** EEPROM-Main: 8987 Enet: 94 *
** FLASH: 49 Unit: 95 *
*****
** (r) Restore Setup (h) Set TX S.N. *
** (u) Set User (l) Restore Login *
** (t) Set Date/Time *
*** (f) Store Factory *
** (z) Debug Mode:OFF (b) BIT Mode:OFF *
*****
```

## Telnet Session (right half of page 1)

#1 is front Ethernet port MAC, Mode, IP address settings.

#2 is rear Ethernet port MAC, Mode, IP address, netmask and gateway settings

EEPROM-Main: Number of writings      Enet: Number of writings

FLASH: Number of writings              Unit: Number of writings

(r) – Restores factory defaults settings. A config file should be saved prior to doing this as all settings will be overwritten back to pre-test defaults.

(u) – Set User

(t) – Sets system Time/Date

(f) – Stores the factory default settings

(z) – Debug Mode (factory use)

(h) – Set TX S.N. (factory use)

(l) – Restore Login – restores the logins to the factory defaults (anything entered after installation at site will be lost)

(b) – Bit Mode on/off (factory use)



```

File Edit Setup Web Control Window Help
*****
* ColdFire uModule: Ver 0278, Oct 4 2013,10:49:12 Page 2/7 *
*****
* FAX TX Control/Status ** System Analog *
*****
* (1). TX On/Off (5). IPA SW Mode ** 1. TX Fwd Pwr: 3476 9621W *
* (2). RF Mute Ctrl (6). Exc SW Mode ** 2. TX Rfld Pwr: 2465 96W *
* (3). Pwr Raise (7). IPA Switch ** 3. Pwr Ctrl Ref: 3491 3.491V *
* (4). Pwr Lower (8). Exc Switch ** 4. APC Ref: 3438 3.438V *
***** 5. APC Output: 2379 2.379V *
* 1. TX Stat: ON A. VswrFlt: OK ** 6. Power Limit: 0000 0.000V *
* 2. RF Mute: OFF B. VswrFb: OK ** 7. EXC A Pwr: 1663 2251mW *
* 3. Modulat: FM C. ExcAFlt: OK ** 7. EXC B Pwr: 0000 0mW *
* 4. Exc ON: EXC A D. ExcBFlt: OK ** 8. Ext Drive: 0000 0.0A *
* 5. IPA ON: IPA A E. IPA Flt: OK ** 9. Sys Rej Load: 0218 0% *
* 6. Remote: REM F. AirFlow: N/A ** 10. TX Rear Temp: 0000 N/A *
* 7. ExcSwMod: AUTO G. FanFlt: N/A ** 11. HP/LP/UPS Ref: 3496/2702/3052 *
* 8. IpaSwMod: AUTO H. Intlk: OK ** 12. Pwr Cal Gain: 3.357V *
* 9. APCStat: ON I. ACmains: OK ** 13. IPA Level: 0000 0.0W *
*10. NumExc: TWO J. PwrLimt: OK ** 14. PA Volt/Curr: 49.8V 284.6A *
*11. CtrlMod: NORM K. RjtLoad: OK *****
*12. PwrMode: NORM L. SYS_SUM: OK ** (a). FB THD 3350 (t). N+1 TX: 0 *
*13. SNMP-Mib:HR/IRT M. FP Mode: EXPERT** (b). PS Ref 1066 (c). UPS Ref 3052 *
*****

```

Page 2: FAX Control/Status Page for the complete System



```

File Edit Setup Web Control Window Help
*****
* ColdFire uModule: Ver 0278, Oct 4 2
*****
* FAX TX Control/Status **
*****
* (1). TX On/Off (5). IPA SW Mode **
* (2). RF Mute Ctrl (6). Exc SW Mode **
* (3). Pwr Raise (7). IPA Switch **
* (4). Pwr Lower (8). Exc Switch **
*****
* 1. TX Stat: ON A. VswrFlt: OK **
* 2. RF Mute: OFF B. VswrFb: OK **
* 3. Modulat: FM C. ExcAFlt: OK **
* 4. Exc ON: EXC A D. ExcBFlt: OK **
* 5. IPA ON: IPA A E. IPA Flt: OK **
* 6. Remote: REM F. AirFlow: N/A **
* 7. ExcSwMod: AUTO G. FanFlt: N/A **
* 8. IpaSwMod: AUTO H. Intlk: OK **
* 9. APCStat: ON I. ACmains: OK **
*10. NumExc: TWO J. PwrLimt: OK **
*11. CtrlMod: NORM K. RjtLoad: OK **
*12. PwrMode: NORM L. SYS_SUM: OK **
*13. SNMP-Mib: HR/IRT M. FP Mode: EXPERT**

```

## Telnet Session (left half of page 2)

- (1) – Turns Transmitter OFF or ON
- (2) - Mutes or Un-mutes transmitter
- (3) - Raises RF power out
- (4) - Lowers RF power out
- (5) - Sets IPA switching mode to Manual/Auto
- (6) - Sets Exciter switching mode to Manual/Auto
- (7) -Switches IPA between A/B
- (8) - Switches Exciter between A/B

1.– 13. and A. – L. are status indicators, see the led's on System Interface or Multi-Unit Interface board

Status F & G are power block only so they have an N/A



```

*****
2013,10:49:12                Page 2/7 *
*****
**          System Analog          *
*****
**  1. TX Fwd Pwr:      3480      9688W *
**  2. TX Rfld Pwr:     2467        96W *
**  3. Pwr Ctrl Ref:    3503      3.487V *
**  4. APC Ref:        3445      3.454V *
**  5. APC Output:     2381      2.378V *
**  6. Power Limit:    0000      0.000V *
**  7. EXC A Pwr:      1670      2246mW *
**  7. EXC B Pwr:      0000        0mW *
**  8. Ext Drive:      0000        0.0A *
**  9. Sys Rej Load:   0218         0% *
** 10. TX Rear Temp:   0002         N/A *
** 11. HP/LP/UPS Ref:  3496/2702/3052 *
** 12. Pwr Cal Gain:   0000      3.357V *
** 13. IPA Level:      0000        0.0W *
** 14. PA Volt/Curr:   49.8V      284.3A *
*****
** (a). FB THD  3350 (t). N+1 TX: 0 *
** (b). PS Ref  1066 (c). UPS Ref 3052 *
*****

```

(a). VSWR Foldback threshold. Should not be set unless factory service is consulted

(b). Power Supply reference – 0=44 VDC;1550=52 VDC, should not be set here, set on tx lcd via “SETUP”

(t). N+1 TX sets the N for the transmitter

(c). UPS Reference sets power level reference for UPS mode. If UPS/Generator cannot handle full tx power this should be set 2500≈1/4 power Remote Input J1-8

## Telnet Session (right half of page 2)

This screen shows DAC/ADC Value and real value for each item listed.

1. Transmitter forward power from output directional coupler
2. Transmitter reflected power from output directional coupler
3. Pwr\_Ctrl\_Ref: Voltage at TP5 on System Interface Board see “PWR\_CTRL\_REF” Sheet 5 APC Circuitry (1 count= ≈1 mV) from Mirco Module and is set by which mode tx is in HP/LP/UPS. Raise/Lower Power changes this ref voltage
4. APC Ref: Voltage buffered from Forward Power Detector in APC circuit
5. APC output: APC voltage that drives transmitter interface to Exciter TP42 on System Interface. Typically will be 2.7 VDC when calibrated. See “APC\_CONTROL” on System Interface Board Sheet 5. Voltage will be slightly lower on exciter reading.
6. Power Limit – Not Displayed unless limit is hit ≤110 % TPO
7. Exciter A power – Calibrated from voltage source from exciter
8. Exciter B power – Calibrated from voltage source from exciter
9. Sys Rej Load: Shown as percentage that reject load was calibrated, either 1 power block or 1 cabinet; Power detector on fan control board (FAX20/30/40 Only)
10. TX rear temp is measured on power supply interface board and is the hot air temperature that is exhausted out rear of power block (see power block temp for FAX20/30/40)
11. HP/LP/UPS Reference is DAC value that the “Pwr\_Ctrl\_Ref” will be set to in each mode.
12. Pwr Cal Gain Software setting
13. IPA Level – Only shown on Power Block
14. PA Volt/Current – Voltage is the main power supply voltage set by “PS Ref” – Current is total DC current of all power blocks



```

C:\ Telnet 192.168.117.88
*****
* ColdFire uModule: Ver 0019, Jun 14 2012,11:11:32 Page 3/7 *
*****
* Power Block 1 Control/Status ** Power Block 2 Control/Status *
*****
* 1. USWR Fault: OK ** 1. USWR Fault: OK *
* 2. USWR Foldback: OK ** 2. USWR Foldback: OK *
* 3. Fan Fault: OK ** 3. Fan Fault: OK *
* 4. Airflow Fault: OK ** 4. Airflow Fault: OK *
* 5. Power Limit: OK ** 5. Power Limit: OK *
* 6. AC Mains OK ** 6. AC Mains OK *
*****
* Power Block 1 Analog Data ** Power Block 2 Analog Data *
*****
* 1. Fwd Power: 3500 5.0kW ** 1. Fwd Power: 3520 5.1kW *
* 2. Rfld Power: 1613 0W ** 2. Rfld Power: 0492 0W *
* 3. Airflow: 2074 93.6% ** 3. Airflow: 1821 97.9% *
* 4. Rear Tmp: 2448 31.4C ** 4. Rear Tmp: 2524 34.3C *
* 5. PwrCal Gain: 3.4360 1.678 ** 5. PwrCal Gain: 3.4520 1.686 *
* 6. PA Cur/Volt: 185.3A 49.7V ** 6. PA Cur/Volt: 204.5A 49.7V *
* 7. IPA power: 1275 11.9W ** 7. IPA power: 1373 14.4W *
*****
* <a> PB1AC FLI ENA <b> PB2AC FLI ENA_ ** <1> PB1-2 <2> PB3-4 *
*****

```

Page 3: Shows Status of Power Blocks 1 & 2, if FAX30 or FAX40 then pressing (2) shows Power Blocks 3 & 4. No commands on this page.

Powercal Gain: This is set in the power block calibration procedure using the buttons on the System Interface Board. This must not be touched once power is calibrated.

```

C:\ Telnet 192.168.117.88
*****
* ColdFire uModule: Ver 0019, Jun 14 2012,11:11:32 Page 4/7 *
*****
* PA * Fault * Current * PA * Fault * Current * PA Volts * PA Temp *
*****
*IPAA*000000 * 0319 3.2A *IPAB*000000 * 0061 0.0A * 3297 49.4V * 2318 32.5C *
* 1A *000000 * 1328 13.3A * 1B *000000 * 1251 12.5A * 3314 49.7V * 1615 49.8C *
* 2A *000000 * 1396 14.0A * 2B *000000 * 1266 12.7A * 3326 49.9V * 1591 50.4C *
* 3A *000000 * 1346 13.5A * 3B *000000 * 1228 12.3A * 3319 49.8V * 1549 51.6C *
* 4A *000000 * 1324 13.2A * 4B *000000 * 1227 12.3A * 3306 49.6V * 1659 48.6C *
* 5A *000000 * 1326 13.3A * 5B *000000 * 1257 12.6A * 3334 50.0V * 1508 52.7C *
* 6A *000000 * 1375 13.8A * 6B *000000 * 1281 12.8A * 3319 49.8V * 1609 50.0C *
* 7A *000000 * 1365 13.6A * 7B *000000 * 1219 12.2A * 3316 49.7V * 1620 49.7C *
*****
*IPAA*000000 * 0334 3.3A *IPAB*000000 * 0065 0.0A * 3304 49.6V * 2329 32.2C *
* 1A *000000 * 1445 14.5A * 1B *000000 * 1412 14.1A * 3314 49.7V * 1615 49.7C *
* 2A *000000 * 1465 14.6A * 2B *000000 * 1382 13.8A * 3336 50.0V * 1668 48.4C *
* 3A *000000 * 1553 15.5A * 3B *000000 * 1387 13.9A * 3329 49.9V * 1554 51.4C *
* 4A *000000 * 1489 14.9A * 4B *000000 * 1369 13.7A * 3320 49.8V * 1652 48.8C *
* 5A *000000 * 1499 15.0A * 5B *000000 * 1390 13.9A * 3300 49.6V * 1610 49.8C *
* 6A *000000 * 1487 14.8A * 6B *000000 * 1392 14.0A * 3328 49.9V * 1679 48.1C *
* 7A *000000 * 1460 14.6A * 7B *000000 * 1381 13.9A * 3312 49.6V * 1670 48.4C *
* <1> PB1-2 <2> PB3-4 * PBLks1-2 * b5:NPA; b4:OT; b3:OC; b2:UU; b1:USWR; b0:OD *
*****
  
```

Page 4: Shows Meters from each IPA and PA module. Also shows the 6 fault bits (b0-b5) from each PA. (1) and (2) Switch between Power Blocks in FAX30/40.

- b0 – Overdrive
- b1 – VSWR at PA Module
- B2 – Under-voltage
- b3 – Over-current
- B4 – Over-temperature
- b5 – Module removed from slot

Order on telnet screen: b0/b1/b2/b3/b4/b5



```
C:\ Telnet 192.168.117.88
*****
* ColdFire uModule: Ver 0019, Jun 14 2012,11:11:32 Page 5/7 *
*****
* FAULT LOG (R) Reset (Up/Down Arrow) Change Pages *
*****
* INDEX * DESCRIPTION * STATUS * OCCUR TIME * CLEAR TIME *
*****
1 C1 PA6 OUT Active 06/25/12 13:28:17
2 PB2 PWR Lmt Active 06/25/12 13:28:15
3 C1 PA6 OUT Inactive 06/25/12 13:28:13 06/25/12 13:28:15
4 PB2 PWR Lmt Inactive 06/25/12 13:28:12 06/25/12 13:28:13
```

Page 5: Telnet Event Log

(R) – Clears fault log

UP/Down Arrow pages through the log

Shows both Active faults as well as faults that have cleared.



```

File Edit Setup Web Control Window Help
*****
* ColdFire uModule: Ver 0278, Oct 4 2013,10:49:12 Page 6/7 *
*****
* Calibration Information *
*****
* MUX INPUT: 0x883F FM: 1 HD: 0 ** Power Block Cal Factors *
* CAL Fwd K1/K2 Rfld K1/K2 ** CAL Fwd K1/K2 Rfld K1/K2 *
* HD: 1.200/26050.0; 1.200/26050.0 ** PB 0: 1.476/59103.1; 1.507/2637.2 *
* FM: 1.639/192546.8; 1.640/7766.7 ** PB 1: 1.427/49211.4; 1.438/2047.8 *
* FH: 1.652/199822.8; 1.652/8036.7 ** PB 2: 0.000/ 0.0; 0.000/ 0.0 *
* NA: 1.200/26050.0; 1.200/26050.0 ** PB 3: 0.000/ 0.0; 0.000/ 0.0 *
* ** *
* TX TPO for Calibration ** FWD Cal Sample: 0000 0000 0000 0000 *
* HD:00000 FM:10000 FH:10000 NA:00000 ** FWD Adj Times: 0000 0000 0000 0000 *
* PA Supply Volts(DAC Output 1066) ** RFLD Pwr Cal: 0000 0000 Tgt:0000 *
* HD:48.0 FM:50.0 FH:46.1 TBD:46.0 ** Cal Times: 0000 *
* ** Calibration Status: 0 *
* ** FWD CAL ERROR CODE: 0x00 *
* ExcPwr(HD) A: 1000 1000 B: 1000 1000 ** *
* ExcPwr(FM) A: 2600 1920 B: 2400 2078 ** *
* ExcPwr(FH) A: 1000 1000 B: 1000 1000 ** FWD FLT/WRN Thresholds: 5011W 5011W *
* ExcPwr(NA) A: 1000 1000 B: 1000 1000 ** AudioInput1:OK AudioInput2:OK *
* ExcA/B THD: 1248mV; 1532mV ** *
* ExcA/B CalFactor: 1.354; 1.155 ** *
*****

```

Page 6: Telnet Calibration Parameter Screen



```
File Edit Setup Web Control Window Help
*****
* ColdFire uModule: Ver 0278, Oct 4 2013,10:49:12 Page 7/7 *
*****
* Debug Information *
*****
* EXC SW Stat: RDY IPA SW Stat: RDY ** CAL Fwd K1/K2 Ext APCGain TPO *
* EXC Status: A ON IPA Status: A ON ** TX1:0.000/0.000; 0; *
* IPA Strike: RDY ** TX2:0.000/0.000; 0; *
* Exc SW Times: 0005 ** TX3:0.000/0.000; 0; *
* ** TX4:0.000/0.000; 0; *
* Pwr Mode Change: 0000 DBG: 0000 ** TX5:0.000/0.000; 0; *
* TX Fault Three-Strike Info ** TX6:0.000/0.000; 0; *
* In-Process: No ** TX7:0.000/0.000; 0; *
* Period: 00 Timer: 00 Count: 00 ** TX8:0.000/0.000; 0; *
* ** *
* PA Out Number: 0 ** TxOnOffCfg: 1 *
* ** TxOnOffStatus: 1 *
* ISP Status: NA Time: 0000 ** RfMuteCfg: 0 *
* RS485-1 TX:1083, RX1:0, RX2:0, ** RfMuteStatus: 0 *
* RS485-2 TX:0, RX1:0, RX2:0, ** RfRmtMute: 0 *
* RS485-3 TX:0, RX1:0, RX2:0, ** Rampup Time: 0 *
* RS485-4 TX:0, RX1:0, RX2:0, ** Rampup State: 0 *
* ** *
*****
```

Page 7: Telnet Debug Screen