Hylas 2 - freedomsat
Installation Guide

www.wafa.ae

Contents

Please read this entire document before attempting your first installation. If you are unsure of any part of this procedure contact our technical support team for further advice.
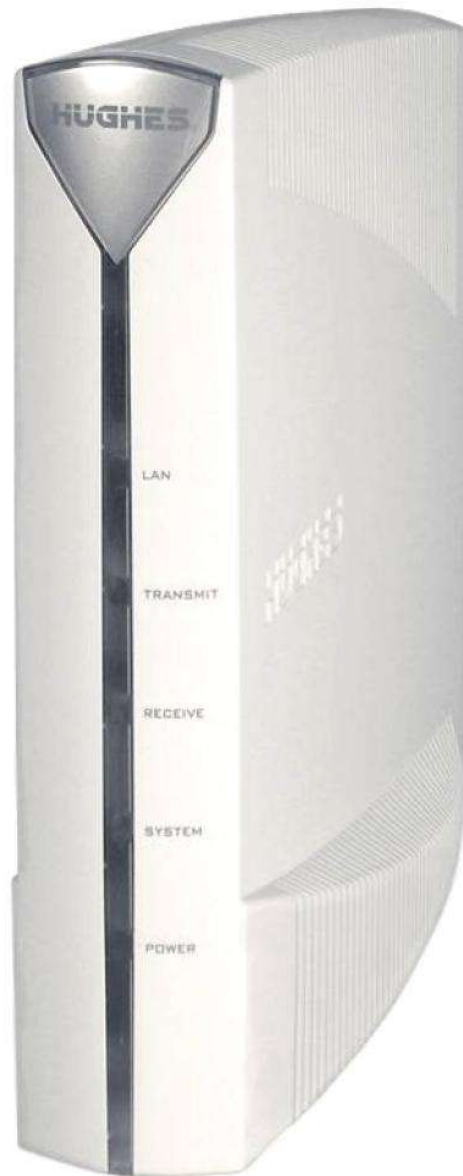
1. Equipment Preparation

- The Hughes 9000 series modems are integrated receive and transmit units with single LAN interface.

- Power specification of these ODUs is 1 Watt.

- IF cables: RG6 type for transmission and reception, two separate cables are required. It is important that the right quality cable is used in order to achieve the right signal levels depending on the cable length (attenuation). Please review the table attached in **Appendix B** at the back of this document.

- You need a valid configuration sheet for the site for the site to be commissioned. Ensure you have this before attending site. This contains details of IP addresses, satellite parameters and other settings that are needed for your modem to function.

- Ensure your antenna is installed and accurately aligned before you start to configure the modem.
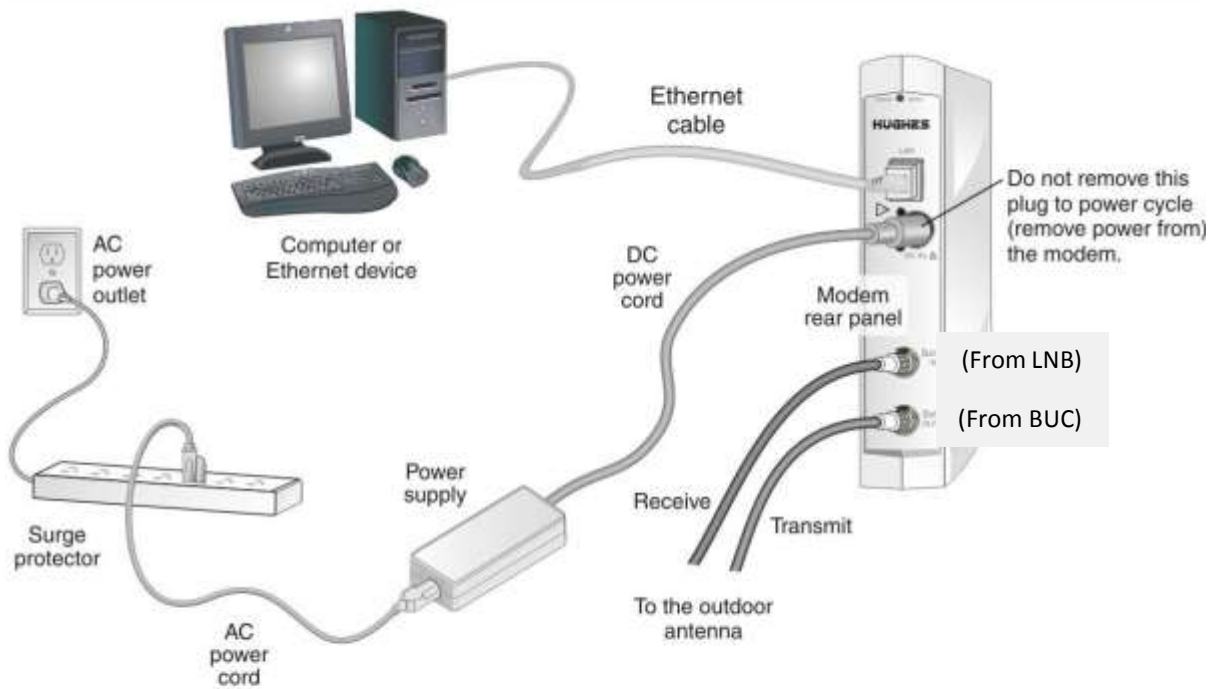
Do you have a valid configuration sheet?

Before continuing with the installation, do make sure to submit the Activation Form. Only after receiving this can we send you the configuration details

Link to Activation Form –
Or email us the ESN on support@wafa.ae

Connecting Modem and PC for configuration of boot parameters

a) Attach the Ethernet cable between your PC and the MODEM.

Note: The Modem auto detects the type of cables you have (crossover or Straight cable).

> **The modem's IP address is preset to 192.168.0.1. If your PC's network card to set for DHCP, the modem will automatically allocate you the IP address of 192.168.0.2 (DHCP is also enabled for normal operation on a commissioned system, you will see your own unique IP's after commissioning is complete).**

After this ensure the Computer is set to "Obtain an IP address automatically".

Changing LAN Settings/Assigning Static IP Addresses:

Windows Vista/7:
Firstly you will need to navigate to the Control Panel> Network & Internet Tab> View Network Status & Tasks> Change Network Adapter Settings> Right Click on your LAN Connection> Properties.

Windows XP:
Navigate to Control Panel> Network Connections> Right Click on your LAN Connection> Properties.
You will always make use of IPv4.
Once IPv4 is selected, click 'Properties'.
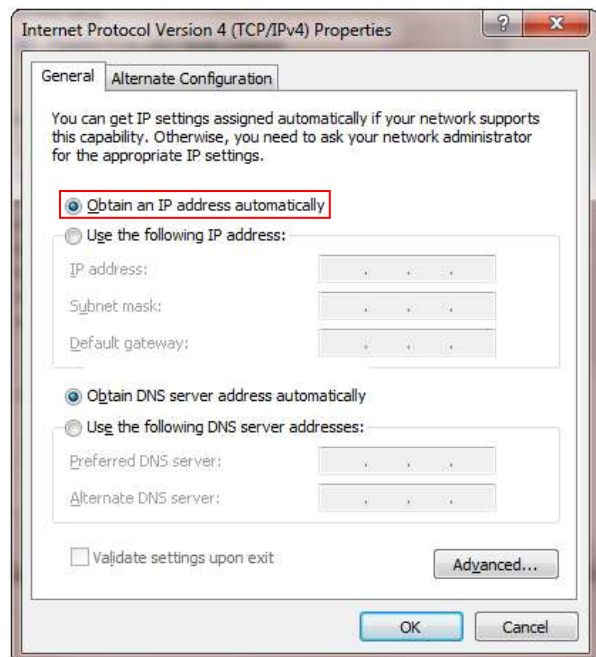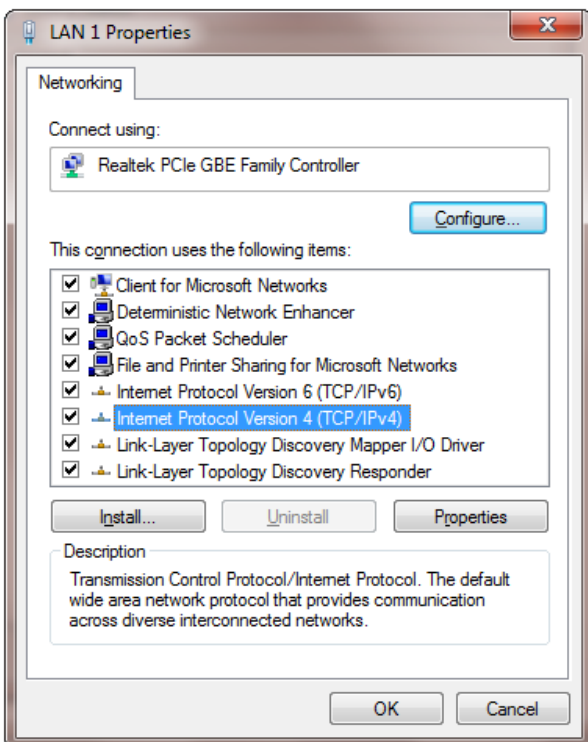
By default, your IP settings will be set to 'Obtain an IP Address automatically'.
They should remain this way.
The same applies to obtaining a DNS Server.

2. **Modem Configuration**

Uploading the SBC configuration file to the Modem

The SBC configuration file *(SBC.cfg)* contains satellite information that populates the Receive LNB Type and various other fields within the VSAT Manual Commissioning Page so that you can proceed with the configuration of the modem. Once you have obtained the SBC.cfg file, save it on the installer laptop, making sure to note the location in which the file is saved; then complete the steps below.

1. Open a browser on the installer laptop.

2. Type http://192.168.0.1/fs/registration/setup.html in the address bar and press **ENTER**. If an alternate IP address was assigned to the satellite router at the HX system gateway, enter that IP address instead. The Broadband Satellite Setup screen appears as shown in Figure 6.

3. Click "Config File Upload".

Broadband Satellite Setup

Welcome to Broadband Satellite Setup. Use the links below to register your HX90 terminal or point the outdoor antenna. Please note that certain functions shall be disabled during this process. Make sure that your HX90 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.
Registration - Adapter Swap	Use this option if you are replacing your existing terminal with a new terminal 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.
Antenna Pointing	Use this option if you would like to run pointing or ACP on your current setup.
VSAT Manual Commissioning	Use this option if you are an installer and would like to manually commission your terminal as a VSAT.
License Management	Use this option to upload and manage feature licenses.
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.

Note: Do not click 'Zip Code File Upload'; this link is used to update the ZIP code table in the satellite router.

4. On the Configuration File Upload screen, click Browse and navigate to the location on the installer PC where the SBC.cfg file is saved.
5. Select the file and click Open.

6. Click Upload.
7. Click Close to return to the Setup screen.

Select the VSAT Manual commissioning page.

This window allows you to change the Satellite parameters, VSAT Lats & Longs, IP/LAN parameters & network management parameters. All the information required to complete this stage is on your site-specific configuration sheet, with the exception of the RFU part number (get this directly from your RFU) & the VSAT Lats & Longs (your local GPS).

Double check all parameters before selecting "**Save Configuration**", the modem will reset.

When the unit restarts, browse back to: http://192.168.0.1/ and then click 'System Status'
Then take note of the signal strength, (The modem RX LED should now be lit).

SYSTEM STATUS

Signal Strength	87
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.	
Receive Status	Receiver operational (RxCode 5)
Transmit Status	Transmitter ready. (TxCode 8)
Software Download Status	All files are up-to-date.
Service Status	Commissioned (Keys updated)
TCP Acceleration Status	Operational
Web Acceleration Status	Inactive
Diagnostics Code	0000-0000-0000-0005(Hourly) 0000-0000-0000-0005(Recent)

Depending on your location, you should have signal strength of 92 and above.

If no signal is displayed (29 or less) check cabling and the satellite parameters are entered correctly into the MODEM (compare with your configuration sheet)

If your signal is a solid 30, it is possible that your polarisation is incorrect.

If your signal is 31 and above you are locked onto the correct satellite but you need to refine the polarisation and/or pointing.

After confirming the settings inputted into the VSAT Manual Commissioning page you may notice that the system status page reports the following:

SDL Initialization complete.
Awaiting first heartbeat msg.
Received first heartbeat message.
Received File/Group message.
Reconciling files... MM loading... Transferring MM to /cfg0/!
All files downloaded. Notifying CFM.

The modem will reboot at this stage – The status should revert to "All files downloaded, no pending changes", all lights should be on and the system status (http://192.168.0.1) should be green.

3. Registration Details

To use this service you will require a registration pin which is provided on your configuration sheet.

You can enter this in directly to the page which will appear in your browser – To reach this all you will need to do is try browsing to any webpage

HN Hylas 2

BW Site ID: BHHN10002 Serial Number: 2035625

You will find the installation instructions attached to the same email as this configuration sheet.

Satellite Parameters

Satellite Longitude:	31 Degress East
Satellite Frequency:	13820
Symbol Rate:	15000000
LNB 22KHz Switch:	On
DVB Mode:	DVB S2 ACM
OTA Frequency:	0
Receive Pol:	Vertical
Transmit Pol:	Horizontal

Recieve LNB type:	Ka_1500825
Transmit Radio:	Select "1 Watt" Option
Registration PIN:	0

This pin is case sensitive, so be sure to enter it exactly as printed on your sheet.

EXAMPLE

Welcome to Freedomsat KA Satellite Network

Please enter your PIN below (this pin can be found on you configuration sheet)

Please enter your PIN »

XXXXXX   Continue

If your PIN is not accepted please contact WAFA Technical Support for assistance:

Telephone: + 971 2 6334216

Email: support@wafa.ae

4. Verifying correct modem operation.

Browse to http://192.168.0.1 and check the system status light is green in the browser, check the following

- Signal quality factor (Minimum of 92)
- Frames received
- Receive Status operational
- Transmit Status available

Power cycle reboot.

a) Unplug the power supply to the modem (at least for a minute)
b) Plug the power supply back into the modem (wait for the **Ready** and **RX** lights to flash back and forth)
c) Confirm that the **status** lights remain steady, and **LAN LED** flashes as the modem boots up completely (you will also see the LAN LED flash when you are passing traffic)

5. Troubleshooting

Head to http://192.168.0.1 and go to the 'System Status' page.

On this page you can determine the working state of the modem.

If you ever need to call into Support about modem issues, you will need to be able to access this page if requested.

Above in the highlighted sections we can see the Signal Strength as well as the Receive and Transmit Status. These are the most important pieces of information to note when diagnosing errors.

The signal strength should always be 92 or above.

The Tx & Rx codes should normally be 8 and 5 respectively. If these are different, there is an issue that needs to be resolved.

We recommend that any non-pressing issues should be reported through the WAFA ticketing system - If you do not have an account, please send an email via this pages link.

For any queries of a more urgent nature please contact WAFA support via telephone.

An additional tool that may prove useful when calling in would be the Windows Command Prompt. To access this, (In Windows Vista or 7) you can simply type 'cmd' into the start menu search and hit enter. In Windows XP you would go to 'Run' in the Start Menu and type the same.

Windows Vista/7   Windows XP

6. MODEM Status LED's
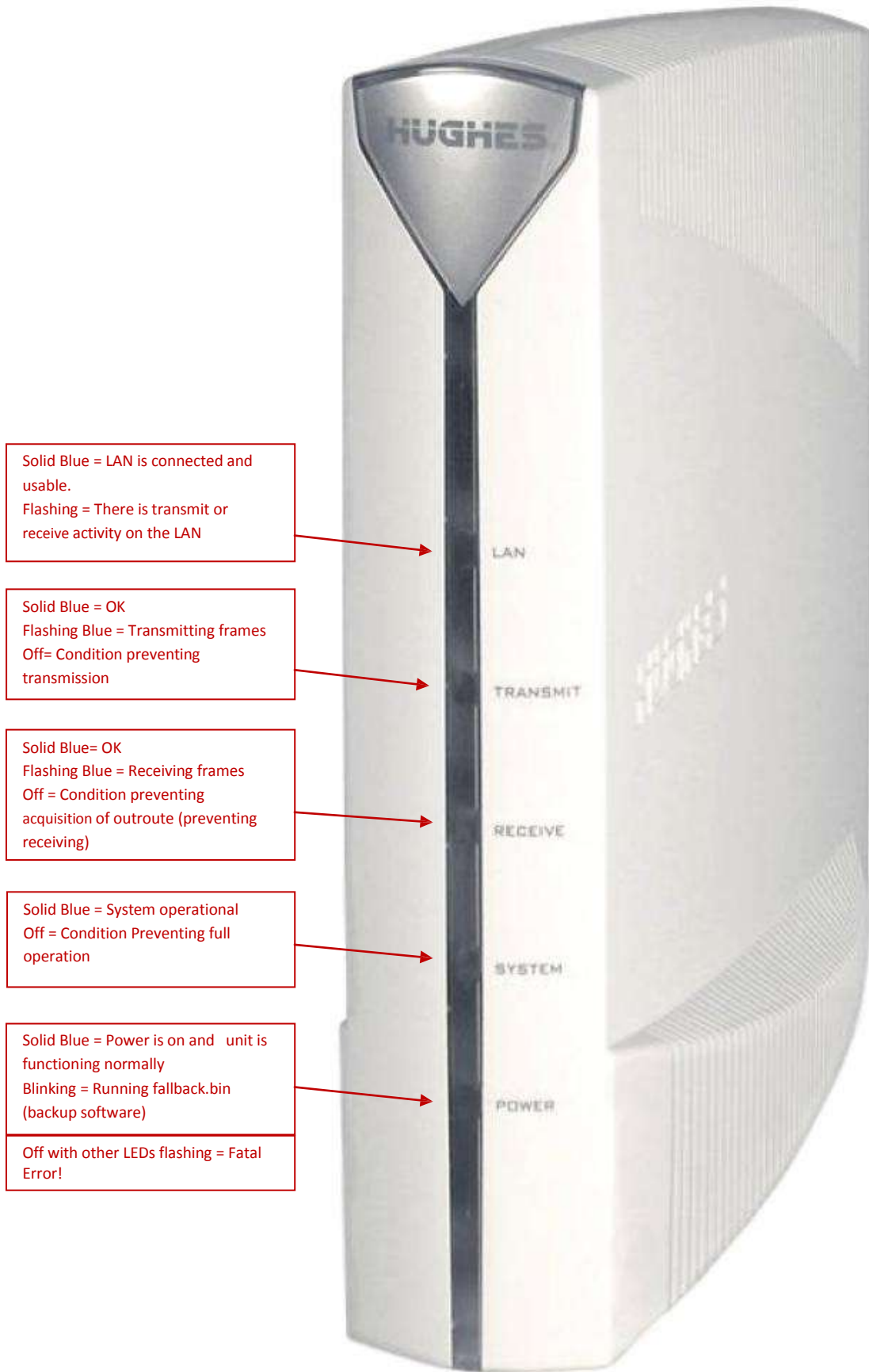
Solid Blue = LAN is connected and usable.
Flashing = There is transmit or receive activity on the LAN

LAN

Solid Blue = OK
Flashing Blue = Transmitting frames
Off= Condition preventing transmission

TRANSMIT

Solid Blue= OK
Flashing Blue = Receiving frames
Off = Condition preventing acquisition of outroute (preventing receiving)

RECEIVE

Solid Blue = System operational
Off = Condition Preventing full operation

SYSTEM

Solid Blue = Power is on and unit is functioning normally
Blinking = Running fallback.bin (backup software)

POWER

Off with other LEDs flashing = Fatal Error!

APPENDIX A

ACRONYMS

GWH: Gateway Host
IDU: Indoor Unit
IFL: Inter Facility Link (cable between IDU and ODU)
IPGW: IP Gateway
IRU: Indoor Receive Unit
ITU: Indoor Transmit Unit
LAN: Local Area Network
ODU: Outdoor Unit
RFU: Radio Frequency unit (same as ODU)
SDL: Software Download
VSAT: Very Small Aperture Terminal
VAR: Value Added Reseller

Support	
Online Ticket System	**http://helpdesk.wafa.ae**
WAFA Support	**support@wafa.ae**
	+971 2 6334216
Support Area	http://www.wafa.ae/vsat/Support.aspx

Product Documentation
Setup Video