![COBHAM]

EXPLORER 6075LX

User & installation manual

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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.

This equipment is not suitable for use in locations where children are likely to be present.

Power supply
The voltage range for the EXPLORER 6075LX is 24-48 VDC nominal. We recommend to use the EXPLORER 6000 Series power Supply (403160P) from Cobham SATCOM

> ⚠️ **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.

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.

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.

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

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

Safety distance, length: 32 m

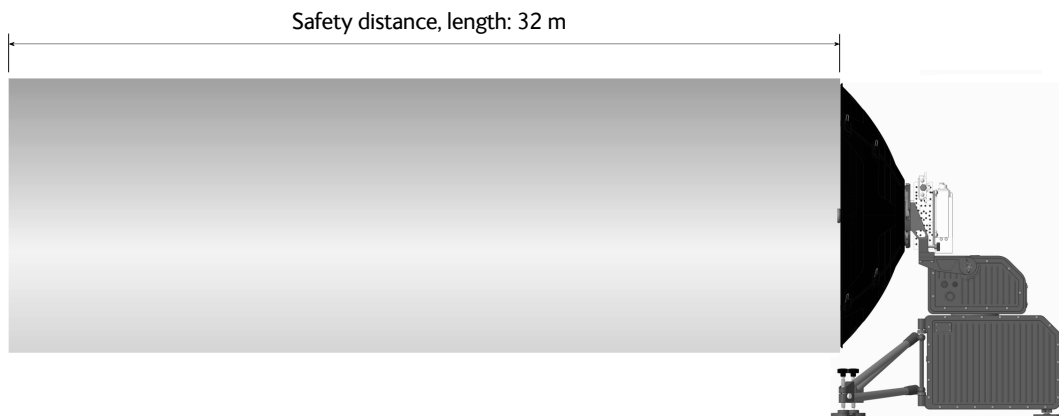Figure 1: Radiation area

Failure to comply with the rules above will void the warranty and may compromise safety!

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.

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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 6075LX, 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 the EXPLORER 6075LX with **software version 2.01**. 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.

Introduction

This chapter has the following sections:

- *EXPLORER 6075LX Stabilized Auto-Acquire Antenna System for Inmarsat Global Xpress*

- *Description of the system components*

- *Part numbers*

2.1 EXPLORER 6075LX Stabilized Auto-Acquire Antenna System for Inmarsat Global Xpress

2.1.1 Overview

The EXPLORER 6075LX is a stabilized auto-acquire fly-away VSAT antenna system, designed for operation in Ka-band. The terminal includes a fully integrated iDirect Core Module, and is configured specifically for operation on the Inmarsat Global Xpress Ka-band network. Its user friendly design allows operators with little satellite experience to access the Inmarsat Land Xpress (LX) services within minutes.

The EXPLORER 6075LX is easy to install, set up and commission by a non-specialist technician. Cobham's unique Dynamic Pointing Correction technology ensures that the antenna stays locked on to the satellite, even in strong wind.

System features

- Easy to set up and use

- Dynamic Pointing Correction technology

- 0.75 m axis-symmetric carbon reflector, 4-piece

- WLAN access point and local IP interface

- LCD display and web-based user interface

- 2-case solution, airline checkable

System units

The system has the following system units:

1. One 2-axis motorized antenna positioner with Inter-Facility Link and cabling interface ports for BUC power.

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

3. Base Unit with antenna control unit, GX modem unit, keypad, display and local IP ports.

Reflector

RF assembly

Antenna positioner with GNSS module

Base Unit with keypad and display, WLAN module, GX modem unit, DC power and local IP ports
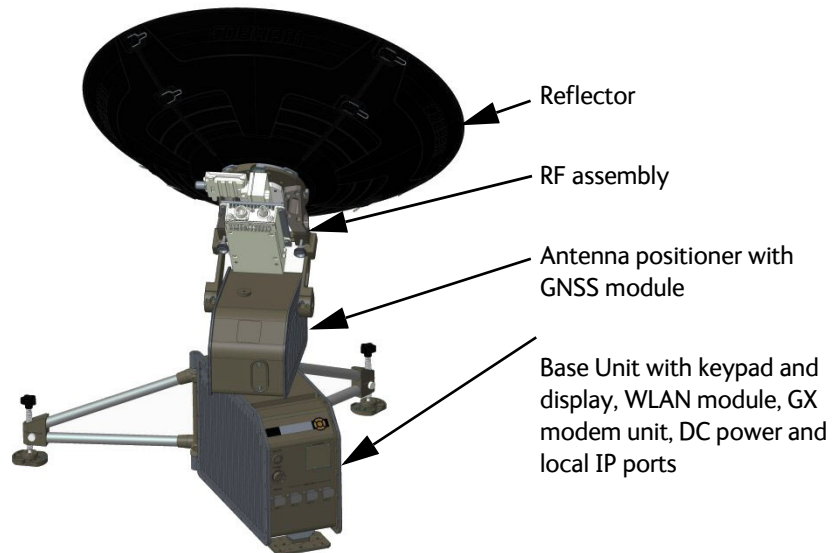
Figure 2-1: Major system components

The antenna provides a stable RF link and the built-in 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　　Satellite service

The EXPLORER 6075LX operates in the Ka-band (19.2 to 30 GHz) and uses the Inmarsat Global Xpress service, see below.

Global Xpress (GX) service

The Global Xpress service from Inmarsat delivers 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.
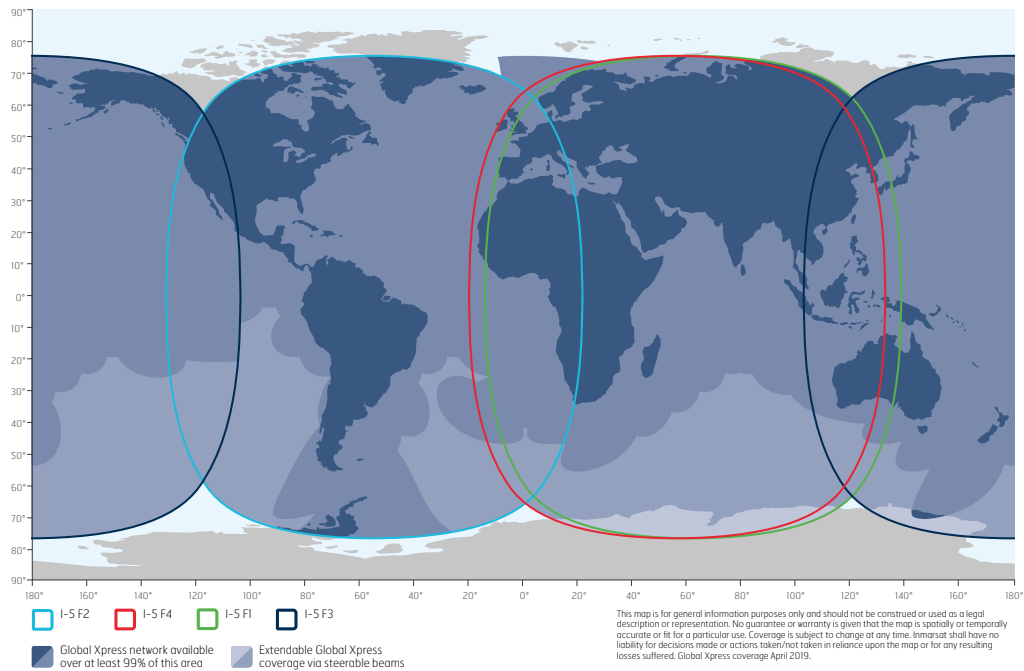
Figure 2-2: GX coverage map[a]

a.　Source: www.inmarsat.com

The satellite positions and predefined satellite profiles are listed in the table below.

Satellite profile	Satellite	Longitude	Color in GX coverage map
GX profile	Automatic selection		
Manual 62.6E GX	I-5 F1	62.6 E	Green
Manual 55.0W GX	I-5 F2	55.0 W	Light blue
Manual 179.6E GX	I-5 F3	179.6 E	Dark blue
Manual 56.5E GX	I-5 F4	56.5 E	Red

Service activation

The service is activated by your service provider. For details, contact your service provider.

2.2 Description of the system components

2.2.1 Antenna positioner

The auto-acquire antenna positioner can accommodate 0° to 88° of angular movement in the elevation axis and ±95° in the azimuth axis. The mechanical assemblies rely on two independent axes to allow for precise antenna pointing. A ground gradient of up to 10° can be accommodated by the terminal. The antenna positioner can stay outside in rainy weather.

> **Note** If the elevation angle is less than 10 degrees it is important to level the terminal.

2.2.2 RF assembly

The RF assembly for EXPLORER 6075LX includes the BUC, LNB, reflector hub, filter/polarizer, and Ka feed horn. It also contains brackets that are attached to mounting blocks on the elevation arms. Once the RF assembly is mounted, the thumb screws beneath the blocks hold the brackets securely in place. Also, the BUC and LNB are mounted closely 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 positioner.
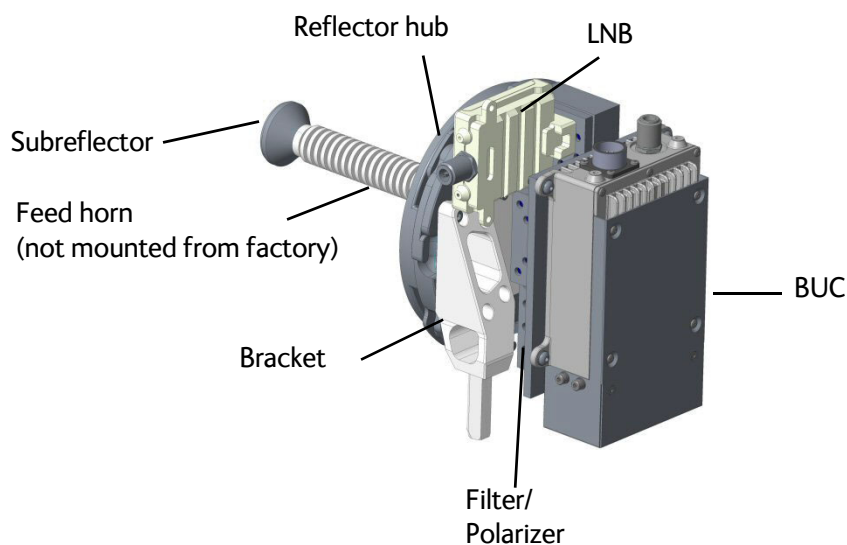
Figure 2-3: GX RF assembly

2.2.3 Reflector

The reflector is a 75 cm reflector, consisting of a center hub and 4 interchangeable petals. The petals are made entirely of carbon-fiber composite with the exception of the metallic latches. The aluminum latches are used to secure the petals to the hub. Two smaller latches along the edge of the petals attach the reflector petals 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.
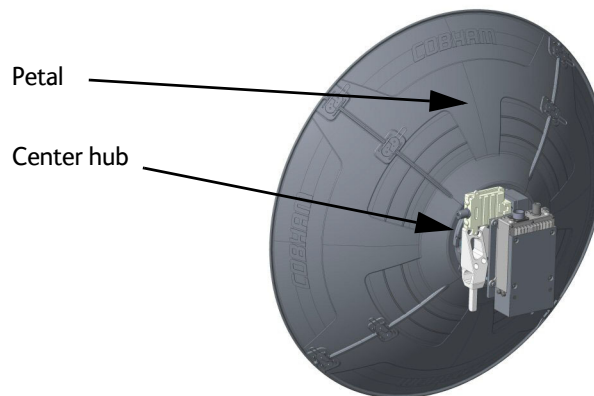
Figure 2-4: Assembled 75 cm reflector with center hub and 4 petals

2.2.4 Base Unit and support legs

The Base Unit contains many subcomponents including the antenna control unit, GX modem, GNSS (Global Navigation Satellite System) module, DC power supply, sensors and WLAN module, in addition to environment-sensing technology that self-regulates system temperature and atmospheric pressure equalization. Four local IP ports are available, Port 1 (Service port) or Port 4 (Management) is used for system control via the web interface.

The Base Unit has an embedded keypad and display to provide access to configuration, control, and system monitoring tools. The antenna positioner is hard-mounted to the Base Unit, and is class IP65 protected against dust and water ingress.
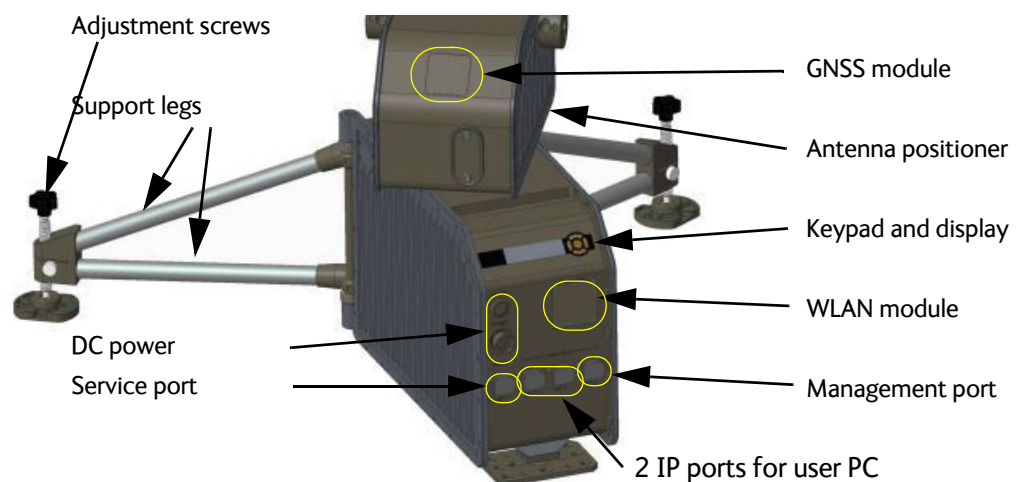
Figure 2-5: Base Unit and support legs

Keypad and display

The display has a two line menu system and two status lines (Upper and Lower) for satellite and antenna information. Using the keypad and display you can deploy, stow and stop the antenna and monitor the system (warnings, errors and information). Signal strength is indicated on the display as 7 blocks. The signal strength is also displayed as a number during manual pointing.

See *The menu tree* on page 4-19 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 6075LX* on page 5-13.
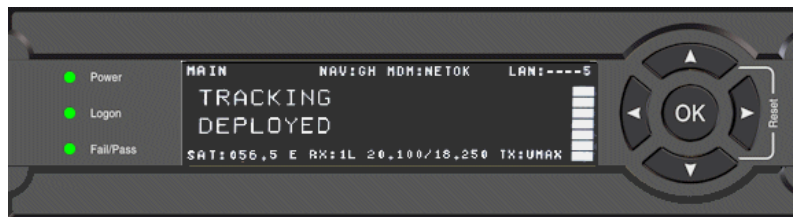
Figure 2-6: Keypad and display (example)

2.2.5 Web interface for setup and troubleshooting

The EXPLORER 6075LX has a built-in web interface, which has two levels:

- **Mobile web interface**, used for basic operations and status. Accessed from a smartphone or tablet via WLAN. For details see *Mobile web interface* on page 4-1

  Note ▷ WLAN must first be configured using the Computer web interface via the Service connector (Port 1) on the Base Unit.

- **Computer web interface**, used for configuration, line-up, troubleshooting, extended status information etc. Accessed from a computer connected to Port 1 on the Base Unit. For details see *Configuration web interface* on page 4-3.

Guest or administrator login

By default, when you try to access the web interface you are prompted for user name and password. There are two types of login:

- **Guest**: To access the web interface as guest (limited access), enter **User name: guest** and the guest password.

  Note ▷ Before you can log in as guest for the first time, the administrator must first create a guest password. See *To change the guest login password (User administration)* on page 4-18.

- **Administrator**: To access the web interface as administrator (full access to all settings in web interface), enter User name: **admin** and the administrator password.

  Note ▷ Before you can log in as administrator for the first time, you must use the local administrator function, see *New installation or forgotten password* on page 4-4.

Under **ADMINISTRATION > User permissions** you can change the settings so that no password is required to access the guest part of the web interface. The administrator password however, is mandatory.

For details, see:

- *To change the guest login password (User administration)* on page 4-18

- *User permissions (for guest user)* on page 4-18

- *Administrator access to the web interface (user name, password)* on page 4-17

2.2.6   Local IP ports and WLAN

The Base Unit has four local IP connectors (type RJ45) for connecting a PC/laptop or similar.

- Service port on the left-hand side (Port 1) for system control via the web interface.

  Important | Port 1 is configured as DHCP server by default. If you are connecting a corporate network, use Port 4 instead.

- Two connectors (Port 2 and Port 3) for user PCs for Internet etc., configured by the GX modem.

- Management port (Port 4), e.g. for system control from a PC on a corporate network. Port 4 is configured as DHCP client by default.

The EXPLORER 6075LX has a WLAN module. Access to one of the Local IP 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 Base Unit, LNB and BUC. Power input is specified as 24 VDC to 48 VDC nominal, for more details see *Technical specifications* on page A-1.

2.3   Part numbers

2.3.1   System part numbers

The EXPLORER 6075LX system has the following part number and consists of the following units:

Part number	Description	Base Unit	RF-package	Modem
406616C-50114	EXPLORER 6075LX Stabilized Auto-Acquire Antenna System for Inmarsat Global Xpress	EXPLORER 6000LX Base Unit	EXPLORER LX RFP and 75 cm petals	GX modem built into the Base Unit

2.3.2   Accessories

The following accessories are available from Cobham SATCOM:

Part number	Description
403160P	EXPLORER 6000 Series Power Supply, 48V/320W
403160P-010	EXPLORER 6000 Series Power Supply Extension cable (10 m)
406616C-070	EXPLORER 6075LX Feed Horn
406627A-005	EXPLORER 6000 Series Manual Jog Tool

2.3.3   Spare parts

For information on available spare parts, log into https://sync.cobham.com/ and select the top menu **Spare Parts**.

Assembly & start up

This chapter has the following sections:

- *What's in the box*
- *To assemble the EXPLORER 6075LX*
- *Power on and auto-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 6075LX:

- Case with RF assembly and reflector petals (left)
- Case with Base Unit and antenna positioner (right)

Figure 3-1: Transit cases

> ⚠️ **CAUTION!** Be careful when handling the feed horn and the RF assembly. After mounting the feed horn on the RF assembly, do not carry the RF assembly by the feed horn. The subreflector can be easily damaged.

The cases contain the following items:

- Base Unit with antenna positioner

- RF package

- Ka feed horn

- One set of reflector petals (4 pcs.) for 75 cm reflector

- DC input cable 2.5 m w. open leads

- RF cables: Transmit (Red, Tx) & Receive (Blue, Rx)

- BUC power cable

- One jog tool for manual stow.
  If you wish to manually deploy the antenna it is recommended to purchase an additional jog tool (406627A-005).

- 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 6075LX

3.2.1   Prerequisites

Wind speed considerations

The antenna is designed to operate under the wind speeds given in the specifications in *General specifications* on page A-2.

Note that the antenna may point away from the satellite in winds blowing faster than the operational wind speed limit. At higher wind speeds drive the antenna manually to the stow position. See *To stow the antenna manually* on page 3-13.

Important	Do not assemble or operate the terminal at wind speeds exceeding the operational wind speeds. In case the wind speeds exceed the operational wind speed limit while the antenna is assembled or operational, stop the antenna and remove the petals and the feed horn. In case the wind speeds exceed the survival wind speed limit while the antenna is assembled or operational, disassemble and pack the antenna.

3.2.2   Assembly

The EXPLORER 6075LX ships from the factory calibrated and ready for use. To be fully operational, you must deploy the Base Unit, install the RF assembly and the reflector, and connect the IFL and power cables. After power-up, the system will auto-acquire the network within typically five minutes. To assemble the EXPLORER 6075LX, do as follows:

1. Unpack the Base Unit and place it upon level ground.

2. Deploy the two support legs. Make sure they are far apart to obtain more stability.

3. Turn the adjustment screws to move the feet up and down to achieve stability.

⚠️	**WARNING!** The EXPLORER 6075LX may fall over if it is not stable. Anchor the terminal to the ground for further stability, e.g. in situations with high wind. For anchoring you may add extra weight, e.g. sand bags, to the support legs or insert stakes through the holes in the support feet.

Note	The base does not need to be completely level. The base unit will self adjust using the embedded sensors.
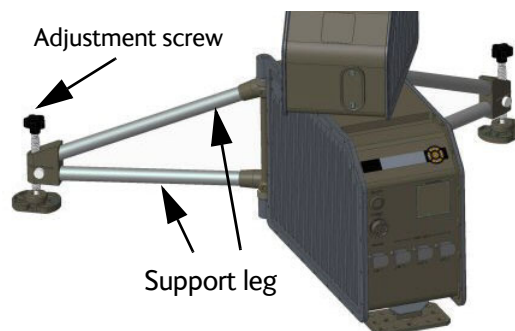
Figure 3-2: Base Unit and support legs

4. Unpack the RF assembly.

5. Retract the thumb screws on the mounting blocks, located on the elevation arms on the antenna positioner.
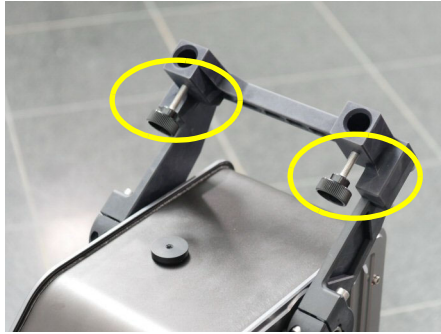
Figure 3-3: Brackets with thumb screws for mounting RF assembly

6. Insert the brackets of the RF assembly down into the mounting blocks on the elevation arms.
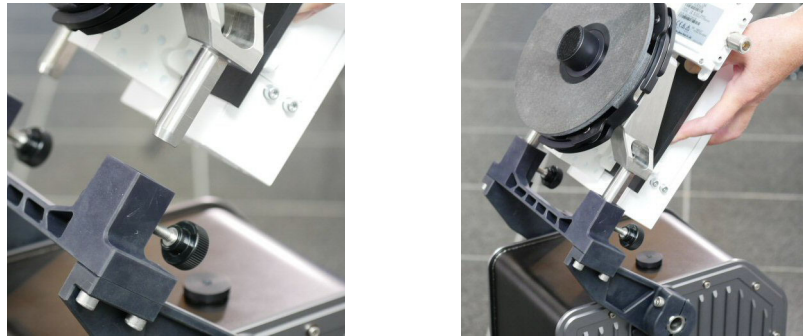
Figure 3-4: RF assembly, mounting

7. Re-engage the thumb screws and work the RF assembly slightly back and forth until the brackets engage completely, while tightening the thumb screws.

Figure 3-5: RF assembly, thumb screws

8. Unpack the four interchangeable reflector petals.

9. Release the four locking mechanisms on the reflector hub on the RF assembly.
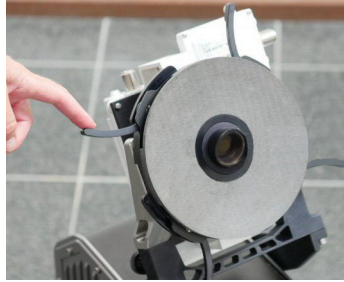
Figure 3-6: Locking mechanisms for the petals

10. Insert the bottom petals and latch them along the edge of each petal to carefully secure the reflector petals into place.
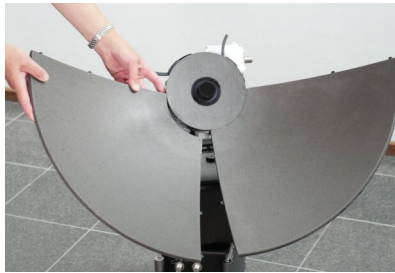
Figure 3-7: Latches to interconnect the petals

11. Re-secure the locking mechanism for each petal on the reflector hub

12. Insert, latch and lock the two upper petals.
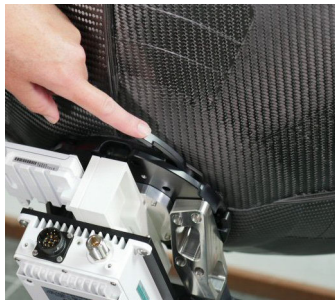
Figure 3-8: Reflector, latches

13. Unpack the feed horn and screw it onto the reflector hub.

> ⚠️ **CAUTION!** Take care when handling the feed horn. The feed's subreflector can be easily damaged. Only touch the lower part of the feed horn as shown in Figure 3-9.

Figure 3-9: Feed horn, mount

3.2.3   Cable connections

Connector overview

The EXPLORER 6075LX has the following connectors:

Tx
(connects to BUC)

Rx
(connects to LNB)

BUC M&C
(connects to BUC)
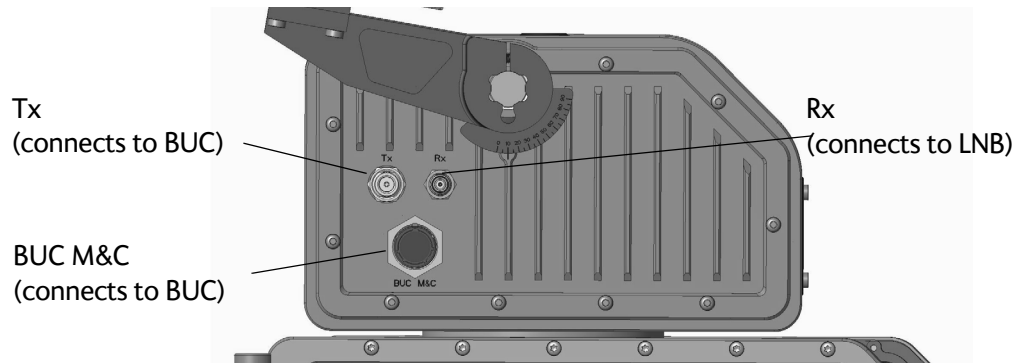
Figure 3-10: Connectors on antenna positioner

DC power

Port 2-3, User data

Port 1, Service

Port 4,
Management
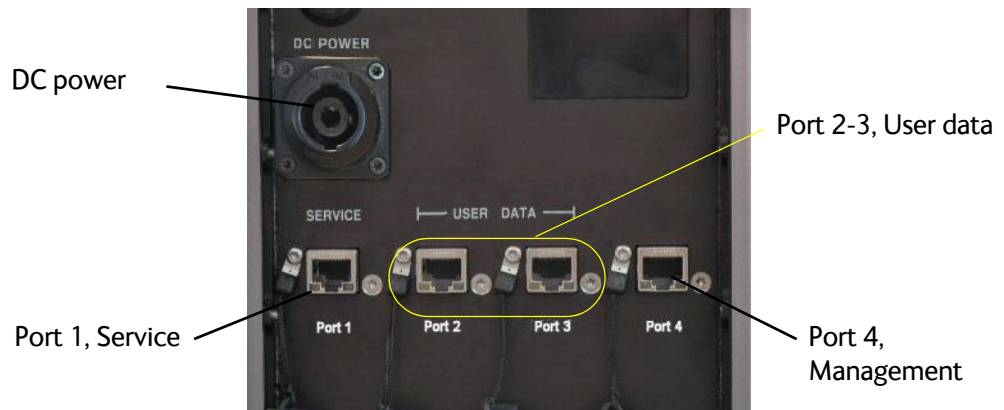
Figure 3-11: Connectors on Base Unit front

Connect cables

1. Connect the RF cables:

   (1) **BUC power cable** between the circular connector on the BUC and the MIL connector marked **BUC M&C** on the antenna positioner.

   (2) **Transmit** (Red, Tx) cable between the N connector on the BUC and the N-connector marked **Tx** on the antenna positioner.

   (3) **Receive** (Blue, Rx) cable between the LNB Receive port and the TNC connector marked **Rx** on the antenna positioner.
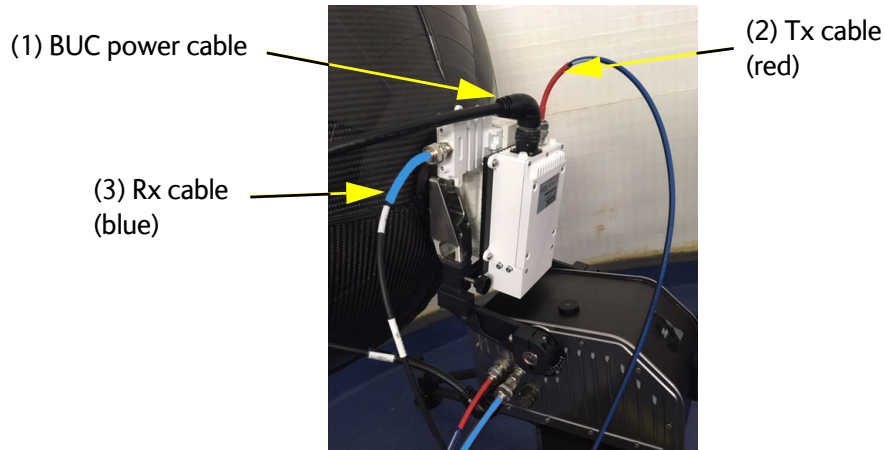
Figure 3-12: Tx, Rx and BUC cables

2. Connect your power supply to the **DC Power** connector on the front of the Base Unit as described in the next section *To connect power*.
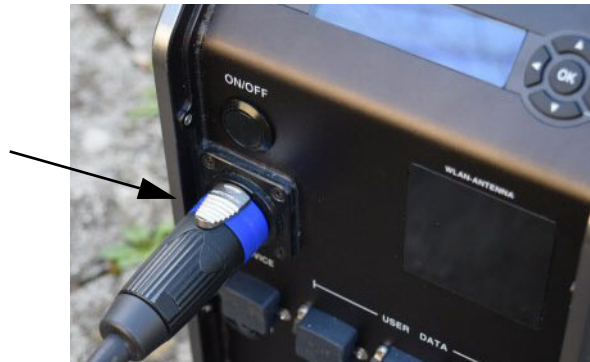
Figure 3-13: DC power connector

3. Connect the Ethernet cables as described below.

   Cable type: Use shielded LAN cable.

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

   - *Service port on the left-hand side (Port 1) for system control via the web interface.*

   - *Two connectors (Port 2 and Port 3) for user PCs for Internet etc., configured by the GX modem.* See the documentation from your service provider.

   - *Management port (Port 4), e.g. for system control from a PC on a corporate network.*

> **Note** **By default**, **the web interface can only be accessed via Port 1 or Port 4**. The WLAN connection must be configured, see *To configure the LAN network* on page 4-6 and *WLAN settings* on page 4-9.

To connect power

We recommend using **the EXPLORER 6000 Series Power Supply** (part number 403160P).

To connect the EXPLORER 6000 Series Power Supply:

> **Note** The Enable signal (2-) is connected to GND (2+) in the cable connector on the EXPLORER 6000 Series Power Supply, which means that power to the EXPLORER 6075LX is controlled only by the ON/OFF button on the Base Unit. There is no remote on/off function.
>
> For pinout, see Figure 3-14.

1. Connect the circular connector from the EXPLORER 6000 Series Power Supply to the DC Power connector on the Base Unit.

   > **Note** If you need a longer cable, an extension cable (10 m) is available from Cobham SATCOM (part number 403160P-010).

2. Connect the line cord on the EXPLORER 6000 Series Power Supply to a standard AC outlet (100-240 VAC). The connector is a Schuko (EU) connector. A Schuko to US adapter is included with the power supply.

To connect using the included power cable:

For applications where you cannot use the EXPLORER 6000 Series Power Supply, an open-ended cable (2.5 m) is supplied with your EXPLORER 6075LX.

> **Note** The Enable signal (**2-** in Figure 3-14) is connected to GND (2+) in the cable connector, mounted on the included power cable. This means that power to the EXPLORER 6075LX is controlled only by the ON/OFF button on the Base Unit. There is no remote on/off function.

1. Connect the circular connector on the supplied cable to the DC Power connector on the Base Unit.

2. Connect the **black wire to GND** and the **red wire to V+ from the DC power supply**.

3. If you are not using the supplied cable, or you need to extend the cable, use minimum **AWG14** for the power supply wires.

Important If you are making your own power cable, you **must connect the Enable signal (2-)**, otherwise you cannot switch on the EXPLORER 6075LX! You have two options:

- Connect pin **2-** (Enable) to GND (pin **2+**). This means you can only switch the EXPLORER 6075LX on and off using the Power switch on the Base Unit.

- Connect a **remote on/off switch** between pin **2-** (Enable) and pin **2+** (GND). This means that when the Power switch on the Base Unit is on, you can use your own remote switch to turn the unit on and off.

1-: Not connected

1+: 24-48 VDC (Red wire)

Cable connector view from back of connector

2+: GND
Black wire

2-: Enable
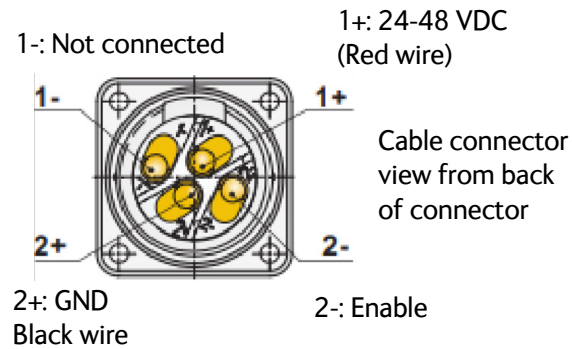
Figure 3-14: DC power, cable connector pinout.

3.3 Power on and auto-pointing

The system is set to automatically point and acquire a connection (default), when a satellite profile is activated.

However, for best results select a satellite profile with the current satellite region, see *To select and activate a satellite profile* on page 4-2.

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

> **Important** The antenna must have full line of sight from the front of the reflector. Also do not cover the GNSS window, located in the top of the antenna positioner, nor the WLAN window, located in the front of the Base Unit, below the display.

Antenna reflector

GNSS window

WLAN window
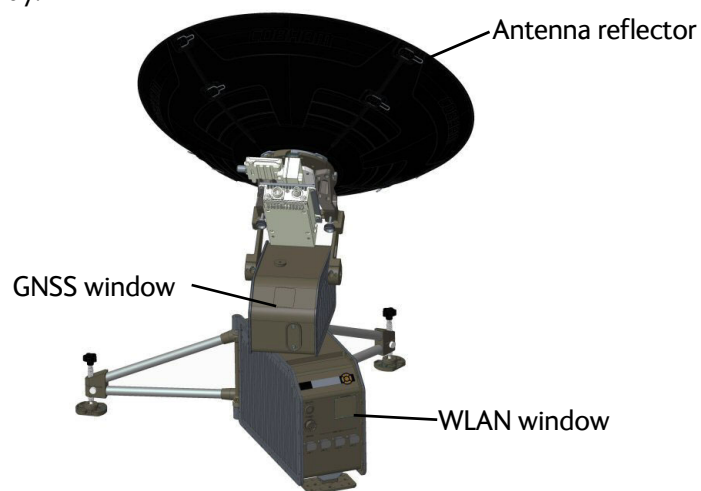
3.3.1 To start up the antenna

To start up the antenna, do as follows:

1. Position the antenna:
   Northern hemisphere: position the antenna so the display faces North.
   Southern hemisphere: position the antenna so the display faces South.

   > **Note** If there is magnetic interference near the Base Unit it may cause the internal compass to give a wrong reading. If in doubt, enter the heading information manually or set it to **None**, see *Navigation* on page 4-15.
   >
   > Be aware that the magnetic material may not always be visible, e.g. concrete is often reinforced with steel bars.

2. Press the On/Off button and step away from the antenna.
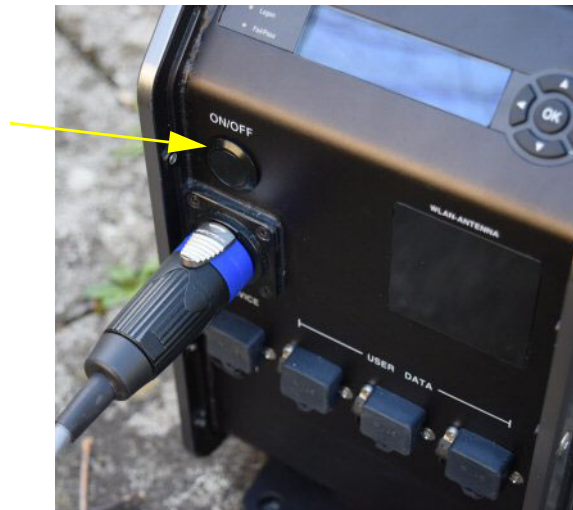
Figure 3-15: On/Off button

The system runs a Power-On Self test (POST) which takes Approximately 40 seconds.

3. Wait for the auto-acquisition process to finish. The total startup procedure normally takes about 5 minutes.

The antenna is fully operational when the display shows **TRACKING** and the field **MDM**: in the upper status line shows **NETOK**.

If the system has previously been set to manual pointing, auto acquisition is disabled and you must disable manual pointing in the keypad or the web interface, see *The menu tree* on page 4-19 or *Antenna mode* on page 4-7.

> Note   When operating the terminal in cold weather allow the terminal to reach operating temperature. Wait for the heating event in the display to disappear.

Auto-acquisition overview

The following points describe the typical auto-pointing algorithm. The EXPLORER 6075LX performs the following actions:

1. Detects mechanical home position for azimuth and elevation.

2. Calculates the azimuth/elevation look angles using the inputs from GNSS (GPS, Glonass etc.), compass, accelerometer and gyroscope.

3. Sets elevation and azimuth to the calculated look angle.

4. Proceeds to maximum value on the satellite signal and achieve LOCK status.

The modem then enters the network and begins passing user traffic.

> Note   As a safety precaution, the modem is automatically inhibited from transmitting until the unit has locked on to the satellite and acquired the network.

Error situation: The azimuth gear has disengaged

To protect mechanical components from damage, the azimuth gear is designed to disengage, if it moves beyond +/- 95 deg. This may happen when manually handling the EXPLORER 6075LX, or if an error occurs.

To re-engage the azimuth gear, do as follows:

1. Turn off the EXPLORER 6075LX.

2. While gently pushing the positioner head towards the center position, power on the EXPLORER 6075LX.

3. When the azimuth gear re-engages, step away from the antenna.

If the disengagement was caused by an error condition in the auto-pointing procedure and the error comes again, contact your local dealer.

3.3.2   To stow the antenna

⚠️ **WARNING!**   Stay clear of the antenna! Be aware of movements and pinch points, especially while the antenna is being positioned, deployed or stowed.

To stow the antenna using the keypad and display

To learn how to use the keypad see *Navigating the menus* on page 4-19.

Shortcut to stow the antenna: Press and hold ▼ for 5 seconds. Otherwise:

1. Press **OK** and scroll to the **OPERATION** menu.

2. Press **OK** again to access the menu.

3. Press ▼ until **STOW** is selected, and press **OK**.

4. Wait until the status shows **STOWED**.

To stow the antenna using the web interface

1. Connect a PC to the connector marked **Port 1**, **Service** (or Port 4, Management).

2. Open your Internet browser and enter the IP address of the EXPLORER 6075LX. The default IP address is http://192.168.0.1.

3. Type in the user name **admin** and the admin password or press ◄ on the keypad for 5 seconds and enter the user name admin to access the Dashboard as an administrator.

4. Click the button **Stow**.
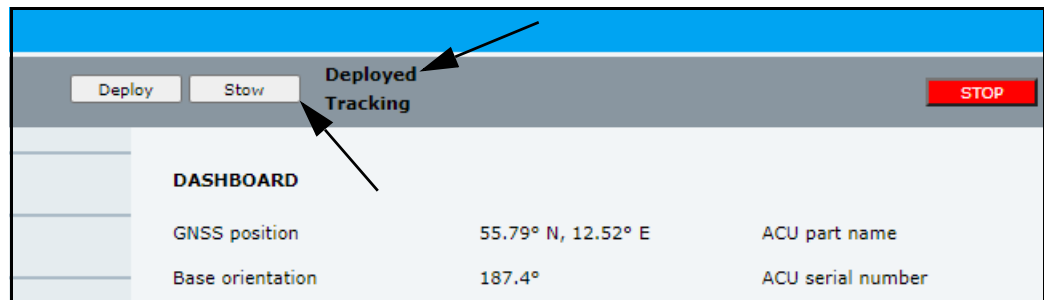
Figure 3-16: To stow the antenna using the web interface

5. Wait until the status shows **Stowed**.

To stow the antenna manually

See *To stow the antenna manually* on page 5-18.

3.4   To disassemble and pack the antenna

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

> ⚠ **WARNING!**   The Base Unit may get very hot in sunny and hot weather conditions. Do not move the unit! Touching the hot unit may cause bodily harm. Wait until the unit has cooled down.

2. Remove all cables.

3. Dismantle the four reflector petals.

4. Unscrew the feed horn from the Rf assembly and place it carefully in the dedicated cutout in the transport case for the RF assembly.

> ⚠ **CAUTION!**   Take care when handling the feed horn. The feed's subreflector can be easily damaged.

5. Loosen the thumb screws and remove the RF assembly from the antenna positioner.

6. Put all parts into the dedicated cutouts in the two transport cases.

Setup and operation

This chapter has the following sections:

- *The web interface*

- *Antenna mode*

- *Local IP and WLAN*

- *To deploy, stow or stop the antenna*

- *Reporting*

- *To jog the antenna*

- *Navigation*

- *Administration*

- *Keypad and display menus*

- *SNMP support*

4.1   The web interface

The VSAT system has a built-in web interface, which has two levels:

- **Mobile web interface**, used for basic operations and status. Accessed from a smartphone or tablet.

  | Note | WLAN must first be configured using the Computer web interface via the service connector (Port 1) on the Base Unit.

- **Configuration web interface**, used for configuration, line-up, troubleshooting, extended status information etc. Accessed from a computer.

4.1.1   Mobile web interface

When you access the web interface from a smartphone or tablet you get access to the mobile web interface, which offers the following basic operations and status:

- Deploy, stow and stop the antenna,
  see *To deploy, stow or stop the antenna* on page 4-11.

- Activate satellite profile,
  see *To select and activate a satellite profile* on page 4-2.

- See status and events

- Access the configuration web interface,
  Enter the menu and tap **Desktop**

To access the mobile web interface of the EXPLORER 6075LX

1. Power up the VSAT system, i.e. switch on the Base Unit. Wait until the LEDs on the front plate of the Base Unit show that the system is ready to be accessed.
   - Power LED: Green
   - Fail/Pass LED: Steady green.

2. Connect your smartphone or tablet to the WLAN of the Base Unit. For details on WLAN setup, see *To configure WLAN* on page 4-10.

3. Open your Internet browser and enter the IP address of the Base Unit. The default IP address is http://192.168.0.1.

4. When prompted, enter the user name and password.
   - For first time use, see *New installation or forgotten password* on page 4-4.
   - For details, see *Administrator access to the web interface (user name, password)* on page 4-17.

The mobile web interface opens. The deploy, stow and stop functions are described in *To deploy, stow or stop the antenna* on page 4-11.

To access the menu, tap the icon in the top right corner.

Menu:

- **Status** shows information such as system status, host name, position, heading (base orientation), selected satellite profile, modem etc.

- **Satellites** lets you select which satellite to activate, see the next section.

- **Eventlist** shows a list of currently active events (if any).

- **Desktop** gives access to the full version of the web interface.

- **Help** opens the user & installation manual for the EXPLORER 6075LX VSAT system.

To select and activate a satellite profile

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

2. Select the satellite profile you want to activate and tap **Activate**.
   There are 5 predefined satellite profiles. For best results, select the profile with the satellite region covering your current location. See also *Satellite service* on page 2-3.

Satellite profile	Satellite	Longitude	Color in GX coverage map
GX profile	Automatic selection		
Manual 62.6E GX	I-5 F1	62.6 E	Green
Manual 55.0W GX	I-5 F2	55.0 W	Light blue
Manual 179.6E GX	I-5 F3	179.6 E	Dark blue
Manual 56.5E GX	I-5 F4	56.5 E	Red

4.1.2 Configuration web interface

Use the built-in web interface of the Base Unit to make a full configuration of the VSAT system. You can use a standard Internet browser.

Note The settings specifically related to service are described in Chapter 5, *Service*.

To access the configuration web interface

To access the web interface of the Base Unit do as follows:

1. Power up the VSAT system, i.e. switch on the Base Unit. Wait until the LEDs on the front plate of the Base Unit show that the system is ready to be accessed.
   - Power LED: Green
   - Fail/Pass LED: Steady green.

2. Connect a PC to **Port 1** (Service port, standard Ethernet) of the Base Unit. You can also connect to the WLAN interface if configured.

   Note If you are connecting a PC which is on a corporate network, do not connect to Port 1 (configured as DHCP server). Connect to Port 4 instead (configured as DHCP client).

3. Open your Internet browser and enter the IP address of the Base Unit. The default IP address is http://192.168.0.1. When the login page is displayed, you know that the connection to the VSAT system can be established.

4. When prompted, enter user name and password.
   - For first time use, see *New installation or forgotten password* further down.
   - For details, see *Administrator access to the web interface (user name, password)* on page 4-17.

When you have entered the user name and password, the web interface is ready for use. You can continue to configure the system.

DASHBOARD			
▸ DASHBOARD	**DASHBOARD**		
SETTINGS	GNSS position	55.79° N, 12.52° E	ACU part name	TT-3160C
SERVICE	Base orientation	180.2°	ACU serial number	12345678
ADMINISTRATION	Satellite profile	GX profile Auto	Software version	2.01 build 3
HELPDESK	Satellite position	56.5° E		
SITE MAP	RX polarisation	Left hand circular	**POINTING**	
	TX polarisation	X-pol	Azimuth, elevation geo	138.6° 15.7°
	RX RF frequency	20.100000 GHz	Azimuth, elevation rel	-41.8° 15.2°
	LNB LO frequency	18.250000 GHz	**TX**	
	BUC LO frequency	28.050000 GHz	BUC TX	Off
	Tracking RF frequency	20.100000 GHz		
	MODEM			
	Model	Inmarsat GX modem		
	RX locked status	Not locked		
	Status ⓘ	READY		
	RX IF frequency	1850.000000 MHz		
	TX allowed	Yes		
	TX mute	Not muted		

Figure 4-1: Web interface > Dashboard

If you cannot establish a connection there might be problems with the Proxy server settings of your PC ("Use proxy server" must be disabled in your PC).

If you want to use another IP port you must configure it according to your network requirements. For information how to configure the local IP connectors see *To configure the local IP network* on page 4-8.

New installation or forgotten password

To get temporary administrator access to the EXPLORER 6075LX, do as follows:

1. On the ACU keypad, push and hold the left arrow key for 5 seconds.

2. Wait for the very short display of **Local administration**, followed by the event text:
   0807F-0 WARNING Local administration enabled.
   This will give you temporary administrator access **for 1 hour or until next restart**.

3. Open your browser and access the web interface.

4. Enter user name: **admin** (no password is required).
   The **DASHBOARD** is displayed.

   > **Note** Accessing the ACU with the local administration function does not change the current administrator password.

5. To create or change the password select **ADMINISTRATION > User login** and locate the section **Change Login**.

6. Type in the new password (minimum 8 characters) and click **Change**. No old password is required.

After 1 hour or a restart the new administrator password is required.

Information and controls in the top bar of the web interface

The top bar, which is independent of the selected page, shows the signal strength, the deployed status, the system status, and, if an event is active, a warning icon.

The buttons **Deploy**, **Stow** and **Stop** are also available from the top bar. For details on these functions, see *To deploy, stow or stop the antenna* on page 4-11.
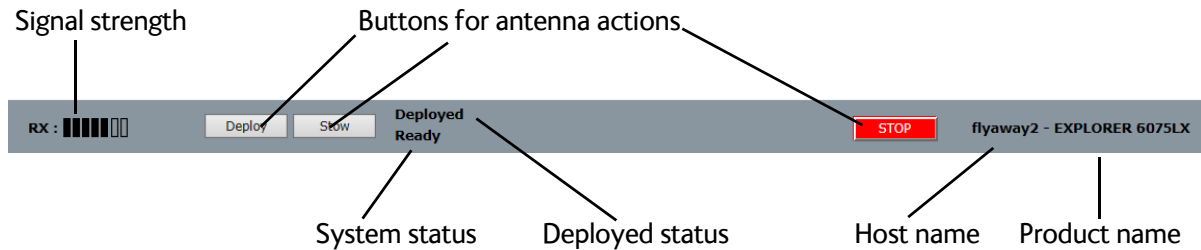
Figure 4-2: Top bar in Dashboard, example

Examples of system status:

- Antenna SW upload

- Antenna POST (Power-On Self Test)

- Ready (waiting for data from the modem or no satellite profile selected)

- Tracking (antenna is locked to the satellite signal and ready to send/receive.

- Manual pointing (the antenna is set up for manual pointing and will not auto-acquire)

- Safe mode (error, followed by an error description)

- <active event message>

Information fields on the Dashboard

DASHBOARD	Description
GNSS position	Position reported by the GNSS module or entered manually
Base orientation	Orientation of the mounting base relative to estimated North
Satellite profile	Name of the currently active satellite profile
Satellite position	Position of the satellite selected in Satellite profile
RX polarization	Left-hand circular (LHCP) or Right-hand circular (RHCP)
TX polarization	X-pol
RX RF frequency	Receiving frequency
LNB LO frequency	The LNB Local Oscillator frequency
BUC LO frequency	The BUC Local Oscillator frequency
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 Base Unit (ACU) and antenna, software version of the VSAT system
POINTING	Description
Azimuth, elevation geo	Current value for geographic azimuth and elevation
Azimuth, elevation rel	Current value for relative azimuth and elevation
MODEM	Description
Model	VSAT modem name, entered in SETTINGS > Modem profiles.
RX locked status	Shows whether or not the system has locked to the incoming signal.
Status	Any status information received from the modem
RX IF frequency	Rx IF frequency read from the VSAT modem
TX allowed	Shows whether the VSAT modem allows the system to transmit.
TX Mute	Muted or Not muted.
TX	Description
BUC TX	On or Off. Shows if the VSAT system has enabled the BUC or not. It is the same TX ON/TX OFF that is shown in the display of the Base Unit, see *Keypad and display menus* on page 4-20.

4.2　Antenna mode

The EXPLORER 6075LX is an auto-acquire antenna, which means it automatically searches for the satellite and logs on without user intervention. However, you may want to use the antenna in a different manner. In the SETTINGS > Antenna page you can set up manual pointing or fixed installation.

The antenna also has Dynamic Pointing Correction (stabilization feature) that ensures that the antenna stays locked on to the satellite, even in strong wind.
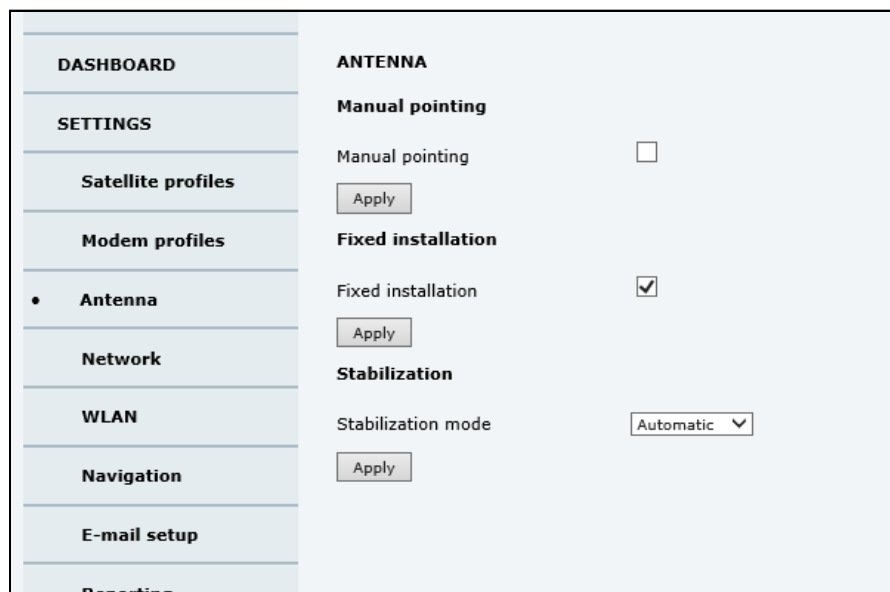
Figure 4-3: Web interface SETTINGS > Antenna, example

1. Select **SETTINGS** > **Antenna**.

2. If you want to point the antenna manually, select **Manual pointing** and click **Apply**. This turns off the motors in the antenna and you must make a manual pointing. See *Manual pointing* on page 5-15.

   > **Note**　In order to ensure that the EXPLORER 6075LX is pointed correctly, make sure that **Fixed installation** is **not** selected while you are pointing the antenna manually.

3. If you want to leave the antenna in a fixed installation, select **Fixed installation** and click **Apply**.
   This means the EXPLORER 6075LX automatically logs on to the network after reboot in case of a temporary power loss. No user action is required. Fixed installation is allowed after the EXPLORER 6075LX has been pointed to the satellite.

4. Select the **Stabilization mode** (Dynamic Pointing Correction).
   - **Continuous**: The antenna continuously compensates for movements to keep a stable position in relation to the satellite.
   - **Off**: Antenna stabilization is not used.
   - **Automatic** (Default setting): The antenna periodically adjusts the position to compensate for movements.

4.3 Local IP and WLAN

4.3.1 To configure the local IP network

On this page you can set up the local IP ports and enter a host name. The host name helps identifying the VSAT system. To configure the local IP ports, do as follows:

1. Select **SETTINGS > Network**.

Figure 4-4: Web interface: SETTINGS > Network (example)

2. Make the necessary changes on this page and click **Apply**.
   For available options for the network configuration, see the table on the next page.

> ⚠️ **CAUTION!** The VSAT 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. You must change the passwords as anyone with access and malicious intent can render the system inoperable!

> **Important** ▸ Make sure that the networks do not use IP address ranges that overlap. Do **not** connect units with the IP address **192.168.1.3** to the Base Unit. This IP address is reserved.

Sections	Preferred use
NETWORK Host name	The host name is used for identifying the VSAT system, and is displayed in the web interface (right side of top line, next to the product name). 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	Port 1 is the service port and is used to access the web interface. By default this port is configured as **DHCP server** and has the static IP address http://192.168.0.1; the current value can be shown in the Base Unit display (NETWORK > PORT 1 IP). If you want a different setup for Port 1, you can change the IP settings. You get the default settings back by resetting to factory default.
LAN Port 2 and 3	Port 2 and 3 can be used for connecting a user to the Internet, if set up by the service provider.
LAN Port 4	Port 4 is a Management port and is configured to be a DHCP client. It can be used e.g. to connect a PC on a corporate network to the web interface. You can change the IP settings according to your needs, e.g. to use Port 4 for user data instead.
LAN Port 5	**Internal LAN port**, **not available**. Port 5 is for connection to the internal modem and is set to static IP.
WLAN	The wireless port can be connected to one of the other ports. Set here which of the ports 1 to 4 you want to access with WLAN. If you want to access the web interface with WLAN, select the port used for accessing the web interface (Port 1 or Port 4 by default). For details on WLAN setup, see *To configure WLAN* on page 4-10.

Static IP or DHCP Client

> **Important** ▸ For Port 1, the DHCP server is enabled by default. This means the EXPLORER 6075LX will act as server when you connect to Port 1!

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** you must specify a unique IP address and a subnet mask.

DHCP Server Settings

When **Mode** is set to **Static**, you can select to let the port act as a **DHCP server**.

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

DNS setup

If you have access to a Domain Name Server (DNS) you can specify the address of the email server by using the server name instead of its IP address. This can be used in Outgoing mail server in *E-mail setup* on page 4-12.

You may statically specify the address of one or two DNS servers. Select the DNS source as static and fill in IP address or addresses.

Alternatively, if your DHCP server can provide a DNS address and you have selected DHCP client above, then select the same LAN as your DNS source.

Gateway setup

If the Base Unit needs to communicate with network units outside the specified sub-nets, you must specify a default gateway (typically a router). The default gateway can be set as a static IP address. Then set the default gateway source to static and enter the IP address of the default gateway. To remove the default gateway set it to 0.0.0.0.

Alternatively, if your DHCP server is able to provide a default gateway address and you have selected DHCP client above, then select the same LAN as your default gateway source.

VLAN (Virtual LAN) port membership table

The VLAN port membership table is configured by the service provider via the modem. The table is useful when troubleshooting.

4.3.2   To configure WLAN

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

1. First, on the **SETTINGS > NETWORK** page, link the WLAN interface to one of the local IP interfaces. Typically, you link WLAN to Port 1, which is used to access the web interface of the VSAT system. See *To configure the local IP network* on page 4-8.

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

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

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

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

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

7. 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 maximum 32 characters.

   | Note | We recommend changing the SSID name to something meaningful for your installation.

8. Select the **Security** standard. Select one of the following encryption standards:
   - **Disabled** (default)
   - **WEP64**, enter the encryption key in hexadecimal format.
   - **WEP128**, 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.

> **Important** | We strongly recommend adding encryption to the WLAN connection, in order to protect your network!

9. Select the **Key type** (hexadecimal or ascii) and type in the **Encryption key** for the selected Security standard. This is not applicable if you have selected **Disabled**.

10.Click **Apply**.

4.4   To deploy, stow or stop the antenna

You can deploy, stow and stop the antenna using the web interface. Do as follows:

1. Click the button **Deploy**, **Stow** or **Stop** in the top bar of the Configuration web interface, or in the start screen of the Mobile web interface.
   - **Deploy**: Prepare the antenna for pointing after it has been stowed.
   - **Stow**: Stow the antenna e.g. before disassembly.
   - **Stop**: Stop the antenna immediately in the current position.
     The Stop button changes into **Start**, click **Start** to restart the antenna.

You can also use the keypad and display to deploy, stow or stop the antenna. See *Menu shortcuts* on page 4-21 and *Menu descriptions* on page 4-23.

4.5 Reporting

4.5.1 E-mail setup

To be able to send diagnostics reports and other system information using e-mail you must set up a couple of parameters. Contact your IT department for the specific data.

To configure the e-mail setup, do as follows:

1. Select **SETTINGS > E-mail setup** from the left navigation pane.

2. Enter the data for Outgoing mail server (SMTP), SMTP port number, SMTP type, SMTP authentication, User name and password. This data is typically provided by your IT department.

   > **Note** You must set **Outgoing mail server** to an IP address if DNS has not been set up in **DNS setup** in *To configure the local IP network* on page 4-8.

4.5.2 Reports, syslog and SNMP traps

You can set up the system to send the following reports and messages:

- Diagnostics report
- Remote syslog
- SNMP traps

To send a diagnostics report

You can send automatically generated diagnostic reports at fixed intervals. The diagnostic report contains information relevant for the service personnel during troubleshooting.

To set up sending a diagnostics report, do as follows:

> **Note** You must first set up the Email. See the previous section, *E-mail setup*.

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

   > **Important** Note that the diagnostics report also shows the WLAN key.

2. Under Diagnostics report, enter the following:
   - E-mail sender
   - E-mail recipients (comma separated)
   - Send interval: Select **e-mail disabled** (default), **day** with 2-minute samples, **week** with hourly samples or **month** with hourly samples. The report contains statistics data for the selected intervals.

3. Click **Apply**.

You can also send the report at any time by clicking **Send now**. Use **Send now** to validate the e-mail setup. See also *Help desk and diagnostics report* on page 5-2.

Remote syslog

You can set up the antenna to send each syslog message to a syslog server to advise the system administrator of the current status of the antenna.

To set up sending syslog messages to a syslog server, do as follows:

1. Select **SETTINGS > Reporting**.

2. In the section **Remote syslog** select **On** to enable remote syslog (default: Off).

3. Enter the IP address of the syslog server to which the syslog messages will be sent.

4. Click **Apply**.

SNMP traps

SNMP traps, or notifications, are network packets which advise the system administrator about significant events in the antenna, e.g. alarms and system error messages. They are generated by the antenna and can be sent automatically to an SNMP trap receiver/manager.

To set up reporting SNMP traps to an SNMP server, do as follows:

1. Select **SETTINGS > Reporting**.

2. In the section **SNMP traps** select **On** to enable sending of SNMP traps (default: Off).

3. Enter the IP address of the SNMP trap receiver/manager to which the SNMP traps will be sent.

4. Enter the Community name. This is the name of the SNMP trap receiver/manager. This is needed for authentication of the SNMP trap request.

5. Click **Apply**.

See also *SNMP support* on page 4-26.

4.6   To jog the antenna

You can use the Jog function to deliberately offset the antenna position. This is useful for testing and troubleshooting and sometimes also during commissioning.

1. Connect a PC to the **Port 1** connector at the Base Unit.
   You may also use WLAN, if it is configured.

2. Open an Internet browser and type the default IP address: http://192.168.0.1.

3. If the antenna is not already deployed, click **Deploy** in the top bar of the web interface.

4. Navigate to the page **SERVICE** > **Jog** and click **Activate Jog**.

   > **Note** The antenna will not be transmitting, and you can enter any position coordinates.
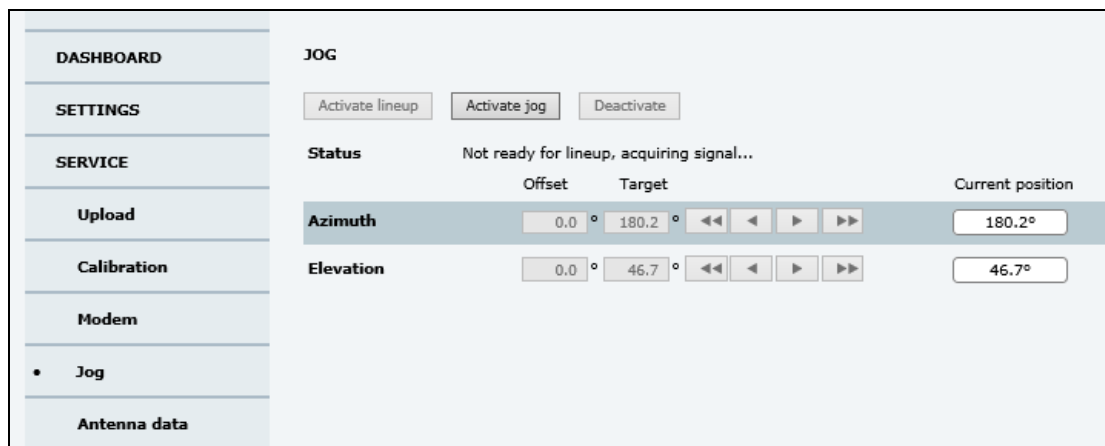
Figure 4-5: To jog the antenna using the web interface

5. When the status field shows **Jogging**, click the arrow buttons for Azimuth or Elevation to change the offset, or type in specific values.
   ◄ and ► change the offset with 0.1˚ increments.
   ◄◄ and ►► change the offset with 1.0˚ increments.
   The current position as well as the offset is shown on the screen.

   > **Note** There may be slight deviations (or "random walk") of a few tenths degrees.

6. Select **Deactivate** to return to normal operation and reactivate the selected satellite profile.

For information on the submenus **Modem** and **Antenna data**, see chapter 5, *Service*.

4.7   Navigation

In this section you can set Heading and Position.

- **Heading**: You can enter a fixed base heading or select **None** to go directly to a full scan if magnetic disturbances in the area cause a misreading of the internal compass.

- **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. If you select GNSS mode you can select between a number of different positioning systems.

Do as follows:

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

Figure 4-6: Web interface: SERVICE > Navigation

2. Set the **Heading (Compass direction)** mode:

Heading (Compass direction) mode	Description
Automatic	Magnetic heading (internal compass) is used (default). If this value cannot be used after two readings, due to a misreading of the internal compass because of magnetic interference, a full azimuth scan is made.
Manual	Enter a value for the direction of the EXPLORER 6075LX as an alternative to the magnetic heading (0 to 360 degrees, precision ±20˚). 0 degrees points North, 180 degrees points South.
None	The antenna will perform a full 180 degrees azimuth scan. Use this option e.g. if magnetic fields are interfering with the internal compass.

3. Set the **Position** mode:

Position mode	Description
GNSS	GNSS module is used for current position (default). At **GNSS**, select one of the following from the drop-down list: • GPS (default) • BEIDOU • GPS + BEIDOU • GLONASS • GPS + GLONASS
Manual	Allows you to manually enter values from other position source. (Accuracy should be better than 50 m). Enter: • **Latitude** • **Longitude** • **Altitude**

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

4.8 Administration

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

- *Administrator access to the web interface (user name, password)*
- *User permissions (for guest user)*
- *To import and export a system configuration*

4.8.1 Administrator access to the web interface (user name, password)

You can log on as guest (**user name: guest**, password configured by administrator) or as an administrator. The Administration settings require an Administration user name and password.

To log on as administrator

1. Open an Internet browser and type the IP address (default http://192.168.0.1**)**.
2. Enter the Administration user name and password.
   If you do not know the password, see *New installation or forgotten password* on page 4-4.
3. Click **Login**.
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

1. In the **ADMINISTRATION > User login** page, type in the current password.
2. Type in the New password and retype it on the next line.

   | Note | The password must be minimum 8 characters long.

3. Click **Change**. At the next login the new password is required.

To log out of Administration

If you have entered nothing for 30 minutes under **ADMINISTRATION**, you are logged out automatically. To log out manually, click **Logout** in the **ADMINISTRATION** page.

4.8.2 To change the guest login password (User administration)

Note | The administrator must create a user password before the user can access the EXPLORER 6075LX the first time.

When you are logged in as administrator you can create or change the guest login password as follows:

1. Select **ADMINISTRATION > User administration**.

2. Type in the new guest password.

3. Retype the new guest password on the next line.

4. Click **Change**.

4.8.3 User permissions (for guest user)

You can manage user access to certain functions of the VSAT system. You can allow or deny users that are not administrators 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 VSAT system you want to give non-administrator users access to.

To set up the user permissions for guest users, do as follows:

1. Select **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.

   Most of the items in the list are self-explaining, others are explained in the table below.

Item	Description
Change network	Change settings in the page SETTINGS > Network. On this page you can change IP configuration of the local IP connectors of the Base Unit. For further information see *To configure the local IP network* on page 4-8.
Change e-mail settings	Change settings in the page SETTINGS > E-mail setup. On this page you can change the e-mail addresses used for sending reports. See *E-mail setup* on page 4-12.
Modify antenna data	Change settings in the page SERVICE > Antenna data. Only used during service. See *To return units for repair* on page 5-18.
Control modem	Allow to reset or restart the modem.

3. Click **Apply**.

4.8.4 To import and export a system configuration

If you need to reuse a configuration in another VSAT system, you can save the current configuration to a file, which can then be loaded into another VSAT system. You can also use this feature for backup purposes.

Important Load and save configurations can only be done with the same software version in the units involved.

The configuration file contains all the settings you have entered during system setup: satellite profiles, modem profiles, local IP setup, user permissions etc.

To save a configuration to a file, do as follows:

1. Select **ADMINISTRATION > Export/import config**.
2. Click the button **Export**. Follow the download instructions on the screen. You can use this configuration file for upload to another VSAT system,

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

1. Select **ADMINISTRATION > Export/import config**.
2. Click the button **Browse** and locate the configuration file (.cfg file) you want to upload. Then click the button **Open**.
3. In the web interface click the button **Upload**.

To clone a system configuration, do as follows:

1. Reset to factory default, see next section for details.
2. Import a configuration from file, see section above.

4.8.5 Reset to factory default

To reset to factory default settings, do as follows:

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

   Important Reset to factory default will delete or reset all the settings listed below!

   - Navigation settings
   - All added satellite profiles
   - All added modem profiles
   - Changes in the network setup
   - User permissions
   - Base Unit display: brightness setting

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

You can also power cycle the EXPLORER 6075LX, see *Power cycle* on page 5-3.

4.9   Keypad and display menus

4.9.1   Keypad and display

With the display menu you can do basic operations such as deploy, stow and stop the antenna. You can also select which satellite profile to use and see the current status of the system.

In the menu system you can also see how the system has been configured. To configure the system, use a connected PC and the web interface.
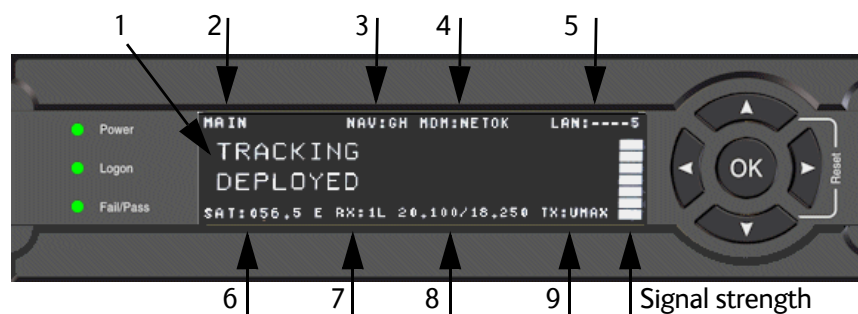
Figure 4-7: Display and keypad of the Base Unit (example)

1. Current status of the VSAT system (examples):
   TRACKING (tracking the current satellite)
   ANTENNA SW UPLOAD (uploading software to the antenna)
   ANTENNA POST (Power-On Self Test)
   READY (waiting for data from the modem or no satellite profile is selected)
   SAFE MODE (used e.g. for software recovery)

2. Current menu, see *The menu tree* on page 4-22.

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 valid heading data).

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**, **5**, – (not in use).
   Note that Port 5 is not a connector, but an internal port connected to the internal GX modem.

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

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

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

9. **TX**: <TX mute> <Modem TX> <ODU TX> <TX pol>
   - <TX mute> = [U,u], (Muted by external signal on User I/O connector: **U** (unmuted) or **u** (muted).

- <Modem TX> = [m,M], **M** (valid TX signal on modem) or **m** (no valid TX signal on modem)
- <ODU TX> = [a,A] **A** (valid TX signal on antenna) or **a** (no valid TX signal on antenna)
- <TX pol> = [-, X, C] (TX polarization of currently active satellite profile: X (X-pol), C (Co-pol) or - (unknown)).

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

4.9.2   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.

4.9.3   Navigating the menus

Use the keypad to navigate the menus.

- Press **OK** or ▶ to select a menu item.
- Use the arrow keys ▲ and ▼ to go through the menu items or enter a number, digit by digit.
- 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 ◀ to move one level up. If applicable, confirm to store the new setting by pressing **OK**.
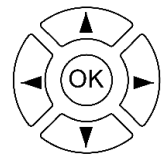
Menu shortcuts

- **Deploy:** Press and hold ▲ to deploy the antenna after it has been stowed.
- **Stow:** Press and hold ▼ to Stow the antenna
- **Administrator access:** Press and hold ◀ for 5 seconds to get temporary administrator access **for 1 hour or until next restart**. For details, see *New installation or forgotten password* on page 4-4.

4.9.4 The menu tree

The menu tree below shows the available menus in the Base Unit display menu system.

OPERATION
DEPLOY
STOW
STOP
START

MANUAL POINTING
AZI ELE SIG
ENALBLE/DISABLE

POINTING
ANTENNA STATE
ELEVATION
AZIMUTH

MAIN
OPERATION
MANUAL POINTING
PROFILE
ANTENNA
MODEM
NETWORK
SATELLITE
EVENTS

PROFILE
<profile 1>
<profile 2>
<profile 3>

POLARIZATION
RX POLARIZATION
TX POLARIZATION

ANTENNA
POINTING
POLARIZATION
GNSS
HEADING
VERSIONS
SERIAL NUMBERS
LOCAL ADMINISTRATION

GNSS
LATITUDE
LONGITUDE
FIX TYPE

SERIAL NUMBERS
ACU
ANTENNA

MODEM
MODEM TYPE
TX ENABLE
RX LOCK
NET LED
STAT LED
TX LED
RX1 LED
RX2 LED
PWR LED
TEMP LED
FAN LED

NETWORK
HOST NAME
PORT 1 IP
PORT 1 MASK
PORT 4 IP
PORT 4 MASK
DEFAULT GATEWAY

SATELLITE
POSITION
RX POLARIZATION
TX POLARIZATION
RX FREQUENCY
LNB LO
TX FREQUENCY
BUC LO

EVENTS
<EVENT 1>
<EVENT N>

Figure 4-8: Menu tree in the display

Top-level menu

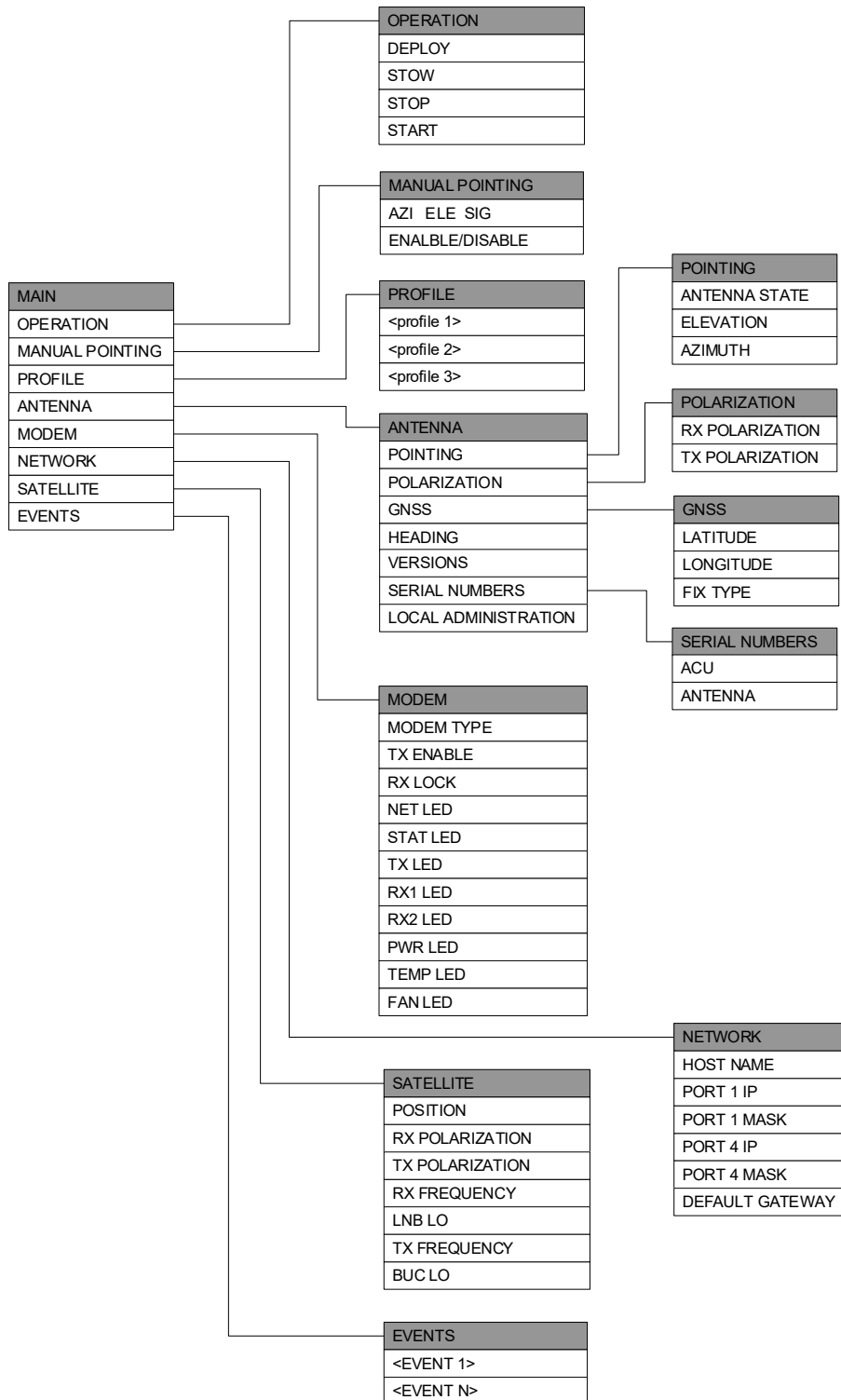| Top-level menu	Description
MAIN	View with current status of the VSAT system.
	The status screen is displayed again after a time out of 10 minutes. New events are shown in this display. If an event is displayed, press **OK** to jump directly to **EVENTS** for viewing the currently active events. Press any key (except left arrow) to go to **MAIN**.
OPERATION	Allows you to deploy, stow or stop the antenna.
MANUAL POINTING	Allows you to enable or disable manual pointing
PROFILE	Allows you to select which satellite profile to use.
ANTENNA	Shows the current antenna parameters, position, polarization, software version and serial numbers of the antenna and Base Unit.
MODEM	Modem information, including modem type and status for TX enable and Rx Lock. Also status for the modem LEDs.
NETWORK	Shows the IP addresses and netmasks of the local IP ports on the Base Unit, and the default gateway.
SATELLITE	Current satellite information. This information is configured using the web interface.
EVENTS	View system events. Number of active events are shown as: X ACTIVE EVENTS in the **MAIN** display. Press **OK** to see the list. See Appendix B, *System messages*, for a list of event messages that may appear in the display and the web interface.

Menu descriptions

OPERATION	Description
DEPLOY	Press **OK** to deploy the antenna
STOW	Press **OK** to stow the antenna
STOP	Press **OK** to stop the antenna immediately. The status shows STOPPED
START	Press **OK** to start the antenna when it has been stopped. The antenna will automatically deploy.

MANUAL POINTING	Description
AZI ELE SIG	Current values for azimuth, elevation, signal strength indicator
ENABLE/DISABLE	Current status: enabled or disabled

PROFILE	Description
\<PROFILE>	Lists the available satellite profiles. Use ▲ and ▼ to go through the profiles and press **OK** to select the profile you want to activate.

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
GNSS	LATITUDE: current latitude, read from GNSS module LONGITUDE: current longitude, read from GNSS module FIX TYPE: NONE, 2D, 3D or USER (USER: the position is entered manually)
HEADING	Orientation of the mounting base in relation to estimated North (base orientation).
VERSIONS	Current software version of the antenna
SERIAL NUMBERS	Serial numbers of the antenna and the Base Unit
LOCAL ADMINISTRATION	Select LOCAL ADMINISTRATION to get administrator access for 1 hour or until next reboot. For details, see *New installation or forgotten password* on page 4-4.

MODEM	Description
MODEM TYPE	Current modem type.
TX ENABLE	On or off, information delivered by the connected VSAT modem.
RX LOCK	On or off, information delivered by the connected VSAT modem.
NET LED	Network acquisition status
STAT LED	Modem status
TX LED	Transmitter enabled/disabled
RX1 LED	Receiver enabled/disabled
RX2 LED	Receiver enabled/disabled
PWR LED	Power on/off
TEMP LED	Temperature
FAN LED	Fan alarm detected/not detected

NETWORK	Description
HOST NAME	Define a name for the VSAT system
PORT 1 IP	Current IP address for Port 1 (service port)
PORT 1 MASK	Current netmask for Port 1
PORT 4 IP	Current IP address for Port 4
PORT 4 MASK	Current netmask for Port 4
DEFAULT GATEWAY	Current default gateway

SATELLITE	Description
POSITION	Current satellite position

EVENTS	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.

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 a change.

4.10 SNMP support

The EXPLORER 6075LX supports SNMP v2 requests to retrieve configuration and present settings. SNMP is always enabled on all Ethernet interfaces. The SNMP community string is public. The EXPLORER 6075LX offers via SNMP most of the data that are available from the DASHBOARD web pages. Detailed documentation about supported OIDs can be found in the MIB file for your VSAT system.

The MIB entries are grouped as shown below:

- System configuration

- Navigation coordinates

- Antenna pointing

- Dashboard and profile

- Tracking receiver

> **Note** None of the SNMP values need to be polled more often than once a minute. Polling SNMP values more frequently will impact the performance of the Base Unit.

You can download the Base Unit MIB file directly from the Base Unit:

1. Go to the **HELPDESK** page.
2. Click the link **Download MIB file**
3. Save the file on your computer.

Service

This chapter has the following sections:

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

5.1 General support

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

5.1.1 Preventative maintenance

The EXPLORER 6075LX 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.

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.
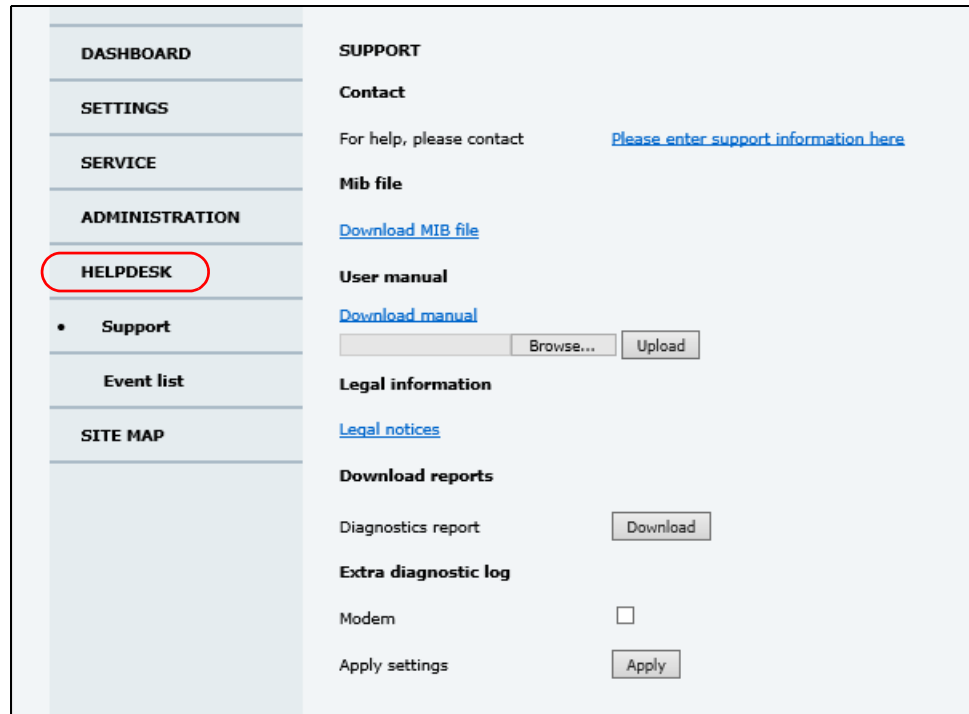

Figure 5-1: Web interface: HELPDESK

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, Cobham Satcom Service and Support, Technical Downloads.

5. Click **Legal notices** to display the license text for the source code of the parts of the EXPLORER 6075LX 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.
   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 - Satellite 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

7. If you want the diagnostics report to include data from the connected modem select **Extra diagnostic log**, **Modem** and click **Apply**. This will only apply until next reboot where the extra modem log is disabled again.

> Note ▶ | The amount of modem data is usually significant and may fill the log quickly.

Event list

When an event (system message) is registered, the web interface shows an event icon ⚠ in the icon bar as long as the event is active. The Base Unit 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.

5.1.3 Power cycle

To power-cycle the antenna do the following:

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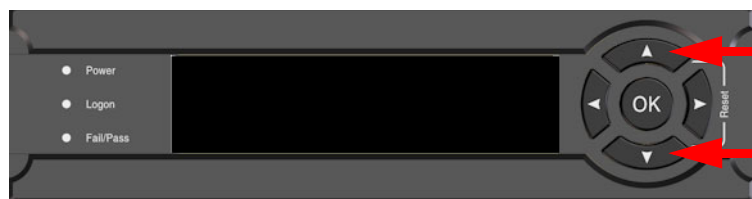

Figure 5-2: To reset the system

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 (Power cycle) - integrated GX modem* on page 4-17.

5.1.4   Satellite profiles and modem profiles

5 satellite profiles with the GX Modem are already set up at the factory (1 for each satellite and one Auto). 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. To add or edit a satellite profile, do as follows:

1. Go to **SETTINGS > 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.

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 5-4: Web interface: SETTINGS, VSAT modem profile – supported modems

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

3. Select the **Generic 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 5-5: Satellite profile with generic GX modem

5.1.5 Manual One Touch Commissioning (OTC)

When the modem starts up for the first time it will automatically register with the BUC and perform P1dB compression on multiple frequencies and then register with the Inmarsat network. During the P1dB compression the antenna will point away from the satellite and transmit on 29 GHz to 30 GHz. The EXPLORER 6075LX will show **BUC Calibration** on the **DASHBOARD** and the Base Unit display. This may take up to 10 minutes.

If you want to make a manual OTC for the modem, do as follows:

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

| Important | Use the Internet browser Firefox to access the iDirect Modem web interface. |

1. Connect a PC to Port 1 on the Base Unit.

2. Open Firefox and enter the web interface.

3. Select **SERVICE > Modem**.

Figure 5-6: Web interface: SERVICE > Modem (example)

4. Under **Modem access** click the link.
   You now get access to the web interface of the built-in iDirect modem.

5. Type in the user name and password (default: user name **admin** and password **iDirect**).

6. In the menu **Commissioning** click **One Touch Commissioning**.
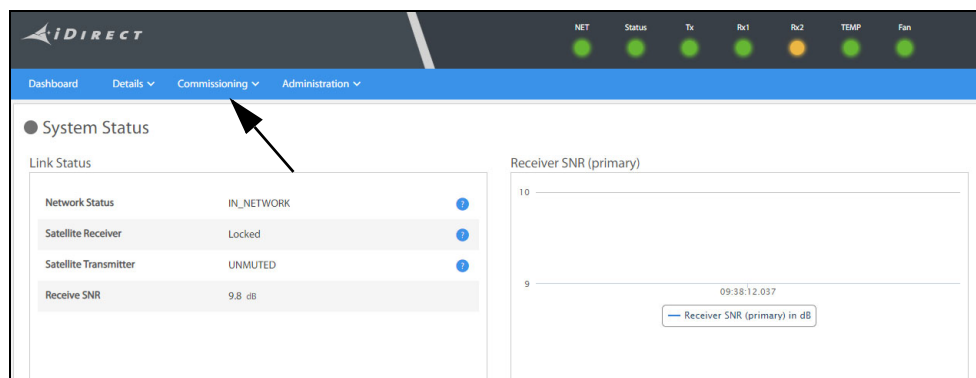
Figure 5-7: Unified web interface of the iDirect modem.

7. Click **Start**. One Touch Commissioning begins. When commissioning is completed the antenna will search for the I-5 satellite with the highest elevation.

8. When the antenna finds the satellite the modem will perform the necessary steps to enter the network (software upgrades, if available).

9. The iDirect modem will indicate the modem status in the dashboard of the Base Unit web interface (**Modem** section) as well as in the display menu **MODEM** of the Base Unit.

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

11. Exit the iDirect web interface.

Modem access configuration

For the built-in GX modem, the section **Modem access configuration** is pre filled. If you want to use a different access type instead of the default HTTPS tunnel to access the web interface of the built-in modem, you can change it here.
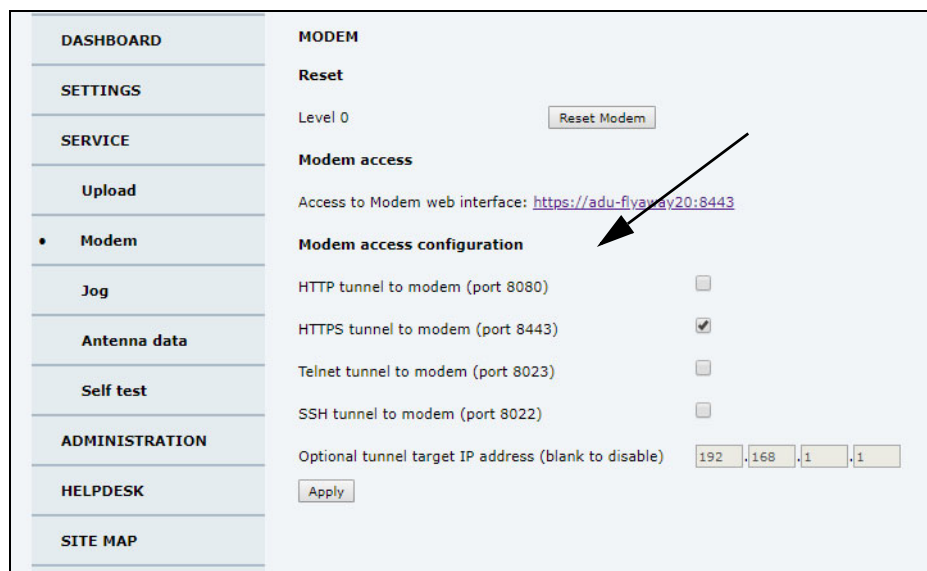
Figure 5-8: Web interface: SERVICE > Modem access configuration

Do as follows:

1. In the web interface, select **SERVICE**.

2. Select **Modem**.

3. Select one of the following methods to access the modem.
   - HTTP tunnel to modem (port 8080)
   - HTTPS tunnel to modem (port 8443), this is the HTTPS tunnel to the iDirect web interface of the built-in GX modem.
   - Telnet tunnel to modem (port 8023)
   - SSH tunnel to modem (port 8022)
   - Optional tunnel target IP address (grayed out, cannot be changed)

4. Click **Apply**.

> **CAUTION!** If you remove all the check marks, there is no access to the modem and you cannot make an OTC.

5.1.6 Antenna data update

The Base Unit contains a backup of the antenna data from the PCM unit in the antenna. When the Base Unit or RF assembly has been exchanged, you must make sure the units are using the same antenna data. Do as follows:

1. Select **SERVICE > Antenna data**.

Figure 5-9: Web interface: SERVICE > Antenna data

2. Enter the new LNB values as shown on the label on the LNB:
   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.

Note | If you have replaced the RF assembly, the system will automatically make a One Touch Commissioning first time you start up the system with the new RF assembly, see *Manual One Touch Commissioning (OTC)* on page 5-5.

5.1.7 Self test

You can start a self test of the antenna alone or of the complete VSAT system.

Important | The EXPLORER 6075LX will reboot to perform the self test. Rebooting the Base Unit will terminate all existing connections.

1. Select **SERVICE > Self test**.

2. Select **Restart antenna** or **Restart terminal**, depending on whether you want to test the antenna alone or the system.

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

5.1.8 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**.
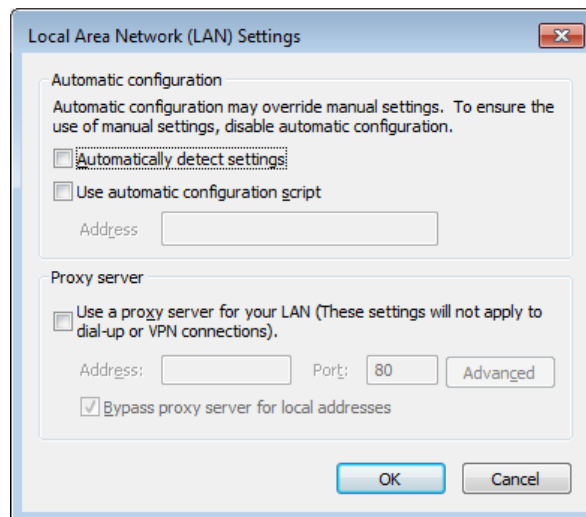
2. Clear the box labeled **Use a proxy server for your LAN**.

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

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> **Note** The GX modem has separate software, see *Software update (modem)* on page 5-12

1. Power up the EXPLORER 6075LX.

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

3. Open your Internet browser and enter the IP address of the EXPLORER 6075LX. The default IP address is http://192.168.0.1.

4. Type in the user name **admin** and the admin password
   or
   press and hold the left arrow key for 5 seconds and enter the user name **admin**.

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

6. Click **SERVICE** in the navigation pane. The **UPLOAD** page is displayed.
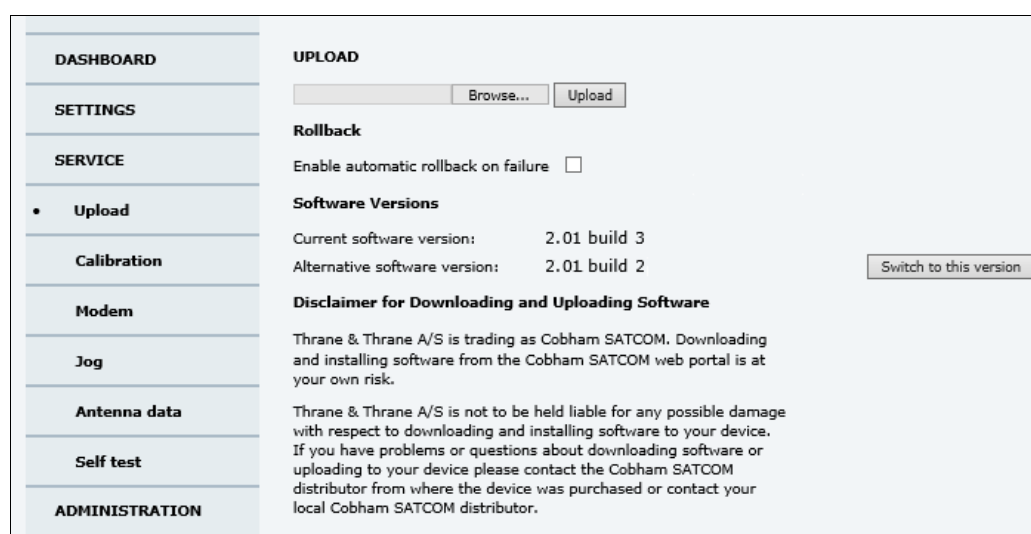

Figure 5-10: Software update with the web interface (example)

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 Base Unit 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 Base Unit and turn it on again. Then repeat the upload procedure as described in *Software update* on page 5-10.

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 6075LX 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.

• DASHBOARD	**DASHBOARD**			
SETTINGS	GNSS position	55.79° N, 12.52° E	ACU part name	TT-3160C
	Base orientation	180.2°	ACU serial number	12345678
SERVICE	Satellite profile	GX profile Auto	Software version	2.01 build 3
ADMINISTRATION	Satellite position	56.5° E	**POINTING**	
	RX polarisation	Left hand circular		
HELPDESK	TX polarisation	X-pol	Azimuth, elevation geo	138.6° 15.7°
SITE MAP	RX RF frequency	20.100000 GHz	Azimuth, elevation rel	-41.8° 15.2°
	LNB LO frequency	18.250000 GHz	**TX**	
	BUC LO frequency	28.050000 GHz	BUC TX	Off
	Tracking RF frequency	20.100000 GHz		
	MODEM			
	Model	Inmarsat GX modem		
	RX locked status	Not locked		
	Status ⓘ	READY		
	RX IF frequency	1850.000000 MHz		

Figure 5-11: Verifying software update

Software update (modem)

The GX 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). See *Manual One Touch Commissioning (OTC)* on page 5-5 for information how to connect to the web interface of the GX modem.

Software recovery (safe mode)

If the EXPLORER 6075LX 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 6075LX.

5.3   Status signaling with LEDs and status messages

Built-In Test Equipment

The EXPLORER 6075LX 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 **SERVICE > 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 signaling

The EXPLORER 6075LX provides various methods for signaling the system status. There are **LEDs** on the front panel of the Base Unit to signal Power on/off, Logon and Fail/Pass. There is also the built-in web interface of the Base Unit which shows any events (BITE error codes) with a short message describing each error. This is also displayed in the Base Unit.

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 6075LX

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

LED	Behavior	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

LED	Behavior	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 Base Unit display.
	Steady green	No faults.

5.3.2   Status information of the modem

The modem status is shown in the display of the EXPLORER 6075LX in the menu **Modem** (see *The menu tree* on page 4-19). 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 5-12: Modem information

5.4 Manual pointing

5.4.1 To point the antenna manually

If auto-acquisition is not possible you can manually bring the antenna into the correct position.

Important | Before manually pointing the antenna make sure it is placed on level ground and with secured support legs as described in *Assembly* on page 3-3.

Note | We recommend acquiring an extra Manual Jog Tool (part number 406627A-005), so that you have one for the azimuth adjustment port and one for the elevation adjustment port.

Do as follows:

1. Press ▼ on the keypad to go to the page **MANUAL POINTING** and press **OK**.

    Note | Using the inputs from GNSS, the system calculates the azimuth and elevation look angles for the target GX satellite.

2. Press ▼ until **ENABLE/DISABLE** is selected, press **OK** to initiate **MANUAL POINTING**.

3. On the manual point page, the terminal displays target elevation (**ELE**) and azimuth (**AZI**) angles. Point the antenna coarsely towards the satellite by turning the base of the antenna. Make sure the antenna is level after movement. Use a compass to find the pointing direction.

Figure 5-13: Display, coarse adjustment

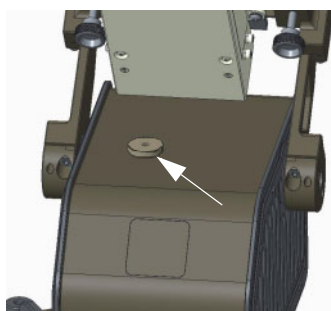4. Unscrew the cover for the azimuth adjustment port.

Figure 5-14: Manual pointing, azimuth adjustment

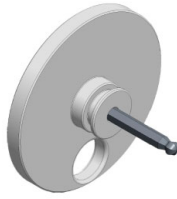5. Take out the Manual Jog Tool (1 pc. supplied with the Base Unit).

Figure 5-15: Manual Jog Tool for azimuth and elevation adjustment

6. Insert the Manual Jog Tool into the elevation adjustment port. Press down until it is completely engaged

7. Fine tune the azimuth angle by turning the tool clockwise or counterclockwise while you observe the display for best possible signal strength.

8. Unscrew the two screws for the cover for the elevation adjustment port.
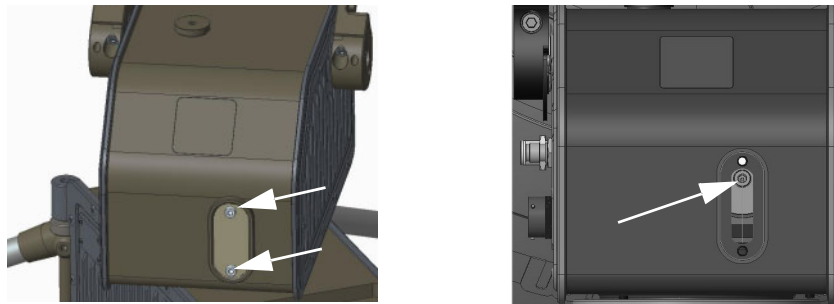
Figure 5-16: Manual pointing, elevation adjustment

9. If you do not have an extra Manual Jog Tool, remove the tool from the azimuth adjustment port so you can use it for the elevation adjustment.

10. Locate the elevation adjustment port in the slot and insert the Manual Jog Tool.

11. Turn the Manual Jog Tool to obtain the calculated elevation look angle shown in the display (see Figure 5-13: in the previous page). You can see the current elevation next to the calculated elevation in the display and on the mechanic scale on the side of the antenna positioner.

    | Note | The value for current elevation (third number from the left) is only valid if the EXPLORER 6075LX is level.

12. Observe the display for appearing signal strength bars. When the 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.

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

14. Repeat steps 12 and 13 until the signal strength is at its maximum.

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

Figure 5-17: Display, confirm manual pointing direction

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

17. Remount the cover for the elevation adjustment port

Important	Leave the Manual Jog Tool inserted in the azimuth adjustment port until you have finished using the antenna with manual pointing. It keeps the antenna positioner in place (holds the current azimuth) and protects the azimuth adjustment port against rain and dust.
	When you have finished, take out the Manual Jog Tool and reinsert the cover that was initially removed.

When you have finished using the antenna, stow the antenna as described in the next section.

5.4.2 To stow the antenna manually

1. Make sure the power is switched off (or you have switched to Manual pointing).

2. Align the antenna positioner with the Base Unit.

3. Unscrew the cover for the elevation adjustment port.
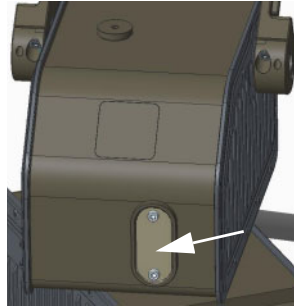   Keep the cover for later.

Figure 5-18: Manual stow, elevation adjustment

4. Take out the Manual Jog Tool .
   (A plastic disc with a hex key, supplied with the Base Unit).

5. In the slot, locate the opening that matches the Manual Jog Tool. This is the elevation adjustment port, see picture.

   > **Note** | The position of the elevation adjustment port changes depending on the elevation, so it may be located elsewhere in the slot.
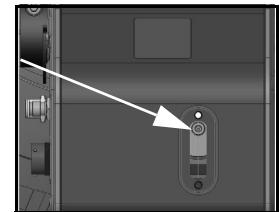
6. Insert the Manual Jog Tool and turn it clockwise to bring the antenna reflector down to stowed position.

7. Take out the Manual Jog Tool and remount the cover.

5.5 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, **Technical Service Partner List**. You can also access the **Cobham SYNC Partner Portal** at https://sync.cobham.com/satcom, 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

This appendix has the following sections:

- *General specifications*
- *Outline drawings*

A.1 General specifications

EXPLORER 6075LX

COBHAM

0.75m Stabilized Auto-Acquire Fly-Away Antenna System for Inmarsat Global Xpress®

Antenna Characteristics

Feed		2 Port Circular
Frequency (GHz)	Rx	19.2 - 20.2
	Tx	29 - 30
Gain (dBi ± 0.2)	Rx	41.5
	Tx	45
Axial Ratio (AR) (dB) w	Rx	≤ 1.5
	Tx	≤ 1.0
Polarization	Rx	LHCP
	Tx	RHCP
G/T - Comm @ 30° EL, Midband (dB/°K)		18.7
EIRP @ Midband (dBW)		52
BUC power (P linear) (Watts)		5

Environmental

Wind Speed	- Operational - Survival	50 km/h / 31 mph (anchored) 160 km/h / 100 mph (anchored)
Temperature	- Operational - Survival	-33° to +55°C (-27.4° to +131°F) -40° to +80°C (-40° to +176°F)
Water & Dust	IP 65 rated	
Humidity	0 to 100% (condensing)	

Assembly Time	Approximately 5 Minutes

Reflector

Size	0.75 m
Optics	Axis-Symmetric
Construction	4-Piece Segmented Carbon Fiber

Mechanical

Axis Drive System	2-Axis Positioner
Mount Geometry	Elevation over Azimuth
Travel - Azimuth - Elevation	± 95° from stow position 0° to 88°

Electrical

RF	Rx	Type TNC (50-Ohm)
	Tx	Type N (50-Ohm)
Nominel Power Consumption		130W
Max. Power Consumption		180W
Power Requirement - Nominal - Absolute max. rating		24 - 48 VDC 19 - 56 VDC

Weights & Measures (approximate)

System weight (assembled)	23 kg / 50.7 lbs
Packaging (2 Peli 1637 Air Cases) - Case size (L/W/D)	Airline checkable 67.6 / 52.5 / 37.8 cm 26.6 / 20.7 / 14.9 inches
Weight in transport cases: - Case 1: Base Unit - Case 2: RF Package, 4 reflector panels	 22.4 kg / 49.4 lbs 17.3 kg / 38.1 lbs

User Interface

Embedded web server for configuration, control and management using external PC

Product number

406616C-50114	EXPLORER 6075LX

Accessories

403160P	EXPLORER 6000 Power Supply - 48 VDC (320 Watt)
403160P-010	EXPLORER 6000 Power Supply Extension cable - 10m extension cable with Neutrik connectors
406616C-070	EXPLORER 6000 Series Ka-band Feed Horn - Field replaceable Feed Horn for Ka-band
406627A-005	EXPLORER 6000 Series Manual Jog Tool - Jog Tool for EXPLORER 6075LX / 6100 Ku - Works for Elevation and Azimuth

For further information please contact:

Cobham SATCOM Land
Lundtoftegaardsvej 93 D
DK-2800 Kgs. Lyngby, Denmark
Tel: +45 3955 8800

71-169129-A02 06.20 LMBU

Subject to change without further notice

Related Products: EXPLORER 6100, EXPLORER 3075GX

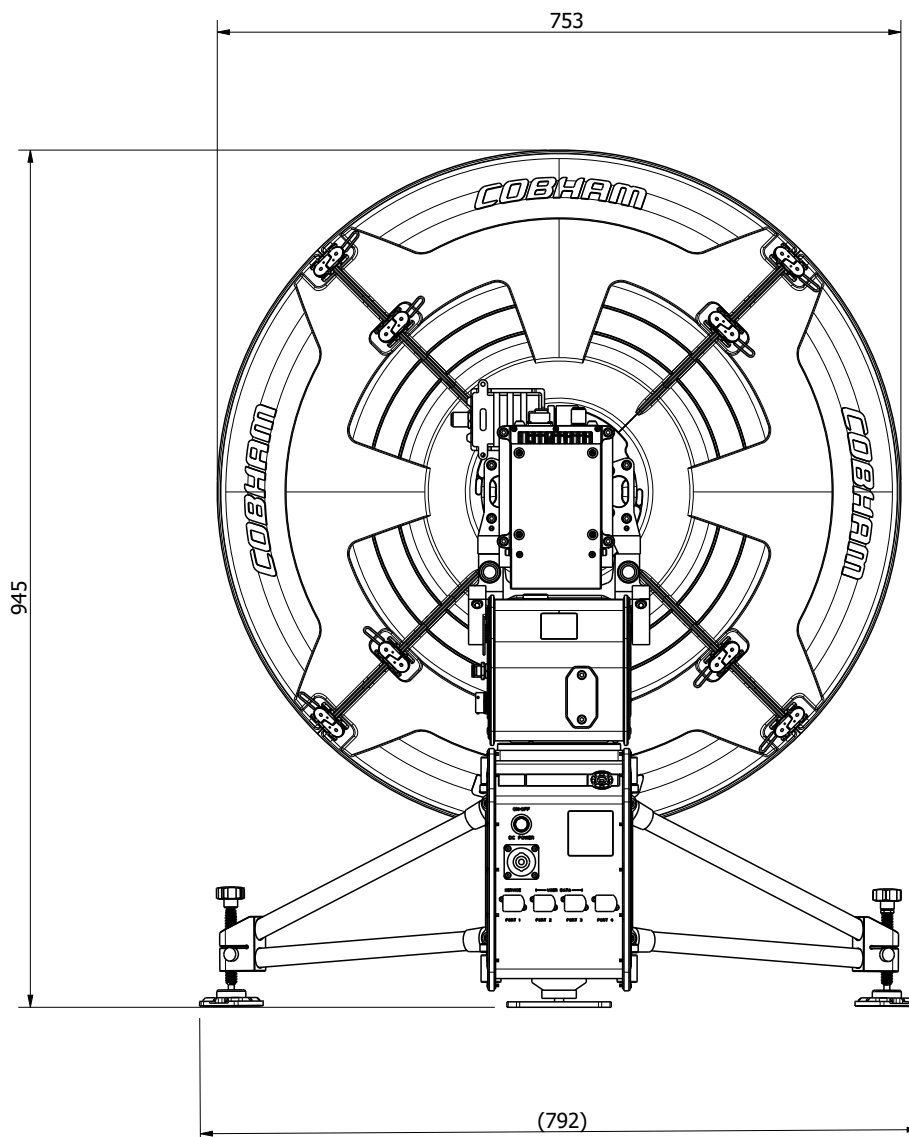**www.cobham.com/satcom**

A.2 Outline drawings
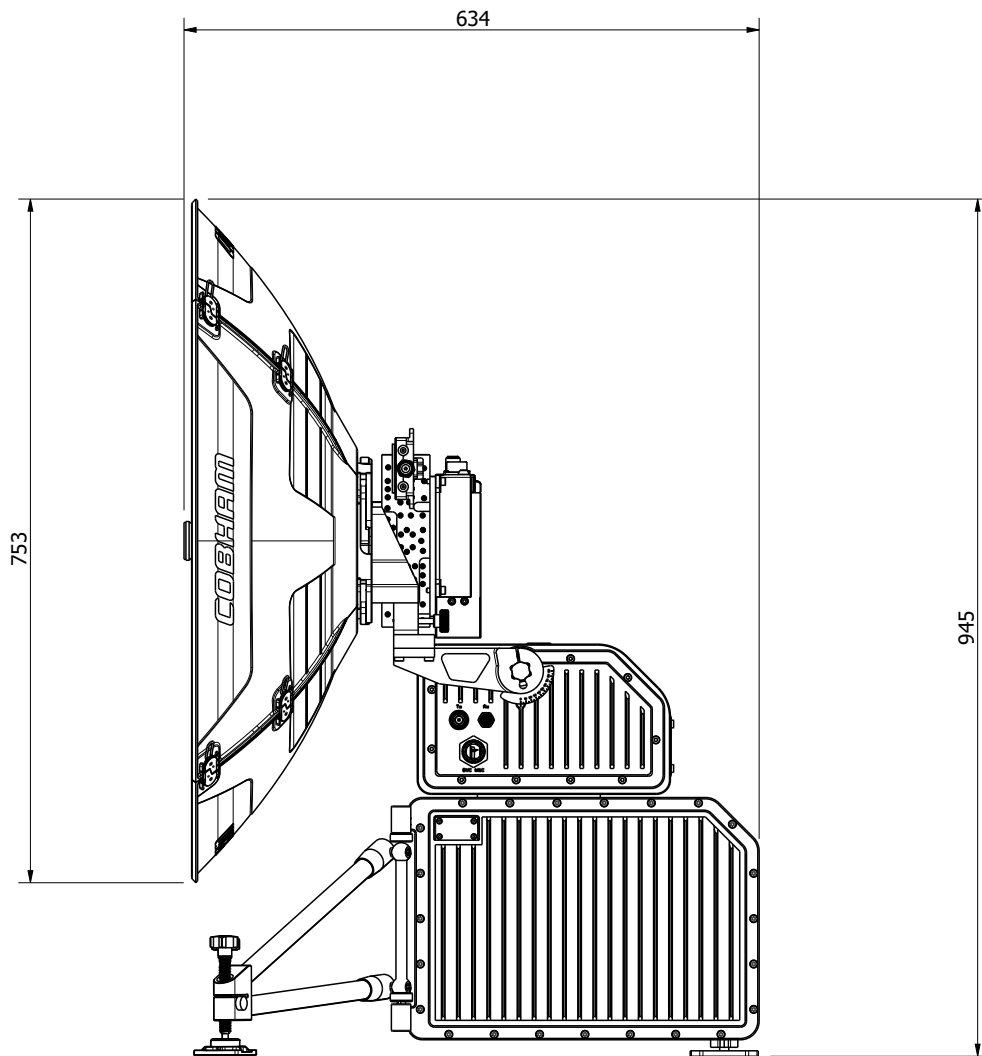
Figure A-1: Rear view, EXPLORER 6075LX

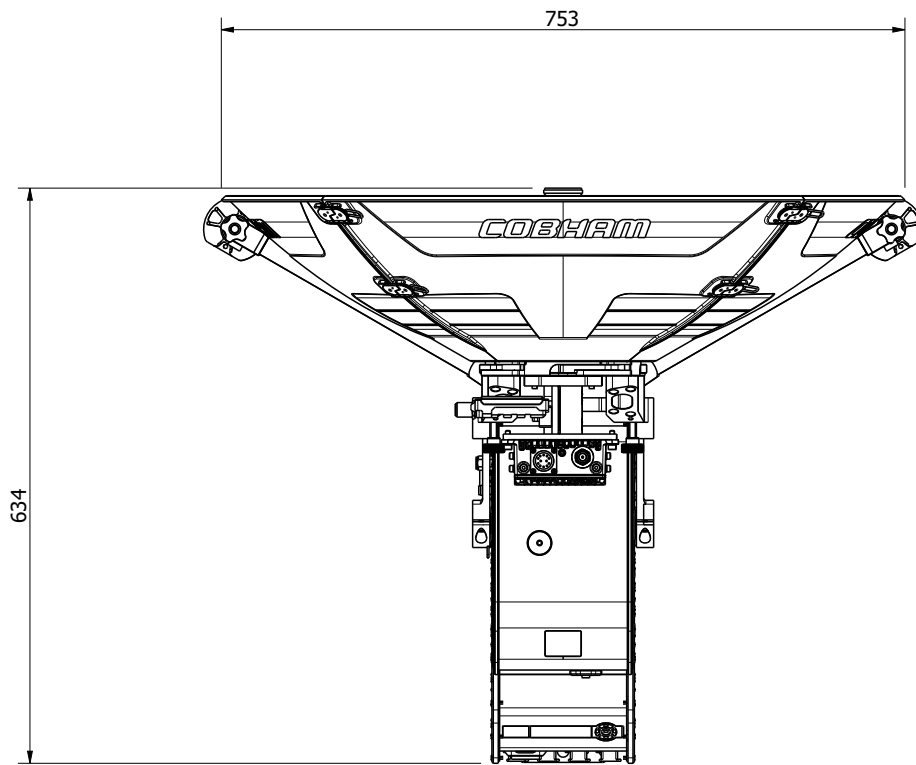Figure A-2: Side view, EXPLORER 6075LX

Figure A-3: Top view, EXPLORER 6075LX

System messages

This appendix has the following sections:

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

B.1   Event messages – overview

> **Note** Your EXPLORER 6075LX will **only show a subset of the listed events**. The following lists are a total list for a range of EXPLORER 6075LXs (including maritime terminals) from Cobham SATCOM.

The EXPLORER 6075LX 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 6075LX detects an event that requires your action, it issues an event message and the red Fail/Pass LED in the LED panel of the Base Unit is lit. As long as an event is active, it is shown in the Base Unit 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

B.2.1 Events from Base Unit

Event ID	Severity	Description	Explanation
08060-0	WARNING	Antenna modem	ACU/Antenna communication error detected (framing and parity). If the situation is persistent, check if cable specifications comply (length and attenuation).
08063-0	ERROR	Antenna connection	The ACU has lost connection with the antenna.
08064-0	ERROR	ADM PLL lock	The intermediate frequency PLL is not in lock. Check the external reference signal.
08065-0	WARNING	GNSS data	Missing GNSS data (fix).
08066-0	WARNING	Heading data	Missing heading information. Check cable and heading provider device.
08067-0	ERROR	PCB temperature	ADM temperature too high. Make sure there is compliance with the environmental specifications.
08068-0	ERROR	PSM power	The PSM fails to provide the requested supply voltage.
08069-0	WARNING	Blocking Zone	The antenna has entered a blocking zone.
0806A-0	WARNING	VMU connection	The ACU has lost connection to the satellite modem.
0806C-0	ERROR	VMU frequency setup	There is a mismatch in the frequency setup. Probably the satellite modem is not configured correctly to match the requirements of the ACU and antenna. A common mismatch is the absence of Rx or Tx LO parameter in the satellite modem.
0806D-0	ERROR	Antenna power	The antenna supply voltage is outside the allowed limits. This may happen if the PSM fails to provide the requested supply voltage.
0806E-0	ERROR	VMU reference signal	There is no VMU Rx or Tx reference signal. Whether this is Rx or Tx reference depends on the user's selection on the modem profile page in the web interface. Make sure the VMU Rx/Tx cable is connected and that the VMU is configured to output the RX/TX reference signal.
0806F-0	WARNING	ROSS synchronization	The ACU has become out of sync with the ROSS device, most likely because the ACU has been replaced, or the ROSS satellite profile is new. A manual (forced) handoff sequence must be initiated from the ROSS, refer to the ROSS manual.

Event ID	Severity	Description	Explanation
08073-0	WARNING	Slave connection	The system is configured as a dual antenna master, but no dual antenna slave is connected to it. Either disable the dual antenna master in the web interface or configure a another system as a dual antenna slave.
08074-0	WARNING	Master connection	The system is configured as a dual antenna slave, but it was not possible to connect to the dual antenna master. Check that the IP address entered in the modem profile is correct and check that the master and slave systems are physically connected as described in the manual.
08075-0	WARNING	Rx cable calibration	The calibration of the ACU-antenna cable failed. The cable could be defective, too long, of too poor quality, not properly connected, or the VIM or ACU hardware could be defective.
08076-0	WARNING	Dual mode configuration	The system is configured as a dual antenna system, but the system setup is invalid. The dual mode function may not work properly or performance could be degraded. Info code: xxxxxxx1 = Antenna types are different, they must be identical xxxxxxx2 = Master or Slave hardware does not support dual mode operation. xxxxxxx3 = Software version on master and slave are different, they must be identical.
08078-0	WARNING	VMU TX frequency invalid	The satellite modem did not provide a Tx frequency, or it is invalid. A default Tx frequency is assumed, but this may degrade Tx performance. To remove this warning re-configure the modem to provide the correct Tx frequency.
08079-0	WARNING	ACU Fan	Internal fan is malfunctioning.
0807A-0	WARNING	Automatic azimuth calibration pending	Automatic azimuth calibration mode is enabled. The system tries to perform an azimuth calibration using the target satellite whenever satellite data is received from the modem. After successful calibration the feature is automatically disabled and the system returns to normal operation. WARNING: If a system has not completed azimuth calibration after the installation, the blocking zones may appear to be at wrong angles.
0807B-0	WARNING	OTC required (Calibration outdated)	BUC calibration is outdated. Rerun it from the Core Module by using the One Touch Commissioning in the web interface.
0807C-0	ERROR	System configuration	Invalid ACU / antenna combination.

Event ID	Severity	Description	Explanation
0807E-0	WARNING	Keyline signal	The keyline signal on the dual antenna master does not match the keyline signal on the slave. Check that the keyline splitter cable is connected to the RS422 connectors. When fixed, the ACU's needs to be rebooted to clear the event.
0807F-0	WARNING	Local administration enabled	Local administration mode is currently enabled. This allows login without providing the admin password. Will be disabled after 1 hour or next reboot.
08080-0	WARNING	Satellite info mismatch	Currently selected manual satellite information does not match information from the modem. Please select another satellite for manual pointing.
08081-0	WARNING	BUC communication	Missing communication between VMU and BUC. Info: 0x00000001: From VMU to BUC Info: 0x00000002: From BUC to VMU
08083-0	WARNING	Friction test timeout	Friction test timeout. Info code format: 0xaaaatttt, where aaaa = axis under test (0=Azi, 1=XEL, 2=EL) and tttt = timeout type. Info: 0xaaaa0001: Axis aaaa did not get ready for test in time Info: 0xaaaa0002: Axis aaaa test did not finish in time
08100-0	ERROR	PSM low voltage (22 V)	The ADM measures a different antenna voltage than expected. If the problem is not solved by a restart, and the PSM is not reporting any errors, the ADM is probably defective.
08101-0	ERROR	PSM high voltage (48 V)	The ADM measures a different antenna voltage than expected. Check for short circuit of the antenna coax connector. If the problem is not solved by a restart, and the PSM is not reporting any errors, the ADM is probably defective.
08102-0	ERROR	PSM 5 V power	Internal voltage supply error of the ADM.
08103-0	ERROR	ADM hotswap	The ACU is not able to supply the correct voltage to the antenna. Check for short circuits in coax cable and the antenna
08104-0	ERROR	Antenna communication	The ACU cannot communicate with the antenna. Check cable and antenna.
08107-0	ERROR	ADM FPGA load	The ADM FPGA cannot be initialised and loaded.
08108-0	ERROR	TX Power Detector calibration	The power detector calibration is not valid.

Event ID	Severity	Description	Explanation
08109-0	ERROR	Antenna XIM data	There is a mismatch in the antenna configuration data. Either the PCM or the VIM in the antenna are malfunctioning or one of them has been replaced. In the latter case, select which is the original device in the web interface and restart the system.
0810A-0	ERROR	ADM production data	Production data has been corrupted.
0810B-0	ERROR	Antenna software version	An error has occurred during upload of software to the antenna, the antenna software version is not as expected. Either the software in the ACU does not meet the minimum version required by the antenna, the software image in the ACU is corrupted or the upload procedure failed because of a communication error.
0810C-0	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.
0810E-0	ERROR	RF calibration	The RF calibration is not valid.
08800-0	ERROR	Internal power supply	An internal power supply voltage is outside its allowed range.
08801-0	ERROR	Input voltage too low	The input voltage to the power supply is too low. If running on battery, charge battery for correct operation.
08802-0	ERROR	Input voltage too high	The input voltage to the power supply is too high. If running on generator or inverter, check for correct operation.
08840-0	WARNING	Master PLL lock	The master PLL has lost lock. Check the input reference signal.
08841-0	ERROR	Tuner lock	The internal tuner PLL was unable to lock.
08842-0	WARNING	GSC demodulator	The GSC demodulator has reported an error.
08843-0	WARNING	DVBS demodulator	The DVBS demodulator cannot be initialised and loaded correctly.
08844-0	WARNING	BUC voltage	The BUC voltage is out of range.
08845-0	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.

Event ID	Severity	Description	Explanation
08880-0	ERROR	WLAN configuration error	Configuration of WLAN module failed.
08A00-0	WARNING	GX Core Module fan	There is a problem with the Core Module fan. Check/clean and replace if necessary.
08A01-0	WARNING	GX Core Module heater	There is a problem with the Core Module heater. Check and replace if necessary.
08A02-0	WARNING	GX Core Module temperature	The Core Module temperature is out of range. This may affect performance, and the Core Module will be shut down if the situation gets worse. If the "GX core module heating" event is also present, the internal heater is currently warming up the unit to its operational temperature.
08A03-0	ERROR	GX Core Module power	The Power Good signal from the Core Module is low. The issue can either be: - Internal Core Module or internal cable failure - Temperature of Core Module is too high and it has been turned off (*) - GMU has been manually switched off on the front panel (*) (*) = Only on systems with GMU.
08A04-0	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
08A05-0	WARNING	GX Core Module heating	The GX core module heater is active. It will automatically be cleared when the core module reaches the operational temperature level.
09000-0	ERROR	KDM 3V3 supply	Internal 3V3 voltage supply error in the KDM.
09001-0	ERROR	KDM 12V supply	Internal 12V voltage supply error in the KDM.
09002-0	ERROR	KDM display	Display hardware error in the KDM.
09010-0	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.
0B000-0	ERROR	PSM production data	Missing or invalid production data in the PSM. Replace it.
0B001-0	ERROR	NMEA 2000 identifier	Missing or invalid production data in the PSM. Replace it.

Event ID	Severity	Description	Explanation
0B010-0	ERROR	PSM link/SW version	Link to the PSM module could not be established. Either the PSM board is malfunctioning, or - if the system software has just been updated - the software is too old and is not compatible with the PSM hardware.
0B060-0	WARNING	NMEA 0183 parse error	Parse errors detected on the NMEA 0183 interface. Check NMEA 0183 cable, signal levels etc.
0B061-0	WARNING	Power supply temperature	ACU Power supply temperature is high. Improve ventilation or move to a cooler area. Info: 00000000 = Temperature warning, system still operational, but will shut down eventually if temperature keeps rising. 00000001 = Temperature critical, system has shut down to protect the hardware from overheating.

B.2.2 Events from antenna

Event ID	Severity	Description	Explanation
0A001-0	ERROR	Production data	Production data is invalid.
0A002-0	ERROR	XIM internal	Antenna configuration data stored in the PCM module is invalid.
0A003-0	ERROR	XIM external	Antenna configuration data stored in the VIM module is invalid.
0A004-0	ERROR	XIM I/X match	Antenna configuration data stored in the PCM module does not match the configuration data stored in the VIM module.
0A005-0	ERROR	Antenna type	The configured antenna type is not supported or unknown.
0A006-0	ERROR	PCM FPGA load	The PCM FPGA cannot be initialised and loaded correctly.
0A007-0	ERROR	XIM FPGA load	The VIM FPGA cannot be initialised and loaded correctly.
0A008-0	ERROR	XIM production	Production/calibration data stored in the VIM module is invalid.
0A00A-0	ERROR	GNSS initialisation	The GNSS device cannot be initialised. Check cable and GNSS device.
0A014-0	ERROR	AMB device discovery	Missing one or more of the following devices: ISM, DDM/DMD/FDM and PMM. Check cables.
0A015-0	ERROR	Azi DDM ABS device	Cannot initialise the azimuth DDM/DMD/FDM. Info: 0x00000000: Device not found (possible cabling problem) 0x0000bbaa: Device internal error (replace device) aa=status, bb=state.
0A016-0	ERROR	Xel DDM ABS device	Cannot initialise the cross-elevation DDM/DMD/FDM. Info: See 0A015-0.
0A017-0	ERROR	Ele DDM ABS device	Cannot initialise the elevation DDM/DMD/FDM. Info: See 0A015-0.
0A018-0	ERROR	ISM ABS device	Cannot initialise the ISM Info: 0x00000000: Device not found (possible cabling problem) 0x000cbbaa: Device internal error (replace device) aa=status, bb=state, c=calibration data error.
0A019-0	ERROR	PMM ABS device	Cannot initialise the PMM. Info: See 0A015-0.
0A01A-0	ERROR	BCM ABS device	Cannot initialise the BCM. Info: See 0A015-0.
0A01E-0	ERROR	Sensor sanity	Too many invalid values measured by the ISM during initialisation. Check for vibrations or malfunctioning ISM.

Event ID	Severity	Description	Explanation
0A021-0	ERROR	Azi axis calibration	Azimuth axis zero reference not found. Check belt and zero reference module. Info: 0x00000001: Timeout (operation did not complete in time) 0x00000010: Encoder or mechanical problem 0x00000020: Zero reference not found 0x00000040: End stop not found.
0A022-0	ERROR	Xel axis calibration	Cross-elevation axis zero reference or end stops not found at expected locations. Check belt, zero reference module, and end stops. Info: See 0A021-0.
0A023-0	ERROR	Ele axis calibration	Elevation axis zero reference or end stops not found at expected locations. Check belt, zero reference module, and end stops. Info: See 0A021-0.
0A025-0	ERROR	Antenna calibration	One or more errors occurred during antenna start-up Info: 0x00000001: Timeout (calibration did not complete in time) 0x00000010: Azimuth axis 0x00000020: Cross-elevation axis 0x00000040: Elevation axis 0x00000080: Polarisation axis
0A028-0	ERROR	Demodulator load	The second receiver demodulator cannot be initialised and loaded correctly.
0A029-0	ERROR	XIM PLL lock	The PLL on the VIM does not lock.
0A02B-0	ERROR	ABS software version	The ABS software version in the antenna is too old to match the hardware requirements. Upload new software via the web interface.
0A02D-0	ERROR	BUC reference switch	The BUC reference switches do not work. Check PCM-VIM cable and replace cable, VIM or PCM.
0A034-0	WARNING	ACU communication	The communication link between ACU and antenna is not working.
0A035-0	WARNING	ISM data valid	Sensor measurements from the ISM are invalid. This indicates a malfunctioning ISM.
0A036-0	WARNING	ISM data range	Sensor measurements from the ISM are out of range.
0A037-0	WARNING	GNSS communication	Lost connection to the GNSS device.
0A038-0	WARNING	GNSS data range	Received information from the GNSS device which is out of range.
0A039-0	WARNING	GNSS device warning	Local GNSS device warning.
0A03A-0	WARNING	GNSS device error	Local GNSS device error.

Event ID	Severity	Description	Explanation
0A03B-0	ERROR	Azi DDM shutdown	The azimuth motor control has detected one of the following situations: Extreme temperature, voltage, current or velocity. The motor was then shut down. This is usually a temporary situation and is probably fixed by a restart of the system.
0A03C-0	ERROR	Xel DDM shutdown	As Azi DDM/DMD/FDM shutdown but detected by the cross-elevation motor control.
0A03D-0	ERROR	Ele DDM shutdown	As Azi DDM/DMD/FDM shutdown but detected by the elevation motor control.
0A03E-0	ERROR	PMM shutdown	As Azi DDM/DMD/FDM shutdown but detected by the polarisation motor control.
0A03F-0	WARNING	AMB timing	This indicates a busy situation. It may occur during installation procedures. No user interaction is required unless it occurs repeatedly.
0A040-0	WARNING	VIM cable attn	The output power cannot be controlled correctly. Check the Tx chain.
0A043-0	WARNING	LNB voltage low	The voltage for the LNB is too low probably caused by a malfunctioning VIM or LNB.
0A044-0	WARNING	LNB voltage high	The voltage for the LNB is too high probably caused by a malfunctioning VIM.
0A047-0	ERROR	VIM PLL lock	The PLL of the VIM is out of lock. Check the 10 MHz reference signal.
0A048-0	WARNING	VIM tuner lock	The PLL of the second receiver (DVB) is out of lock. Check the 10 MHz reference signal.
0A049-0	WARNING	Azi encoder slip	A slip of the azimuth encoder has been detected. If this event is not resolved by itself after some time, check the belt and encoder of the azimuth axis.
0A04A-0	WARNING	Xel encoder slip	A slip of the cross-elevation encoder has been detected. If this event is not resolved by itself after some time, check the belt and encoder of the cross-elevation axis.
0A04B-0	WARNING	Ele encoder slip	A slip of the elevation encoder has been detected. If this event is not resolved by itself after some time, check the belt and encoder of the elevation axis.
0A04D-0	WARNING	GNSS position	No position available from the GNSS device or position too old.
0A04E-0	WARNING	GNSS velocity	No velocity available from the GNSS device.
0A04F-0	WARNING	Heading data	Heading information is missing in the antenna.

Event ID	Severity	Description	Explanation
0A050-0	ERROR	Azi DDM communication	Communication error between PCM and azimuth DDM/DMD/FDM. Check SUB-D connectors and cables.
0A051-0	ERROR	Xel DDM communication	Communication error between PCM and cross-elevation DDM/DMD/FDM. Check SUB-D connectors and cables.
0A052-0	ERROR	Ele DDM communication	Communication error between PCM and elevation DDM/DMD/FDM. Check SUB-D connectors and cables
0A053-0	ERROR	ISM communication	Communication error between PCM and ISM. Check SUB-D connectors and cables.
0A054-0	ERROR	PMM communication	Communication error between PCM and PMM. Check SUB-D connectors and cables.
0A055-0	WARNING	Azi DDM warning	The azimuth motor controller has temporarily observed an unusual situation for temperature, voltage, current or velocity. No user interaction required.
0A056-0	WARNING	Xel DDM warning	The cross-elevation motor controller has temporarily observed an unusual situation for temperature, voltage, current or velocity. No user interaction required.
0A057-0	WARNING	Ele DDM warning	The elevation motor controller has temporarily observed an unusual situation for temperature, voltage, current or velocity. No user interaction required.
0A058-0	WARNING	PMM warning	The polarisation motor controller has temporarily observed an unusual situation with regards to temperature, voltage, current or velocity. No user interaction required.
0A059-0	WARNING	Azi cal. limits	Check limits of the calibration result for the azimuth axis are exceeded. Pointing performance may be degraded. Info: 0x00000040: End stop detected before expected limit 0x00000100: Zero width is low 0x00000200: Zero width is high 0x00000400: Zero slack is high 0x00001000: Friction average is high 0x00002000: Friction peak is high 0x00004000: Friction asymmetry is high Zero width low/high: Zero reference module placement may be incorrect. Zero slack high: Mechanical slack may be too high. Friction average/peak high: Mechanical friction is higher than expected. Friction asymmetry high: Mechanical imbalance may be too high.
0A05A-0	WARNING	Xel cal. limits	Check limits of the calibration result for the cross-elevation axis are exceeded. Pointing performance may be degraded. Info: See 0A059-0.
0A05B-0	WARNING	Ele cal. limits	Check limits of the calibration result for the elevation axis are exceeded. Pointing performance may be degraded. Info: See 0A059-0.

Event ID	Severity	Description	Explanation
0A05D-0	WARNING	ISM warning	The ISM has temporarily observed an unusual situation for temperature or voltage. No user interaction required. If repeated after cooldown and reboot, check if the ISM or cables around it are defective.
0A05E-0	WARNING	Low elevation	The antenna is not allowed to transmit because the elevation is too low.
0A05F-0	WARNING	Heading range	Heading data range error. External heading unit supplies unreliable data.
0A062-0	WARNING	High elevation	The antenna cannot perform acquisition in gyro-free mode because the elevation is too high.
0A063-0	WARNING	BCM warning	The BCM has observed an unusual situation with regards to the PLL. If the situation persists, check the BCM.
0A064-0	ERROR	BCM communication	Communication error between PCM and BCM. Check SUB-D connectors and cables.
0A065-0	ERROR	Deploy/Stow	Deploy/stow error. The antenna did not properly unlock (deploy), or the stow switch never closed (stow).
0A066-0	ERROR	OMT error	Problem with OMT. Temperature out of range or OMT cable may be broken.
0A067-0	WARNING	Automatic stow	The antenna automatically stowed because it detected significant movement.
0A068-0	WARNING	Polarisation tuning	Polarisation tuning was not successful. Polarisation may be incorrect.
0A069-0	ERROR	BCM error	The BCM PLL failed to initialize.
0A06A-0	WARNING	Missing BUC response	No response received from the BUC.
0A06C-0	FATAL	Antenna base tilt	Antenna base tilted beyond limit.
0A06D-0	WARNING	VMU reference distribution	VMU reference signal not present at BCM, but is present at ACU. Check coax cable between VIM and BCM.
0A06E-0	WARNING	Antenna orientation	The terminal is oriented in a way that prevents it from pointing to the selected satellite.

Approvals

This appendix lists the approvals for EXPLORER 6075LX.

C.1 CE

The EXPLORER 6075LX Stabilized Auto-Acquire Antenna System for Inmarsat Global Xpress is CE certified as stated in the simplified EU Declaration of Conformity in the Safety sheet supplied with the EXPLORER 6075LX system.

Note that the simplified EU Declaration of Conformity covers a series of EXPLORER 6000 products. The full Declarations of Conformity can be found on the Cobham SATCOM web site as described in the simplified EU Declaration of Conformity.

C.2 FCC

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

Part 15.21

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Contains FCC ID: F4AAPPN551 (WLAN module)

C.3   IC

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class [B] digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

Contains IC: 3913A - APPN551 (WLAN module)

A

ACU   Antenna Control Unit. Another name for the Base Unit in the VSAT system.

ADU   Above Deck Unit. Another name for antenna.

B

BeiDou   Chinese satellite navigation system.

BITE   Built-In Test Equipment

C

CM   Continuous Monitoring

D

DHCP   Dynamic Host Configuration Protocol. A protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network.

DNS   Domain Name System. A system translating server names (URLs) to server addresses.

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

F

FCC   Federal Communications Commission. An independent agency of the United States government, created by Congressional statute to regulate interstate communications by radio, television, wire, satellite, and cable in all 50 states, the District of Columbia and U.S. territories. The FCC works towards six goals in the areas of broadband, competition, the spectrum, the media, public safety and homeland security.

FPGA   Field Programmable Gate Array

G

GLONASS   GLObal'naya NAvigatsionnaya Sputnikovaya Sistema. A Russian Global Navigation Satellite System.

GND   Ground

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.

H

HTTP   Hyper Text Transfer Protocol

HTTPS   Hyper Text Transfer Protocol Secure

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 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 Base Unit (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.

M

MDM	Modem
MIB	Management Information Base. A Formal description of a set of network objects that can be managed using the Simple Network Management Protocol (SNMP).

O

ODU	OutDoor Unit. Another word for antenna.
OID	Object Identifier, in the context of the Simple Network Management Protocol (SNMP), consists of the object identifier for an object in a Management Information Base (MIB).

P

PAST	Person Activated Self Test
PC	Personal Computer
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.

Rx	Receive

S

SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol. An Internet-standard protocol for managing devices on IP networks. It is used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.
SSH	Secure SHell. A network protocol for secure data communication, remote shell services or command execution and other secure network services between two networked computers that it connects via a secure channel over an insecure network.
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.

T

Tx	Transmit

V

VLAN	Virtual Lan. A logical subnetwork that can group together a collection of devices from different physical LANs.
VSAT	Very Small Aperture Terminal. An earthbound station used in satellite communications of data, voice and video signals, excluding broadcast television. A VSAT system consists of a two-way satellite ground station and a stabilized VSAT antenna with a dish antenna that is smaller than 3 meters.

W

WLAN	Wireless LAN, wireless network