

This is a list of some of the internal pages in the 7000 modem, the 6000 should be similar. I'll try to explain what is on each page and what you can do from the ones that offer you options. Before you can access these pages you must have your browser configured properly, either no proxy or the modem listed in the proxy exceptions list. You must have also enabled your browser to access the modem through your firewall. Many of the items we are going to cover may be blank or a 0 if you have reset your modem since the last time the test shown was run.

The files mentioned are in the archive along with this presentation, I split them into System Control Center and Advanced directories. You can also view the pages inside your modem instead of loading the files. To easily see the files extract them into sub-directories and open the index.html file.

The basic page is your system control center, <http://192.168.0.1/> it is a handy place to see the status of your modem. This is in the file System Control Center.html

The links in the System Status section of the page take you to the same places the dots above do. The "Connectivity Test" is a very simple check to see if your modem can see the NOC, it doesn't test your Internet connection. This is in the files System Control Center con_test.html and System Control Center conteststatus.bin.html

The first dot is green if all is working or yellow or red if there are problems. Clicking it will take you to the detailed system status page, we will cover the it later in the presentation.

The second (blue) dot gives you details on the reception status, not much interest as it is almost always going to show an "Frames with Errors" rate of 0 unless you or the NOC are having rain problems. This is in the file System Control Center rx_stats.html

The third (blue) dot gives you details on the transmission status, this is important information since the "Number of Failed Transmissions" when compared to the "Number of Successful Transmissions" will give you the percentage of your transmissions that had to be done over. The error percentage should be below 1% once you have done a few thousand transmissions. You will see a higher error rate just after booting the modem as it locks onto the signal and does the initial setup of your connection. You can clear this and start over by going to the "Advanced" page and selecting clear statistics. This is in the file System Control Center tx_stats.html

The fourth (blue) dot gives you the system information. This is in the file System Control Center sys_info.html

This is where you will find the numbers you need to have handy when you call tech support or post to the forums for tech support. For your personal info the "Software Release" gives you the version of the software that you are running, you can't change it or force an update. Also here are your LAN and Subnet IP addresses if you need them to set up a router or a computer not using DHCP to set them.

On the other side of the table you can see your satellite (by location), polarization and your transponder frequency. The software configuration isn't changeable by the user and should show this status if everything is working properly.

The "Help" links on the main page take you to some general topics,

Getting Started
Browsing Optimization Utility

View Help Topics
Contact Information
Restart DW7000 (pops up a window with a reset button)

Getting Started has some really basic info for the first four choices but the fifth entry has several interesting FAQ sections, these four expand on the status messages seen on the “System Status” page.

The “Browser Optimization Utility” gives instructions for using it and a link to download a new copy if you need it to configure a new computer.

Help topics takes you to several pages, aside from ones already covered you will find the Glossary and “Advanced Troubleshooting Statistics” where you will see several bits collected from the many pages under the “Advanced Configuration and Statistics” screen that we will cover later.

The last internal link of interest is the “RestartDW7000” which will pop up a window with a reset button to do a software reboot of the modem, similar to a Ctrl-Alt-Delete on a PC. I saved a bookmark to the reset popup page so I can go there directly saving a few clicks.

System Status Page This is in the file System Control Center sys_status.html

If you click on the first column you will get possible values for that item, if you click on the second column you will get the description for the current status. Clicking on the possible values on the new page will give you a detailed explanation of that condition.

RxCode Receive Status This is in the file System Control Center rx_status.html

1 The receiver is in pointing mode.

This condition indicates that the installer is performing antenna pointing. In this mode, the transmitter is disabled for safety reasons since the installer is working near the dish.

If this occurs during normal operation, try power-cycling the DW7000 by unplugging the power cord from the wall outlet and then plugging it back in.

2 The receiver is in factory or NOC mode.

This status is for DW7000 testing purposes only and should never be seen by users.

If this occurs during normal operation, try power-cycling the DW7000 by unplugging the power cord from the wall outlet and then plugging it back in.

3 The receiver is not locked.

If the DW7000 had been operating previously, this status is probably due to inclement weather conditions and will be corrected when the weather improves.

This condition indicates that the Receiver is unable to receive the signal from the NOC. This is also associated with a signal level less than 30. This occurs if there is a weather outage for the user, a NOC outage, a misaligned or faulty antenna, or faulty cabling.

If this keeps happening under normal weather conditions, make sure the power supply to the DW7000 is correct. The power supply should be Part # 1031105-0001.

If the power supply is correct, try power-cycling the DW7000 by unplugging the power cords from the wall outlet and then plugging them back in.

4 The receiver is locked to the wrong network.

This condition should only be seen during installation and occurs when the receiver is locked to a signal, but the signal ID does not match the ID that was assigned to the user during commissioning or the ID that was entered by the installer during manual pointing.

If this occurs during normal operation, it may be due to the user changing acquisition parameters, including frequency and/or location of satellite, or the antenna becoming misaligned.

5 The receiver is operational.

This is the normal operating state where the receiver is receiving data from the NOC. This is the only state when the transmitter will operate correctly.

6 The receiver is not detecting any signal.

This condition occurs when the Receiver is not detecting any type of radio signal from the antenna. This could indicate that the cabling between the receiver and the antenna is faulty or that the receiver itself is faulty. Check that the cables are firmly connected on the DW7000.

Also, make sure that the power supply to the DW7000 is correct. The power supply should be Part # 1031105-0001. Try power-cycling the DW7000 by unplugging the power cords from the wall outlet and then plugging them back in.

7 The receiver is locked to an unknown network.

This condition should only be seen during installation and occurs when the receiver is locked to a signal but there is no DIRECWAY Network ID on that signal.

If this occurs during pointing or commissioning, the antenna has not been pointed correctly. If it occurs during normal operation, it may be due to the user changing acquisition parameters, including frequency and/or location of satellite, or the antenna becoming misaligned. The former condition can be corrected by re-commissioning the site. The latter requires an antenna repointing.

TxCode Transmit Status This is in the file System Control Center tx_status.html

The detailed descriptions of these can be seen by clicking on them in the modem web pages.

- 1 The transmitter has been disabled by the Network Operations Center
- 2 The transmitter has been placed in test mode by the Network Operations Center
- 3 The transmitter is locking to the receive carrier
- 5 The transmitter is not locked to network timing
- 6 The transmitter is not available because the receiver is not detecting a signal or is not locked to the correct network
- 7 The transmitter is not available because the receiver is not tuned for normal operation
- 8 Transmitter available for Normal Operation
- 9 The satellite transmitter is adjusting for optimal network timing
- 10 The transmitter is unable to communicate with the Network Operations Center
- 11 The transmitter is not available because the receiver software is out of date
- 12 The transmitter is not receiving network control messages from the Network Operations Center
- 13 The transmitter is unable to range because it cannot communicate with the Network Operations Center
- 14 The transmitter is not available because ranging has failed
- 15 The transmitter is waiting for a ranging request to be processed by the Network Operations Center

- 16 The transmitter is waiting for a transmit request to be processed by the Network Operations Center
- 17 The transmitter is unable to obtain an available transmission rate
- 18 The transmitter is requesting a transmit pointing test
- 19 The transmitter is queued for a transmit pointing test
- 20 The transmitter is performing a transmit pointing test
- 21 The transmitter is disabled because a transmit pointing test failed
- 22 The transmitter is disabled because a transmit pointing test cannot be performed
- 23 The transmitter is disabled pending a transmit pointing test
- 24 The transmit cable cannot be detected

Software Download Status Messages

This is in the file System Control Center sdl_status.html

Waiting for first heartbeat msg.
Received first heartbeat message.
Received parameter file list.
Starting download for all files.
File list changed. Downloading new files.
File download in progress.
File download failed.
Error writing file to disk.
Storing received files to disk.
File download completed. Processing files.
All files processed.
All files are up-to-date.

TCP Acceleration Status This is in the file System Control Center pep_status.html

TCP Acceleration - Operational
TCP Acceleration - Disabled
TCP Acceleration - Not operational
TCP Acceleration – Impaired

Web Acceleration Status This is in the file System Control Center tpc_status.html

Web Acceleration - Inactive
Web Acceleration - Operational
Web Acceleration - Not Operational
Web Acceleration – Connecting

The registration installer screens <http://192.168.0.1/fs/registration/setup.html> that you should be using are covered in the users manuals so I'll skip over them here except to note you should be using the point4020 program instead of the registration servers.

The advanced screen <http://192.168.0.1/fs/advanced/advanced.html> is where most of the good stuff is buried. Across the top are commands that you can execute, use these with care and only if you understand what they are going to do. Down the left side are more pages that you can open, both to see your modem status and to reset some settings. This is in the file advanced.html

You can look through the drop down menus for commands that sound interesting and safely try the ones that contain show or print as part of the name and see what information they show.

An example, in the first column you have the command “devs” select that and click the execute button and you will get a listing in the page body. If you scroll down to the items starting with a “9” you will see entries like this one:

```
9 /mem/webfiles/registration/acp.html
```

If you edit it to become a normal URL like this it will open the page in the modem.

```
http://192.168.0.1/fs/registration/acp.html
```

I have not tried this with the last two entries that end with “.js”

On the left menu you can select many different actions, I'll go though the more important ones here.

Auto Refresh Settings: This controls how often the modem refreshes the pages that it updates automatically, longer puts less load on the modem CPU, faster is handy for watching something that changes quickly like the messages on the main status page.

Summary: A basic collection of info on your modem collected from other screens, same as the opening screen.

Event Logs: These are internal logs of the modem's operations you can look at them using any program that will display text but a spreadsheet works best since the data is in CSV format that the spreadsheet can turn into columns.

Address Statistics

Firmware Statistics

ACP Statistics: This one is of interest if you want to see how your modem has been doing on passing ACP tests. Almost all the numbers are cleared with a modem reset so you should check it just before shutting down. This is in the file advanced_acp.html.

You can see where you are in the ACP cycle from these three numbers:

Time (s) Since Pass XPOL.... 0 to 259200 - This one will count up and count per second and the modem will try to do an ACP once it reaches the Maximum.

Minimum Revalidate Interval. 259200 - This is the minimum number of seconds that will pass before a ACP will be requested.

Maximum Revalidate Interval. 157680000 - If the modem hasn't passed an ACP by the time you reach this number you will get a “failed Pointing Test” message and have to repoint and pass an ACP to get back on line.

Transmitter Statistics

Transmitter Debug Stats

emacShow: This shows the status of your internal and external Ethernet ports.

Ranging Statistics: This is a record of your modem's attempts to determine its distance from the satellite (the third section) which has to happen so you can get the transmitter enabled. This is in the file `advanced_ranging.html`.

```
NOC-Sat Delay (AnE)..... 2524069   Remote-Sat Delay (BnD).... 2488652
Remote Distance To Sat (D)... 991420   SFNP Interval..... 3600000
Ranging ID..... 16           Network Ranged On (L:H:F). 099:W:1110
NOC ID..... 0
```

The second and fourth sections are related to setting your transmit power and what mode of error correction to use. You may see rates listed that you can not connect at, this is normal and all you need to be concerned about is connecting at the highest rate anyone else on your satellite and transponder can connect at.

```
Successful Rates      | Unsuccessful Rates    | Failed Rates          |
-----+-----+-----+
128k Sequential 1/2
256k Turbo Code 2/3
256k Turbo Code 4/5
```

In this block the numbers of interest are the EsNo's The target number is what DW wants your modem to be set to, the initial and final show where you started (full power) and what the modem decided to use which is usually close to the "Target". If you can't get to the "Minimum" number you may not be able to connect at that rate.

```
-----
Rate..... 128k Sequential 1/2

Available..... 1           Ranging Reason..... 9
Ranging Sessions Required.... 3       Minimum EsNo..... 0
Target EsNo..... 120      SwitchUp EsNo..... 255
Initial Power Setting..... 0       Final Power Setting..... 31
Initial Received EsNo..... 131     Final Received EsNo..... 120
Power Control Type..... PWM      Final Received C/No..... 631
Outroute SQF..... 61        Outroute C/No..... 832
Initial Timing Offset..... 1257    Final Timing Offset..... 500
Timestamp..... DEC 15 07:49:48 (GMT) 2005
```

Health Monitor Stats

DVB PID Statistics

SLH Statistics

PEP Statistics

IP Relay Route Table

Route Table Statistics

RIP Statistics

VIP Statistics

Software Download Monitor

Reset History: This shows the last 10 resets that the modem has been able to record. Most are either self explanatory or greek. Ones like "Reset Reason :System Power Up" don't need explained and ones like "VXWorks Exception" or "Watchdog Timer" mean that the modem had an internal crash. About all you can do is look here to see if it is crashing a lot if you are seeing the lights going out and coming

back on.

Configuration Parameters: These are the detailed settings of your modem, the “Value in use” column is the one to look at. This is in the file advanced config_param.

LAN Statistics: You can check this to insure that your modem and the device it is connected to have negotiated the best possible connection, what you are looking for are these items on “LAN Statistics LAN1 (Switch Port 2)”:

Auto Neg Duplex:	Full
Duplex Select:	Full
Auto Neg Speed:	100Mbps
Speed Select:	100Mbps
Link Status:	Up

DHCP Server Statistics: If you are using the DHCP server built into the modem you can see how many addresses it has assigned:

Total Available addresses.....	0000000253
Total Addresses used.....	0000000000

Header Compression Statistics

Turbo Page Statistics: This page shows what is going on with the modem's web proxy, much of the information is of no use to us but these lines provide useful information:

Downstream proxy status:	RUNNING
Last Failure reason:	Idle disconnect timeout
Upstream proxy IP address:	066.082.009.080

Turbo Page Debug Statistics **TCP Layer4 Switch Statistics**

Turbo Page Configuration: You can use this page to attempt to connect to a different proxy server if the one you are currently working with is having problems. Your first attempt should be to click the button with “Auto Select TurboPage Server” selected. You can also use this page to disable the proxy server if you haven't been able to connect to one that is working. To do this enter 10.120.10.10 as the address and 86 as the port and select “Use TurboPage Server configured below” and you will have no proxy. The only way to recover from this change appears to be a reboot. More details here:
<http://www.broadbandreports.com/faq/13533>

DNS caching Statistics **Terminal Error Statistics** **Inroute & ACSF Configuration** **Power Save Configuration** **Serial Port Config/Stats**

Clear Statistics: This will clear all the counters in the modem so you can start testing from a known point, this is handy for working with the transmit error rate as an example.

Setup: Takes you to the Install and Pointing screens.

Force Ranging: This will force the modem to recheck its distance from the satellite and retry its communications settings for error correction. Once you click it a

pop-up will open and you will do a range operation there is no option to abort it
and if you fail you will be off line.

Help: This takes you to advanced help, you should never need these if you are using
the point4020 program.