■ For wall mount installation - four suitable dowels and screws

■ Complementary products:

» Maintenance Cabinet - required for backup batteries, power system, AC/DC power adaptors and local transport/backhauling equipment

» Auxiliary Box - required for Dry Contact alarms, connectivity controllers, and easy access to technical support

2.2.3   Mounting Options

Use the following table as a reference for installation depending on your system configuration.
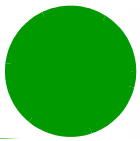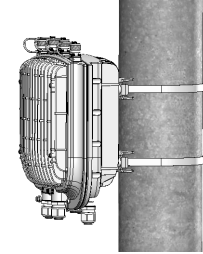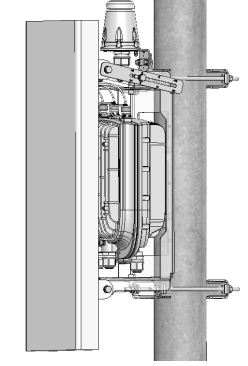
Table 2-1: Mounting Options

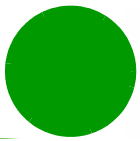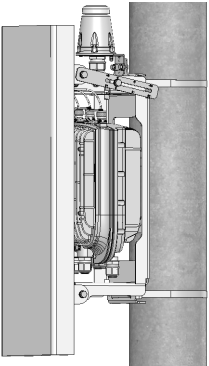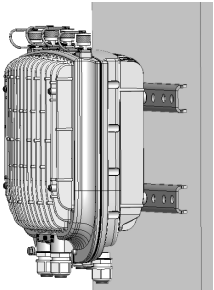| Configuration	Option	Use kit	Refer to	Example
Standalone (without an attached antenna)	Pole mount - poles between 1" - 4"	Pole mount kit (four clamps), supplied with the unit	"To mount the BTS on a pole of up to 4" (using clamps):" on page 36	
	Pole mount - poles up to 6"	■ Metal bands ■ Pole mount kit (two clamps only)	"To mount the BTS on a pole of up to 6"(using metal bands):" on page 37	
With an attached antenna	Pole mount - poles between 1" - 4"	■ Antenna ■ Pole mount kit ■ Antenna mounting kit (includes carriage and parts to attach the antenna)	"Pole Mounting with an Attached Antenna" on page 39 ■ "To prepare for mounting on a 1"-4" pole:" on page 40 ■ "To mount the antenna:" on page 43	

Table 2-1: Mounting Options

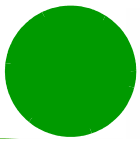| Configuration	Option	Use kit	Refer to	Example
With an attached antenna	Pole mount - poles up to 6"	■ Pole mount kit (supplied with the unit) ■ Metal bands ■ Antenna ■ Antenna mounting kit (includes carriage and parts to attach the antenna)	1 "To prepare for mounting on a pole up to 6'' (using metal bands):" on page 43 2 "To mount the antenna:" on page 43	
Standalone	Wall mount	■ Wall mount kit	"Wall Mount Installation" on page 45	
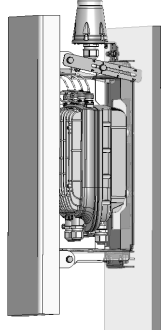
Table 2-1: Mounting Options

Configuration	Option	Use kit	Refer to	Example
With an attached antenna	Wall mount	■ Antenna ■ Antenna mounting kit (includes carriage and parts to attach the antenna) ■ Wall mount kit	1 "To mount the antenna:" on page 43 2 "Wall Mount Installation" on page 45	

2.3 BreezeCOMPACT Installation

INFORMATION

Install the unit with the bottom panel, including the LEDs, facing downward. Note the direction arrows (UP) on the sides of the BTS.

CAUTION

The weight of the BTS is 9 kg and the weight of the Pole Mounting Kit is approximately 5 kg. Make sure to plan the installation accordingly. It is recommended to use a harness and carrying hook to lift the units.

Install the unit using the supplied kit only.

2.3.1 Installing the BTS on a Pole

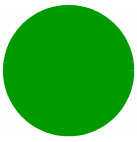The BTS can be installed on poles of various sizes using the supplied mounting kits.

■ For poles of 1''-4'' in diameter, use the supplied metal clamps.

■ For larger poles (up to 6") use the metal bands and two clamps out of the four included in the pole mount kit.

When an attached antenna is to be installed together with the BTS, use the carriage mounting kit, which includes a carriage and parts to attach the antenna. Install the BTS and the antenna on the ground and then lift the assembly up the pole using the carrying hook.

CAUTION

Do not use the hook for lifting the assembly when the GPS is installed on the carriage. This may damage the GPS. Tie the carriage on both sides and carefully lift it up the pole.

2.4   Pole Mounting without an Attached Antenna (Standalone)

When not using the attached antenna, mount the BTS on the pole using the pole mount kit supplied with the BTS.

To mount the BTS on a pole of up to 4" (using clamps):

Refer to Figure 2-1 and Figure 2-2.

1   Thread the four rods through the nuts, washers, spring washers, and two clamps, and fasten the clamps to the BTS mounting holes.

2   Attach the BTS with the mounted clamps to the pole.

3   Thread the other two clamps to the rods and use the nuts washers and spring washers to fasten and fix the BTS to the pole.
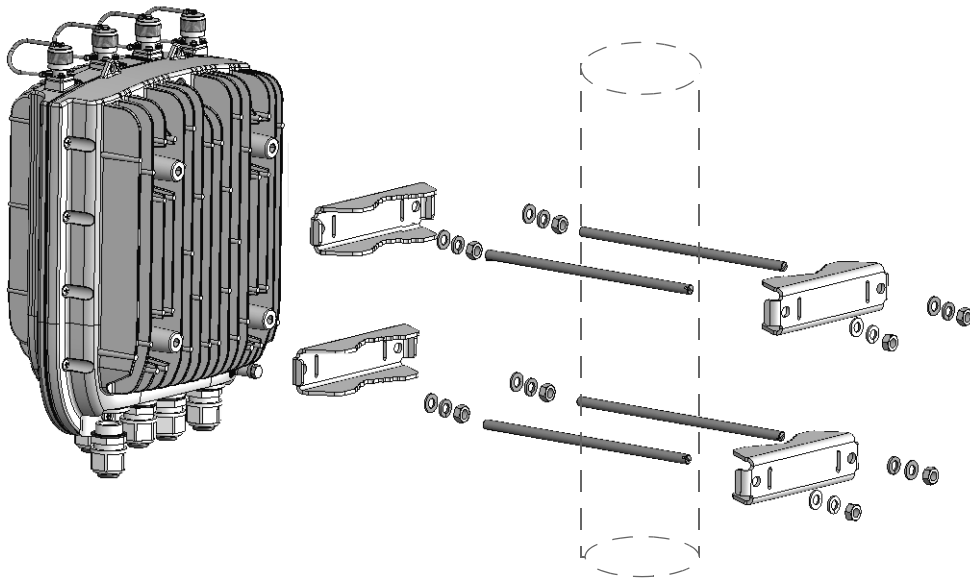

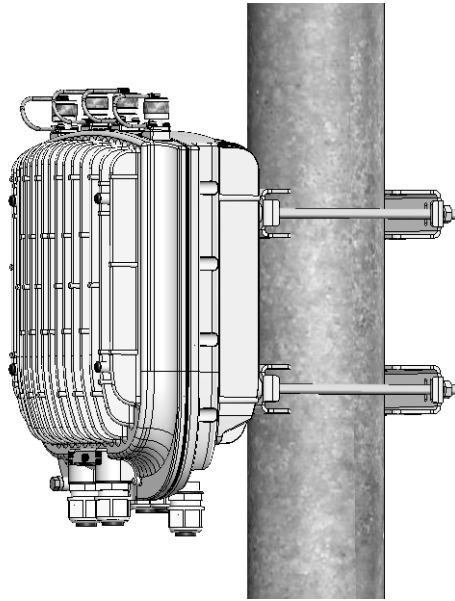**Figure 2-1: Pole Mounting without the Carriage**

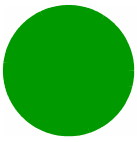**Figure 2-2: BTS Installed on the Pole**

To mount the BTS on a pole of up to 6"(using metal bands):

Refer to Figure 2-3 and Figure 2-4.

1 Thread two metal bands through the designated grooves in two clamps.

2 Attach the clamps to the BTS and use the screws, washers and spring washers to fasten the clamps to the BTS (Figure 2-3)

3 Close and fasten the bands.

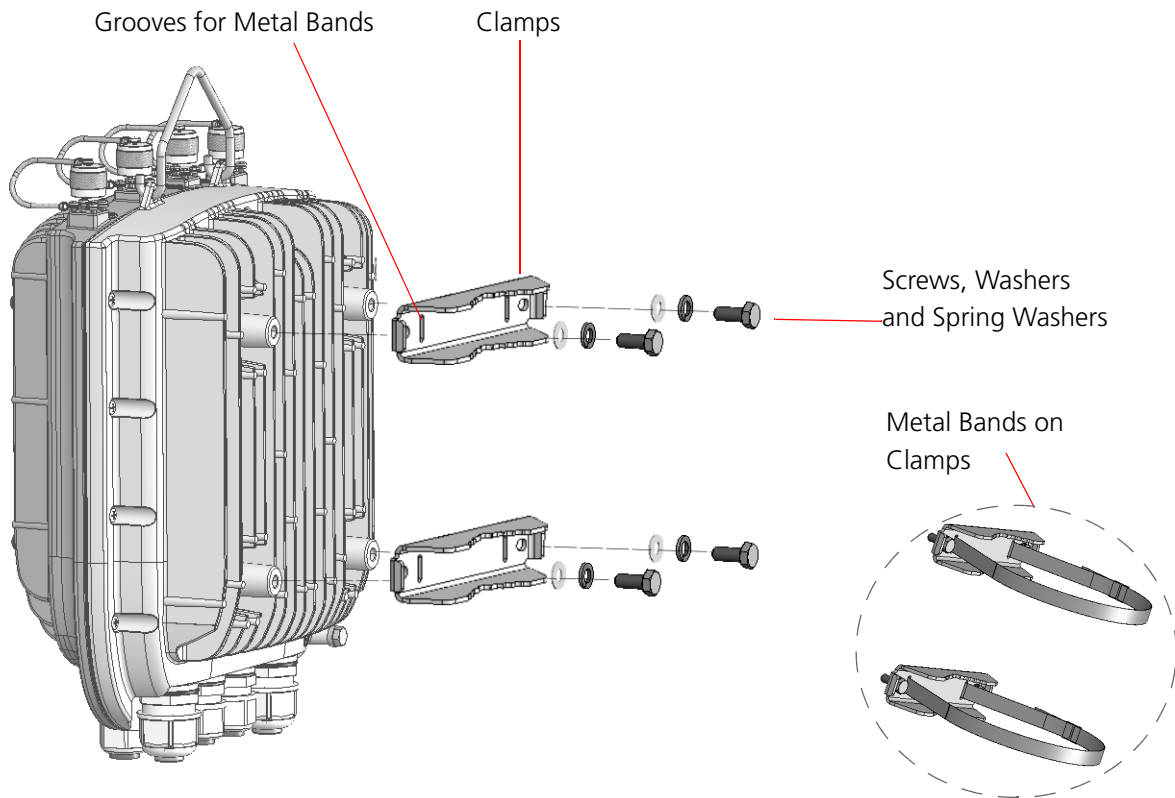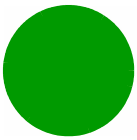Grooves for Metal Bands   Clamps

Screws, Washers
and Spring Washers

Metal Bands on
Clamps
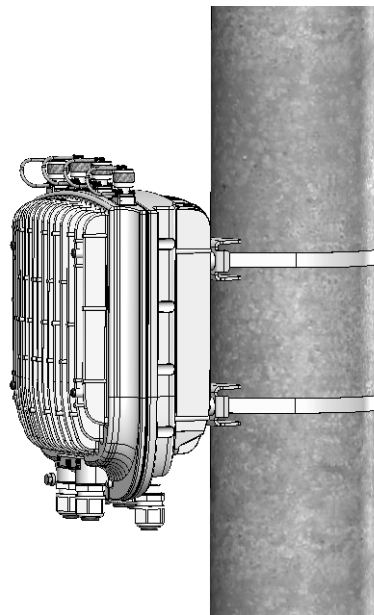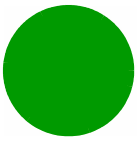
Figure 2-3: Attaching the Clamps

Figure 2-4: BTS Installed on Poles Using Metal Bands

2.5 Pole Mounting with an Attached Antenna

When using the attached antenna, you first mount the BTS on the carriage, then also the antenna (and optionally GPS), and finally lift the assembly up the pole, attach the clamps/metal bands and fasten the screws.

2.5.1 Package Content

■ Antenna

■ Antenna mounting kit, including:

» One carriage

» 2 x Antenna tilting arms

» 6 x M8 Hex nuts

» 6 x M8x22 screws

» 6 x M8 flat washers

» 6 x M8 spring washers

■ Pole mount kit - use the following parts:

» Clamps/metal bands depending on pole diameter

» 4 rods

» 8 x nuts, washers, and spring washers

■ Hook for carrying the assembly up the pole

TBD Describe single sector installation including Double Dual Slant attached antenna with the RF cable tails.

TBDAlso describe 2 sectors installation with 2 separate Dual Slant antennas located in space diversity of 1.3m with additional RF cables 1m/0.5m.
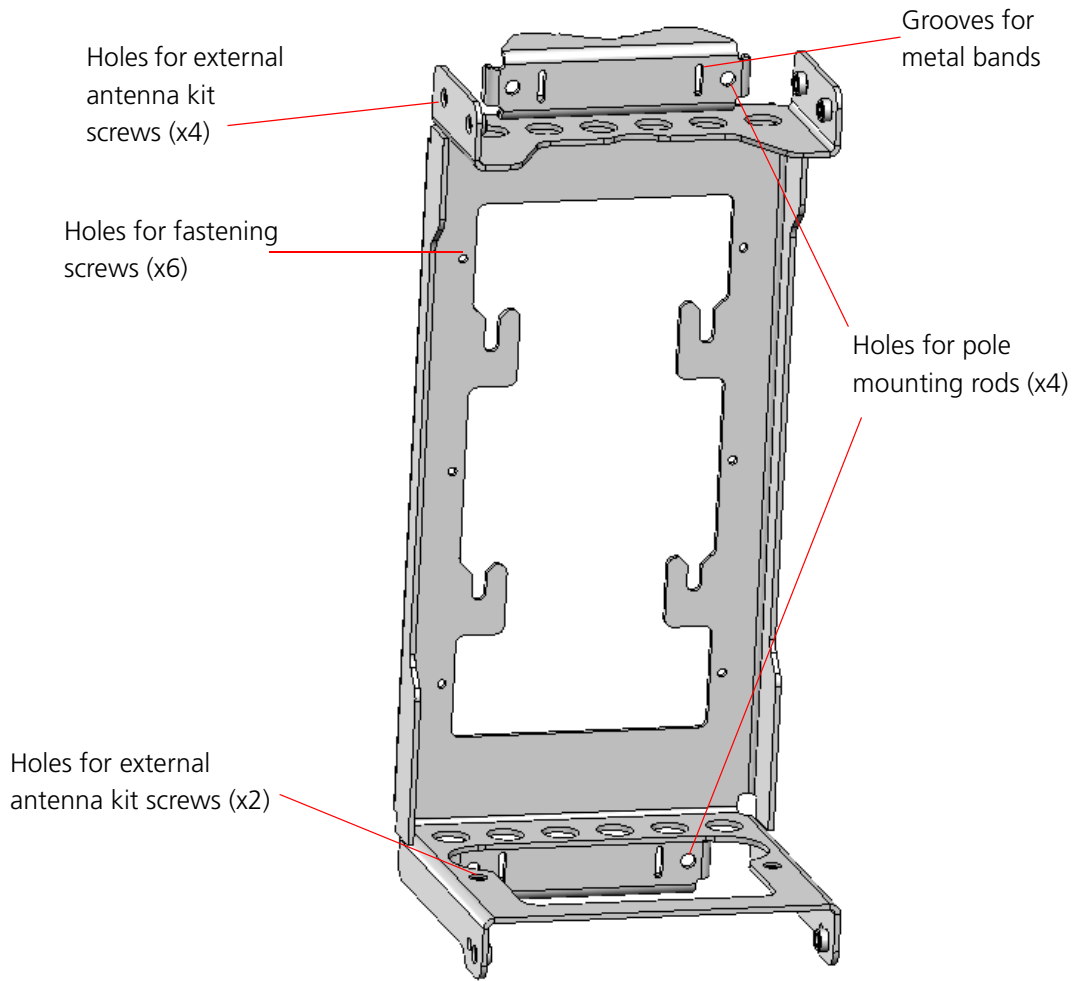
Holes for external
antenna kit
screws (x4)

Grooves for
metal bands

Holes for fastening
screws (x6)

Holes for pole
mounting rods (x4)

Holes for external
antenna kit screws (x2)
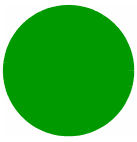
Figure 2-5: The Carriage, Part of the Antenna Mounting Kit

2.5.2   Mounting the BTS and Antenna on the Carriage

CAUTION

⚠️

The weight of BTS is 9 Kg and the weight of the Pole Mounting Kit is approximately 5 kg. Plan the installation accordingly. It is recommended to use a harness to lift the units.

Install the unit using the supplied kit only.

To prepare for mounting on a 1"-4" pole:

1   Attach the M8x20 nuts, washers and spring washers to the BTS and slightly fasten.

Carrying hook

M8x20 nuts, washers
and spring washers

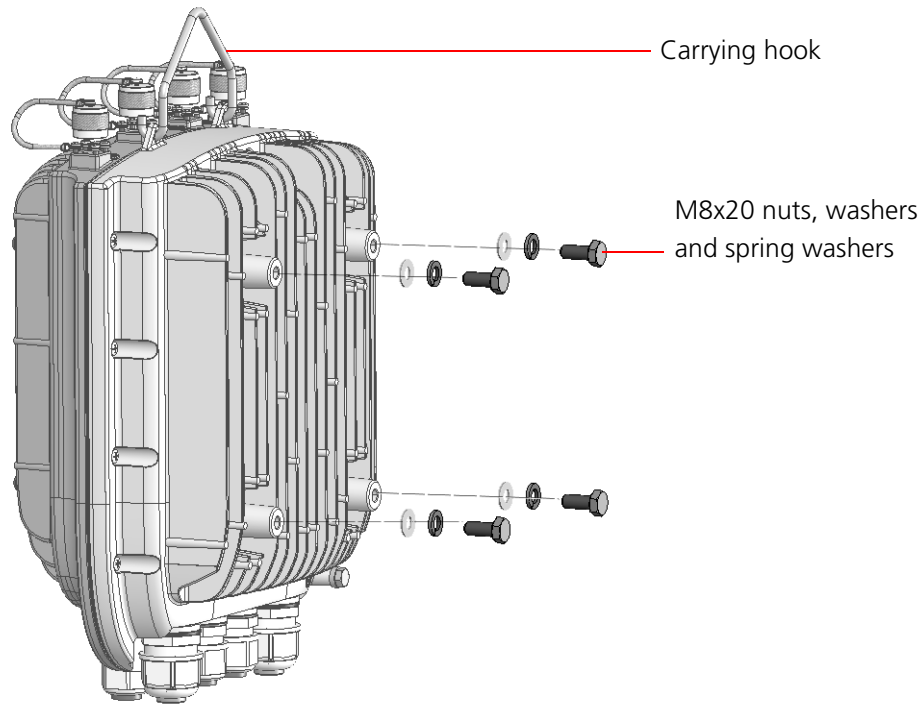**Figure 2-6: Preparing the BTS for Installation**

2   Hang the BTS screws on the BTS carriage hanging hooks. Locate the carriage hooks between the washers and the BTS.

3   Insert the four threaded rods through the holes in the carriage. If you intend to mount the GPS on the carriage, thread the rods through the GPS bracket as well (Refer to "To install the GPS on the carriage:" on page 48' and Figure 2-8).

4   Attach nuts, washers and spring washers to both sides of the threaded rods and fasten to fix the rods in place on the carriage (Figure 2-7).

M8x20 nuts, washers and
spring washers on both
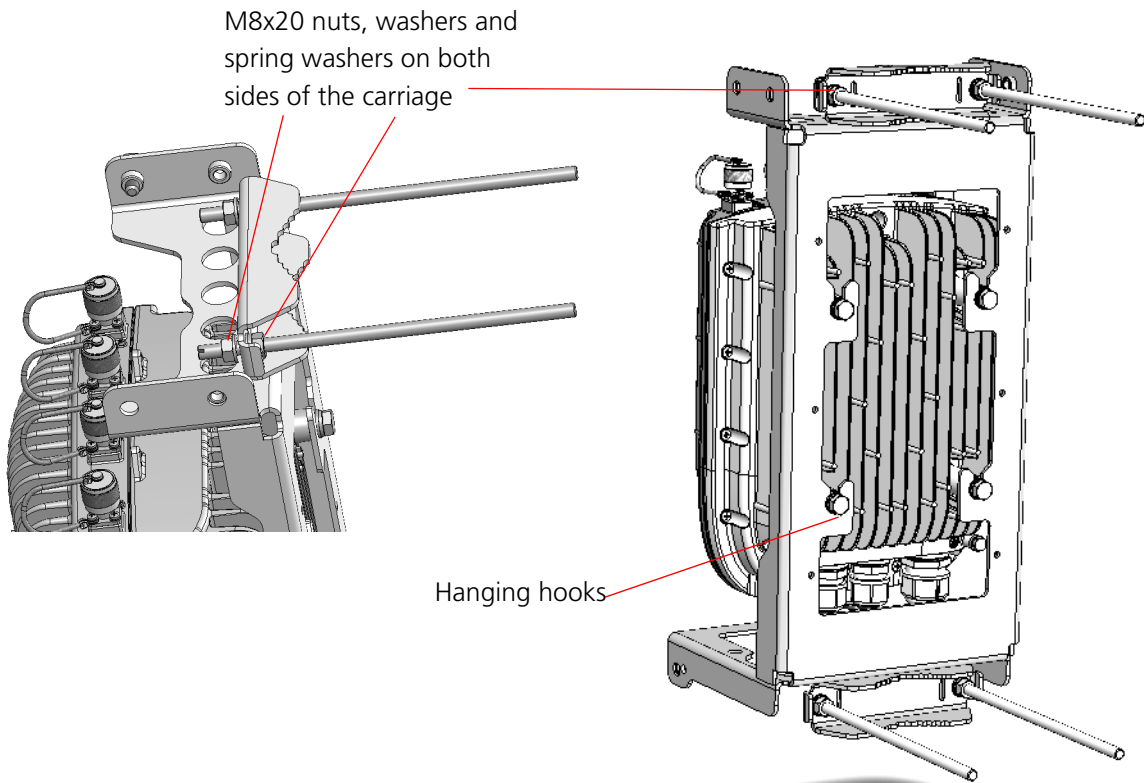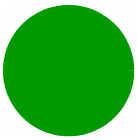sides of the carriage

Hanging hooks

Figure 2-7: BTS Installed on the Carriage

M8x20 nuts, washers and
spring washers on both
sides of the carriage

GPS Bracket (optional)
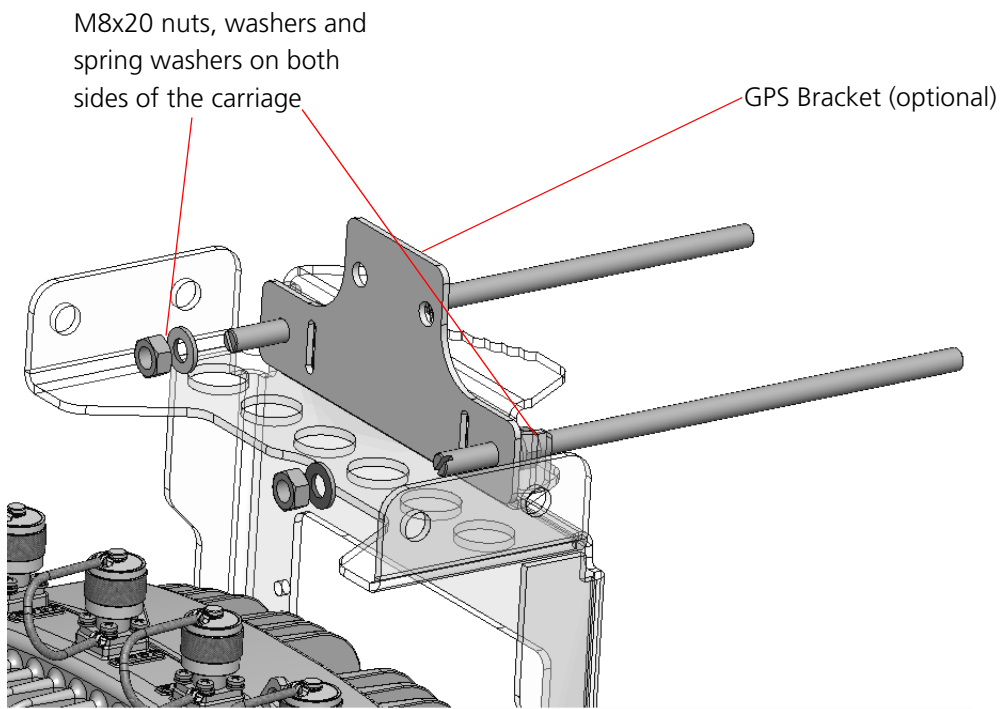
Figure 2-8: Installing the GPS Bracket
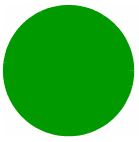
To prepare for mounting on a pole up to 6'' (using metal bands):

1   Mount the BTS on the carriage as described in step 1-2 above.

2   Thread two metal bands through the grooves on the carriage.

To mount the antenna:

1   Attach the antenna tilting arms to the carriage using screws, washers and spring washers. Do not over tighten.

2   Assemble the antenna and fasten the two lower screws to the carriage and the upper two to the brackets.

Attached Antenna

Antenna Fastening
Screws (x4)

Antenna Tilting
Arms (x2)

Antenna Alignment
Screw (x2)
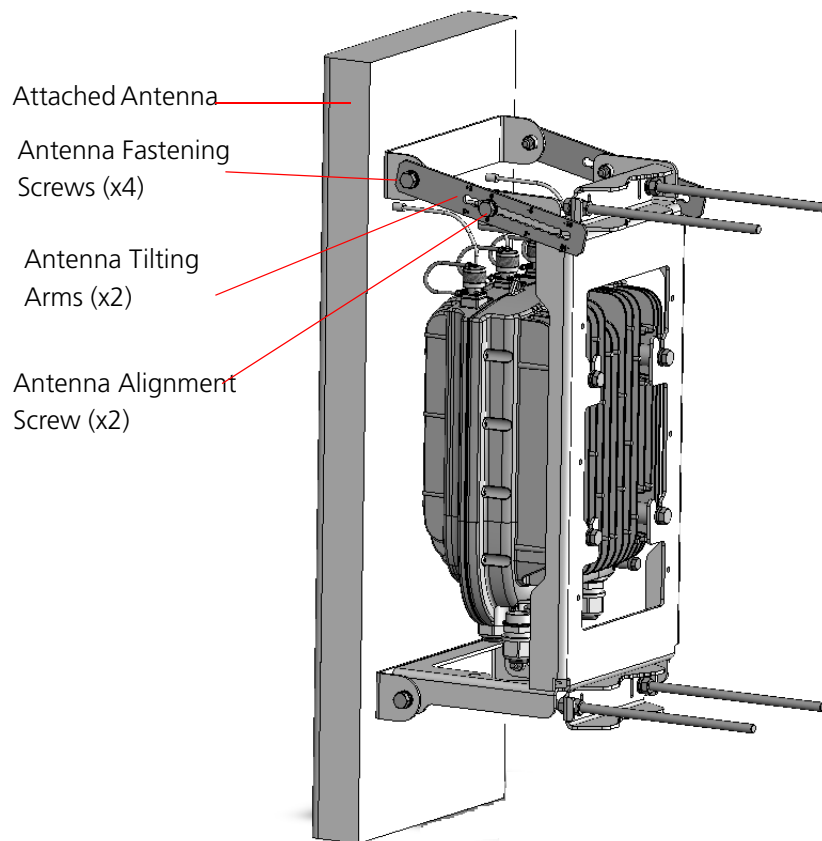
Figure 2-9: Assembling the Antenna on the Carriage

To mount the assembly on the pole:

1 Lift the assembly up the pole using the hook.

2 For 1"-4" poles attach the other two clamps; For up to 6" poles close the metal bands and fasten.

3 Fasten all the screws. Apply torques of 80 [Lib*In] = 9 [N*m] to the M8 screws.

4 Tilt the antenna as necessary and fasten the alignment screws (for wall mount tilting is limited).

Figure 2-10: BTS and Attached Antenna Mounted on a 1"-4" Pole
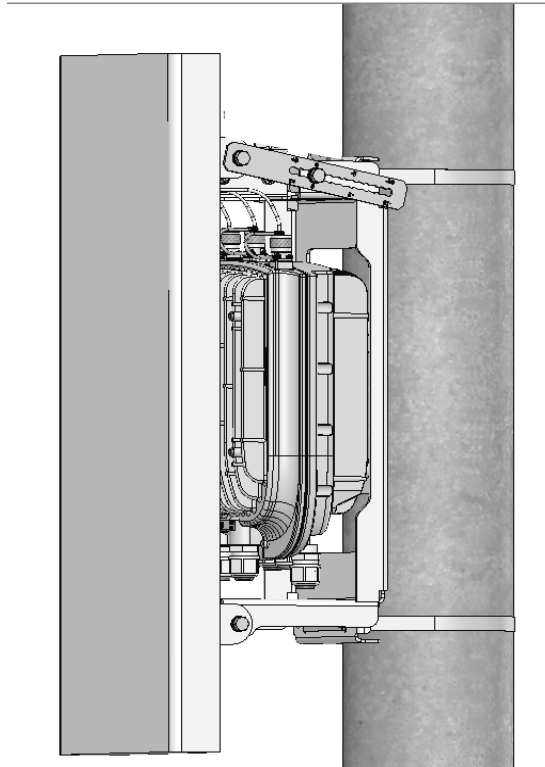
Figure 2-11: BTS and Attached Antenna Mounted Using Metal Bands

2.5.3   Wall Mount Installation

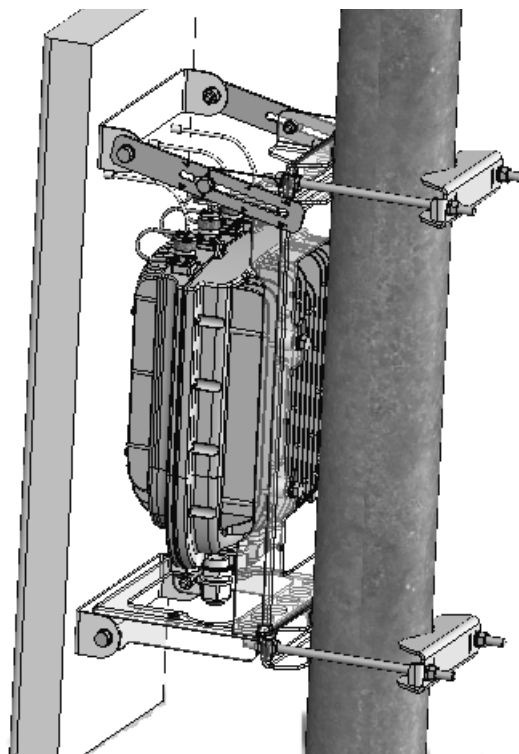The BTS can be installed on walls. This requires attaching and fastening the carriage with the BTS to the wall using suitable securing means (not supplied). The location of the screws should be planned with maximum precision.

To install the BTS on a wall:

1 Place the carriage on the wall and mark the exact location of the holes to drill.

2 Drill the holes and use four metal dowels and screws to secure the carriage to the wall.

3 Insert the tilt control screws (M8x20) into the middle-side hole of the carriage on both sides (see Figure 2-12).

Antenna
Connections

Holes for
wall mount

Screws (to be
fastened using
dowels

Figure 2-12: Mounting the Carriage on the Wall

4 Hang the BTS on the BTS carriage hanging hooks (see "To prepare for mounting on a 1"-4" pole:" on page 40).
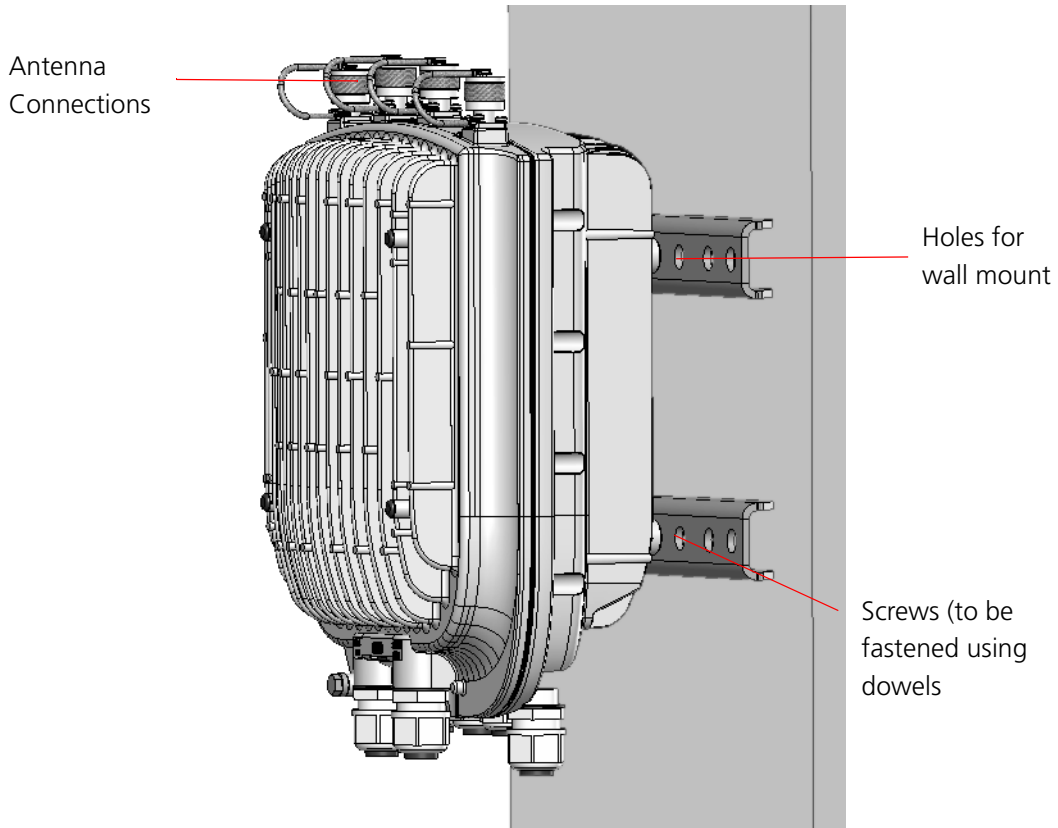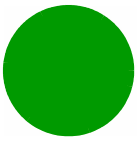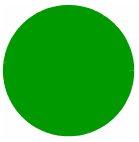
5 Attach and fasten all the screws.

2.6   GPS Installation

GPSs are used to synchronize the air link frames of Intra-site and Inter-site located sectors to ensure that in all sectors the air frame starts at the same time, and that all sectors switch from transmit (downlink) to receive (uplink) at the same time. This synchronization is necessary to prevent Intra-site and Inter-site sectors interference and saturation (assuming that all sectors are operating with the same frame size and with the same DL/UL ratio).

Usually the GPS is installed on the top of the tower, However it can be installed on the carriage with a special mounting kit.

CAUTION

Do not use the hook for lifting the assembly when the GPS is installed on the carriage. This may damage the GPS. Tie the carriage on both sides and carefully lift it up the pole.

Make sure to position the GPS such that there is no obstacle (buildings, antennas, chimney, large trees, etc.) casting a shadow over the GPS antenna. The GPS antenna should have 360° open sky with no obstacles.

2.6.1   Package Content

■ GPS receiver +antenna attached to a mounting bracket

■ Optional: Mounting kit for carriage, including

  » GPS Carriage bracket

  » Locking bracket

  » Screws, washers, spring washers

■ Metal Bands (for pole mounting on poles up to 4")

■ GPS Quick installation guide

2.6.2   Additional Installation Requirements

Items marked with an asterisk (*) are available from Alvarion.

■ Cable (IDU-ODU) - available in three lengths: **3m**, 20m, 50m, 100m*. Package includes:

  » Shielded Cat.5E Ethernet cable

  » Two shielded RJ-45 connectors

  » One RJ-45 plastic cover**TBD?**

■ A grounding cable with appropriate terminations for connecting the indoor unit's ground terminal to the rack or to a ground connection.

■ Installation tools

2.6.3   Installing the GPS

➡ **To install the GPS on a pole:**

Use the metal bands to attach and fasten the GPS to a pole of up to 4" (See Figure 2-13). For wall-mounting, thread 4mm screws (not supplied) through the designated holes and tighten firmly.

GPS Antenna

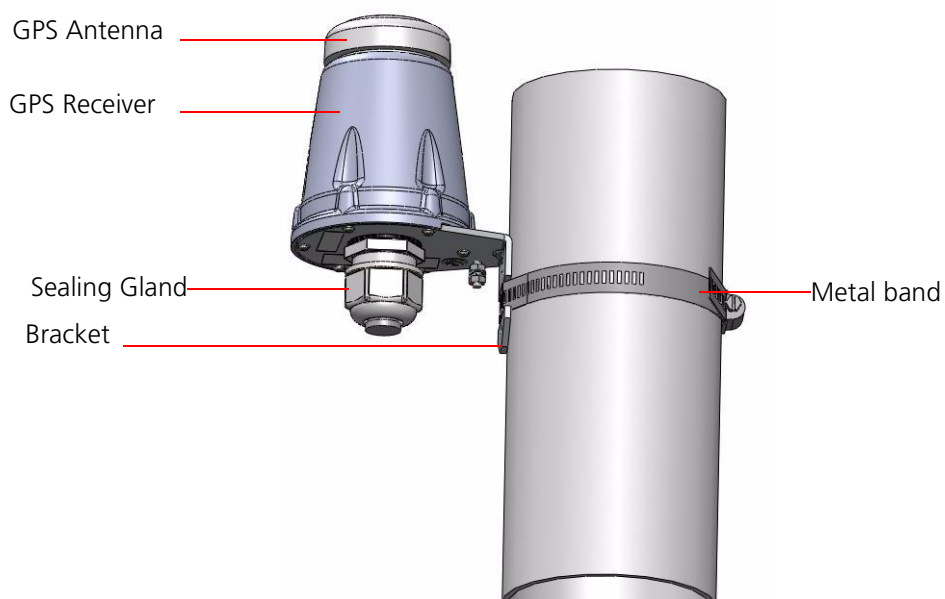GPS Receiver

Sealing Gland

Bracket

Metal band

Figure 2-13: Pole Mounting the GPS Using Metal Bands (4" Pole)

➡ **To install the GPS on the carriage:**

1   Thread the upper two rods through the carriage and also through the GPS bracket.

2   Attach nuts, washers and spring washers to both sides of the threaded rods and fasten to fix the rods in place on the carriage (Figure 2-14).

M8x20 nuts, washers and
spring washers on both
sides of the carriage
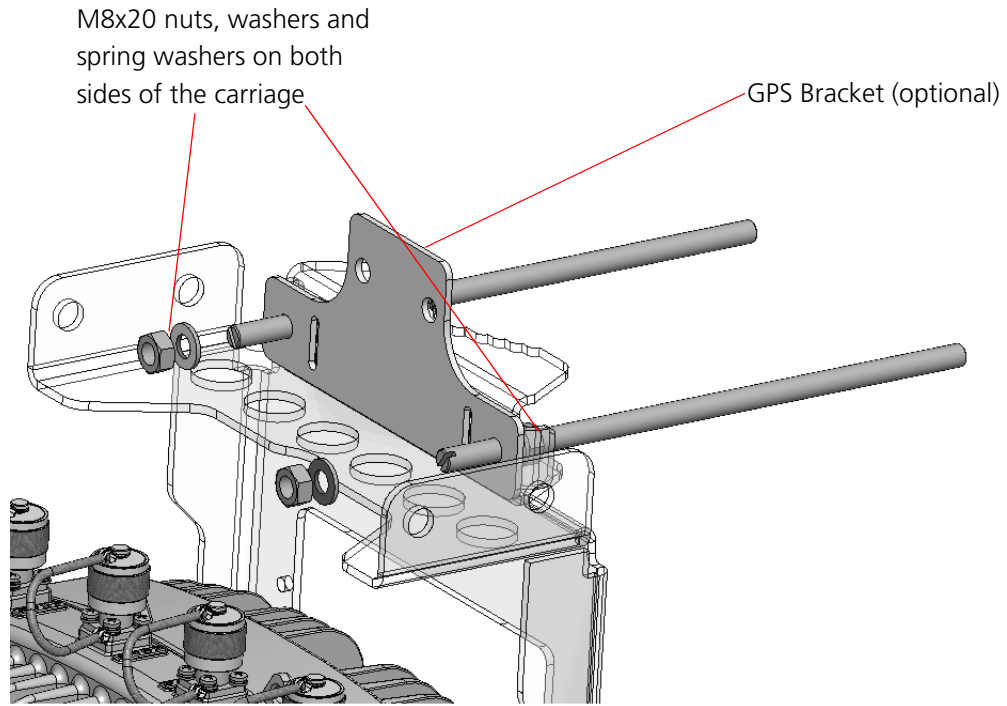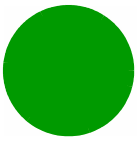
GPS Bracket (optional)

Figure 2-14: Installing the GPS Bracket

3 Attach the GPS bracket to the carriage bracket, add the locking bracket and fasten the two screws.
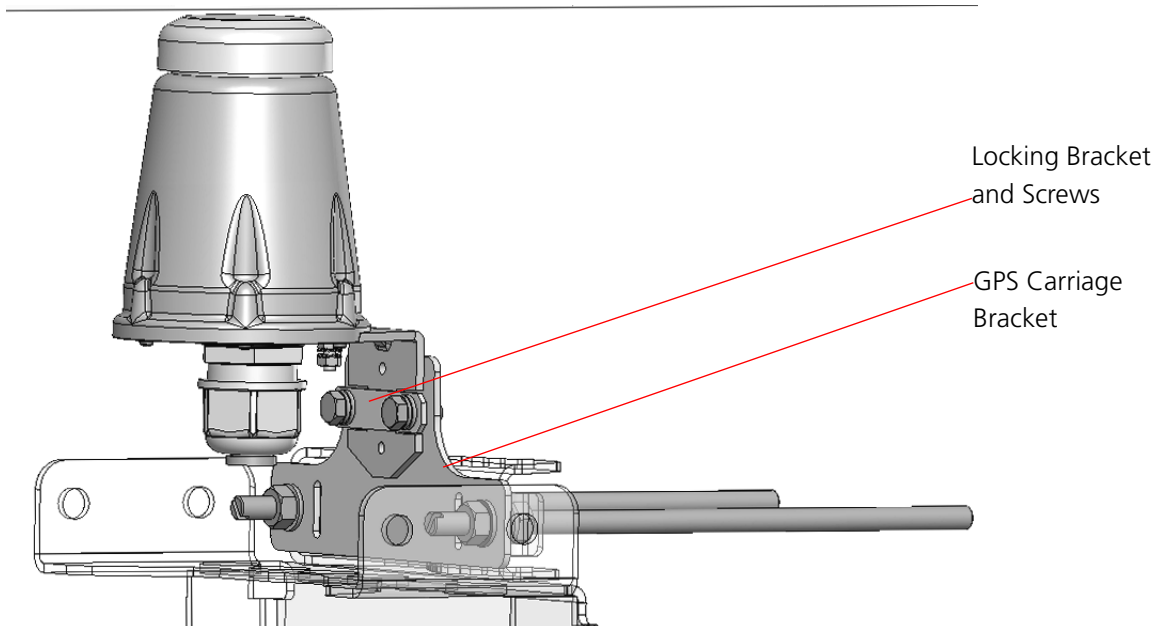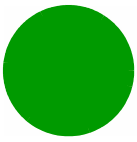
Locking Bracket
and Screws

GPS Carriage
Bracket

Figure 2-15: GPS installed on the Carriage

2.6.4   Connecting the GPS

The Outdoor GPS Receiver is connected to the BTS via a Cat. 5E Ethernet cable. Before connecting the cable, make sure that the length of the cable is sufficient to reach the BTS.

The shielded Cat.5E Ethernet cable is supplied with a rubber bushing and a sealing gland nut. During installation, you replace the sealing gland nut and rubber bushing that are on the GPS with the same parts that are supplied with the cable.

To connect the GPS cable:

Refer to Figure 2-16.

1   Measure the distance and make sure that the length of the cable is sufficient to reach the BTS.

2   Remove the sealing gland plug from the gland nut.

3   Open the sealing gland nut and remove it. Do not disassemble the gland base from the bracket.

4   Remove the rubber bushing from the sealing gland.

INFORMATION

The removed parts (sealing gland plug, nut and rubber bushing) can be disposed of, as they are replaced by the same parts supplied with the GPS cable.
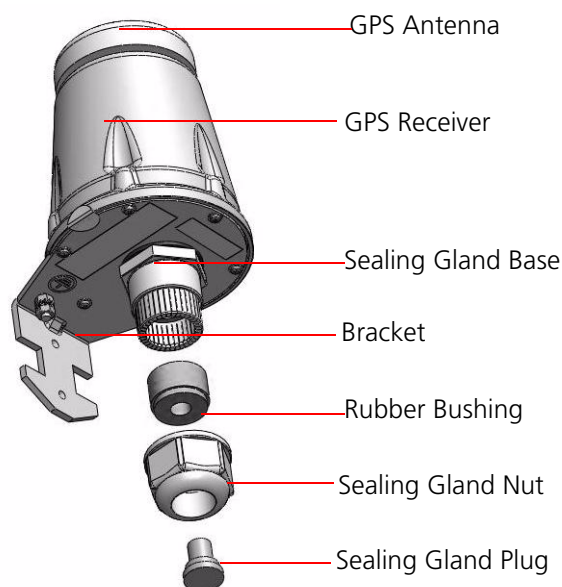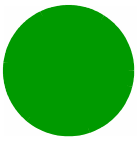
GPS Antenna

GPS Receiver

Sealing Gland Base

Bracket

Rubber Bushing

Sealing Gland Nut

Sealing Gland Plug

Figure 2-16: GPS Components

5 Insert the GPS cable (side labeled GPS) into the sealing gland base (Figure 2-17) and connect it to the RJ-45 connector at the bottom of the GPS (Figure 2-18).

Rubber Bushing
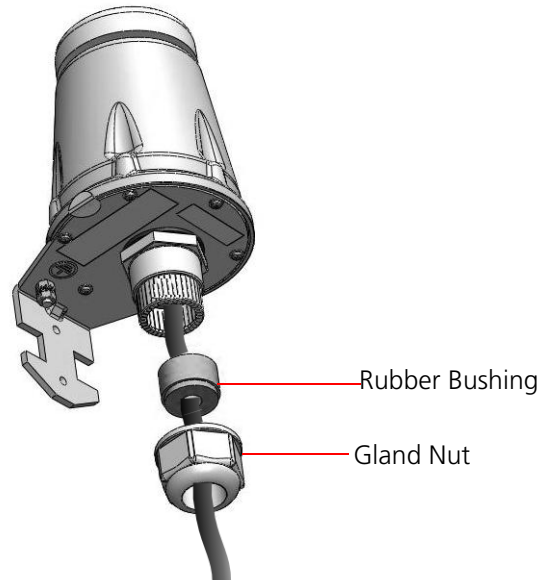
Gland Nut

Figure 2-17: Connecting the GPS Cable

Grounding

Sealing Gland with RJ-45 Connector
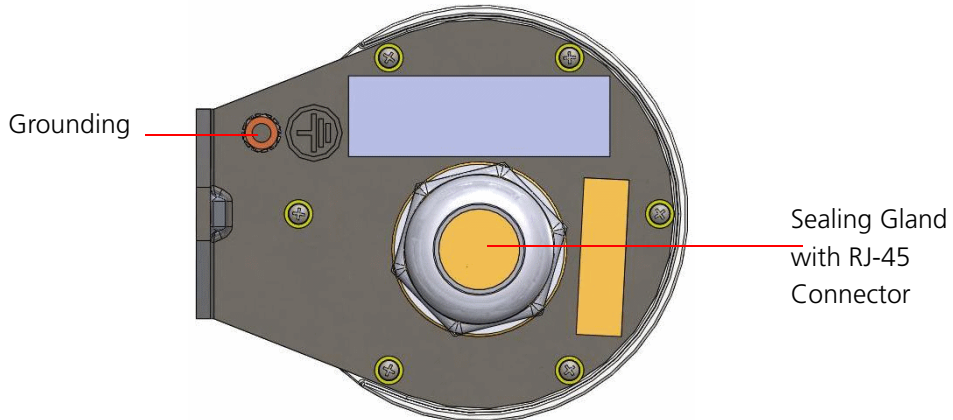
Figure 2-18: GPS Bottom View

6 Tighten the rubber bushing on the cable inside the gland base.

7 Tighten the gland nut.

8 Connect the other end of the data cable to the GPS IN connector located on the BTS panel (see Figure 2-21).

9 Connect the grounding cable to the grounding screw located on the bottom panel of the GPS bracket. Connect the other end of the grounding cable to a good ground (earth) connection

Grounding screw
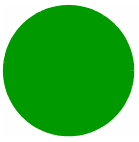
Figure 2-19: Trimble Lassen GPS Grounding

2.7 Connecting the BreezeCOMPACT Cables

2.7.1 Introduction

This chapter describes how to prepare and connect all the required cables to the BTS. A DC and a DATA cable are required to connect the BTS to the backhaul.

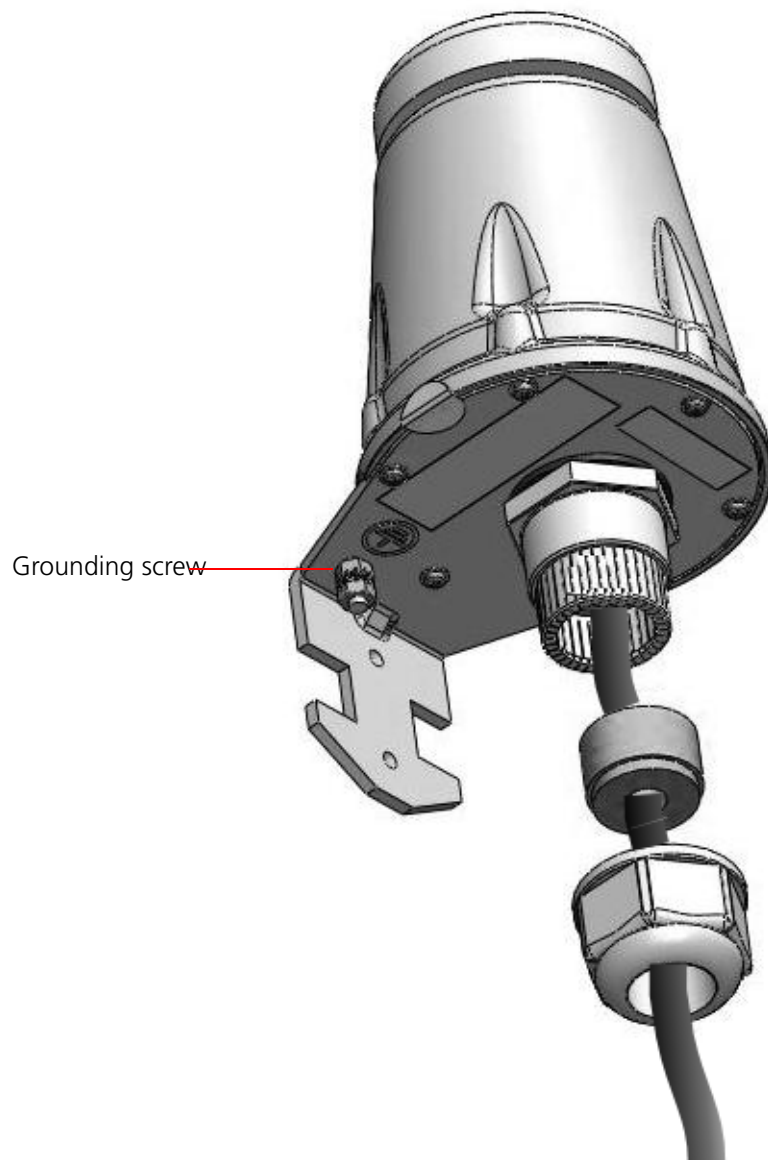The BreezeCOMPACT is provided with sealing glands on all the cable connectors. The cables are to be connected to the BTS by inserting the cable connector through the sealing gland. Some of the cables provided by Alvarion are supplied crimped and with a sealing gland already attached to them.

For connecting cables to connectors with sealing glands, refer to "Using the Connector Sealing Accessories" on page 64.

To ensure proper sealing of the glands use only the special wrench supplied with the BTS (see Figure 2-20).
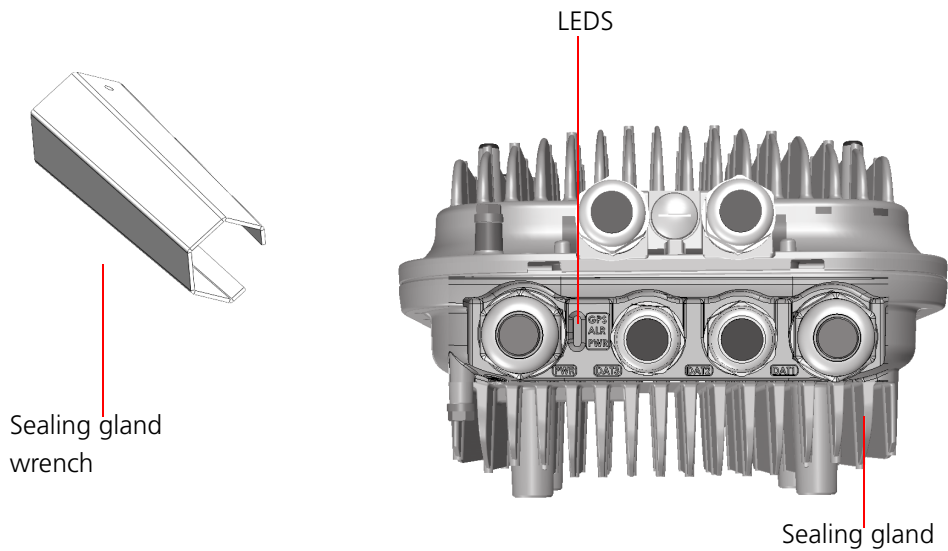
Figure 2-20: BreezeCOMPACT with Sealing Gland Wrench

Grounding   GPS IN (RJ-45)   SYNC OUT (RJ-45)

PWR (6-pin mini-fit)   DAT3 (RJ-45)   DAT2 (RJ-45)   DAT1(Fiber Optics)
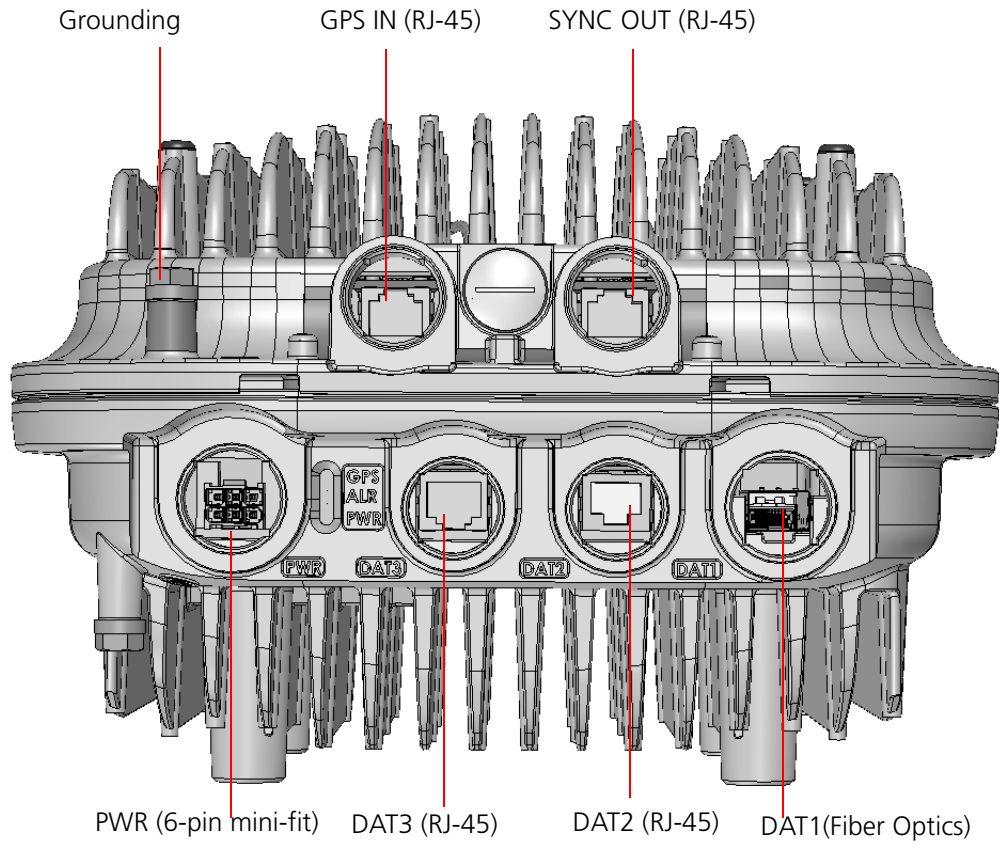
Figure 2-21: BreezeCOMPACT Connectors
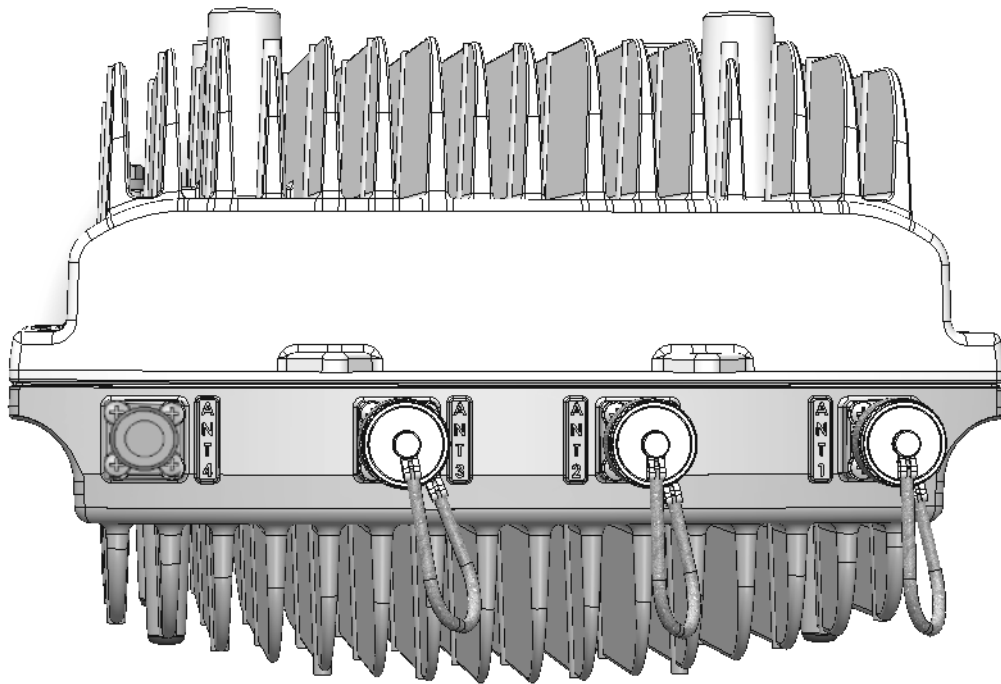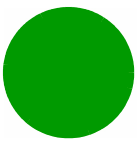
Figure 2-22: BreezeCOMPACT Antenna Connectors

Table 2-2: BTS Connectors

Connection	Connector Type	Functionality	Cable
PWR	4-pin mini-fit Molex	Power connection, DC in -40 to -60 VDC at connector input. Maximum consumption: 150W	Shielded 16AWG Length: ≤90m
DAT1	10/100/1000BASE-T Optic SFP shielded **LC female**	For data and Inband management	OM3 50um multimode optical cable Length: ≤100m
DAT2	10/100/1000BASE-T RJ-45, female **1G**	For data and Inband management	Shielded RJ-45 CAT-5e Length: ≤100m

Table 2-2: BTS Connectors (Continued)

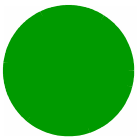| Connection	Connector Type	Functionality	Cable
DAT3	RJ-45	For Out Of Band management or Data + Inband management: ■ PoE Data + DC Out ■ PoE Data + DC In (depending on configuration) ■ PoE in ≤ 70W (allowed only for 2x2) ■ PoE out for camera connection ≤ 20W ■ OOB management or Data +IB management or Future Ethernet chain	Shielded RJ-45 CAT-5e Length: ≤100m
⏚ (GND)	Grounding screw	Connection to ground (earth)	
GPS IN	RJ-45	Connection to GPS with lightning arrestors to the master BTS via RS-422 signals, or Chaining GPS signals connection to slave BTS from previous GPS out connector (future option).	Shielded RJ-45 CAT-5e Length: ≤20m
SYNC OUT	RJ-45	Chain GPS signals between BSTs (master / slave). Chaining is a future option.	Shielded RJ-45 CAT-5e Length: ≤20m
ANT1 - ANT4	4 x N-Type jack, 50 Ohm, lightning protected	Connection to external antenna(s). See Section 2.7.8. **CAUTION** To prevent lightning damage to the unit, connect only DC ground lightning protected antennas with short LMR-400 cables (0.5m/1m) to these ANT1-4 connectors.	LMR-400 Length: ≤1m
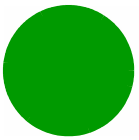
2.7.2   Connection Diagrams

Figure 2-23: Single Sector with Double Dual-Slant Antenna Connections

Figure 2-24: Two Sectors with Two Double Dual-Slant Antenna Connections

2.7.3   Connecting the Grounding Cable

Use 10 AWG cable for grounding.

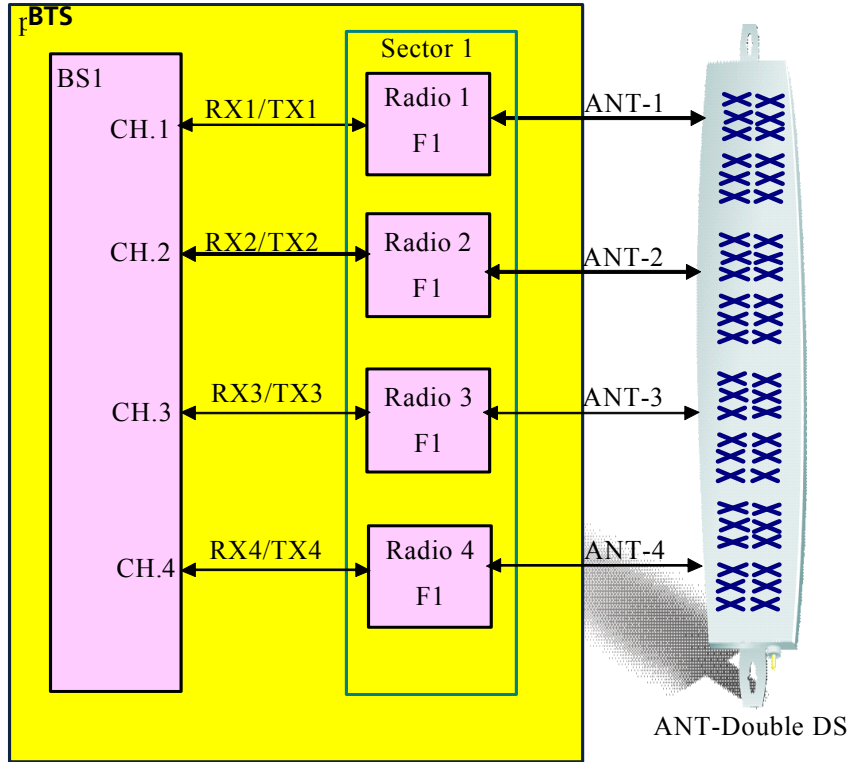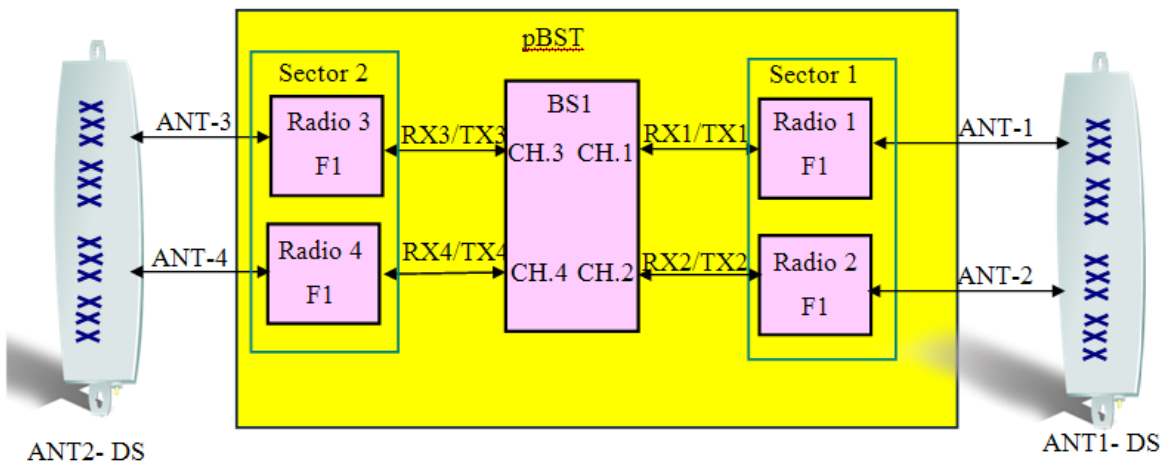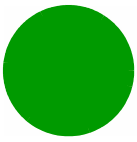When grounding the unit, use the GND (ground) screw on the unit as a grounding point. The Grounding screw (marked ⏚) is located on the connectors panel of the unit (see Figure 2-21).

To connect the grounding cable:

1   Connect one end of a grounding cable to the ground terminal and firmly tighten the grounding screw.

2   Connect the opposite end of the grounding cable to a ground connection.

2.7.4   Preparing and Connecting the Data Cable (RJ-45 Connector)

To prepare a Data cable, use either the cable kit available from Alvarion or one of the authorized indoor-outdoor CAT 5E cables listed in Table 2-4, and follow the wiring instructions as detailed herein. The Alvarion's cable kit includes an RJ-45 connector and a protective cover for the connector. This cable should be used when the power is fed through the DC 48V connector.

When connecting any data equipment (switch, hub, PC) to the DAT 3 connector, use only a 4-wire cable, connecting pins 1, 2, 3 and 6. Power on pins 4, 5, 7 and 8 may damage your equipment, therefore these pins should not be connected.

NOTE!

It is recommended not to crimp 4-5 and 7-8 pairs as power might be fed towards the network device connected to the BTS.

When feeding power to a backhauling system, use an 8-wire cable. The following table shows the required wire pair pin-to-pin connections, for 4-wire and 8-wire cables. + means connected, - means not connected.

Table 2-3: Wire to Pin Mapping for Data Cable for the BTS

Pin	Description	Connection to Data Equipment (4-wire)	Connection for Backhauling (8-wire)
1	Ethernet TXP	✓	✓
2	Ethernet TXN	✓	✓
3	Ethernet RXN	✓	✓
4	PoE 48V Pos.	N/A	✓
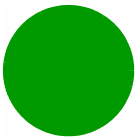
Table 2-3: Wire to Pin Mapping for Data Cable (Continued)for the BTS (Continued)

Pin	Description	Connection to Data Equipment (4-wire)	Connection for Backhauling (8-wire)
5	PoE 48V Neg.	N/A	✓
6	Ethernet RXN	✓	✓
7	PoE 48V Pos	N/A	✓
8	PoE 48V Neg.	N/A	✓
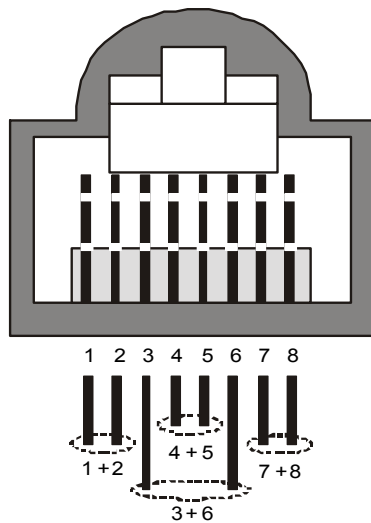
Figure 2-25: RJ-45 Data Connector

Table 2-4: Approved Category 5E Ethernet Cables

Manufacturer	Part Number
UNIXTAR www.unixtar.com.tw	C5ES4P24
WESTERN www.westernwire.org	KF804E1D
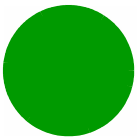
To assemble the RJ-45 connector:

1 Thread the RJ-45 plastic cover on the cable.

2 Reveal 5cm of outer sleeve, then reveal 4cm of the inner sleeve.

3 Release all wires and arrange them in order, then cut them to 1cm lengths.

4 Insert the wires into the connector and press it using a standard tool (it is recommended to solder the shield drain wire to the connector as in the picture). Note the Pin assignment for each cable.

5 Push the plastic cover into place.
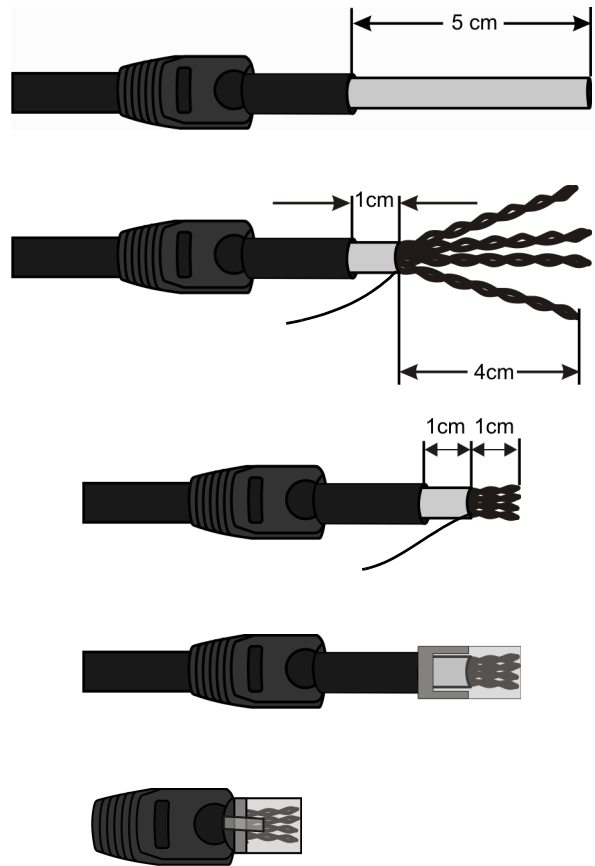
To connect the data cable:

For connecting cables to connectors with sealing glands, refer to "Using the Connector Sealing Accessories" on page 64.

1 Connect one end of the cable to the DAT3 connection on the BTS.

2 Connect the other end of the data cable the backhauling equipment. See Figure 2-23.

INFORMATION

The combined lengths of the Ethernet cables should not exceed 100m.

2.7.5   Preparing and Connecting the Power Cable

■ Cable type: 6-pin mini-fit, DC in -40 to -60VDC at connector input. 2 wires are connected to -48VDC, 2 wires are connected to return signal and 1 wire to the Ground.
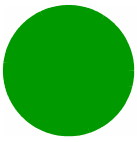
■ Maximum power consumption:150W

To prepare the power cable:

1 Make sure you have the following components:

   » Outdoor shielded 4x16AWGpower cable

   » Five terminals for Mini-Fit 16 AWG wires

   » Mini-fit 6-pin housing that fits the terminals

   » A crimping tool for preparing the wires, suitable for 20-16 AWG/0.1-1.5 mm^2 wires with open barrel terminals. It is recommended to use the Pressmaster$^®$ DRB-0115.
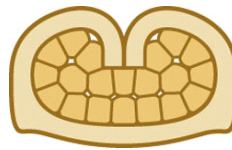
Figure 2-26: Open Barrel Terminal

2 Insert the cable through the sealing gland.

3 Remove as small a length as possible of the cable's external jacket to expose the wires.

4 Insert a terminal into the appropriate Pressmaster slot.

5 Insert the wire into the terminal within the slot and squeeze the tool's handles to crimp the terminal.

Wire external   Terminal
jacket
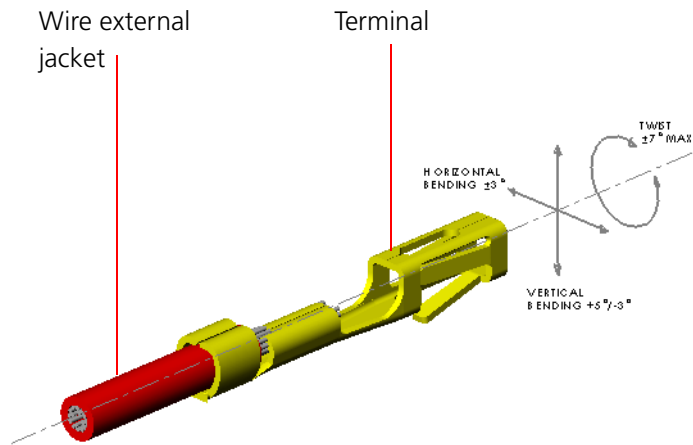
Figure 2-27: Crimped Wire

6 Repeat steps 3 and 4 for each of the five wires.

7 To insert a contact into the housing, align the contact with the desired cavity at the rear of the housing as shown in Figure 2-28. In all rows the locking lance must be facing away from the housing latch to engage the contact in the cavity. Push the contact straight into the cavity until an audible click is heard. Give the lead a light tug to confirm that the contact is locked in place.

INFORMATION

Figure 2-28 reflects the direction in which the pins are connected. Make sure that you connect the pins accordingly.

Housing
latch

Locking lance
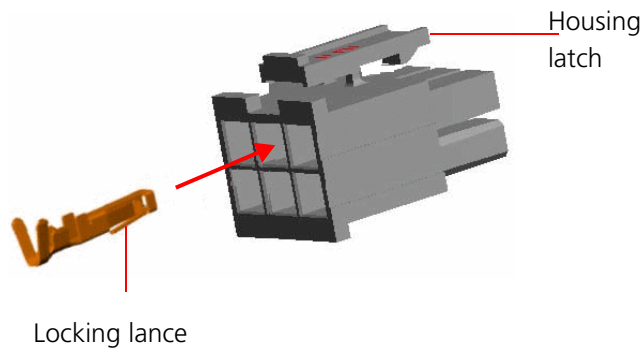
Figure 2-28: Inserting a Contact into the Housing
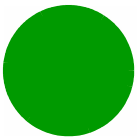
8 Connect the wires to the mini-fit connector as follows (see Figure 2-29):

» Pins 1 (48V_RTN): Black (16 AWG min. wire)

» Pin 2 (48V_RTN): Green (16 AWG min. wire)

» Pin 3: Not connected

» Pin 4 (+48V): Red (16 AWG min. wire)

» Pin 5 (+48V): White (16 AWG min. wire)

» Pin 6 (Shield) - cable shield)

9 Attach suitable terminal rings to the side that connects to the power source.

10 When connecting to a circuit breaker, see Figure 2-29 below for the location on the cable. Use a 20A breaker.
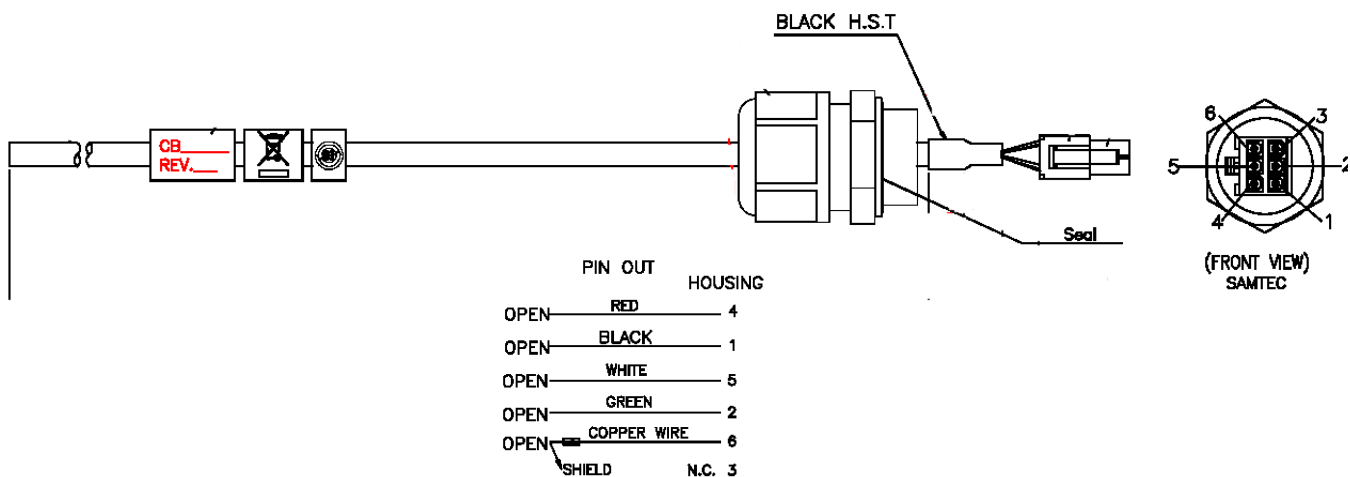
Figure 2-29: Power Cable for BreezeCOMPACT

To connect the power cable:

For connecting cables to connectors with sealing glands, refer to "Using the Connector Sealing Accessories" on page 64.

1 Connect the cable to the PWR connector on the unit and close the sealing gland.

2 Connect the other end of the power cable (with the terminal rings) to the DC power source.

3 Connect the AC/DC power supply to the mains

The system is now powered-up.

2.7.6   Connecting the GPS Cable

Connect the data cable to from the GPS to the GPS IN connector located on the BTS panel (see Figure 2-21).

2.7.7   Using the Connector Sealing Accessories

The outdoor equipment is supplied with the connectors sealed with either flexible plastic covers, plastic caps or sealing glands. Some of the cables provided by Alvarion are supplied crimped and with a sealing gland already attached to them.

When there is a flexible cover and you need to use the connector, remove the cover and connect the cable. Use appropriate sealing methods to ensure protection against rain and moisture.

When there is a cap covering the connector and you need to use the connector, add a sealing gland before connecting the cable.

For connectors with a sealing gland, insert the cable into the gland before connecting it, as described in the procedures below. There are two sizes of sealing glands, labeled 10.5 and 7.9 on their plug.

After connecting each cable, make sure that the nut of each sealing gland is properly tightened and that the sealing gland is tightly attached to protective body of the connector to ensure proper sealing against rain and moisture.

Use only the special wrench supplied with the equipment (see Figure 2-30).
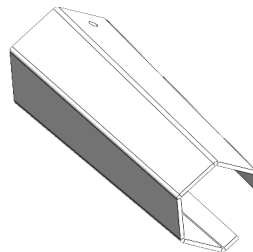

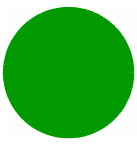
Figure 2-30: Sealing Gland Special Wrench

NOTE! Unused connectors should always be sealed with the cover firmly tightened to the protective body of the connector.

To connect a cable to a connector with a small gland (7.9):

Refer to Figure 2-16.

1   Release the sealing gland nut from the gland base and remove the plug.

2   Thread the cable through the released nut.

3   Insert the cable through the gland and push it until it is connected to the unit connector.

4   Return the sealing nut to the gland and firmly tighten to ensure proper sealing.

Sealing Gland Base with
connector underneath

Plug
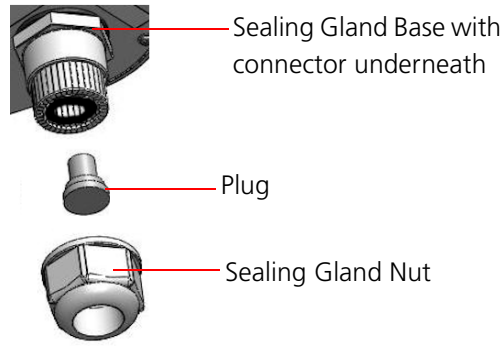
Sealing Gland Nut

Figure 2-31: Small (7.9) Sealing Gland Components

To connect a cable to a connector with a large gland (10.5):

Refer to Figure 2-32.

1   Remove the sealing gland from the unit.

2   Release the sealing gland nut from the gland base and remove the plug.

3   Remove the rubber bushing from the sealing gland.

4   Thread the cable through the released nut and the rubber bushing.

5   Crimp the cable and assemble the appropriate connector.

6   Connect the cable to the connector on the outdoor unit.

7   Insert the rubber bushing into the gland base.

8   Return the gland base to the outdoor unit and tighten firmly.

9   Return the gland nut to the gland base and firmly tighten to ensure proper sealing.

Sealing Gland Base

Rubber Bushing

Sealing Gland Nut
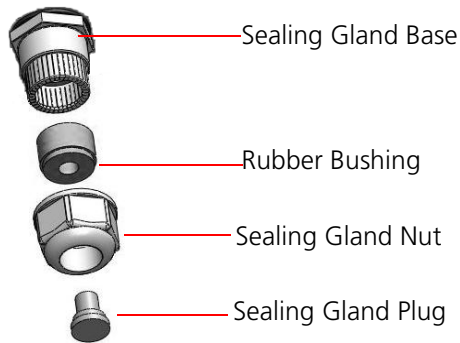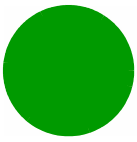
Sealing Gland Plug

Figure 2-32: Large (10.5) Sealing Gland Components

2.7.8   Connecting to External Antennas

Four N-type connectors are used for the optional external antenna connection (see Figure 2-33). The connectors must have an impedance of 50 Ohm and lightning protected.
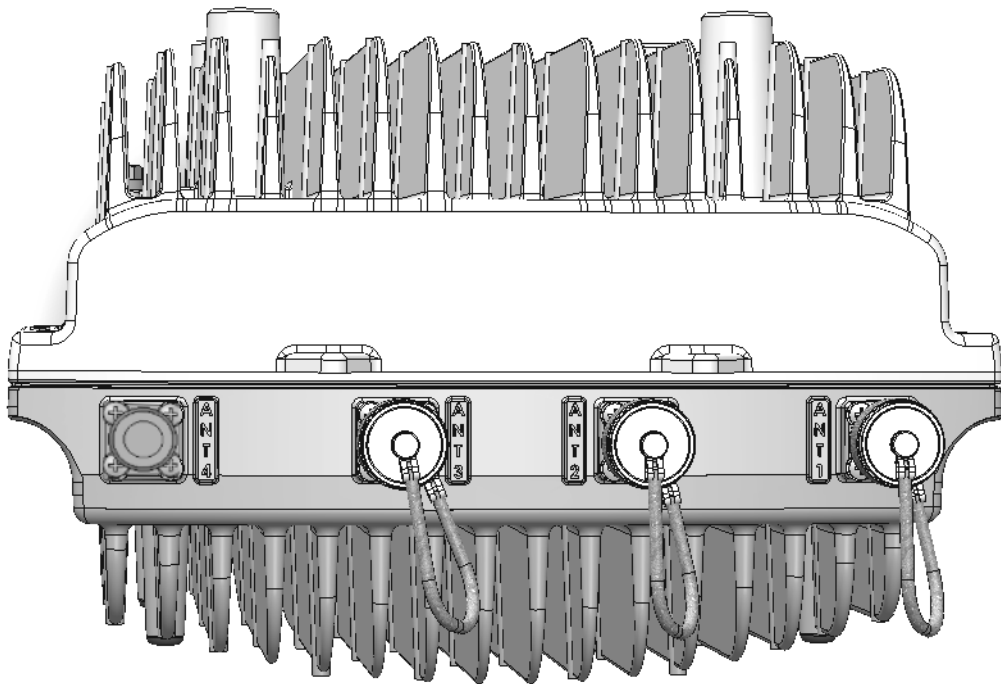
Figure 2-33: External Antenna Connections

To connect the RF cable (units with external antenna):

1 Connect one end of the coaxial RF cable to the connector (marked ANT1 to ANT4) located on the rear panel of the unit.

2 Connect the other end of the RF cable to the antenna.

3 Seal the RF connectors properly to protect against rain and moisture.

INFORMATION The recommended minimum distance between any two antennas in neighboring sectors is 0.5 m.

The minimum distance between any two antennas in the same sector (space diversity configuration) is 1.3 m, that is 10 lambda (λ), where λ=C/Frequency (Hz). C is the speed of light in centimeters per second which is equal to 29,979,245,800.

2.8   System Initial Verification

After powerup, the BTS automatically starts a self-testing procedure to verify that the BTS has been correctly assembled and installed on site, all its components are functioning properly, and that it is now ready for commissioning. During the self-test, the LEDs indicate the working status of the various components.

To perform testing:

1   Verify that the BTS is connected to an AC power source.

2   Upon completion of the internal test and boot up (up to 5 minutes), verify that the following LEDs are lit as follows:

Table 2-5: BreezeCOMPACT LEDs

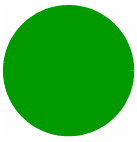| Name	Description	Functionality
PWR	Power indication	■ Green - Power provided to the unit is OK
ALRM	Alarm indication	■ Lights at power up ■ Turns off after power up is complete ■ Lights on runtime in case of critical failure
GPS	GPS status indication	■ Lights at power up ■ Turns off after power up is complete ■ Lights when the GPS is reporting at least four satellites or more reception. ■ Blinks (0.5 Sec on, 0.5 Sec off) when the number of satellites decreases from 4 to 3 or 2 satellites or the min. configured value. ■ Turns off when only one satellite is received, or the minimum configured value of GPS is not operational or not installed. ■ Lights again when the unit is regaining satellites reception of 4 satellites or more.

Upon power-up completion, the BTS is ready for basic network definition.

Chapter 2 - Commissioning

In This Chapter:

2.1　Introduction

After completing the installation process some basic unit's parameters must be configured locally using the Monitor program to enable discovery by the Element Management System and remote management of the unit.

Refer to "The Monitor Program" on page 81 for information on how to access the Monitor program using Telnet and how to use it.

It is assumed that the unit is a new one (was never configured after being shipped from factory). Otherwise, it is recommended to reset the unit to its factory default values before proceeding with following configuration steps: Enter the Monitor program and select BTS>Unit Control>ShutDown Operation>Update>resettoFactoryDefault (you will be prompted to confirm the requested action).

2.2   Configuring Parameters Required for Management Connectivity

The following section describes the minimum mandatory configuration actions required to allow remote management of the site and to enable discovery by the Element Management System:

■   Configuring the BTS Number

■   Configuring the Management Interface Connectivity Mode Parameter

■   Configuring the IP Interfaces Parameters

■   Configuring the L1 and L2 Parameters (if necessary)

■   Configuring the SNMP Authorized Manager and Traps Manager

■   Applying the Configuration

2.2.1   Configuring the BTS Number

In the Main menu of the Monitor program, select BTS>General>Update and configure the BTS number. The BTS Number must be unique in the Radio Access Network. The default (0) is not a legitimate value.

2.2.2   Configuring the Management Interface Connectivity Mode Parameter

The default Connectivity Mode is inband. If a different Connectivity Mode is required, select BTS>Connectivity>Management Interface>Update. You will be prompted to configure the Connectivity Mode.

2.2.3   Configuring the IP Interfaces Parameters

For more information on IP Interfaces parameters refer to "Configuring the IP Interfaces Parameters" on page 42. Note that configuration of certain parameters may depend on the value to be configured for the BS Bearer IP Address (see)

Select BTS>Connectivity>IP Interfaces>Update. You will be prompted to configure the following parameters (for some parameters you may just press Enter to keep the default value):

■   Bearer Subnet Mask (the default is 255.255.255.0).

■   Bearer Next Hop Gateway. Must be within the range defined by BS Bearer IP Address and Bearer Subnet Mask. The default is 0.0.0.0. Must be changed to a valid value if IP addresses of core network equipment is not within the range defined by BS Bearer IP Address and Bearer Subnet Mask.

■   Bearer VLAN ID (default 11).

■   Default Authenticator IP. The default is 0.0.0.0. Must be changed to a valid value if IP address of default authenticator ASN-GW is not within the range defined by BS Bearer IP Address and Bearer Subnet Mask.