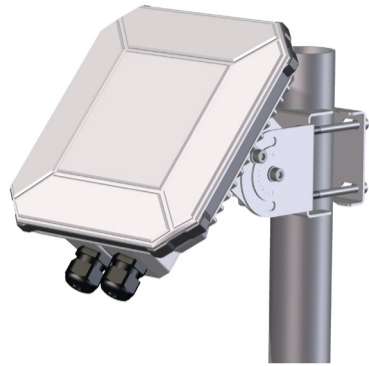# EXPLORER 540

Installation guide

COBHAM

What's in the box?

The following items are included in the delivery:

- EXPLORER 540 terminal
- Pole mount kit
- 2 Cable glands and 1 Blind plug
- Torx bit Size TX10 (tamper resistant, 1/4" Hex drive) for mounting/dismounting the cover for the small compartment
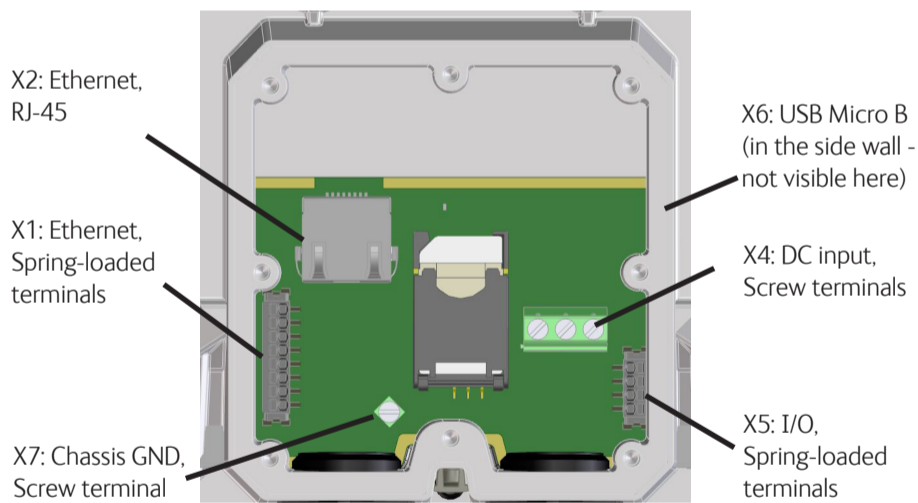- Installation guide (this guide)

EXPLORER 540 terminal with pole mount kit

EXPLORER 540 User and integrator's manual (part no. 98-148232) as well as other language versions of this installation guide are available for download at the Self Service Center. Go to www.cobham.com/satcom and select Service and Support > Cobham SATCOM Service and Support > 24-7 Self Service Center / Technical Downloads.

Step 2: Connect cables

To maintain the Ingress Protection of the EXPLORER 540 and to avoid cables accidentally being disconnected, all cable connections are made inside the small compartment at the back of the EXPLORER 540.

- Use the provided Torx bit to open the small compartment at the back of the terminal.
- Use a flat blade screw driver (max. 2 mm wide) to press down the spring-loaded terminals.
- Use a flat blade screw driver (max. 3.5 mm wide) to unscrew and fasten the screw terminals.

X2: Ethernet, RJ-45

X1: Ethernet, Spring-loaded terminals

X7: Chassis GND, Screw terminal

X6: USB Micro B (in the side wall - not visible here)

X4: DC input, Screw terminals

X5: I/O, Spring-loaded terminals

1. Lead the cable(s) through the cable gland(s) and gasket(s) (suitable for cable diameter 5-10 mm). Make sure the cable glands fit tightly.

2. Connect the cables according to your configuration. See the reverse of this guide for pinout and example configuration drawing. The RJ-45 connector of the LAN cable can pass through the cable gland. (see picture)

3. If you are not using PoE to power the EXPLORER 540, connect a power cable between the DC input terminals and an external battery or power supply.

4. When all cables are connected, mount the cover for the compartment and tighten the screws with the included Torx bit.
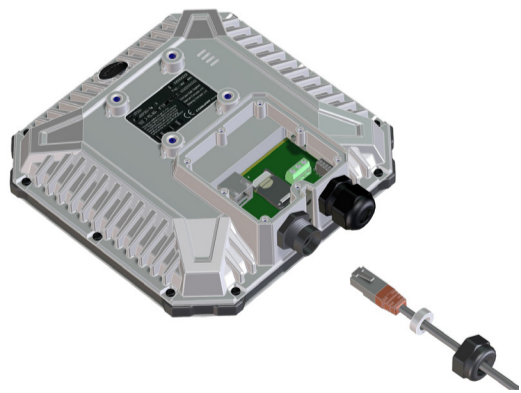
Important! If you only need to install one cable, mount the provided blind plug in the unused hole to maintain the Ingress Protection (IP grade) of the terminal.

Step 1: Insert SIM card

You need a BGAN SIM card for either M2M or standard class 2 services. To insert the SIM card, do as follows:

NOTE: Make sure the EXPLORER 540 is **not** powered when you insert or remove the SIM card!

1. Open the cover for the small compartment at the back of the EXPLORER 540. Use the included Torx bit to unscrew the screws.

2. Locate the SIM holder in the middle of the compartment.

3. Slide the lock to release the SIM holder.

4. Lift the end of the SIM holder and insert the SIM card as shown.

5. Lower the SIM card holder with the SIM card inserted and lock it.

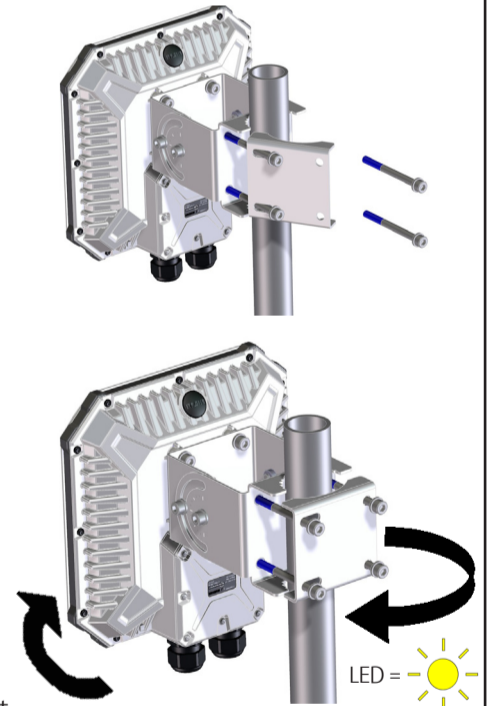6. When all cables are connected, put the cover back on and tighten the screws.
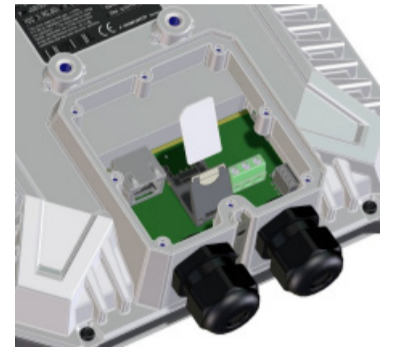
Step 3: Install the EXPLORER 540

A pole mount kit is included in the delivery. To mount the EXPLORER 540 on a pole, do as follows:

1. Attach the base of the pole mount bracket to the EXPLORER 540 using the included Hex L key on the 4 screws. **Caution!** Max. length of the screws is 9 mm! Longer screws can damage the EXPLORER 540.

2. Unscrew two of the long screws from the pole mount kit to leave one side open for the pole.

3. Place the pole mount kit with the EXPLORER 540 around the pole as shown.
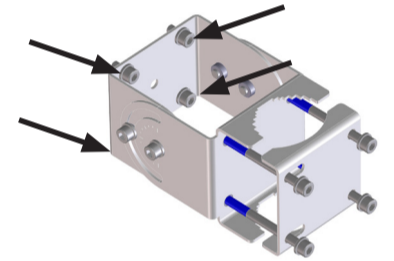
4. Remount the two remaining long screws. Do not tighten the screws completely until you have pointed the antenna.

5. Power up the system. Observe the LED between the cable glands (see LED description on the back).
   - LED flashing rapidly green: Starting up
   - LED flashing yellow: Pointing
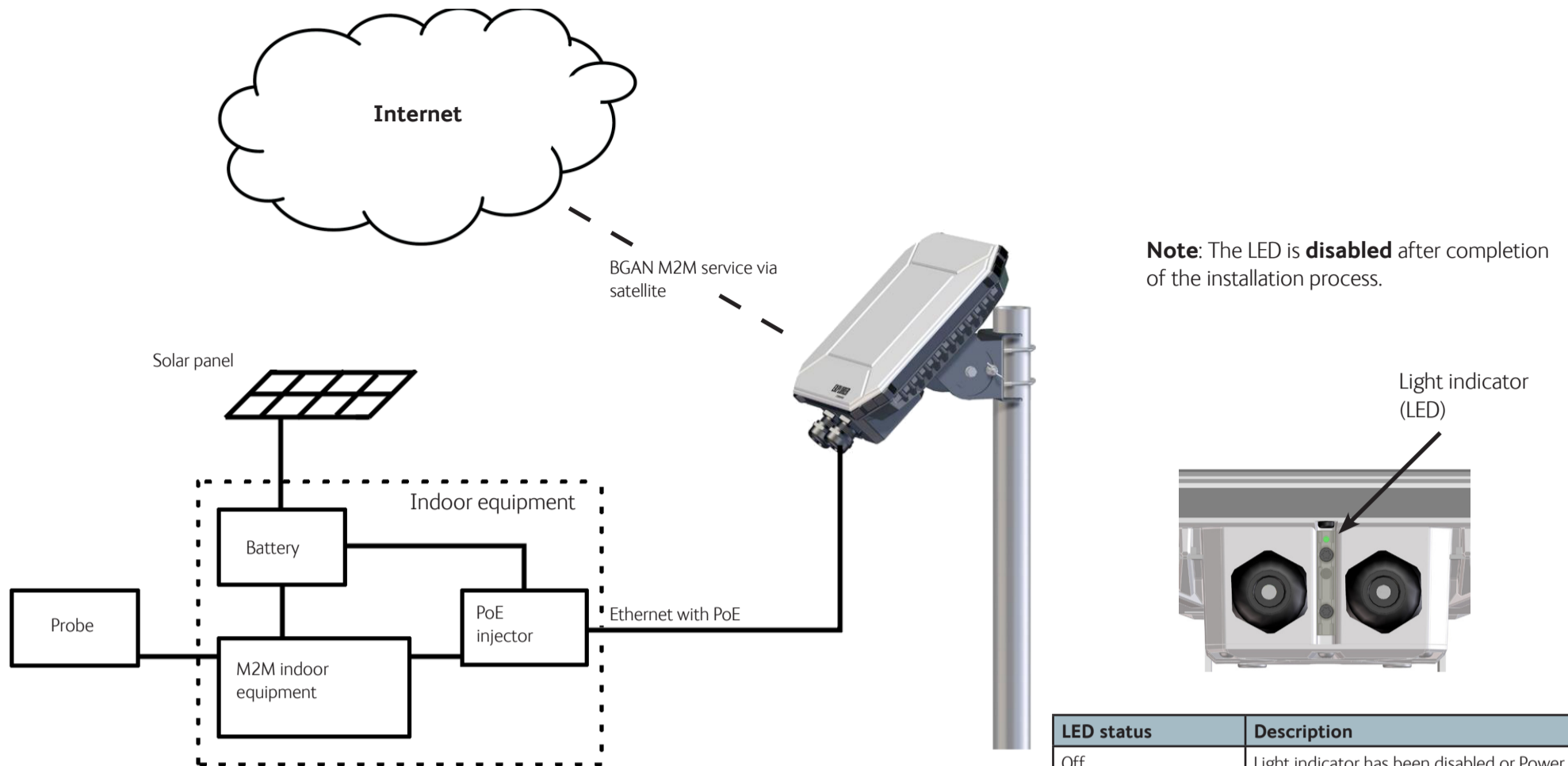   - LED steady yellow: Warning! See **Verificaton** on the back.

6. When LED flashes yellow: Turn and tilt the EXPLORER 540 and use the pointing sound to obtain the highest possible signal strength. (continuous sound = best signal)

7. When you have the highest possible signal strength. tighten all the screws to keep the EXPLORER 540 in the pointed position. The EXPLORER 540 will automatically exit the pointing process once it has detected a stable BGAN signal.

8. When the pointing process has ended, the LED changes as follows:
   - LED flashing green: Verifying network connection
   - LED steady green and then off: Ready - installation process has ended successfully. The LED is disabled (off) after a few minutes.

LED =

LED =
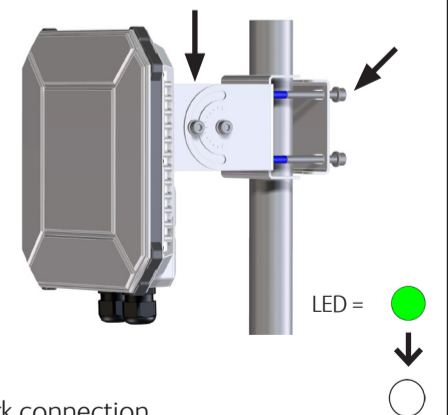
If the LED is steady yellow, the installation failed and there is a warning. If you can connect a computer locally to the EXPLORER 540, you can use the web interface to follow the progress on screen, see any warnings, and restart the installation if necessary. See **Verification** on the back.

System Configuration - Example

Internet

BGAN M2M service via satellite

Solar panel

Indoor equipment

Battery

Probe

M2M indoor equipment

PoE injector

Ethernet with PoE

Note: This drawing is just an example. Your configuration may use other types of equipment.

Note: The LED is **disabled** after completion of the installation process.

Light indicator (LED)

Number	Cable	Requirements
1	DC Power cable	1.5 mm², UV resistant, Temperature: -40 to +75 deg. C, Max cable length: 12 meters at 12 V operation, 200 meters at 24 V operation
2	LAN cable	Cable: Ethernet Min. Cat 5 Solid copper wire, STP. Max. length: 100m **PoE source according to PoE+ IEEE 802.3at type 2 class 4**
3	I/O cables	0,2 mm² to 0,5 mm² (26 AWG til 20 AWG), output up to 2A. Use shielded cable on input if not actively driven high/low.

LED status	Description
Off	Light indicator has been disabled or Power off
Green flashing rapidly	Starting up
Yellow flashing	BGAN pointing
Green flashing	Verifying network connectivity
Green constant	Ready
Yellow flashing rapidly	Closing down
Yellow constant	Warning (user recoverable). See web interface for the warning text.
Red constant	Error. See the web interface.
Blue flashing	Uploading software to the terminal

Connectors and pin allocation

IMPORTANT: You must use **either** X1 **or** X2 for LAN, not both!

The EXPLORER 540 has the following connectors/terminals:

- X1: LAN/PoE, Spring-loaded terminals
- X2: LAN/PoE, RJ-45 connector
- X3: SIM card
- X4: DC input, Screw terminals
- X5: I/O, Spring-loaded terminals
- X6: USB, micro B connector
- X7: Chassis GND, Screw terminal

DC power connector (X4)

Pin	Signal
1	DCIN+
2	DCIN-
3	GND (optional - for connection of shield)

LAN/PoE connector (X1 or X2)

Pin	Signal
1	TXp
2	TXm
3	RXp
4	POE+
5	POE+
6	RXm
7	POE-
8	POE-

I/O connector (X5)

Pin	Signal	Details
1	GPI	Request wake up input
2	GPO	Terminal ready output
3	GPIO	M2M remote control/status,input/output
4	GND	Ground

USB connector (X6)

Pin	Signal
1	+5V
2	Dm
3	Dp
4	ID
5	GND

Verifying and troubleshooting the installation

If the **LED** turns **steady yellow**, it means the installation failed, e.g. because the terminal was unable to detect a stable BGAN signal or veriify the network connection.
If you connect a computer locally to the terminal, you can use the built-in web interface to follow the progress on screen during installation, and to see warning messages in case the installation failed.

1. Connect your computer to the LAN interface of the EXPLORER 540.
2. Open your browser on the connected computer.
3. Power up the terminal.
4. Access the web interface at the local IP address (default192.168.0.1).
5. Enter the user name: **User** and password: <serial number of the terminal>.
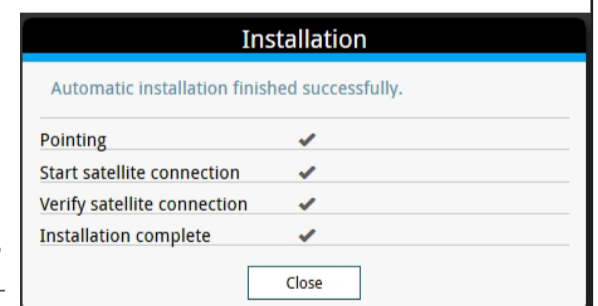
Technical specifications

Item	Specification
Dimensions	202 x 202 x 51.8 mm 8.0 x 8.0 x 2.0 inches
Weight	1.6 kg / 3.5 lbs (excl. cellular modem)
Operating temperature	-40 to 75°C
Power supply PoE Power supply DC	According to: PoE+ IEEE 802.3at type 2 class 4 10.5 to 32 VDC
Power consumption	Power save (**Wake on** configured): 110 mW Sleep mode: 2.5 W Max. power when transmitting: • PoE: 24 W • DC: 21 W
IP grade	IP66

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