

# **Hughes 9502**

## **Quick Setup Guide**

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## 1. Objective

Program a BGAN M2M Hughes 9502 Terminal to maintain a connection to the network and provision the unit to have a Global Public IP Address that is translated to a device connected to the 9502 on the LAN. Also included are instructions on how to convert a 9502 M2M terminal to use BGAN services.

## 2. Powering Up the terminal

- The 9502 will power up automatically when DC power is applied. It does not have a power button. By default it will bypass antenna (ODU) pointing and automatically register, attach and activate a PDP context.
- Once you have applied DC power, the terminal goes through a power-on-self-test (POST) that takes approximately 15-20 seconds and then the *power LED will start flashing* for another 15 seconds.
- If you want to enter pointing mode, you will need to *short press (<2 seconds)* the function button within those 15 seconds. If you do not short press the Function button, the unit will try to register with the network and set up a PDP context.

## 3. Getting a GPS Fix

- Once you get into pointing mode (all three LEDs are flashing), you have to first obtain a GPS fix by laying the antenna flat, pointing up to the sky in order to see the GPS satellites. The *GPS LED will go solid* once you have a fix. Once you have a fix, then you can point to the Inmarsat satellite (sect. 5.0)

## 4. Connecting to the BGAN Terminal

- If you are connecting your PC via USB port, you must first have the *Hughes USBLAN driver* installed on your laptop ([www.bgan.hughes.com](http://www.bgan.hughes.com)). If connecting through the Ethernet port, configure your laptop's network parameters to the following:
  - IP Address 192.168.128.200 Subnet 255.255.255.0 Gateway 192.168.128.100
- Open Internet Explorer and type *192.168.128.100* in the address section to obtain the web interface.

## 5. Point the antenna

- Once you have your PC connected to the IDU, monitor the Signal strength section.
  - The Signal Strength section of the WebUI will indicate "Pointing"
  - Adjust the antenna to achieve the highest receive level *>50db*. The higher the better of course
  - Once you have locked down the antenna and have a >50db signal, *short press (<2 seconds)* the function button to get out of pointing mode and start registering with the network.
  - The unit will now proceed with the registration process.

## 6. Configuring the Terminal

### Settings>IP Address /DHCP:

- The terminals Netmode is by default set to **NAT** mode. See the User manual for *Relay Mode* instructions.

### Connections>Manage APN:

- Check to make sure that the APN that you want to use for your connection is listed at the top under Defined APNs. If not add the APN and user credentials (if required), click *Save* and then highlight it on the left hand side and click on *Make Default*.

## 7. M2M Settings

### Context Watchdog

- Set to **ON**
- *Primary Ping Address* - this needs to be a server address that is within your VPN or if you are routed to the Public Internet, you can use a DNS Server ( 4.2.2.1)
- *Secondary Ping Address* - this needs to be a server address that is within your VPN or if you are routed to the Public Internet, you can use a DNS Server ( 8.8.8.8)
- *Time between pings* – this parameter depends upon the frequency that data will be pulled/pushed. If data will be pushed/pulled frequently, this parameter can be increased to avoid unnecessary pings/data being consumed
- *Ping required*: Recommended setting is No.

### Always On Context

- *Always On* context needs to be set to **ON**.
- *Static ACA IP Address* – setting this parameter depends upon how you setup the device connected to the 9502. If the device can accept DHCP addressing, leave this field blank or 0.0.0.0. If the device uses a static IP address only, configure the device as 192.168.128.200 and then put this same address in this field
- *APN Configuration* - you will need to select the appropriate APN from the drop down
- Username and Password, Leave the Username and Password blank unless it is required for a static public IP address
- Click on *Apply*
- You will be asked to reboot the unit, click *Reboot* and wait for the terminal to reboot.

## 8. Test Your Configuration

- Make sure that the device is connected to the 9502 via Ethernet. If you want to monitor the activity via the webUI, connect your laptop via the USB port. Ensure that you have the *Hughes USB driver* installed.

- Open the webUI and go to the *Manage Context Page*; once a PDP context has been automatically setup you should see something similar to the example below. The *global IP address* will be listed if you have a data session active.

The screenshot displays the Hughes webUI interface for managing contexts. The top navigation bar includes icons for Home, Connections, Settings, M2M, Security, and SMS. The main header shows the number '9502' and the title 'Manage Contexts'.

On the left side, there is a 'STATUS' panel with three sections:

- Connection:** Shows a 'Connected' status with a lock icon. Below it, 'Beam: REGIONAL 13' and 'Signal Strength: 50' are displayed with a progress bar at 40%.
- GPS:** Shows '3D GPS Fix' with a location of '32.89565° N 117.20213° W' and a 'Last Fix' of '31-Jan-2012, 23:55 UTC'.
- Satellite Info:** Shows 'I-4 Americas' with a heading of '147.3°' and an elevation of '46.5°'.

The main content area is divided into two sections:

- Close an Active Connection:** A table with columns 'Owner', 'Service', 'API', and 'Global IP'. One row is visible with values: '192.168.128.101', 'Standard', 'BGAN.INMARSAT.COM', and '161.30.23.168'. A 'Close Selected Connection' button is located below the table.
- Open a New Connection:** A table with columns 'Owner', 'Service', and 'API'. It is currently empty. An 'Open Selected Connection' button is located below the table.

**Note:** The proceeding configuration this allows a customer to have access to his asset over the internet via a public internet. The customer will need to point his polling engine at the global public IP address.

## 9. Converting a 9502 M2M Service to BGAN Service

Open up a browser and type in `192.168.128.100` in the URL field. Click on the `Settings>Features` page as shown below:

The screenshot shows a web browser window with the URL `http://192.168.128.100/index.html` and the page title "BGAN - Home". The browser's address bar and menu bar are visible. The main content area features the "HUGHES" logo and a navigation bar with icons for Home, Connections, Settings, M2M, Security, and SMS. The "Settings" icon is highlighted, and a dropdown menu is open, showing options: IP Address / DHCP, Ethernet, ATC Setup, and Features. The "Features" option is selected. The page content includes a "9502" header, a "STATUS" section with "Connection" (Registering...), "Signal Strength: 0/40", "GPS" (Acquiring, Location: Waiting, Last Fix: 00-mon-0000, 00:00 UTC), and "Pointing Info" (a red-bordered box with text: "The terminal is still determining its location. When it has a GPS fix it will calculate the direction and elevation of the satellite."). Below this is a "Terminal Information" table:

Terminal Information	
Model	BGAN USE
IMEI	004401-64-
Software Version	5.9.4.0

Below the terminal information is a "SIM Information" table:

SIM Information	
IMSI	901112112801930
APN	STRATOS.BGAN.INMARSAT.COM
Subscriber Phone Number	Not configured by Service Provider.

The "Troubleshooting" section includes "Terminal Logs" with a table:

Log Type	Current Log	Archived Log	Reset Log
System Log	<a href="#">Download Current</a>		
Event Log	<a href="#">Download Current</a>	<a href="#">Download Archive</a>	<input type="button" value="Reset Event Log"/>
Packet Log	<a href="#">Download Current</a>	<a href="#">Download Archive</a>	<input type="button" value="Reset Packet Log"/>

Below the logs is a "Reset Terminal to Factory Defaults" section with a button: . The "Reboot Terminal" section is partially visible at the bottom.

Browser window: <http://192.168.128.100/setii> | BGAN - Settings - Features





File Edit View Favorites Tools Help

Home Connections Settings M2M Security SMS

# HUGHES

9502 Feature Management

**ALL SETTINGS**

-  IP Address / DHCP
-  Ethernet
-  ATC Setup
-  Features

Available Features		
Feature Name	Feature Status	Activate
SMS Remote Management	Active	<input checked="" type="radio"/>
Enhanced Security	Inactive	<input type="radio"/>
BGAN Services	Inactive	<input type="radio"/>
Feature Activation Code:		<input type="text"/>
<input type="button" value="Activate Feature"/>		

Click on the *BGAN Services Activate* radio button and enter the *Activation code* in the space provided then click on *Activate Feature*.

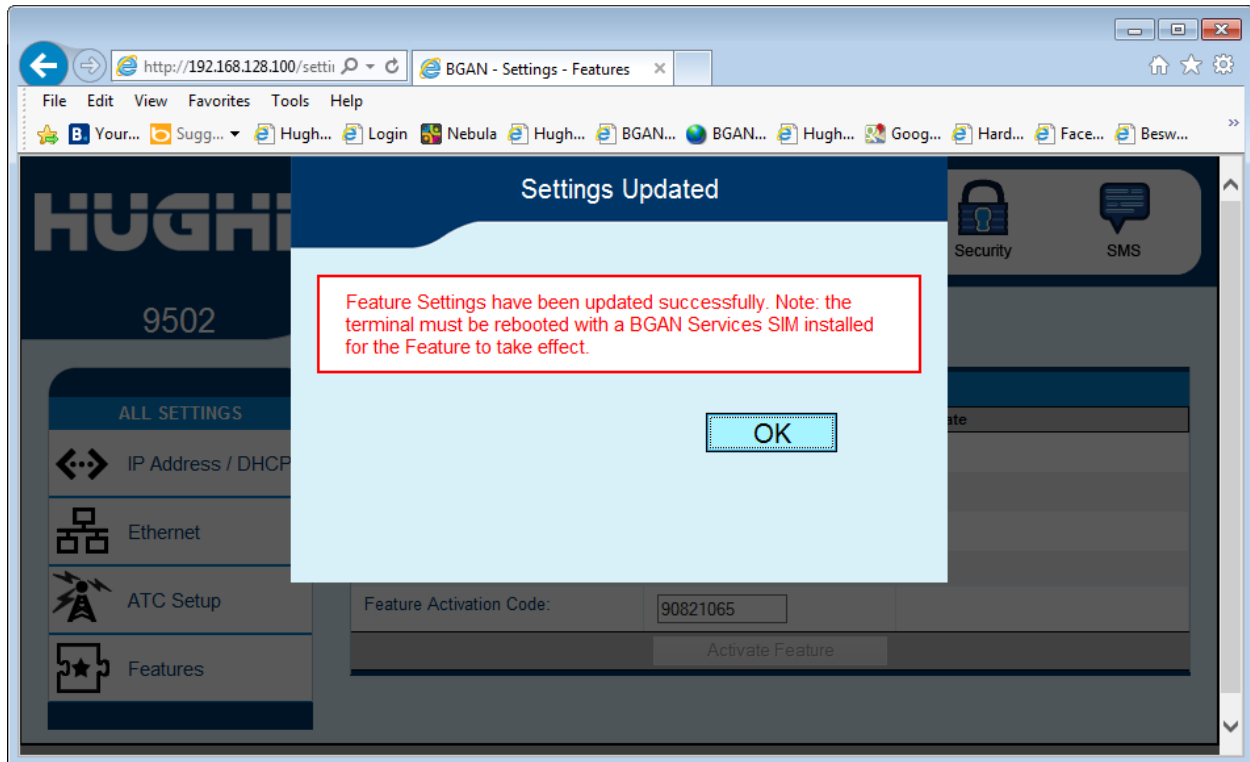
The screenshot shows the Hughes 9502 web interface for Feature Management. The browser address bar shows the URL `http://192.168.128.100/setting`. The page title is "BGAN - Settings - Features". The Hughes logo is visible at the top left, and the device ID "9502" is displayed. The navigation menu on the left includes "ALL SETTINGS", "IP Address / DHCP", "Ethernet", "ATC Setup", and "Features". The main content area is titled "Feature Management" and contains a table of "Available Features".

Feature Name	Feature Status	Activate
SMS Remote Management	Active	<input type="radio"/>
Enhanced Security	Inactive	<input type="radio"/>
BGAN Services	Inactive	<input checked="" type="radio"/>

Below the table, there is a text input field for "Feature Activation Code" containing the value "90821065" and an "Activate Feature" button.



**Read** the note about needing a *BGAN SIM card* inserted into the terminal in order to have the BGAN features take effect. Insert a BGAN SIM card and *reboot* the terminal by pulling the power and then re-applying the power.



Go to the *Connections>Automatic Contexts* page and click on *Services* down arrow to make sure that the streaming options are now available. You will also see that the webUI will indicate that the terminal is enabled for BGAN Services by the *9502B* up in the left-hand corner of the page as shown below. Now you can start to use your 9502 with BGAN services.

**HUGHES** Home Connections Settings M2M Security SMS

**9502B** Automatic Contexts for Multiple Devices

This feature automatically connects Devices based upon their IP Addresses. Static IP Addresses cannot intersect with the DHCP Address Range.

**STATUS**

**Connection**

Registering...

Signal Strength: 0  
40

**GPS**

Acquiring

Location: Waiting

Last Fix: 00-mon-0000, 00:00 UTC

**Pointing Info**

The terminal is still determining its location. When it has a GPS fix it will calculate the direction and elevation of the satellite.

**Static IP Automatic Contexts**

ACA	Enabled	IP Address (192.168.128.x)	Service	APN
1	Off	200	Standard	bgan.inmarsat.com
2	Off	210	Standard	bgan.inmarsat.com
3	Off	220	Standard	bgan.inmarsat.com
4	Off	230	Standard	bgan.inmarsat.com
5	Off	240	Standard	bgan.inmarsat.com
6	Off	250	Standard	bgan.inmarsat.com

Update Static Settings

**DHCP Automatic Contexts**

Enabled	DHCP Address Range (192.168.128.x)	Service	APN (Default APN)
Off	101 to 199	Standard	bgan.inmarsat.com

Update DHCP Settings

**Note:** Once you convert the terminal to use BGAN Services, there is no way currently to convert the terminal back to using M2M Services. This fall back feature **may** be added in a future software release.