EXPLORER 3075GX

Manual-Deploy Fly-Away System for Inmarsat GX
User & installation manual

COBHAM

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Disposal

Old electrical and electronic equipment marked with this symbol can contain substances hazardous to human beings and the environment. Never dispose these items together with unsorted municipal waste (household waste). In order to protect the environment and ensure the correct recycling of old equipment as well as the re-utilization of individual components, use either public collection or private collection by the local distributor of old electrical and electronic equipment marked with this symbol.

Contact the local distributor for information about what type of return system to use.

Safety summary

The following general safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the equipment. Thrane & Thrane A/S assumes no liability for the customer's failure to comply with these requirements.

Microwave radiation hazards
During transmission the antenna radiates Microwave Power.This radiation may be hazardous to humans close to the antenna. During transmission, make sure that nobody gets closer than the recommended minimum safety distance. The minimum safety distance in front of the antenna reflector is 32 m when in the focal line (a straight line between the feed horn and satellite), based on a radiation level of 10 W/m^2. No hazard exists at the back of the reflector.

> **WARNING!** This device emits radio frequency energy. Do not place your head or other body parts between transmitting feed horn and reflector when the system is operational.

> **WARNING! Potentially hot surface** when the system is operated in hot environments without the possibility for ventilation. Contact may cause burn. Allow to cool before servicing.

Service
User access to the interior of the antenna is not allowed. Only a technician authorized by Cobham SATCOM may perform service - failure to comply with this rule will void the warranty.

Power supply
The voltage range for the EXPLORER 3075GX is 100 – 240 VAC (nominal), 4 A, 50/60 Hz. Use the original power cable delivered with the equipment and make sure to apply safety ground to the terminal.

> **WARNING!** Before disassembling or performing any maintenance or upgrades, unplug the unit from the power source.

Note: When you use a transportable and/or temporary power supply, e.g. a generator, refer to the national legislation for correct safety ground connection.

Do not operate in an explosive atmosphere
Do not operate the equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

Keep away from live circuits
Operating personnel must not remove equipment covers. Component replacement and internal adjustment must be made by qualified maintenance personnel. Do not replace components with the power cable connected. Under certain conditions, dangerous voltages may exist even

with the power cable removed. To avoid injuries, always disconnect power and discharge circuits before touching them.

| ⚠️ | **WARNING!**   Be aware of pinch points while the antenna is being positioned, deployed or stowed. |

Failure to comply with the rules above will void the warranty!

FCC §15.105: Information to the User

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Table of contents

About this manual

1.1 Manual overview

This manual has the following chapters:

- *Introduction*
- *Assembly & start up*
- *Setup and operation*
- *Service*

This manual has the following appendices:

- *Technical specifications*
- *System messages*
- *Approvals*

1.1.1 Intended readers

This is a user and installation manual for the EXPLORER 3075GX system, intended for users of the system and service personnel. It is important that you observe all safety requirements listed in the beginning of this manual, and install the system according to the guidelines in this manual.

1.1.2 Software version

This manual is intended for EXPLORER 3075GX with **software version 1.54.** The software version of the GX modem (Core module) is shown in its own web interface.

1.1.3 Typography

In this manual, typography is used as indicated below:

Bold is used for the following purposes:

- To emphasize words.
  Example: "Do **not** touch the antenna".

- To indicate what the user should select in the user interface.
  Example: "Select **SETTINGS** > **Satellite profiles**".

Italic is used to emphasize the paragraph title in cross-references.

1.2   Precautions

Text marked with "Warning", "Caution", "Note" or "Important" show the following type of data:

- **Warning**: A Warning is an operation or maintenance procedure that, if not obeyed, can cause injury or death.

- **Caution**: A Caution is an operation or maintenance procedure that, if not obeyed, can cause damage to the equipment.

- **Note**: A Note gives information to help the reader.

- **Important**: A text marked Important gives information that is important to the user, e.g. to make the system work properly. This text does not concern damage on equipment or personal safety.

All personnel who operate equipment or do maintenance as specified in this manual must know and follow the safety precautions. The warnings and cautions that follow apply to all parts of this manual.

> **WARNING!**   Before using any material, refer to the manufacturers' material safety data sheets for safety information. Some materials can be dangerous.

> **CAUTION!**   Do not use materials that are not equivalent to materials specified by Cobham SATCOM. Materials that are not equivalent can cause damage to the equipment.

Chapter 2

Introduction

This chapter has the following sections:

- *EXPLORER 3075GX Manual-Deploy Fly-Away System for Inmarsat GX*
- *Description of the system components*

2.1 EXPLORER 3075GX Manual-Deploy Fly-Away System for Inmarsat GX

2.1.1 Overview

The EXPLORER 3075GX is a manual-deploy 75 cm fly-away antenna system, designed for operation in the Ka-band. The integrated GX modem, also known as the iDirect Core Module, facilitates the acquisition of an operational satellite based on the terminal's GPS location. All of the EXPLORER series terminals are easy to install, set up, and commission by a non-specialist technician. The system has the following major components:

1. 2-axis manual-control antenna positioner with Inter-Facility Link and cabling interface ports for Block Up-converter (BUC) power.

2. Reflector and RF assembly including filter/polarizer, BUC, and Low Noise Block Down-converter (LNB).

3. Electronics enclosure with antenna control unit and Gx Modem Unit, keypad, display and LAN ports.

Figure 2-1: Major system components

The antenna provides a stable RF link and the modem provides IP services on the RF link. The IP services are provided via a switch in the antenna subsystem, which is controlled by the GX modem. Status information from the GX modem is provided via the antenna subsystem. The antenna subsystem can be monitored and software upgraded from the earth station via the GX modem.

2.1.2   Global Xpress (GX) service

The EXPLORER 3075GX is a unique GX antenna system operating in the K/Ka-band (19.2 to 30 GHz). It is used with the Global Xpress service from Inmarsat, delivering consistent high-performance download speeds of up to 50 Mbps and 5 Mbps over the uplink. The following figure shows the coverage map of the GX service.
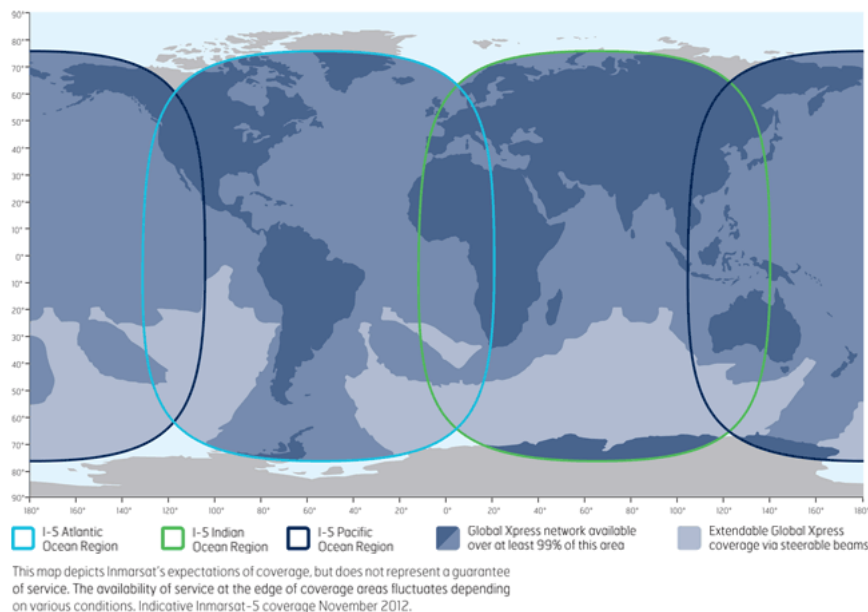
Figure 2-2: GX coverage map[a]

a.   Source: www.inmarsatgov.com

2.1.3   Service activation

The EXPLORER 3075GX should be activated from the start. If there are problems with the GX service contact your service provider.

2.2 Description of the system components

2.2.1 Antenna positioner

The manual-deploy antenna positioner can accommodate 0° to 90° of angular movement in the elevation axis and 27° of fine adjustment ° in the azimuth axis. The mechanical assemblies rely on two independent axes to allow for precise antenna pointing. The antenna positioner can stay outside in rainy weather.

Manual controls

The manual control panel includes:

- Azimuth and elevation adjustment controls

- Elevation lock mechanism

- Elevation axis scale

- Keypad and display panel with target angle coordinates and real-time signal strength indicators
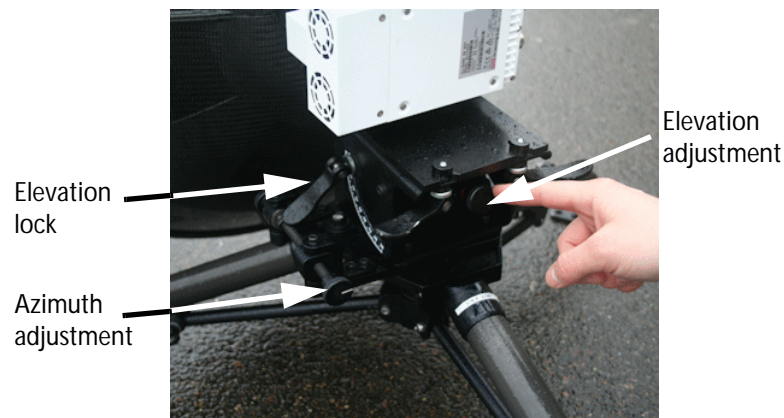
Figure 2-3: Manual controls

Figure 2-4: Electronically assisted tool for manual-pointing

2.2.2 RF assembly

The RF assembly includes the BUC, LNB, reflector hub, filter/polarizer, and feed horn. It also contains a mounting bracket for mounting onto the tripod. Once the RF assembly is mounted, the quick-release locks beneath the positioner mounting plate hold the assembly securely in place. The BUC and LNB are mounted close to the filter/polarizer to reduce the need for wave guides. This design allows for quick assembly and disassembly of the RF assembly from the tripod.

LNB

Hub

Filter / Polarizer

BUC

Sub reflector

Feed
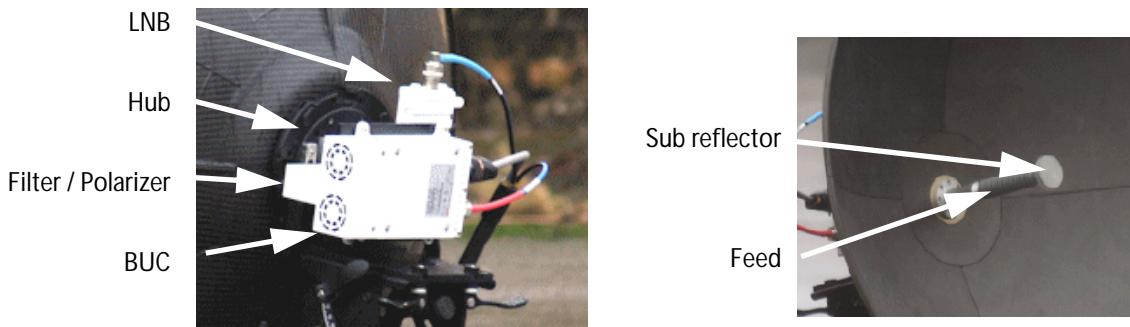
Figure 2-5: RF assembly

2.2.3 Reflector

The 75 cm reflector consists of four interchangeable panels and a center hub. The panels are made entirely of composite with the exception of the latches. The aluminum latches are used to secure the panels to the hub. Two smaller latches along the edge of the panels attach the reflector panels to each other. The reflector weighs 3 kg (8.5 lbs). The reflector has been designed to meet wind load and thermal distortion requirements; see *Technical specifications* on page A-1 for more detail.

Panels

Latch

Center hub

Figure 2-6: Assembled reflector with center hub and 4 panels

2.2.4 Electronics enclosure

The electronics enclosure contains many subcomponents including the antenna control unit, GX modem, GNSS (Global Navigation Satellite System) module, AC power supply, WLAN module, in addition to environment-sensing technology that self-regulates system temperature and atmospheric pressure equalization. Four LAN ports are available, LAN port 1 (Service port) is used for system control via the web interface.

The electronics enclosure has an embedded keypad and display to provide access to configuration, control, and system monitoring tools. The electronics enclosure is class IP65 protected against dust and water ingress.
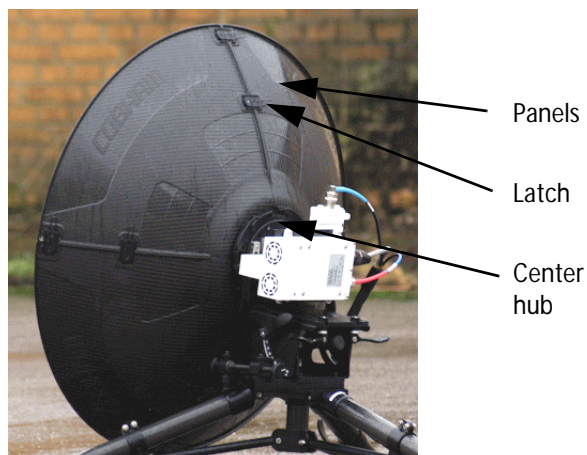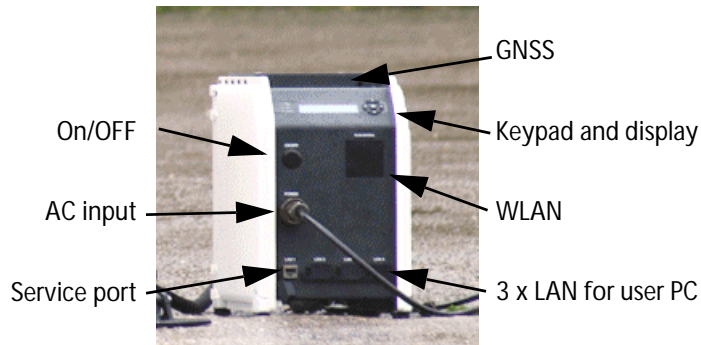

Figure 2-7: Electronics enclosure

Keypad and display

The display has a two line menu system and two status lines (Upper and Lower) for compact satellite and antenna information. See *The menu tree* on page 4-16 for a list of menus. The menus show how the system has been configured. The three LED light indicators are described in *LEDs on the keypad of the EXPLORER 3075GX* on page 5-12. You can see warnings, errors and information messages in the display. Signal strength is indicated on the display as 7 blocks. The signal strength is also displayed as a number during manual pointing.

Figure 2-8: Keypad and display (detailed, example)

2.2.5 Web interface for setup and troubleshooting

To fully configure the EXPLORER 3075GX, use the built-in web interface. Installation of software is not necessary, you can use a standard Internet browser. The web interface is mainly used for first-time setup, including WLAN use and administrating access rights (admin and guest). The web interface is useful when troubleshooting the EXPLORER 3075GX, i.e. download a diagnostics report. The web interface can be accessed using WiFi. For details about network configuration see *To configure the LAN network* on page 4-6.

Figure 2-9: Web interface, DASHBOARD (example)

2.2.6 LAN ports and WLAN

The electronics enclosure has four LAN connectors (type RJ45) for connecting a PC/laptop or similar:

- LAN connector on the left-hand side (LAN 1) for system control via the web interface.

- Three connectors (LAN 2 to LAN 4) for user PCs for Internet etc., configured by the GX modem.

The EXPLORER 3075GX has a WLAN module. Access to one of the LAN ports using WLAN must be set up in the web interface, see *To configure the LAN network* on page 4-6.

2.2.7 Power supply

The internal power supply supplies power to the electronics enclosure, LNB and BUC. Power input is specified as 100-240 VAC, for more details see *Technical specifications* on page A-1.

Assembly & start up

This chapter has the following sections:

- *What's in the box*
- *To assemble the EXPLORER 3075GX*
- *Power on and manual pointing*
- *To disassemble and pack the antenna*

3.1 What's in the box

3.1.1 To unpack

Two transit cases contain the EXPLORER 3075GX antenna system:

- Case with RF assembly and electronics enclosure (left)
- Case with tripod, antenna panels and cables (right)

Figure 3-1: 2 transit cases

| Note | Do not grab the RF assembly by the feed horn. The RF feed's subreflector can be easily damaged. |

Hold the RF feed as shown in the picture.

The cases contain the following items:

- Tripod and electronics enclosure
- RF feed assembly
- Transmit (Red, Tx) & Receive (Blue, Rx) RF cables
- BUC power cable (Gray)
- Power cable
- Quick guide
- Safety summary page

3.1.2 Initial inspection

Inspect the cases immediately upon receipt for evidence of damage during transport. If the shipping material is severely damaged or water stained, request that the carrier's agent be present when opening the cases. Save all packing material for future use.

> **WARNING!** To avoid electric shock, do not apply power to the system if there is any sign of shipping damage to any part of the front or rear panel or the outer cover. Read the safety summary at the front of this manual before installing or operating the system.

After unpacking the system, inspect it thoroughly for hidden damage and loose components or fittings. If the contents are incomplete, if there is mechanical damage or defect, or if the system does not work properly, notify your dealer.

3.2 To assemble the EXPLORER 3075GX

3.2.1 Prerequisites

Wind speed considerations

The antenna is designed to operate under wind speeds of 48 km/h (30 mph) gusting up to 72 km/h (45 mph) while anchored and survive winds of 100 km/h (62 mph) gusting up to 129 km/h (80 mph) while anchored. Note that the antenna may point away from the satellite in winds blowing faster than the operational wind speed limit.

> **Important** Do not assemble or operate the terminal at wind speeds exceeding the operational wind speeds. In case the wind speeds exceed the survival wind speed limit while the antenna is already assembled or operational, disassemble and pack the antenna.

3.2.2   Assembly

To be fully operational, you must deploy the tripod, install the RF assembly and the reflector, and connect the IFL and power cables. Then you can make a manual pointing to acquire the network.

To assemble the EXPLORER 3075GX, do as follows:

1. Unpack the tripod, place it upon level ground.

Bubble meter

Figure 3-2: Electronics enclosure and support legs

2. Adjust the height of each leg so that the bubble in the bubble meter is within the marked circle. Make sure the legs are as widely spread as possible to support the RF assembly and the reflector petals. Fasten each leg by turning the black locking lever.

> ⚠️ **WARNING!**   Be aware of pinch points while the antenna is being positioned, deployed or stowed.
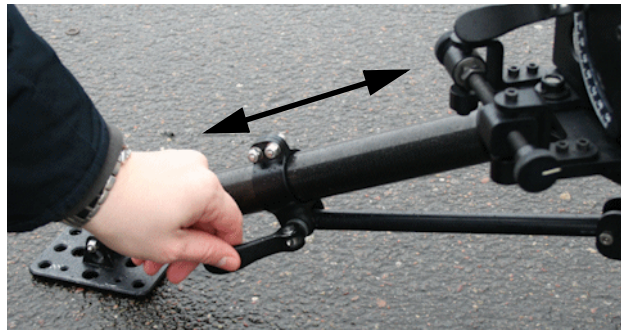

Figure 3-3: To adjust the support legs

3. In high wind conditions you can anchor the tripod to the ground. You may add extra weight to the support legs, or insert stakes through holes on the support feet.

4. Take the RF assembly out of the case, handle it carefully.

> Note ▷ Do not grab the assembly by the feed horn. The feed's subreflector can be easily damaged.

Assembly & start up

Figure 3-4: To mount the RF assembly

5. Lift the two fastening screws and position the RF assembly on the top plate of the tripod.

6. Re-engage the screws to lock the RF assembly on the top plate.

7. Unpack the four interchangeable reflector panels.

8. Release the four locking mechanisms on the reflector hub on the RF assembly.

9. Insert the two bottom panels and latch them along the edge of each panel to carefully secure the reflector panels into place.

Figure 3-5: Latches to interconnect the panels

10. Re-secure the locking mechanism for each panel on the reflector hub.

Figure 3-6: Center hub with four latches for the 4 panels

11. Insert and latch the two upper panels.

12. Remove the electronics enclosure from the case and place it near the tripod. You must be able to see and read the values in the display of the electronics enclosure.

13. Connect the cables:

(1) BUC power cable (Gray) to the MIL connector
(2) Transmit (Red, Tx) cable IFL RG-6 to the BUC Transmit port
(3) Receive (Blue, Rx) cable IFL RG-6 to the LNB Receive port.
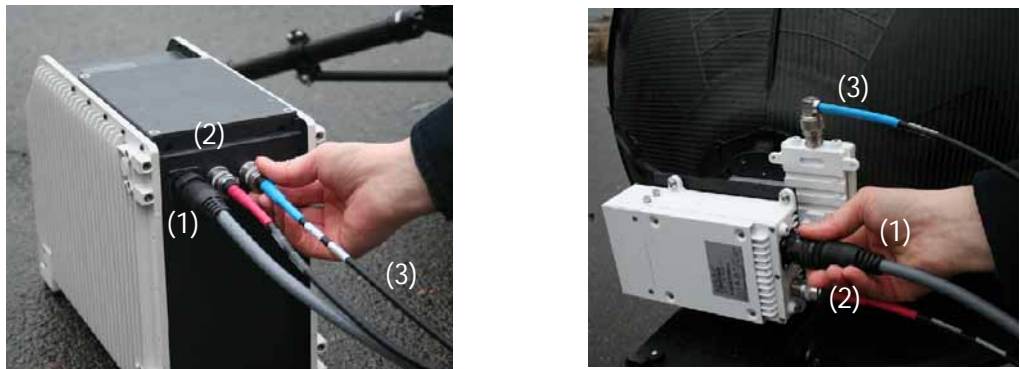
Figure 3-7: Transmit, Receive and BUC cables

14. Connect the power cable.
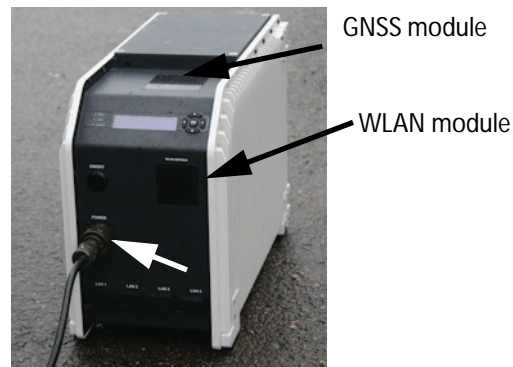
Figure 3-8: AC power connection, location of GNSS module and WLAN module

15. Do not cover the GNSS (GPS, Glonass, etc.) module. The module sits in the top of the electronics enclosure.

16. Do not cover the WLAN module.

There are four RJ-45 ports for making IP-data connections.

LAN cable type: Use shielded LAN cable.

- LAN connector on the left-hand side (LAN 1) for system control via the web interface.
- Three connectors (LAN 2 to LAN 4) for user PCs for Internet etc., configured by the GX modem. See the documentation from your service provider.

Note **The web interface can only be accessed via LAN1 (leftmost)**. The Wi-fi connection must be configured, see *To configure the LAN network* on page 4-6 and *WLAN settings* on page 4-8.

3.3 Power on and manual pointing

To bring the EXPLORER 3075GX into the network, you point the antenna toward the Global Xpress satellite and follow the signal-strength indications to peak on the signal. The manual pointing takes typically five minutes.

To start up the antenna, do as follows:

1. Press the On/Off button.

Figure 3-9: Power on button

The EXPLORER 3075GX goes through an initialization procedure.

2. Wait until the display of the electronics enclosure shows **DEPLOYED IDLE** (first power on after factory reset) or **MANUAL POINTING**.
   The Power and Fail/Pass LEDs are steady green, and the LED Logon is off. Make sure no hardware failures or error codes are present, check the display for events.

3. Use the keypad and press the arrow key ▼.

Figure 3-10: Manual pointing display

4. Press **OK** or ▶ to select **DEPLOYED IDLE** or **MANUAL POINTING**.

5. On the manual point page, the terminal displays target elevation (**ELE**) and azimuth (**AZI**) angles. Point the antenna coarsely towards the satellite (azimuth within 27° of

target) by turning the tripod. Make sure the tripod is level after movement. Use a compass to find the pointing direction.

Figure 3-11: Coarse adjustment by turning the tripod

6. Open the elevation quick release locks.

7. Adjust the elevation to the calculated elevation look angle shown in the display by turning the elevation adjustment knob.

Figure 3-12: Adjustment of elevation

8. The RF assembly and reflectors may be nose-heavy when mounted on the tripod and the elevation knob may be hard to turn. If you have trouble turning the knob, gently pull the RF package towards you while turning the knob.

9. Fine tune the azimuth angle by turning the knob clockwise or counterclockwise.

Figure 3-13: Turning the knob for azimuth adjustment

10. Observe the display for appearing signal strength bars. When the GX signal is detected, slowly scan the azimuth angle back and forth to maximize the signal strength (the number **SIG** in the display). Make sure to scan at least ±3° after the initial signal indication.

11. Once the azimuth angle is adjusted, slowly scan the elevation angle up and down until the signal strength is at its maximum.

12. Repeat steps 10 and 11 until the signal strength is at its maximum.

13. Tighten the quick-release locks for elevation.

14. At the peak of the signal press **OK**. This sends a command to the integrated GX modem to allow the transmission of data.

15. When the connection is established, the display shows **ACQUISITION OK**.

16. Wait until the field **MDM**: in the upper status line shows **NETOK**.

Figure 3-14: LED when operational (detailed, example)

For first-time setup connect a PC to LAN port 1 and continue at *Connection to the web interface* on page 4-1. For a description of the keypad and display see section *Keypad and display menus* on page 4-15.

3.4 To disassemble and pack the antenna

1. Press the ON/OFF button on the unit to power it off.

⚠️ **WARNING!** The electronics enclosure may get very hot (temperatures above 70° C) in hot weather conditions. Do not move the unit! Touching the hot unit may cause serious bodily harm. Wait until the unit has cooled down to temperatures below 50° C.

2. Remove all cables.

3. Dismantle the four reflector panels.

4. Remove the RF assembly from the tripod.

5. Put all parts into the two transport cases.

Setup and operation

This chapter has the following sections:

- *Setup with the web interface for PC*
- *Keypad and display menus*
- *Web interface for tablet and smartphone*

4.1 Setup with the web interface for PC

4.1.1 Introduction

Use the built-in web interface of the EXPLORER 3075GX to set up the antenna, WLAN and for service and troubleshooting. You can use a standard Internet browser.[1] A satellite profile with the GX Modem is already set up at the factory. No further profiles are needed.

Important	The EXPLORER 3075GX is not designed to be connected directly to the Internet. It must be located behind a dedicated network security device such as a firewall.
	If any ports of the EXPLORER 3075GX are exposed to the Internet you must change the default passwords as anyone with access and malicious intent can render the EXPLORER 3075GX inoperable.

The following sections apply if you connect to the web interface with a PC. If you connect to the web interface with a tablet or a smart phone you have access to a limited web interface for mobile devices, see *Web interface for tablet and smartphone* on page 4-19.

4.1.2 Connection to the web interface

To connect to the web interface do as follows:

1. Switch on the EXPLORER 3075GX system. Wait until the LEDs on the front plate show that the system is ready to be configured.
   - Power LED: Green
   - Logon LED: Off
   - Fail/Pass LED: Flashing green during power-on self test, after that steady green.

2. Connect a PC to the LAN1 connector (Service port, standard, leftmost). Use a shielded LAN cable. You can configure the network according to your requirements. See *To configure the LAN network* on page 4-6 for more information.

3. Open your Internet browser and enter the IP address of the EXPLORER 3075GX. The default IP address is http://192.168.0.1 (shown in the display in the menu **Network**.).

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1. If you need to enter the GX modem web interface you must use Firefox.

When the login screen is displayed you have verified that the connection to the EXPLORER 3075GX can be established. The web interface is ready for use. You can continue to configure the system.

Enter user name and password

Logon

User name: _____

Password: _____

[Logon] [Cancel]

Forgot administrator password?

Figure 4-1: Logon screen

If you cannot establish a connection there might be problems with the Proxy server settings of your PC. See *Proxy server settings in your browser* on page 5-8 for further information.

4. Type in the user name **admin** and the password **1234** (default) to access the **Dashboard**.
   There is also a guest login (user name: **guest**, password: **guest**). With this login you can protect the system from accidental changes of the configuration. A guest can only access the functions that are allowed on the page **User permissions** by an administrator. For more information see *User permissions (guest login)* on page 4-11.

5. The web interface shows the **DASHBOARD** page.

Acquisition process

The EXPLORER 3075GX antenna must be manually pointed after power on. See *Power on and manual pointing* on page 3-6. The antenna is fully operational when the display shows **ACQUISITION OK** and the field **MDM:** in the upper status line shows **NETOK**.

Topics in the web interface

The site map shows the existing menus and submenus. You can click on each menu in the site map to go directly to the page or display the respective submenu.

Figure 4-2: Topics in the web interface (SITE MAP)

The **DASHBOARD** is the first screen that is displayed. It shows the properties and status of the EXPLORER 3075GX.
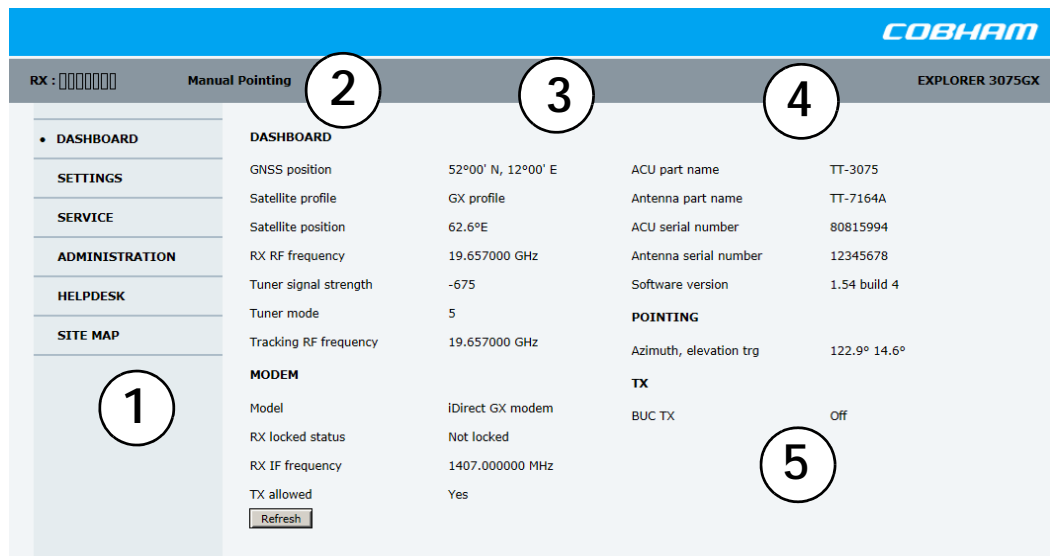

Figure 4-3: Web interface: DASHBOARD

The web interface has the following sections:

1. The navigation pane holds the main menu. Clicking an item in the menu opens a submenu in the navigation pane or a new page in the contents section.

2. The signal status field shows the tracking signal strength and the system status. The signal strength can vary during operation, depending on the current position relative to the satellite.

3. The icon bar shows icons for active events, when relevant.

4. The host name is shown on every page of the web interface. The host name is useful for identifying the system at remote login and when requesting reports from the system. You can change the host name, see *To configure the LAN network* on page 4-6.

5. The contents section shows the page selected in the navigation pane. This section is used for viewing or changing settings, or for performing actions.

The following icon may appear in the icon bar in the web interface:

Icon	Explanation
⚠	An event is active. Click the icon to see a list of active events. For explanations of the event messages, see *List of events* on page B-2. Note that this icon will remain in the icon bar as long as the event is active.

Table 4-1: Web interface: Event icon

To navigate the web interface

- **To expand a menu**, click the menu in the navigation pane.

- **To access status and settings**, click the relevant subject in the navigation pane or click the relevant icon in the icon bar. The status or settings are displayed in the contents section.

- **To get an overview over the submenus available**, click **SITE MAP** in the navigation pane. Click on items in the site map to go directly to the relevant location.

> Note: You can give access to some configuration settings for users that are not administrators. For information see *User permissions (guest login)* on page 4-11.

Status field in the icon bar

The top bar shows the current signal strength and the current status of the antenna. **Examples**:

- **Antenna software upload**

- **Antenna POST** (Power-On Self Test)

- **Ready** (waiting for data from the modem or no satellite profile selected)
  Deployed idle (antenna ready)

- **Manual pointing**

- **Acquisition OK** (signal from the GX satellite acquired)

- **Safe mode** (error mode, click event icon to see the current events)

Sections on the Dashboard

DASHBOARD	Description
GNSS position	Current position, reported by the GNSS module
Satellite profile	Name of the currently active satellite profile.
Satellite position	Position of the satellite selected in Satellite profile.
RX RF frequency	Ka band receiving frequency, auto-selected by modem
Tuner signal strength	Current tuner signal strength
Tuner mode	GSC (GX) or Narrow band
Tracking RF frequency	Current RF tracking frequency
ACU part name, Antenna part name, ACU serial number, Antenna serial number, Software version	Part names, serial numbers for antenna, software version of the EXPLORER 3075GX.

Table 4-2: Web interface: DASHBOARD

MODEM	Description
Model	Modem name, selected in **SETTINGS** > **Modem profiles**.
RX locked status	Locked or Not locked. Demodulator lock of the modem.
RX IF frequency	Read out from the modem.
TX allowed	Yes or no, reported from the internal GX modem.

Table 4-3: Web interface, DASHBOARD, MODEM section

TX	Description
BUC TX	On or Off. Shows if the EXPLORER 3075GX has enabled the BUC or not. It is the same TX ON/TX OFF as shown in the display of the ACU.

Table 4-4: Web interface, DASHBOARD, TX section

Setup and operation

4.1.3 To configure the LAN network

On this page you can set up the LAN network and enter a host name. The host name helps identifying the EXPLORER 3075GX system, e.g. in a diagnostics report. There are four 10/100 Mbit ports, labelled LAN 1, 2, 3 and 4. LAN1 is the service port. LAN2, LAN3 and LAN4 are ports for user data and controlled by the GX modem.

> **Important** The EXPLORER 3075GX system is not designed to be connected directly to the Internet. It must be located behind a dedicated network security device such as a firewall. If any ports of the EXPLORER 3075GX are exposed to the Internet you must change the default passwords as anyone with access and malicious intent can render the EXPLORER 3075GX inoperable.

To configure the LAN network, do as follows:

1. Select **SETTINGS > Network.**

2. Make the necessary changes on this page and click **Apply**.

Figure 4-4: Web interface: SETTINGS, Network (default settings)

> **Important** Make sure that the networks do not use IP address ranges that overlap.

Sections	Preferred use
NETWORK Host name	The host name is used for identifying the EXPLORER 3075GX. The default host name is acu. You can change the name. Letters (a-z), digits (0-9) and hyphen (-) are allowed as legal characters. Note: The host name must start with a letter.
LAN Port 1	LAN port 1 is dedicated as the service port. By default this port has the static IP address http://192.168.0.1; the current value can be displayed in the EXPLORER 3075GX display. The service port has 3 modes: • **Static** (default). • **DHCP client**. Used when the antenna is on a local network. • **Switched with port 5**. For direct access to the GX modem[a]. This LAN is internal with static IP address (192.168.1.2).
LAN Port 2, 3 and 4	User data ports, configured automatically by the modem. The Virtual LAN (VLAN) table shows this configuration.
LAN Port 5	No connector, only internal connection.This network is connected to the modem (iDirect GX Modem). It is set to static IP.
WLAN	The wireless port can be connected to one of the other ports (service port or one of the user data ports). Set which of the ports 1 to 5 you want to access with WiFi. If LAN Port 1 is selected, you must set it to a static IP address and select DHCP server.

Table 4-5: Setup of LAN network

a. If you need to access the GX modem's web interface see *GX Modem: One Touch Commissioning (OTC)* on page 5-6.

Static IP or DHCP Client

Important | The DHCP server is enabled by default.

If you select **DHCP client** the network IP address and sub-net mask must be provided by a DHCP server on that network. If you select **Static IP** address you must specify a unique IP address and a sub-net mask.

DHCP Server Settings

On **LAN Port 1: Service** you can select to run a DHCP server. The DHCP server settings are only displayed and can be selected when **LAN Port 1: Service**, **Mode** is set to **Static**, otherwise the DHCP server settings are not shown.

The DHCP start and end addresses must be on the same network as the port's static IP.

VLAN port membership table

The VLAN port membership table (Virtual LAN) is configured by the modem. The table is useful when troubleshooting.

4.1.4 WLAN settings

On this page you can enable and set up the WLAN access point. Do as follows:

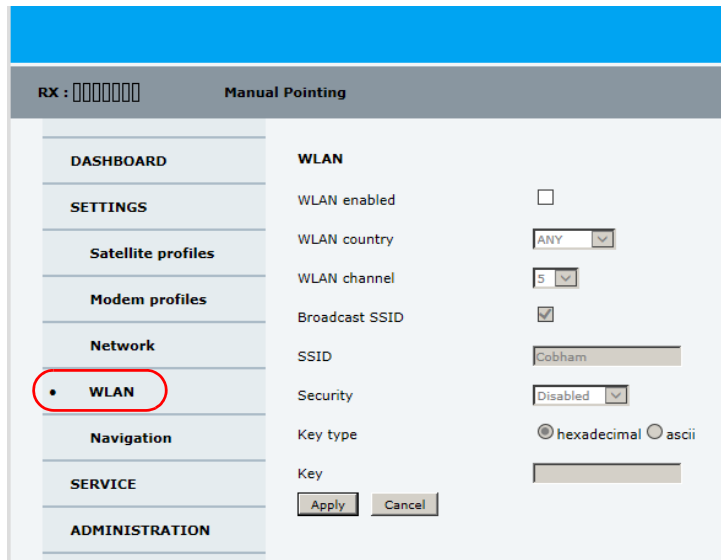1. Select **SETTINGS > WLAN** from the left navigation pane.

Figure 4-5: Web interface: SETTINGS > WLAN

2. Enable or disable the WLAN (default: **Disabled**).

3. Select the **Country** for your present location.

4. **WLAN channel** can be changed, channels available depend on the setting for **Country**.

5. For **Broadcast SSID,** select **Enabled** (default) or **Disabled.**
   Enabled: WLAN access point is shown to other users.
   Disabled: WLAN access point is hidden.

6. Type in the **SSID** of your choice or accept the default SSID, which is **Cobham**. The SSID is the name of the wireless local area network. It is a text with maximum 32 characters.

7. Select the **Security** standard. Select one of the following encryption standards:
   • Disabled (default)
   • WEP-64, enter the encryption key in hexadecimal format.
   • WEP-128, enter the encryption key in hexadecimal format.
   • WPA-PSK, enter the encryption key in hexadecimal or text format.
   • WPA2-PSK, enter the encryption key in hexadecimal or text format.

8. Type in the **Encryption key** for the selected Security standard. This is not applicable if you have selected **Security mode None**.

9. Click **Apply**.

4.1.5 Navigation (Position and Fixed installation)

In the section **Position** you can enter a fixed position if the position provided by the internal GNSS module is not sufficiently good or you do not want to wait for a GPS fix. You can also enter a fixed base heading if magnetic disturbances in the area cause a misreading of the internal compass.

The mode **Fixed installation** is selected if the EXPLORER 3075GX is set up as a fixed installation, i.e. when the EXPLORER 3075GX will not move over time and where access to the EXPLORER 3075GX is not intended and/or difficult.

Do as follows:

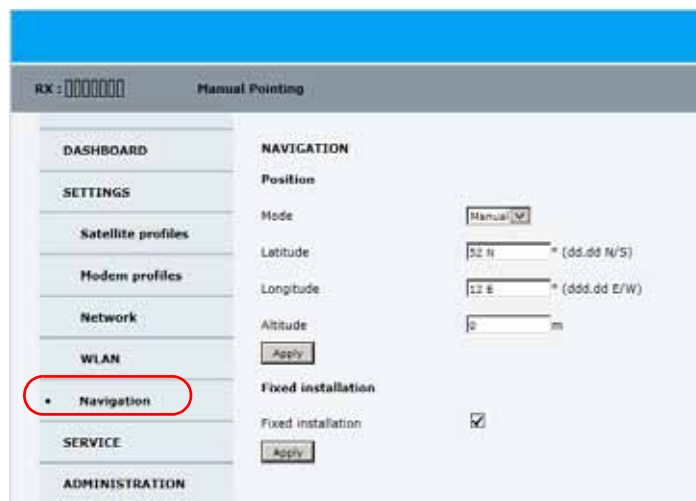1. Select **SETTINGS > Navigation** from the left navigation pane.

Figure 4-6: Web interface: SETTINGS > Navigation

2. Set the **Position**:

Item	Description
Position mode	**GPS** - GNSS module is used for current position (default).
	Manual - enter values from other position source. (Accuracy should be better than 50 m.)

Table 4-6: Web interface: SERVICE > Navigation

3. Click **Apply** to save the new settings.

4. Select **Fixed installation** if you want the EXPLORER 3075GX to automatically allow the GX modem to enter the network after reboot in case of a temporary power loss. No user action is required. **Fixed installation** is allowed after the EXPLORER 3075GX has been pointed to the satellite.

   | Note | In order to ensure that the EXPLORER 3075GX is pointed correctly, make sure that **Fixed installation** is not selected during manual pointing of the EXPLORER 3075GX. |

5. Click **Apply** to save the new settings.

4.1.6   Administration

In this section of the web interface you can configure the following administrative settings:

- *Access to the administration settings (user name, password)*
- *User permissions (guest login)*
- *Import and export of a system configuration*
- *Reset to factory default*

Access to the administration settings (user name, password)

You can logon as an administrator or as guest (user name: guest, password: guest). The Administration settings require an Administration user name and password. To log on as administrator, do as follows:

1. Open your Internet browser and enter the IP address of the EXPLORER 3075GX: http://192.168.0.1.

2. Enter the Administration user name **admin** and password **1234** (default).

3. Click **Logon**.

4. Select **ADMINISTRATION**.
   The Administration page is now updated to let you change the user name and password or log off Administration.

To change the administrator password, do as follows:

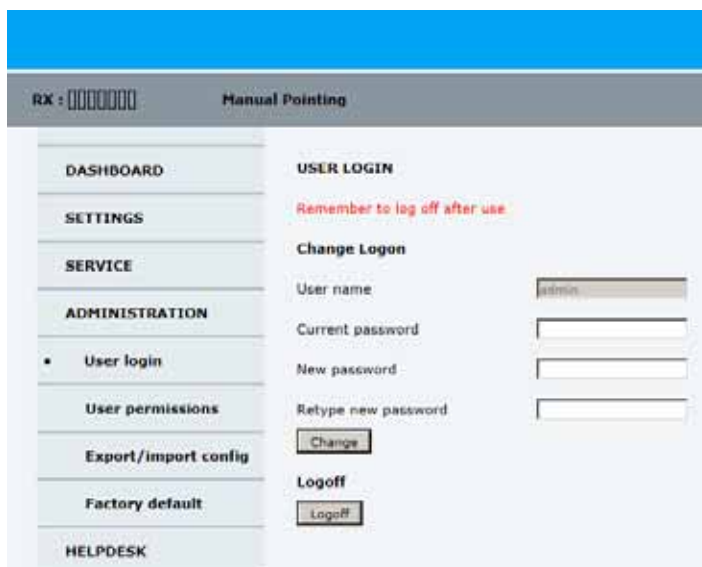1. In the section **Change Logon** type the new password and retype it on the next line.

Figure 4-7: Web interface: Administration, change administrator logon and password

2. Click **Change**. At the next logon the new password is required.

To reset the administrator password, do as follows:

1. Contact your service partner for a reset code. Report the serial number of the ACU. You find it in the **Dashboard, ACU serial number**.

2. Click the link **Forgot administrator password?** on the **LOGON** page.

3. Type in the reset code obtained from your service partner and click **Reset**.

4. Type in the user name **admin**, the password **1234** (default) and click **Logon**.

To log off administration

If you have not entered anything for 30 minutes under **ADMINISTRATION**, you are logged off automatically. To log off manually, click **Logoff** in the **ADMINISTRATION** page.

4.1.7   User permissions (guest login)

You can manage user access to certain functions of the EXPLORER 3075GX system. You can allow or deny users that are not administrators (user name: guest, password: guest) access to certain functions and make these pages read-only. This is useful if you want to protect the system against unintended changes or tampering of the system.

Important	Study this screen thoroughly and decide which areas of the EXPLORER 3075GX system you want to give non-administrator users (user name: guest) access to.

To set up the user permissions for guest users, do as follows:
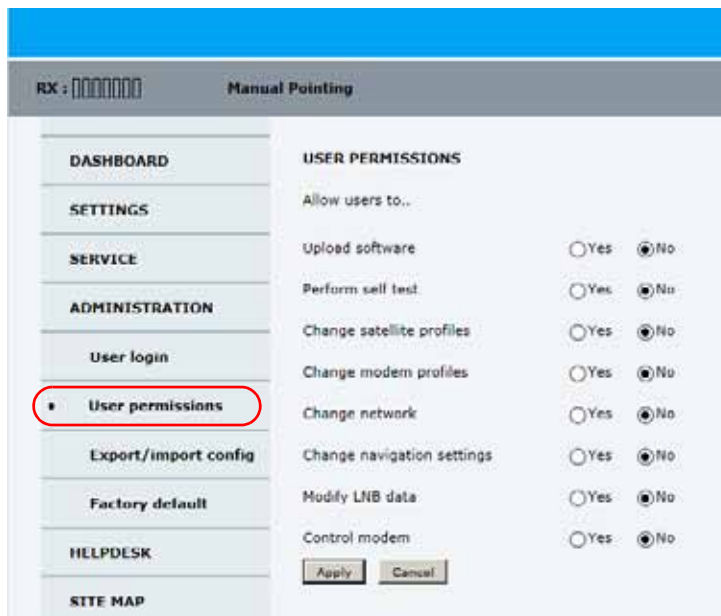
1. Select **ADMINISTRATION > User permissions**.

Figure 4-8: Web interface: ADMINISTRATION, User permissions

2. For each item under **ALLOW USERS TO:** select

- • **Yes** to allow the **guest user** access
- • **No** to block the **guest user** access to the settings. Then the pages are read-only, changes cannot be made by the guest user.

Change network: Locks the page SETTINGS > Network. On this page IP configuration of the LAN connectors can be changed. For further information see *To configure the LAN network* on page 4-6.

Modify LNB data: Locks the page SERVICE > LNB for guest users. This page is used when exchanging an LNB.

Control Modem: Locks the page SERVICE > Modem for guest users. This page is used to reset or power cycle the GX modem.

3. Click **Apply**.

4.1.8   Import and export of a system configuration

The configuration file contains all the settings you have entered during system setup: satellite profiles, VSAT modem profiles, LAN setup, user permissions etc. If you need to reuse a configuration in another EXPLORER 3075GX, you can save the current configuration to a file, which can then be loaded into another EXPLORER 3075GX. You can also use this feature for backup purposes.

| Important | You can only load and save configurations when the units have the same software version. |

| Important | The configuration file contains the encryption key of the WLAN. |

To save a configuration to a file, do as follows:
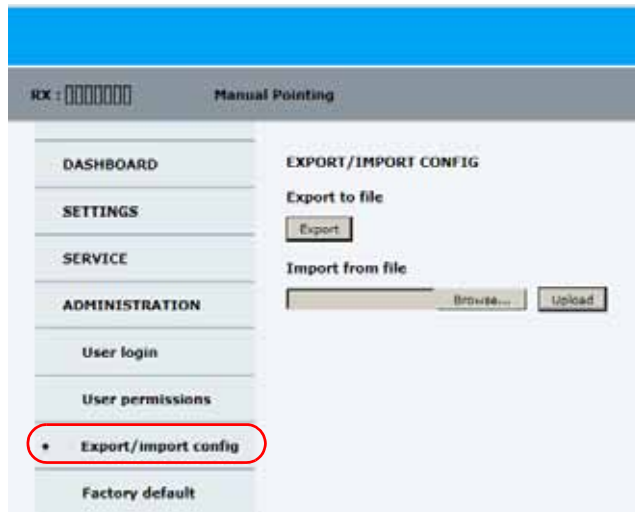
1. Select **ADMINISTRATION > Export/import config**.

Figure 4-9: Web interface: Administration, Export/import configuration

2. Click the button **Export**. Follow the download instructions on the screen. You can use this configuration file for upload into another EXPLORER 3075GX,

To load a configuration from a file, do as follows:

1. Select **ADMINISTRATION > Export/import config**.

2. Click the button **Choose File** and locate and double click the configuration file (.cfg file).

3. In the web interface click the button **Upload**.

To clone a system configuration, do as follows:

1. Reset to factory default, see the following section for details.

2. Import a configuration from file, see section above.

4.1.9   Reset to factory default

When resetting EXPLORER 3075GX to factory default, the following settings are deleted or reset to factory default:

- Navigation settings

- All added satellite profiles

- All added VSAT modem profiles

- Changes in the network setup

- User permissions

- Display: brightness setting

To reset to factory default settings, do as follows:

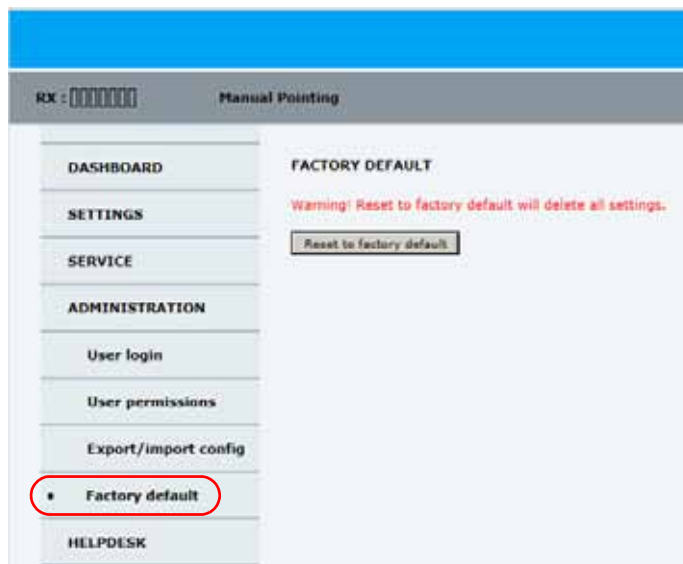1. Select **ADMINISTRATION > Factory default**.

Figure 4-10: Web interface: ADMINISTRATION > Factory default

2. Click **Reset to factory default**.

Reset to factory default - integrated GX modem

> ⚠️ **CAUTION!** Administrators only. Close this page for guest users, see *User permissions (guest login)* on page 4-11.

> ⚠️ **WARNING!** The system becomes inoperable if you select **Default Factory Configuration** in the drop down list on the page **SERVICE > Modem**.

To reset the integrated modem to factory default, do as follows:

1. Select **SERVICE > Modem**.

Figure 4-11: Web interface: SERVICE > Modem, Factory default

2. In the drop-down box select the reset level:
   - Level 0: Soft Reset – Power cycle of the GX modem
   - **Do not use:** Level 2: Diagnostic Test Mode – Only connection to the GX modem is the serial RS-232 interface, all other connections are shut down.
   - **Do not use:** Level 3: Default Factory Configuration.

   > **Important** Note for level 2 and level 3: The GX modem may stop working. You may have to upload new software.

4.2   Keypad and display menus

4.2.1   Keypad and display

In the display you can see the current state of the system. You can see events (warnings, errors and information) and how the system has been configured. Use the keypad to navigate through the menu tree.
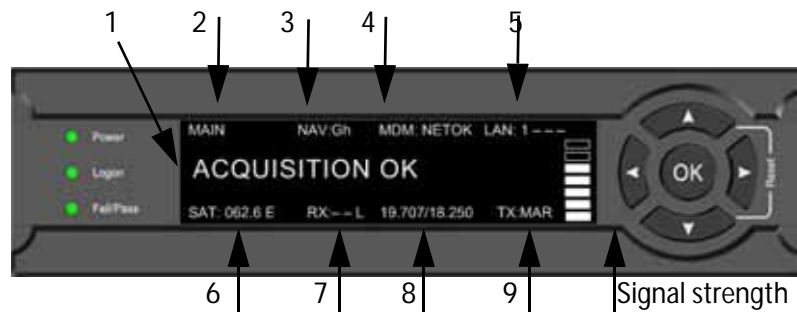

Figure 4-12: Display and keypad of the ACU (example)

1. Current status of the EXPLORER 3075GX (examples):
   ANTENNA SOFTWARE UPLOAD
   ANTENNA POST (Power-On Self Test)
   READY (waiting for data from the modem or no satellite profile selected)
   DEPLOYED IDLE (antenna ready)
   MANUAL POINTING
   ACQUISITION OK (signal from the GX satellite acquired)
   SAFE MODE (error mode, se event menu to see current events)

2. Current menu, see *The menu tree* on page 4-16.

3. **NAV**: Navigational information
   First letter: **G** (Valid position signal received from the GNSS module) or **g** (No valid GNSS fix)
   Second letter: **H** (Valid heading data) or **h** (No heading data available).

4. **MDM**: Current status of the modem: **TEST, ERROR, READY, INIT, RXOK, ACQ, NETOK, RESET, OFF**

5. **LAN**: LAN connectors used, **1**, **2**, **3**, **4**, **–**.

6. **SAT**: Longitude, satellite position of the currently active satellite profile.

7. **RX**:
   1 (Rx1 Lock, **-** or **1**),
   - (Rx2 Lock, **-** or **2**),
   L (RX polarisation of currently active satellite profile: **L** (left-hand) **R** (right-hand).

8. RF tracking frequency in GHz and LNB LO Frequency.

9. **TX**: <Modem TX> <ODU TX> <TX pol>
   <Modem TX> = [m,M]
   <ODU TX> = [a,A]
   <Tx pol>=[-,L,R]

After 1 hour the display is dimmed to lowest intensity. Press any key to light up the display.

4.2.2 Navigating the menus

Use the keypad to navigate the menus.

- Use the arrow keys ▲ and ▼ to go through the menu items or enter a number, digit by digit.

- Press **OK** or ► to select a menu item.

- Use the arrow keys ◄ and ► to go through the settings and move from one digit to the next.

- Press **OK** to select a setting.

- Press ◄ again to move one level up. If applicable, confirm to store the new setting by pressing **OK**.

4.2.3 The menu tree

In the menu tree you can see how the system has been configured. To enter satellite information, use a connected PC and the web interface.
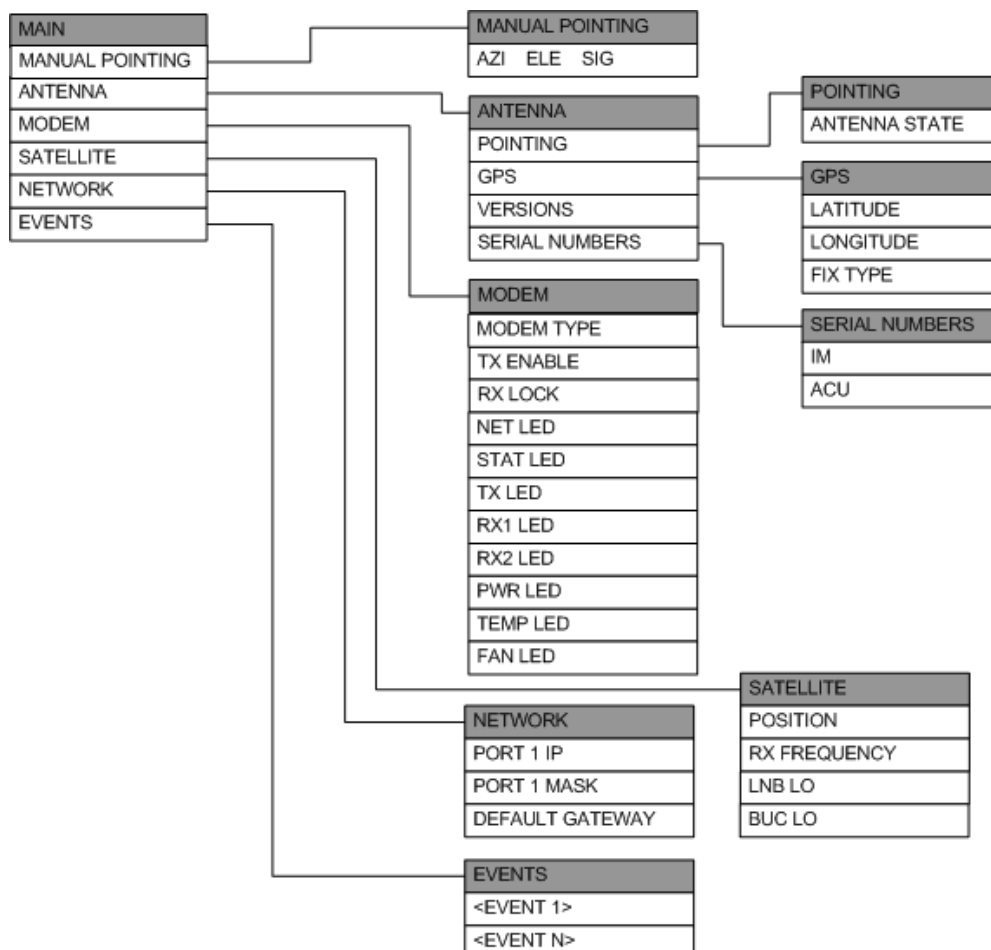
Figure 4-13: Menu tree in the display

Top-level menu

Top-level menu	Description
MANUAL POINTING	Shows current azimuth, elevation and signal strength.
MAIN	View with current status of the EXPLORER 3075GX. Example when logged on to the satellite: This view is displayed after a time out of 10 minutes. Press any key (except left arrow) to enter the menu at **MAIN**. New events are shown in this display. If an event is displayed, press **OK** to jump directly to the menu **EVENTS** for viewing the currently active events.
ANTENNA	Shows the current antenna parameters, position, software version and serial numbers of the ADU and ACU.
MODEM	Modem information, including modem LED status
SATELLITE	Current satellite information. This information is selected using the web interface.
NETWORK	Shows the IP addresses and netmasks of the LAN connectors and the management mask.
EVENTS	View system events. Active events are shown as: X ACTIVE EVENTS in the **MAIN** display. Press **OK** to update the list.

Table 4-7: Top-level menus

Menu descriptions

MANUAL POINTING	Description
AZI ELE SIG	Current values for azimuth, elevation, signal strength indicator

Table 4-8: MANUAL POINTING menu

ANTENNA	Description
POINTING	ANTENNA STATE: Current state of the antenna, e.g. TRACKING ELEVATION: Current elevation angle of the antenna AZIMUTH: Current azimuth of the antenna, with reference to North
GPS	LATITUDE: current latitude, read from GNSS module. LONGITUDE: current longitude, read from GNSS module. FIX TYPE: 2D or 3D or NONE
VERSIONS	Current software version.
SERIAL NUMBERS	Serial number of the EXPLORER 3075GX and an Inmarsat serial number.

Table 4-9: ANTENNA menu

MODEM	Description
MODEM TYPE	Current modem type.
TX ENABLE	On or off, information delivered by the connected GX modem.
RX LOCK	On or off, information delivered by the connected GX modem.
NET LED	Modem status. Steady or flashing green/yellow/red, OFF
STAT LED	
TX LED	
RX1 LED	
RX2 LED	
PWR LED	
TEMP LED	
FAN LED	

Table 4-10: MODEM menu

SATELLITE	Description
POSITION	Current satellite position.
RX FREQ	Current RX frequency.
LNB LO	LNB LO frequency
BUC LO	BUC LO frequency

Table 4-11: SATELLITE menu

NETWORK	Description
PORT1 IP	Current IP address for LAN1 (service port).
PORT1 MASK	Current netmask for LAN1.
DEFAULT GATEWAY	Current default gateway.

Table 4-12: NETWORK menu

EVENT	Description
<EVENT>	In this menu all active events are listed. Use ▲ and ▼ to go through the active events.
	Events can be of the type WARNING or ERROR.
	If a new event occurs or there is a change in the event list while you are in the **EVENTS** menu, a * is shown in the upper left corner of the display, next to the menu name. Press **OK** to update the EVENTS list, the * will be removed. A > means the event text is longer than the display. Press > to see the remaining text.

Table 4-13: EVENTS menu

Example: **EVENT 1/4***: This is the first event out of a list of 4 and there has been a change in the list. EVENT 1/4 will always be shown, the * indicates that there has been a change.

4.2.4 Brightness of the display

To adjust the brightness do the following:

1. Press and hold **OK** for a short moment until BRIGHTNESS XXX% is displayed (XXX is the current brightness value).

2. Hold **OK** + press ▲ to brighten or ▼ to darken display.

3. Release OK to leave the brightness menu.

4.3 Web interface for tablet and smartphone

If you access the web interface from a smartphone or tablet the mobile web interface is displayed. It has the following basic functions:

- Activate a satellite profile

- See status and events

- Access the web interface (PC version)

To access the mobile web interface, do as follows

1. Press the On/Off button to power up the EXPLORER 3075GX.

2. Connect your smartphone or tablet to the WLAN of the EXPLORER 3075GX. For details on WLAN setup. see *WLAN settings* on page 4-8.

3. Open your Internet browser and enter the IP address of the ACU. The default IP address is **http://192.168.0.1**. The mobile web interface opens.

Figure 4-14: Mobile web interface, logon page and status page

To access the menu, tap the icon in the top right corner. The following menus are available:

	Description
Status	Shows the system status, host name, position, heading, selected satellite profile, modem etc.
Satellites	Lets you select which satellite to activate, see the next section.
Event list	Shows a list of currently active events, if any.
Desktop	Gives access to the web interface for PC access, i.e. the full version of the web interface. In this view, tap the button **Mobile version** in the status bar to go back to the mobile version.
Logoff	Log off the antenna.

Table 4-14: Menus in the mobile web interface

To select and activate a satellite profile

1. From the menu, tap **Satellites**.

2. Tap to select the satellite profile which you want to activate.

3. Tap **Activate**.

Service

This chapter has the following sections:

- *General support*
- *Software update*
- *Status signalling with LEDs and status messages*
- *To return units for repair*

5.1   General support

Contact for support

If this manual does not provide the remedies to solve your problem, contact your service provider.

5.1.1   Preventative maintenance

The EXPLORER 3075GX is constructed to require a minimum amount of regular maintenance.

> ⚠ **WARNING!   Potentially hot surface** when the system is operated in hot environments without the possibility for ventilation. Contact may cause burn. Allow to cool before servicing.

Make the following checks on a regular basis:

- Inspect the reflector front surface for physical damage including chips and cracks. Any substantial damage can affect antenna performance and may require a portion of the reflector to be replaced.
- Check the feed horn for cracks or damage.
- Use low-pressure washing and soft scrubbing to rinse off grit and reduce wear.

Service

5.1.2 Help desk and diagnostics report

On this page you can enter the support contact for this installation, download the user and installation manual and download a diagnostics report.
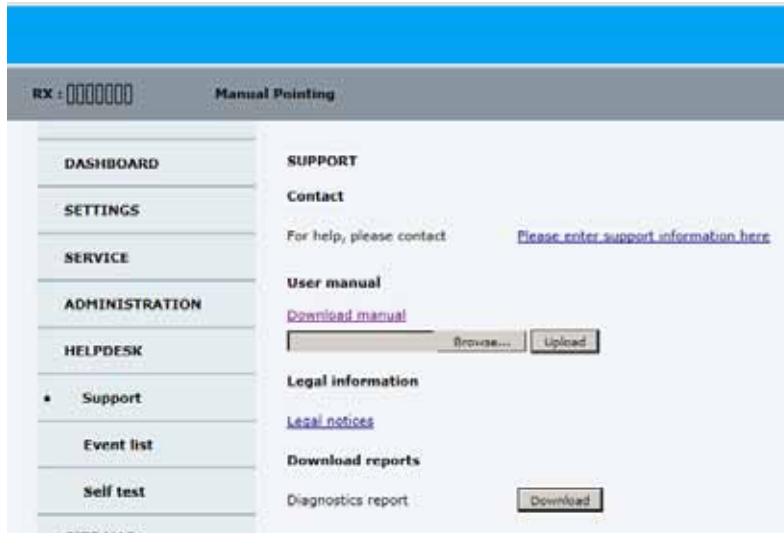
Figure 5-1: Web interface: HELPDESK

1. Select **HELPDESK** from the left navigation pane.

2. Click the link, enter support contact information and click **Apply**.

3. To download the user and installation manual (this manual) click **Download manual**.

4. To upload an updated manual to the antenna click **Browse** and locate the new file, then click **Upload**.
   Check for a newer version at www.cobham/satcom, Service and Support, AVIATOR, EXPLORER, SAILOR, Sea Tel Service and Support, Technical Downloads.

5. Click **Legal notice** to display the licence text for the source code of the parts of the EXPLORER 3075GX software that fall under free and open source software.

6. In the section **Download Reports** click the button **Download**. The diagnostics report (txt file) is downloaded to your computer.

   | Important | The diagnostics report contains the encryption key of the WLAN (cfg.net.wlan.key). |

   The diagnostics report contains information relevant for the service personnel. It is also useful documentation of the current setup. The report contains all parameters set during configuration. The main sections are:
   - Software
   - System
   - Hardware
   - Setup - System data
   - Network - LAN and WLAN configuration
   - Modems

- Satellites - Satellites profiles
- Operation - Current modem and navigation parameters.
- POST - results of the Power-On-Self-Test
- Active Events - lists the currently active events
- Events - List of all cleared events.
- System log

Event list

When an event is registered, the web interface shows an event icon ⚠ in the icon bar as long as the event is active. The ACU display shows also active events. To view the event list with active events, click the event icon from the icon bar at the top of the web interface, or select **HELPDESK** > **Event list** from the left navigation pane.

The **Event list** page shows a detailed list of active events and notifications including the time of the first occurrence, ID and severity of the event message, and a short text describing the error. Active events are cleared from the event list when the error is cleared. They are moved to the section **Notifications** and are displayed for 24 hours. All entries in the section **Notifications** are cleared automatically after 24 hours and after restart of the system. For a list of all events with description, error code (ID), explanation and remedy see *System messages* on page B-1.

Self test

You can start a self test of the EXPLORER 3075GX ADU and ACU.

1. Click **Self test** in the **HELPDESK** page.
2. Click the menu item **Self test**.

   > **Important**   Warning! The EXPLORER 3075GX will reboot to perform the self test. Rebooting will terminate all existing connections.

5.1.3   Reset

> **Important**   Warning! Reset to factory default will delete all settings, including satellite and VSAT modem profiles, network setup, user permissions and ACU display brightness settings.

To reset the antenna do the following:

1. Press and hold ▲ and ▼ until the ACU display shuts down and the antenna reboots.

Figure 5-2: To reset the system

2. Wait until the antenna has rebooted and is operational again. The last active satellite profile will be used.

To reset the GX modem to factory defaults use the web interface. See *Reset to factory default - integrated GX modem* on page 4-14.

Reset to factory defaults using the web interface

To reset the EXPLORER 3075GX to factory defaults via the web interface see *Reset to factory default* on page 4-13.

5.1.4   Satellite profiles and modem profiles

A satellite profile with the GX Modem is already set up at the factory. You may add a satellite profile with the generic modem for troubleshooting purposes.

Satellite profiles – New entry and Edit
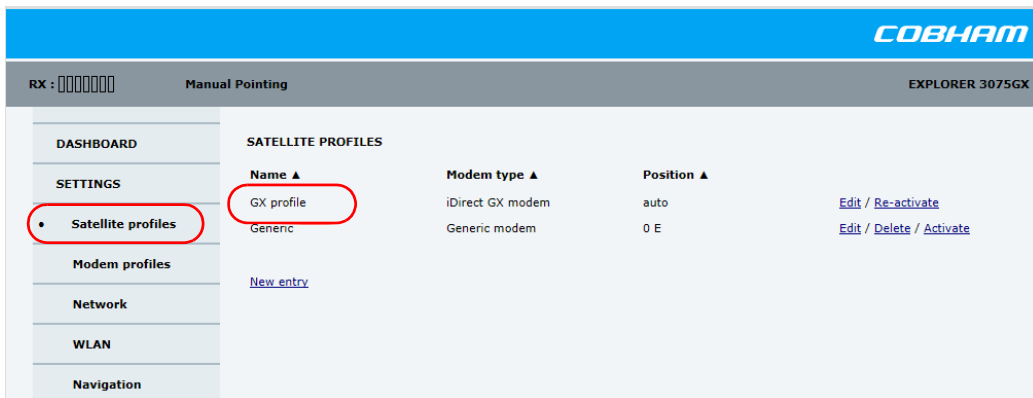
Figure 5-3: Web interface: SETTINGS - list of satellite profiles (example)

Each satellite profile has one assigned modem profile.
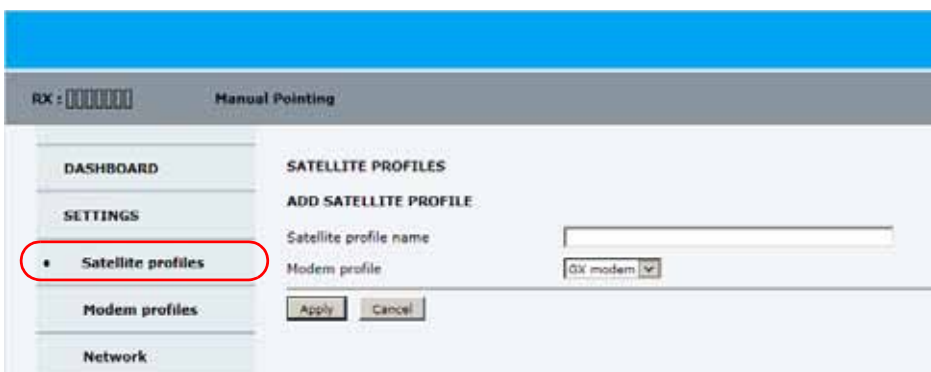
Figure 5-4: Web interface: SETTINGS, Satellite profiles — new entry (example)

To add or edit a satellite profile, do as follows:

1. Go to **SETTINGS or Satellite profiles** and click **Edit** or **New entry**.

2. Enter or edit the Satellite profile name.

3. Select a modem profile. The page automatically displays the parameters available for the selected VSAT modem profile. For instructions how to add a modem profile see the following sections.

4. Enter the data for the satellite, if any. For satellite data see www.lyngsat.com.

5. Click **Apply** to save the settings for the satellite profile.

Modem profiles

On the page **Modem profiles** you create, edit or delete VSAT modem profiles. The VSAT modem profile GX Modem is already set up at the factory. It is useful for troubleshooting to create a VSAT modem profile with the Generic modem.

Modem profile – New entry and Edit

To add or edit a VSAT modem profile, do as follows:

1. Go to **SETTINGS** > **Modem profiles** and click **New entry** or **Edit**. The supported VSAT modem profiles are listed in the drop-down list **Modem**.
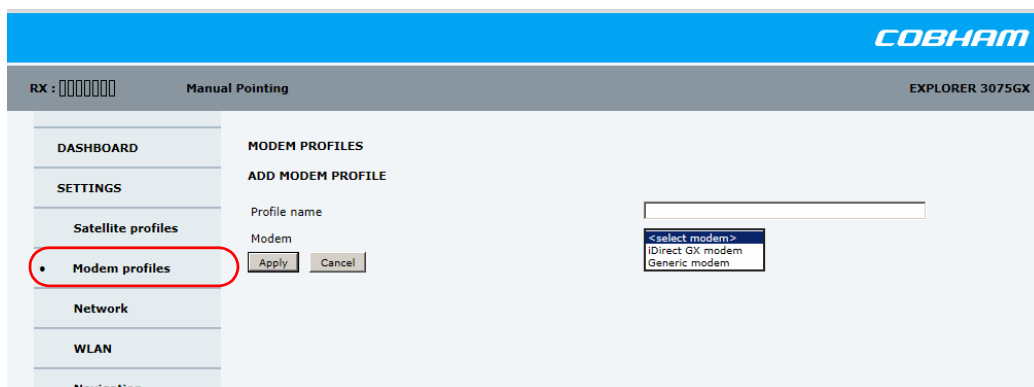
Figure 5-5: Web interface: SETTINGS, VSAT modem profile – supported modems

2. Fill in a modem profile name of your own choice.

3. Select the **Generic GX modem** (for troubleshooting) from the drop down list.

4. Click **Apply** to add the new profile to the list of VSAT modem profiles or to accept the edits.

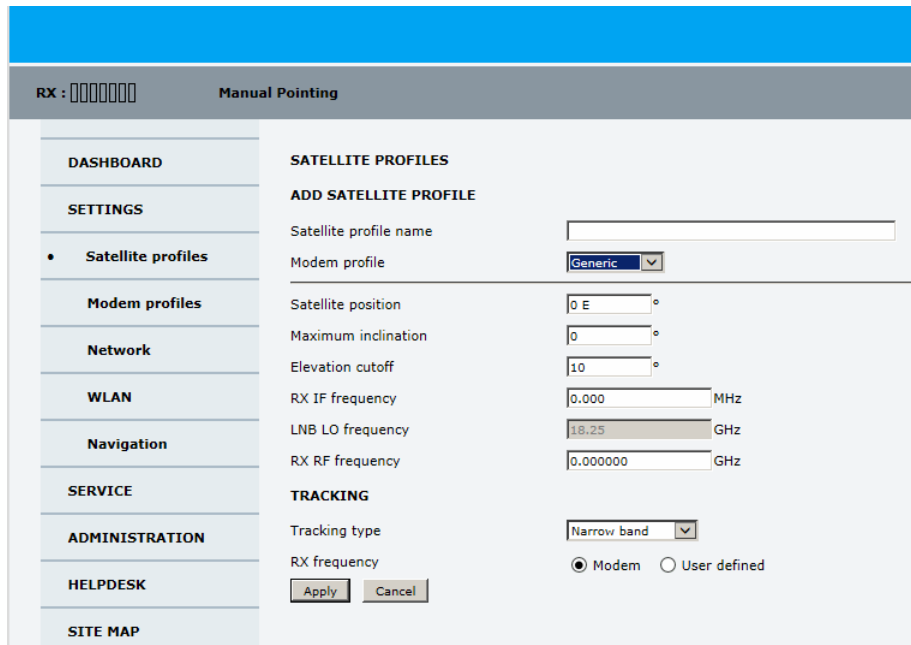For a generic modem you enter all parameters in the satellite profile.

Figure 5-6: Satellite profile with generic GX modem

5.1.5 GX Modem: One Touch Commissioning (OTC)

You may have to make the One Touch Commissioning (OTC) for the modem.

> ⚠️ **WARNING!** For your safety: Active RF transmission may occur during an OTC procedure. Software updates may also occur, yet the system is in receive-only mode during such auto-updates.

Important | You must use the Internet browser **Firefox**.

Important | After changing the TX cable you must make a One Touch Commissioning.

1. Connect a PC to LAN1.

2. Enter the web interface (via Firefox browser) and go to **SERVICE** > **Modem**.
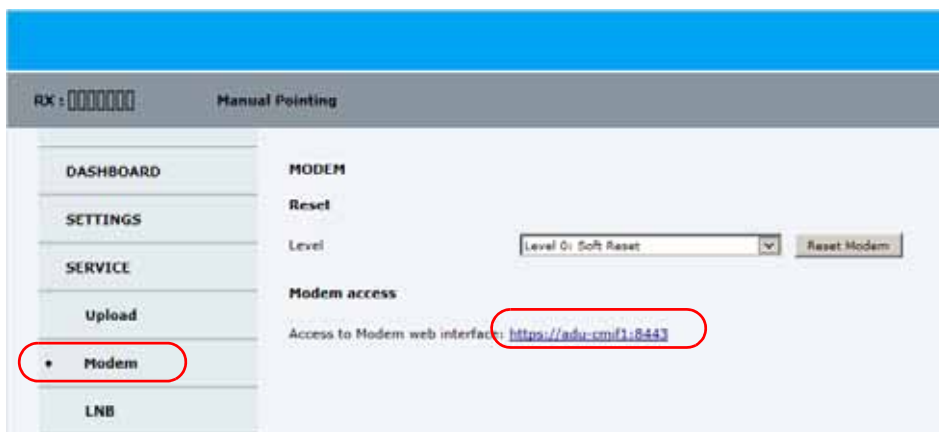
Figure 5-7: Web interface: SERVICE > Modem, Factory default

3. At **Modem access** click the link.

4. Type the user name **admin** (default) and the password **iDirect** (default).
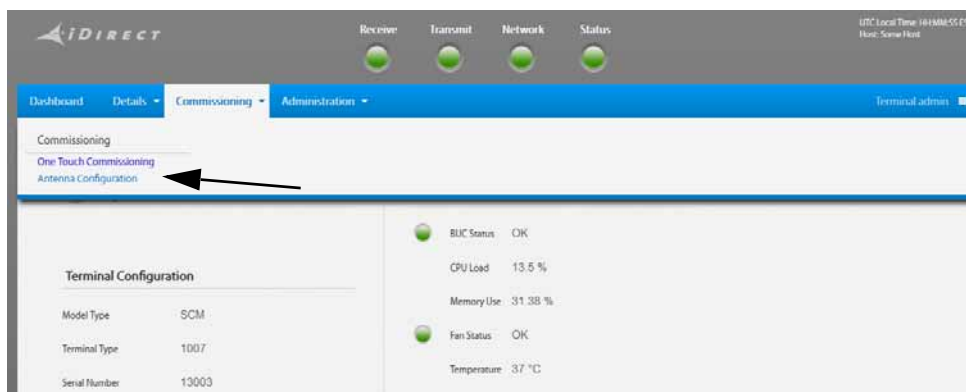
Figure 5-8: Unified web interface of the Core Module

5. In the menu **Commissioning** click **One Touch Commissioning**.

6. Click **Start**. Once commissioning is completed the antenna will search for the I5 satellite with the highest elevation.

7. The antenna will find the satellite and perform necessary steps to enter the network (software upgrades, if available).

8. The Unified Web Interface of the Core Module will indicate the modem in the network as well as the modem status in the display in the menu **MODEM**.

9. When commissioning is completed, test all subscribed services.

5.1.6   LNB data update

If the RF assembly or the LNB has been replaced you must update the LNB data.

> ⚠️ **WARNING!**   Make sure to enter the correct values for the new LNB. Incorrect values may make the system inoperable.

To enter data of the new LNB do as follows:

1. Select **SERVICE > LNB**.

2. Enter the new values as shown on the label:
   LNB-LPN: LNB model number
   LNB-LSN: LNB serial number, in Inmarsat format
   L-MID: Manufacturer ID
   LNB-FID: LNB function ID (typically empty, shown with a "-")

3. Click **Apply** to save the new settings.

4. Restart the system and wait for **MDM:NETOK** in the display.

5. If you have replaced the RF assembly, you must make a One Touch Commissioning, see *GX Modem: One Touch Commissioning (OTC)* on page 5-6.
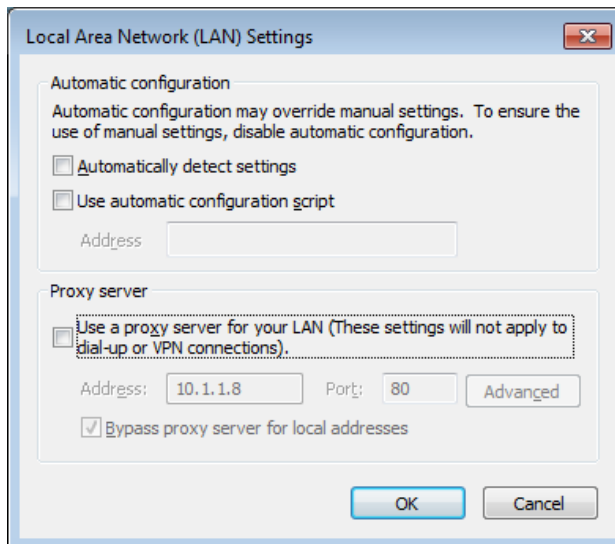
5.1.7 Proxy server settings in your browser

If you are connecting your computer using a LAN or WLAN interface, the **Proxy server** settings in your browser must be disabled before accessing the web interface. Most browsers support disabling of the Proxy server settings for one specific IP address, so you can disable Proxy server settings for the web interface only, if you wish. Consult your browser help for information.

To disable the use of a Proxy server completely, do as follows:

Note ▸ | The following description is for **Microsoft Internet Explorer**. If you are using a different browser, the procedure may be different.

1. In Microsoft Internet Explorer, select **Tools** > **Internet Options** > **Connections** > **LAN Settings**.

2. Clear the box labeled **Use a proxy server for your LAN**.

3. Click **OK**.

When the proxy server settings are disabled, close and restart your browser. You may need to change this setting back on return to your Internet connection.

5.2 Software update

5.2.1 Prerequisites

You need the following items to make a software update:

- One computer with a standard LAN port available.

- A standard Internet browser.

- 1024×768 pixels or higher display resolution (best viewed with small fonts).

- One straight LAN cable.

- Access to the file with the new software.

5.2.2 Software update procedure

EXPLORER 3075GX (GX modem has separate software)

1. Power up the EXPLORER 3075GX system.

2. Connect a PC to LAN interface 1 (Service port, standard).

   If you want to use another LAN port to access the web interface you must configure it according to your network requirements. See *To configure the LAN network* on page 4-6 for more information.

3. Open your Internet browser and enter the IP address of the EXPLORER 3075GX. The default IP address is http://192.168.0.1.

4. Type in the user name **admin** and the password **1234** (default) to access the **Dashboard**.

5. The web interface shows the **DASHBOARD** page.

6. Click **SERVICE** in the navigation pane. The **UPLOAD SOFTWARE TO TERMINAL** page is displayed.
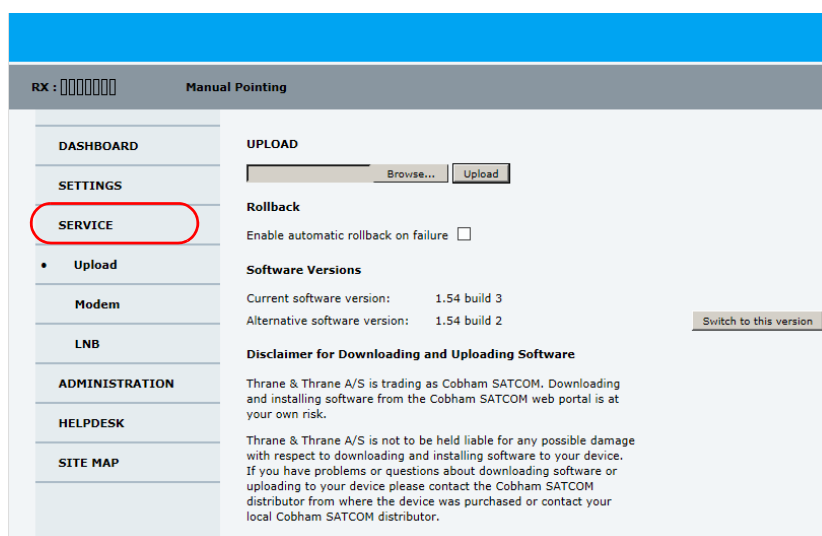
Figure 5-9: Software update with the web interface

7. Click **Browse...** and locate the new software file.

8. Click **Upload**.

| Important | Do not browse away from the upload page. This will terminate the upload process. Wait for the browser to reload automatically. |

9. You can select **Enable automatic rollback on failure**, then the system returns to the previous software if the installed software fails.

10. Click **Switch to this version** if you want to force the system to use the alternative software version stated in the display.

Note that the upload procedure takes a couple of minutes. When done, the ACU automatically restarts with the new software version.

The start-up procedure after a software upload takes longer than the usual start-up time, as the software in the antenna must also be updated. The display shows: **ANTENNA SW UPLOAD**.

If software upload fails - how to recover

To recover from a failed software upload, turn off the ACU and turn it on again. Then repeat the upload procedure as described in *Software update* on page 5-9.

To verify the software update

1. The software version can be viewed in the **DASHBOARD** window of the web interface.

2. After completing the software update procedure, the EXPLORER 3075GX will perform a POST (Power On Self Test).

3. When the POST has finished, the green Pass/Fail LED on the keypad must become steadily green. Verify that the Pass/Fail LED is not red nor flashing orange once every 2 seconds. Wait until the Pass/Fail LED is green.

4. Verify that the software update has been completed successfully. You find the software version number in the **DASHBOARD** window of the web interface.
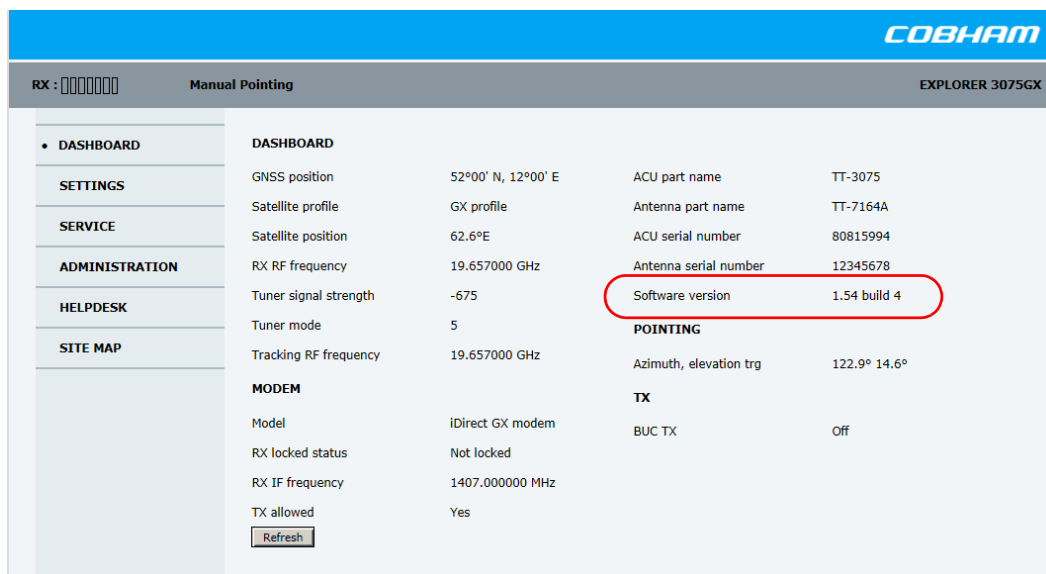

Figure 5-10: Verifying software update

Software update (modem)

The modem detects automatically whether a software upgrade is needed. If yes, software upgrade is done automatically via the satellite link. You can see the current software version in the web interface of the GX modem (Core Module).

Software recovery (safe mode)

If the EXPLORER 3075GX has become inoperative, a software recovery update may bring it back into an operational state.

To make a software recovery, do as follows:

1. During reboot push and hold the arrow keys ◀ and ▶ on the keypad. The text **safe mode** is shown in the display. The network settings are reset to factory default (http://192.168.0.1).

2. Open an Internet browser and enter the address http://192.168.0.1. A web interface is displayed.

3. Upload new software or reset to factory default.

4. Reboot the EXPLORER 3075GX.

Service

5.3 Status signalling with LEDs and status messages

Built-In Test Equipment

The EXPLORER 3075GX has a Built-In Test Equipment (BITE) function in order to make fault diagnostics easy during service and installation. The BITE test is performed during:

- Power On Self Test (POST), which is automatically performed each time the system is powered on.

- Person Activated Self Test (PAST), which is initiated by starting a self test in the web interface **HELPDESK > Self test**.

For details on error messages after a POST or a self test see *Event list* on page 5-3 and *System messages* on page B-1.

Means of signalling

The EXPLORER 3075GX provides various methods for signalling the system status. There are **LEDs** on the front panel of the ACU to signal Power on/off, Logon and Fail/Pass. There is also the built-in web interface of the ACU which shows any events (BITE error codes) with a short message describing each error. This is also displayed in the ACU.

In an error situation, one of the following system status messages may be shown:

- ACU POST error

- ADU POST error

- SAFE MODE (plus information about the specific error, see *System messages* on page B-1).

5.3.1 LEDs on the keypad of the EXPLORER 3075GX

There are 3 LEDs: Power, Logon and Fail/Pass LED.

LED	Behaviour	Description
Power	Steady green	Power supply OK
	Steady red	Power supply failure
	Off	No power
Logon	Flashing green	Current status is displayed: • Searching satellite • Identifying satellite • Carrier lock & TX enabled from modem
	Steady green	Satellite link established
	Off	No satellite link acquired

Table 5-1: LEDs on the ACU

LED	Behaviour	Description
Fail/Pass LED	Steady red	A fault which prevents operation is present in the system (ACU, ODU, MODEM).
	Flashing green	A Power On Self Test (POST) or Person Activated Self Test (PAST) in progress. The current status is displayed.
	Flashing red	Active BITE failure or warning. The event is shown in the ACU display.
	Steady green	No faults.

Table 5-1: LEDs on the ACU (Continued)

5.3.2   Status information of the modem

The modem status is shown in the display of the EXPLORER 3075GX in the menu **Modem** (see *The menu tree* on page 4-16). The current status is communicated by a text string: Steady green, red or yellow, or flashing green, red or yellow.

- NET LED
- STAT LED
- TX LED
- RX1 LED
- RX2 LED
- PWR LED
- TEMP LED
- FAN LED

Figure 5-11: Modem information

Service

5.4 To return units for repair

Should your Cobham SATCOM product fail, please contact your dealer or installer, or the nearest Cobham SATCOM partner. You will find the partner details on www.cobham.com/satcom where you also find the Cobham SATCOM Self Service Center web-portal, which may help you solve the problem. Your dealer, installer or Cobham SATCOM partner will assist you whether the need is user training, technical support, arranging on-site repair or sending the product for repair. Your dealer, installer or Cobham SATCOM partner will also take care of any warranty issue.

Technical specifications

Ka-Band	Receive	Transmit
Feed	2 Port Circular	
Frequency range (GHz)	19.2 - 20.2	29 - 30
Gain (dBi ± 0.2)	41.0	44.5
Axial ratio (dB)	≤ 1.5	≤ 1.0
Polarization	LHCP	RHCP
G/T - Comm @ 30° EL, Midband (dB/°K)	17.3	
EIRP @ Midband (dBW)	51.5	
BUC output power (P linear) (W)	5	

Reflector	
Size	75 cm
Optics	Axis-Symmetric
Construction	4-Piece segmented

Mechanical characteristics	
Axis Drive System	2-Axis positioner
Mount Geometry	Elevation over azimuth
Travel:-Azimuth	± 27° from stow position
Travel:-Elevation	0° to 90°

Power requirement
100-240VAC, 4A, 50/60Hz 150W (max)

Weights and measures	
Terminal	21.5 kg (47.5 lbs)
Transport cases (2)	Airline checkable
Case with base unit and RF assembly Dimensions (L/W/D) Weight	 62.5/50/29.7 cm (24.6/19.7/11.7 in) <23 kg (50.7 lbs)
Case with reflector panels, tripod and cables Dimensions (L/W/D) Weight	 79.5/51.8/31 cm (31.3/20.4/12.2 in) <23 kg (50.7 lbs)

Environmental characteristics	
Wind Speed - Operational	48 km/h (30 mph) gusts up to 72 km/h (45 mph) (anchored)
Survival	129 km/h (80 mph)
Temperature - Operational, antenna	-25° to +55°C (-13° to +131°F)
Temperature - Storage. antenna	-40° to +80°C (-40° to +176°F)
Rain	<100 mm/hr
Humidity	0 to 100% (condensing)
IP class	IP65

Cable requirements for TX and RX cables	
Coax RF Loss	<3 dB @ 50 MHz <10 dB @ 2 GHz
DC resistance	<1 Ohm

Important | After changing the TX cable you must make a One Touch Commissioning. See *GX Modem: One Touch Commissioning (OTC)* on page 5-6.

System messages

This appendix has the following sections:

- *Event messages – overview*
- *List of events*

B.1 Event messages – overview

The EXPLORER 3075GX detects events during

- POST (Power On Self Test) – a self test performed at every power-up.
- PAST (Person Activated Self test) – started in the web interface
- CM (Continuous Monitoring) – automatically performed while the system is in operation.

When the EXPLORER 3075GX detects an event that requires your action, it issues an event message and the red Fail/Pass LED in the LED panel of the ACU is lit. As long as an event is active, it is shown in the ACU display and in the web interface (in HELPDESK > Event list or click the event icon on the DASHBOARD).

Note | Active events and notifications are shown. As soon as the event is cleared, it is not displayed any longer. It is then moved to the Notifications section. Notifications are cleared after 24 hours.

State the Event ID when contacting your service partner.

The event description might contain a number of digits in brackets, e.g. (00000005). This is supplemental information and used for service and diagnostics purposes.

B.2 List of events

Error code (ID)		Severity	Description	Explanation
08065-0	ADM	WARNING	GNSS data	Missing GPS data (fix).
08067-0	ADM	ERROR	PCB temperature	ADM temperature too high. The ACU is not equipped with a fan, so make sure there is compliance with the environmental specifications.
0806A-0	ADM	WARNING	VMU connection	The ACU has lost connection with the sat modem.
0806C-0	ADM	ERROR	VMU frequency setup	There is a mismatch in the frequency setup. Wait 5 minutes. If the error persists power-cycle the terminal.
0806E-0	ADM	ERROR	VMU 10 MHz reference	The Rx or Tx reference signal is not present. Make sure Rx/Tx cable is connected and that the VMU is configured to output the RX/TX reference signal.
08078-0	ADM	WARNING	VMU TX frequency invalid	The modem unit provided a TX frequency of zero. This may degrade Tx performance. Wait 5 minutes. If the error persists power-cycle the terminal.
08104-0	ADM	ERROR	Antenna communication	The ACU cannot communicate with the antenna. Check cable and antenna.
08107-0	ADM	ERROR	ADM FPGA load	The ADM FPGA cannot be initialised and loaded.
0810A-0	ADM	ERROR	ADM production data	Production data has been corrupted.
0810C-0	ADM	ERROR	File system integrity	One or more file system partitions are corrupt. You may have lost your settings and collected statistics. If restarting the system does not help, contact your service partner.
0810D-0	ADM	ERROR	Antenna communication	Link to the ACU could not be established. Either the ACU is malfunctioning, or - if the system software has just been updated - the software is too old and is not compatible with the ACU hardware.
08800-0	ADM	ERROR	Internal power supply	An internal power supply voltage is outside its legal range.

Table B-1: Event messages

System messages

Error code (ID)		Severity	Description	Explanation
08840-0	ADM	WARNING	Master PLL lock	The master PLL has lost lock. Check the input reference signal.
08841-0	ADM	ERROR	Tuner lock	The internal tuner PLL was unable to lock.
08842-0	ADM	WARNING	GSC demodulator	The GSC demodulator has reported an error.
08843-0	ADM	WARNING	DVBS demodulator	The DVBS demodulator cannot be initialised and loaded correctly.
08844-0	ADM	WARNING	BUC voltage	The BUC voltage is out of range.
08845-0	ADM	WARNING	LNB voltage	The LNB voltage is out of range. The LNB might be switched off to protect the power supply circuitry. Reactivate satellite profile to try again, check LNB cable and surroundings if the problem persists.
08880-0	ADM	ERROR	WLAN configuration error	Configuration of WLAN module failed.
08A00-0	ADM	WARNING	GX Core Module fan	There is a problem with the Core Module fan. Check/clean and replace if necessary.
08A01-0	ADM	WARNING	GX Core Module heater	There is a problem with the Core Module heater. Check and replace if necessary.
08A02-0	ADM	WARNING	GX Core Module temperature	The Core Module temperature is out of range. It may affect performance, and it will be shut down if the situation gets worse.
08A03-0	ADM	ERROR	GX Core Module power	The Power Good signal from the Core Module is low. Check cables.
08A04-0	ADM	WARNING	iDirect modem	The ACU detected a warning/error in the iDirect modem. Log into the modem for more information. Info: 0x00000001: Temperature error 0x00000002: Test error 0x00000004: Fan error
09000-0	KDM	ERROR	KDM 3V3 supply	Internal 3V3 voltage supply error in the KDM.
09001-0	KDM	ERROR	KDM 12V supply	Internal 12V voltage supply error in the KDM.
09002-0	KDM	ERROR	KDM display	Display hardware error in the KDM.

Table B-1: Event messages (Continued)

Error code (ID)		Severity	Description	Explanation
09010-0	KDM	ERROR	KDM link/SW version	Link to the KDM module could not be established. Either the KDM board is malfunctioning, or - if the system software has just been updated - the software is too old and is not compatible with the KDM hardware.

Table B-1: Event messages (Continued)

Event ID	Severity	Description	Explanation
0C002	Error	GNSS position/velocity	Not detecting any GPS satellite
0C007	Error	SNR communication	SSI values are not being received
0C013	Error	No transponder found	The acquisition algorithm could not identify a transponder

Table B-2: Event messages of the antenna

Approvals

This appendix lists the approvals for EXPLORER 3075GX.

C.1   EN 301 489-1 V1.9.2 (2011-09)

BACL
Bay Area Compliance Labs Corp.

Bay Area Compliance Laboratories Corp.
1274 Anvilwood Ave., Sunnyvale, CA 94089, USA
Phone: (408) 732-9162, Fax: (408) 732-9164
www.baclcorp.com

ATTESTATION OF CONFORMITY

Date of Issue: 2014-10-23   Attestation Number:R1408202

Bay Area Compliance Laboratories Corp. (BACL) hereby declares that testing has been completed and reports have been generated for;

Product: VSAT Terminal

Model: EXPLORER 5075GX

Applicant: TracStar Systems dba Cobham SATCOM
                1551 College Park Business Center Road
                Orlando, FL 32804, USA

That this product has been assessed and found to comply against the following Standards;

EN 301 489-1 V1.9.2 (2011-09), EN 301 489-12 V2.2.2 (2008-07)
EN 301 360 V1.2.1 (2006-02)
EN 303 978 V1.1.2 (2013-02)

Application of the CE Mark is permitted only after all applicable requirements are met in accordance with the European Union Rules, including the manufacturer's issuance of a "Declaration of Conformity."

This attestation is specific to the standard(s) stated above and compliance with additional standards and/or directives may be required.

Attestation by: John Chan

                        Certification Manager

_____   2014-10-23
Signature   Date

C.2 AS/NZS 22:2009 + A1:20110

DECLARATION OF CONFORMITY

This product was found to be compliant with AS/NZS CISPR 22:2009 + A1:2010 for Information Technology Equipment.

Supplier Information	
Model:	EXPLORER 5075GX
Responsible Party:	TracStar Systems dba Cobham SATCOM
Address:	1551 Collage Park Business Center Road
	Orlando, FL 32804, USA
Contact Person:	George Tong
Telephone:	(517) 673-8007
Email:	George.Tong@cobham.com

EUT Information Summary	
Product Type:	VSAT Terminal
Report Number:	R1408202
Issuance Date:	2014-10-24
Tested by:	Bay Area Compliance Laboratories Corp.
	1274 Anvilwood Ave., Sunnyvale, CA 94089, USA
	Phone: (408) 732-9162, Fax: (408) 732-9164
	www.baclcorp.com

TracStar Systems dba Cobham SATCOM

being the responsible party, declares that the product

EXPLORER 5075GX

was tested to demonstrate compliance with AS/NZS CISPR 22 Rules and regulations. The methods of testing were in accordance with the most current and accurate measurement standards possible. All necessary steps have been taken in order to assure that all production units will continue to comply with AS/NZS CISPR 22 requirements.

Signature

Oct 24, 2014
Date

GEORGE TONG
Name

DIRECTOR ENGINEERING
Title

C.3 FCC Part 15 and ICES-003

DECLARATION OF CONFORMITY

The device submitted for testing at Bay Area Compliance Laboratories Corp. was found to be compliant with FCC Part 15 and ICES-003 Rules and Regulations for Information Technology Equipment.

Supplier Information	
Model:	EXPLORER 5075GX
Responsible Party:	TracStar Systems dba Cobham SATCOM
Address:	1551 College Park Business Center Road
	Orlando, FL 32804, USA
Contact Person:	George Tong
Telephone:	(517) 673-8007

EUT Information Summary	
Equipment Class:	Class B
Product Type:	VSAT Terminal
Report Number:	R1408202
Issuance Date:	2014-10-23
Tested by:	Bay Area Compliance Laboratories Corp.
	1274 Anvilwood Ave., Sunnyvale, CA 94089, USA
	Phone: (408) 732-9162, Fax: (408) 732-9164
	www.bacloorp.com

TracStar Systems dba Cobham SATCOM

being the responsible party, declares that the product

EXPLORER 5075GX

was tested to demonstrate compliance with all applicable FCC and IC Rules and regulations. The methods of testing were in accordance with the most current and accurate measurement standards possible. All necessary steps have been taken in order to assure that all production units will continue to comply with the Federal Communications Commission's requirements.

Signature

Oct 24, 2014
Date

GEORGE TONG
Name

DIRECTOR ENGINEERING
Title

C.4 Part 15 of the FCC Rules

DECLARATION OF CONFORMITY

The device submitted for testing at Bay Area Compliance Laboratories Corp. was found to be compliant with Part 15 of the FCC Rules and Regulations for Information Technology Equipment.

Supplier Information	
Model:	EXPLORER 5075GX
Responsible Party:	TracStar Systems dba Cohbarn SATCOM
Address:	1551 College Park Business Center Road Orlando, FL 32804, USA
Contact Person:	George Tong
Telephone:	(517) 673-8007

EUT Information Summary	
Equipment Class:	Class B
Product Type:	VSAT Terminal
Report Number:	R1408202
Issuance Date:	2014-10-23
Tested by:	Bay Area Compliance Laboratories Corp. 1274 Anvilwood Ave., Sunnyvale, CA 94089, USA Phone: (408) 732-9162, Fax: (408) 732-9164 www.baclcorp.com

TracStar Systems dba Cohbam SATCOM

being the responsible party, declares that the product

EXPLORER 5075GX

was tested to demonstrate compliance with all applicable FCC Rules and regulations. The methods of testing were in accordance with the most current and accurate measurement standards possible. All necessary steps have been taken in order to assure that all production units will continue to comply with the Federal Communications Commission's requirements.

Signature

Date: Oct 24, 2014

Name: GEORGE TONG

Title: DIRECTOR ENGINEERING

C.5   Declaration of similarity

COBHAM

Cobham SATCOM Land Systems
TracStar Systems Inc (dba Cobham
SATCOM Land)
4030 Nelson Av
Concord CA 94520
Tel: +1 925 798 7979
Fax: +1 925 798 7986

DECLARATION OF SIMILARITY

October 23, 2014

To:

Bay Area Compliance Labs Corp.
1274 Anvilwood Ave.,
Sunnyvale, CA 94089, USA
Tel: 408 732 9162
Fax: 408 732 9164
www.baclcorp.com

Dear Sir/ Madam,

We TracStar System Inc (dba Cobham SATCOM Land) hereby declare that product model Explorer 3075GX is electrically identical to product model Explorer 5075GX, the results of which are featured in BACL test reports, R1408202, R1408202-12, R1408202-360 and R1408202-978 available on request.

Similarities:
1. Identical electronic enclosures with identical PCBAs
2. Identical antenna system

Differences:
1. The Explorer 5075 GX that was tested is an auto acquire motorized system
2. The Explorer 3075 GX is a manual operated antenna with no motors

Please contact me should there be need for any additional clarification or information.

Regards

Dr George Tong
Director Engineering, Land VSAT and RF Antenna System

A

ABS ADU Bus Slave

ADM ACU Digital Module. A main processor board in the ACU.

AMB Antenna Module Bus

B

BUC Block Up Converter. The BUC can be thought of the "transmitter", and its actions are effectively the direct opposite to the LNB. The BUC consists of the Up Converter and HPA.

C

CM Continuous Monitoring

D

DVB Digital Video Broadcasting, a set of standards relating to digital television.

F

FPGA Field Programmable Gate Array

G

GNSS Global Navigation Satellite System, e.g. GPS.

GPS Global Positioning System. A system of satellites, computers, and receivers that is able to determine the latitude and longitude of a receiver on Earth by calculating the time difference for signals from different satellites to reach the receiver.

GSC Global Signaling Channel.

GX Global Xpress, high-speed broadband network, a worldwide Ka-band mobile satellite system.

I

IFL Inter-Facility Link

IMSO International Mobile Satellite Organisation. An intergovernmental organisation that oversees certain public satellite safety and security communication services provided via the Inmarsat satellites.

IP Ingress Protection. An international classification system for the sealing effectiveness of enclosures of electrical equipment against the intrusion into the equipment of foreign bodies (i.e. tools, dust, fingers) and moisture. This classification system uses the letters "IP" followed by two or three digits. An "x" is used for one of the digits if there is only one class

IP of protection; e.g. IPX4 which addresses moisture resistance only.

IP Internet Protocol. The method or protocol by which data is sent from one computer to another on the Internet.

K

KDM Keyboard and Display Module of the ACU

L

LAN Local Area Network

LED Light Emitting Diode

LNB Low Noise Blockdown Converter. A device used to amplify or boost the weak received signal without amplifying the noise signals (hence the "low noise" part of LNB) and to convert the high frequencies of the signal into lower frequencies, a process called down converting, for conveyance to the indoor equipment (demodulator) for processing.

P

PAST Person Activated Self Test

POST Power On Self Test. A system test that is activated each time the system is powered on.

R

RF Radio Frequency. Electromagnetic wave frequencies between about 3 kHz and about 300 GHz including the frequencies used for communications signals (radio, television, cell-phone and satellite transmissions) or radar signals.

S

SSID Service Set IDentifier. An SSID is the name of a wireless local area network (WLAN). All wireless devices on a WLAN must use the same SSID in order to communicate with each other.

V

VLAN Virtual LAN

VMU VSAT Modem Unit

W

WLAN Wireless LAN, wireless network

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