



REPORT NUMBER:

SUBJECT: Modem Commissioning

DATE:

PREPARED BY:

OVERVIEW OF PROBLEM: How to commission a Hughes modem

First off:

- Who is the customer's VAR?:

If we are not the customer's VAR (Internet Service Provider), we will not be able to look up vital information to perform the commissioning process, like the PIN #. Motosat customers usually have a SAN that starts with V301 V302 or MOT1000. Make sure you have your SAN and PIN before starting.

- Lock onto Satellite:

Search for the satellite you wish to commission your modem on. You can go to <http://kb.direcway.com/al/12/4/2518.htm> for a list of satellites and frequencies you can use. Also you can use the satellite parameters listed on your modem system info page. If you can't lock onto the satellite you wish to use for commissioning, try another. There are many to use. If you cannot lock onto any satellites, even in Generic mode, there is a receive problem that needs to be fixed before commissioning can continue.

IMPORTANT: If you are going to do a Satellite change, make sure you are able to lock on to the satellite you wish to change to before calling in to do the satellite change.

Getting Started

Once the Satellite dish has locked on to the desired satellite you wish to commission on and you have a search operation complete on your Datastorm page, Open your modem page by either clicking on Modem status on your Datastorm page. Or go to 192.168.0.1 You can click on the little man which is on the main modem page under the system info button next to What do these controls mean. Or you can type this address in 192.168.0.1/fs/advanced/advanced.html to get to the page we will need to go to.

Once you get to this page you are going to click on installation as pictured

S/N: 4060749
Main.bin: [5.8.0.82]
Fallback.bin: [5.3.0.28_PID]

Advanced Configuration and Statistics

Enable Auto Refresh: Interval (sec):

Advanced Menu

- + General
- + Receiver Stats
- + Transmitter
- + Diagnostics
- + LAN/WAN
- + IP Routing
- + IP Stack/Services
- + Firewall
- + PEP
- + Turbopage
- + Serial Protocols
- + Logs
- + OS Stats
- + VADB
- **Installation**
 - Setup
 - ACP Stats
 - Ranging Stats
 - Force Ranging
 - SDL Monitor
 - SDL Missed Frames
 - Config Params
 - VADB Test

below. Then you will click on setup.

- From this window you should see several different options; we want to choose “Registration installer”.

http://192.168.0.1 - DIRECWAY Setup - Microsoft Internet Explorer

DIRECWAY **HUGHES**

DIRECWAY Setup

Welcome to DIRECWAY Setup. Use the links below to register your DIRECWAY terminal or point the outdoor antenna. Please note that certain functions shall be disabled during this process. Make sure that your DIRECWAY terminal is restarted once you complete the Setup process.

Registration - Installer	Use this option if you are an installer and are commissioning a new terminal.
Registration - User	Use this option if you have a Registration Id and your antenna is already pointed.
Re-registration	Use this option if your terminal is already commissioned and you would like to update your account.
<hr/>	
Antenna Pointing	Use this option if you would like to run pointing or ACP on your current setup.
Manual Commissioning	Use this option if you are an installer and would like to manually commission your remote.
<hr/>	
Config File Upload	Use this option to upload a new registration configuration file.
Zip Code File Upload	Use this option to upload a new Zip Code file.

Close

- To start the modem asks for the zip code where the system will be installed. Just input the current zip code where you are located right now into this field and click next.

- The next page just confirms and displays the location’s longitude and latitude, go ahead and click next again.

- On this page you need to choose the Satellite you are currently locked on to. If you cant remember then go to your Datastorm configuration page and check it there. You can choose any frequency as long as the satellite name matches. For example. SM5 (117) has multiple entries. You can choose either of the entries listed for commissioning as long as you are locked on SM5 (117)

NOTE: The satellites and frequencies are displayed as their satellite name. For Example: 117w is SM5, 83W is AMC9, 99W is G16 or G4R, 91W is G17 or G11



DIRECWAY - Satellite Parameters

Please select the Satellite/Transponder combination from the list provided, or check the "Enter satellite parameters manually" box to enter the satellite parameters manually. Click **Next** to continue.

My antenna is pointing to:

Enter satellite parameters manually

- From here you are either going to select the satellite from the drop down list. If the satellite you are pointed to is not in the drop down list you can put a check in "enter satellite parameters manually." You will have to change the satellite info manually, filling in the parameters that are needed. Which are Longitude, Frequency, Symbol Rate, Receive Polarization and Transmit Polarization. You should copy those parameters from your Datastorm configuration page.

DIRECWAY - Manual Entry of Satellite Parameters

Please enter the Satellite Parameters below then click **Next** to continue.

Longitude (Degrees): <input type="text" value="89"/> <input type="button" value="v"/> West <input type="button" value="v"/>	22KHz Tone: <input type="button" value="v"/> Off <input type="button" value="v"/>
Frequency: <input type="text" value="1170.0"/> MHz	Frequency Band / Modulation: <input type="button" value="v"/> Ku Band - QPSK <input type="button" value="v"/>
Symbol Rate: <input type="text" value="30.00"/> Msps	DVB Mode: <input type="button" value="v"/> DVB-S <input type="button" value="v"/>
Receive Polarization: <input type="button" value="v"/> V <input type="button" value="v"/>	DVB Program Num(User Data): <input type="text" value="20500"/>
Transmit Polarization: <input type="button" value="v"/> H <input type="button" value="v"/>	DVB Program Num(DNCC Data): <input type="text" value="0"/>
	Enable OPI Display: <input type="checkbox"/>

Click on Next when parameters are entered.



Broadband Satellite - Receive LNB Selection

Please select the receive LNB from the options listed below. Click **Next** to continue.

Receive LNB:

- Next it will ask your LNB part number. Just click on NEXT to skip this page.

You will then be asked to enter whether the transmitter is a 1 watt or 2 watt. Most people have a 1 watt transmitter. If you have a 2 watt you would know because you would have specified you wanted a 2 watt when you bought the system. 2 watt is only on a .98 or a 1.2 meter sized dish. Click on Next



Broadband Satellite - Transmit Radio Parameters

Please select the transmit radio wattage from the options listed below. Click **Next** to continue.

1 Watt 2 Watt

Select transmit radio part number

Displaying Signal Strength

- Click on the blue button that reads “Display Signal Strength” and a window will pop up showing your signal and it will also show you if you are locked on a signal. Leave the window open for 10 seconds. If the signal drops into the red then you need to go back and check your satellite parameters and make sure you picked the right satellite and frequency. Also make sure your dish is pointed at the correct satellite that you are trying to enter. If it is in the green and signal is above 50 then close the window and click on next.

DIRECWAY - Receive Antenna Pointing

Use the values below to adjust the antenna's elevation, azimuth, and polarization. Adjust the antenna until you receive the highest signal strength possible.

Antenna Pointing Values:

Elevation:	37.4
Magnetic Azimuth:	132.5
Polarization:	-24.3

[Display Signal Strength](#)

Close signal strength display and click on **Next** when Receive Antenna Pointing is complete.

Perform ACP

[Back](#) [Next](#) [Exit](#)

http://192.168.0.1 - Signal Qu...

Signal Strength:

 88

Status: The receiver is locked

[Close](#)

Internet

Performing a Transmit Pointing Test

-The next page should give you two options. “Automatic Cross Pol” and “Manual Cross Pol”, Choose the Automatic Cross Pol. Another pop-up will appear and it will give a couple different messages. It should start by requesting a transmit pointing test, then either change to being queued for the test, or performing it. From there you will get your test score. If the score fails try again. If after a few tries it fails each time then you will need to see if you can align the dish better or try another frequency from the drop down list in the previous steps. If it passes then close the window and click next.

DIRECWAY - Transmit Antenna Pointing (Auto Cross Pol)

In order to be able to transmit over the satellite, it is essential to have appropriate cross pol isolation. This screen will allow you to check the isolation values for the transmitter. Adjust the polarization of the antenna until the highest possible isolation is achieved.

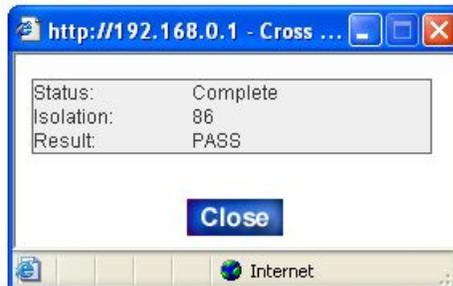
Cross Pol Test Type:

Automatic

Manual

Close the ACP result window when complete and click **Next** to continue.

Back **Next** **Exit**



Manual Cross Pol: Only used when directed by Tech Support or if you know how to peak your signal.

Connecting to the NOC (Hughes)

-The next page has you choose the Registration server. Just click on next and go past that page since it already has filled in the information needed.

DIRECWAY - Registration Server Selection

The DIRECWAY terminal will now connect to the Registration Server to continue the setup process. Please select the Registration Server from the list below or manually enter the Registration Server URL, then click **Next** to continue.

Choose Server:

Enter Registration Server address manually Secure HTTP Mode

HTTP://

Back

Next

Exit

-The next screen should look like it does below. Once the click next to continue comes up just click on next. If any of the lines fails there will be the option to retry. Click on retry.

DIRECWAY. 

DIRECWAY - Registration In Progress

Satellite connection established

Encryption Keys downloaded

Authentication successful

Click **Next** to continue.

Back Next Exit

- A window will pop-up and describe how it will redirect you to a 'secure' site.



Click on Yes to proceed.

Next it may bring up a window saying that the content was blocked. It will be located where the red circle is in the picture below. You will need to click it and then click on "display blocked content" It will take you back to the Registration Server Selection page. Just continue back through those steps for



a second time and move on to the next step.

The next page will be the subscriber agreement page for those modems not activated. It takes some time to load so give it a few minutes. You may see an error at the bottom of the page saying adjusting for network timing. That is normal. Just let it run.

Registration

Subscriber Agreement

This Agreement was last revised on September 1, 2008

Thank you for choosing HughesNet! PLEASE READ THIS SUBSCRIBER AGREEMENT CAREFULLY, AS IT CONSTITUTES A BINDING CONTRACT BETWEEN YOU AND HUGHES NETWORK SYSTEMS, LLC ("HUGHES®") AND BETWEEN YOU AND ONE OF HUGHES' SUPPLIERS, MOTIVE, INC.. BY APPLYING FOR OR ESTABLISHING AN ACCOUNT WITH HUGHES, YOU AGREE TO BE BOUND BY THE TERMS OF THIS AGREEMENT.

It will then bring up the subscriber agreement if your modem hasn't been activated yet. Scroll down to the bottom and then click on I Accept to continue. If the I Accept button is grayed out and you can't click it then look at the top of the window for an Active X box or drop down. Click on accept. If you don't see the subscriber agreement then skip this step.

- Next it will ask for a SAN and PIN. If you don't see this page skip to the next step. Enter your SAN and PIN in the boxes and then click on next. The SAN needs to have the letters capitalized. If you do not have a SAN or PIN you will

* Indicates required fields.



Your information is protected using industry standard SSL technology.

Site Account Information	
Site Account Number (SAN):	<input type="text"/> *
PIN:	<input type="text"/> *

need to contact your service provider to get this information.

The next page will be a welcome and confirmation that your modem has been registered. You do not need to print this information. It can be accessed later. Click on next.

Registration

Your account is registered for service.

Please write down the following information about your satellite terminal.

Site Id: 1E418502
Terminal IP Address: 192.168.0.1
Terminal Subnet Mask: 255.255.255.0

Use the above information to configure IP devices connected to the satellite terminal.

The default Gateway on each IP device should be set to the Terminal IP Address.

Print this page

Continue

- Next it will download more information and then bring up a screen to restart the modem. Click on restart and the modem will power off and come back on.

Almost Done

-After the LAN light on the modem comes on, go into the system info page on the modem (192.168.0.1) and get your new satellite parameters.

This information is needed when you call Technical Support.

HN7000S Info	Satellite
Site ID: Not_Commissioned	Transmit Path: Satellite
Serial Number: 4031939	Outroute: Primary
Software Date: Sep 26 2006, 15:10:23	Longitude: 99 West
Software Release: 5.3.0.28	Receive Frequency: 1330 MHz
LAN1 IP Address: 192.168.0.1	Receive Symbol Rate: 22 Msp/s
LAN1 Subnet Mask: 255.255.255.252	Receive Polarization: Horizontal
LAN2 IP Address: 0.0.0.0	Transmit Polarization: Horizontal
LAN2 Subnet Mask: 255.255.255.0	22KHz Tone: Off
	Router Address: 100.100.100.100
Transmit Radio Info	
Transmit Radio Wattage: 0 Watt	

Copy those parameters down. See example above as to what info you will need to copy. Next go to your Datastorm page and click on configuration. Make sure those parameters match with what is listed in the Modem system info page.

If the satellite you commissioned your modem on is the same as the one you pointed at then your modem should come online on its own. If not then you will need to click on search and get your satellite to move to the correct satellite.

After all that the modem should be downloading a software update from Hughes. Please leave the modem online to let this download. Depending on your modem and how long it has been since you have commissioned it, this may take up to 30 min to complete. However you can monitor this progress by entering the modem page (192.168.0.1), and click on System Info. Listed under 'Software Download Status' should be the file it is currently downloading.

SYSTEM STATUS

Signal Strength	74
<i>Note: Signal Strength is not an indicator of browsing speed. Precipitation can affect Signal Strength. If you do not see a red flag next to any of the status messages on this page, you should be able to browse the Internet successfully.</i>	
<u>Receive Status</u>	<u>Receiver operational. (RxCode 5)</u>
<u>Transmit Status</u>	<u>Transmitter ready. (TxCode 8)</u>
<u>Software Download Status</u>	<u>File list changed. Downloading new files.</u>
<u>Service Status</u>	<u>Commissioned [Keys updated]</u>
<u>TCP Acceleration Status</u>	<u>Operational</u>
<u>Web Acceleration Status</u>	<u>Inactive</u>
<u>Diagnostics Code</u>	0000-1000-0100-0016(Hourly) Not Available(Recent)
<u>Fair Access Policy Threshold Exceeded</u>	<u>NO</u>

Once the modem has downloaded all its files it will restart. After it has restarted then you should be able to browse and you will notice that the 'Software Download Status' says all files up to date. After this you have completed the commissioning of your modem.