Nokia Networks

Installing and Cabling Flexi Zone Micro High Power 2x20 W BTS

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Summary of changes

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made to previous issues.

This document is common for all TDD-LTE releases. You may find here information about solutions that are not available or supported in a specific SW release or RAT. For features supported in your SW release, see respective feature documentation chapter in the system library.

Table 1 Releases covered by the document

Product	Release
TD LTE	TD-LTE15A, TD-LTE16

This document contains instructions that are specific for Flexi Zone Micro BTS (FWHR).

Changes between issues 01 (2015-12-22) and 02 (yyyy-mm-dd)

The following sections have been added:

- Installing base stations to ensure installer safety
- Flexi Zone Micro BTS (FWHR) United States FCC Part 15 compliance
- Flexi Zone Micro BTS (FWHR) Industry Canada IC RSS-GEN compliance
- Flexi Zone Micro Bluetooth Modular Approval
- EU RoHS statement

Issue 01

This is the first issue of the document.

1 Installing Flexi Zone Micro BTS

1.1 Installing Flexi Zone Micro BTS (FWHR) on a wall

The procedure describes the installation on a wall that is specific for FWHR.

Purpose

Use the Flexi Zone Wall and Pole Mounting Bracket (FMWA) (472858A) to install Flexi Zone Micro BTS (FWHR) on a wall.

Before you start

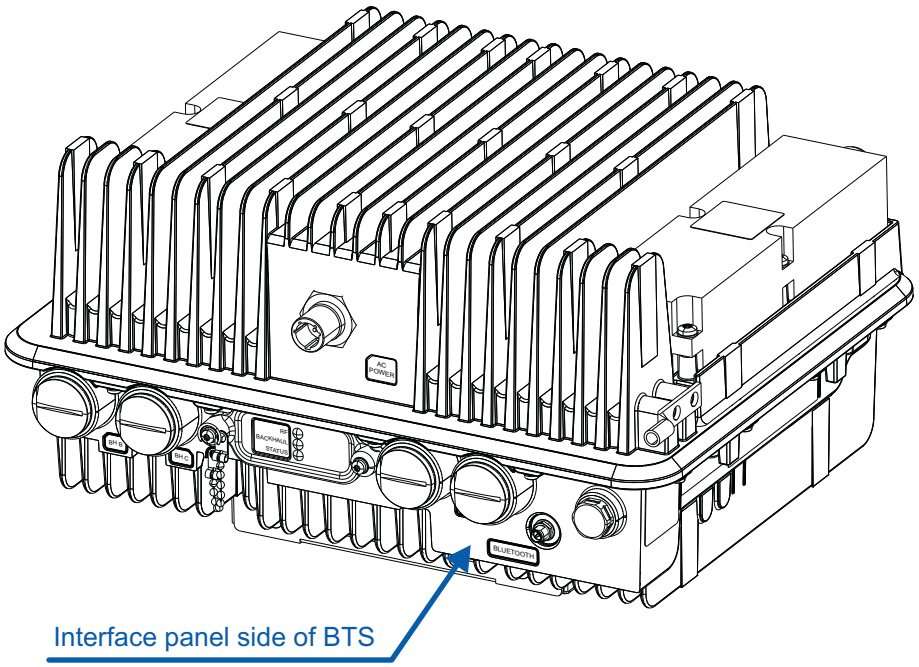
CAUTION! Risk of personal injury.
Ensure that the wall installation surface and selected fasteners can sustain the device under required circumstances. Evaluation of the wall structure and fastening hardware type should be done by a structural engineer.

NOTICE: Flexi Zone Micro BTS equipment must be installed by trained and qualified service personnel in accordance with all local codes and requirements.

NOTICE: Flexi Zone Micro BTS equipment is intended for installation in a restricted access location or equivalent.

NOTICE: The BTS interface panel should always face the ground. Any other installation position might cause overheating and possible damage to the BTS.

Figure 1 Flexi Zone Micro BTS (FWHR) interface panel



When selecting a location to mount the BTS, keep in mind the following:

- Avoid mounting the BTS such that the antennas are blocked by other structures such as walls. A direct line of sight to the area to be covered will provide the best performance.
- Keep other metallic mounting features as far away from all antennas as possible.
- Keep cables routed and secured away from the LTE and Bluetooth antennas.
- Remotely locating the Bluetooth antenna is not allowed.
- Since only remotely connected antennas are supported, external lightning surge protection must be added. For more information on remotely mounting antennas, see section Installing antennas.

If side clearance is less than screw driver length, the grounding cable needs to be pre-installed. The minimum and recommended maintenance clearances are shown in Table 2: Flexi Zone Micro BTS (FWHR) maintenance clearances.

Table 2 Flexi Zone Micro BTS (FWHR) maintenance clearances

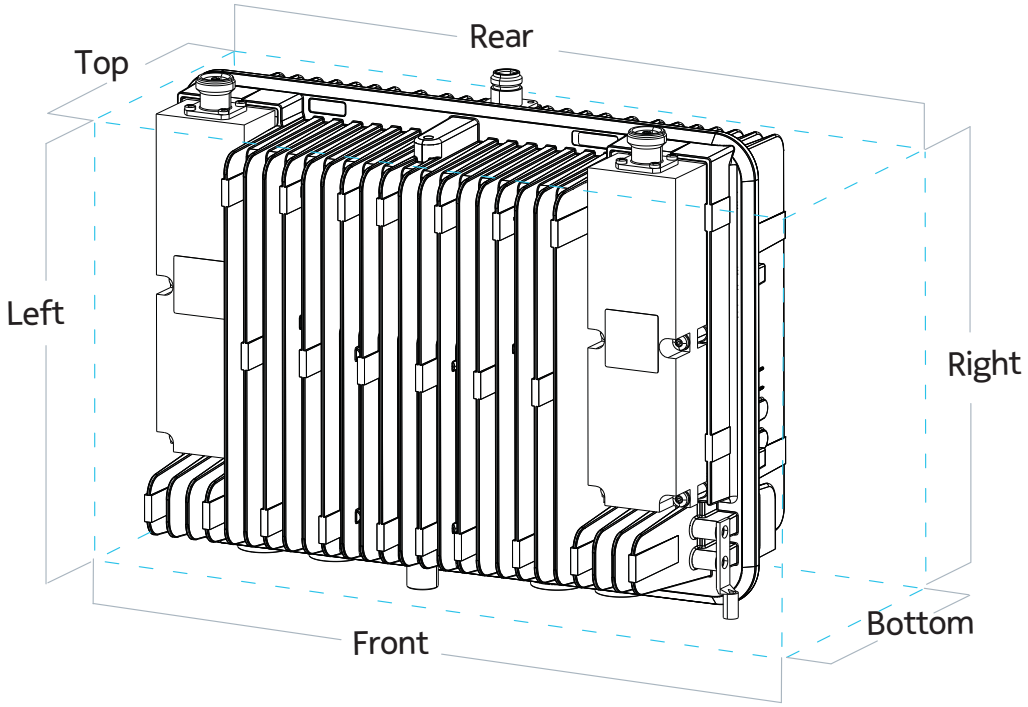
BTS side	Minimum clearances	Recommended clearances
Front	50 mm (1.97 in)	500 mm (19.68 in)
Rear	35 mm (1.38 in)(1)	35 mm (1.38 in)(1)
Top	100 mm (3.94 in)	Height of the unit + 10 mm (0.39 in)
Bottom	100 mm (3.94 in)	300 mm (11.81 in)
Left	10 mm (0.39 in)(2)	10 mm (0.39 in)(2)
Right	10 mm (0.39 in)	10/110 mm (0.39/4.33 in)(3)

(1) For wall and pole installations.

(2) For horizontal pole installations the clearance must be at least 20 mm (0.78 in).

(3) Depends on the screwdriver length.

Figure 2 Flexi Zone Micro BTS clearances

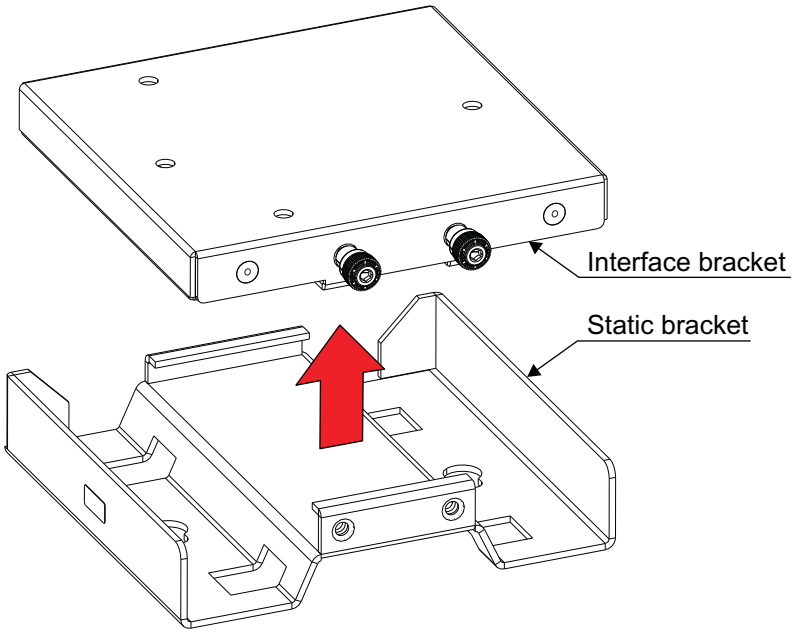


Procedure

1 Disassemble the mounting bracket.

The mounting bracket consists of two elements: the interface bracket and static bracket. Loosen the two thumb screws (M6), slide up the interface bracket and put aside the static bracket. Note that thumb screws (M6) are integral parts of the interface bracket.

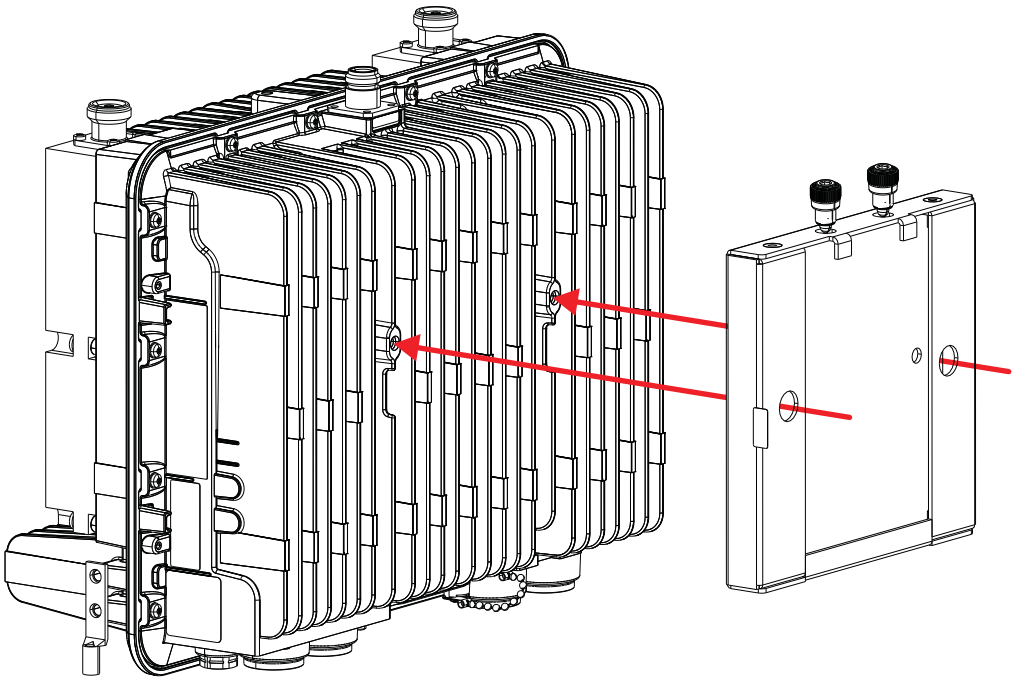
Figure 3 Disassembling the mounting bracket



2 Fix the interface bracket to the Flexi Zone Micro BTS using two M6 cap screws and washers included with the mounting bracket.

Tighten the screws to 5.1 Nm (3.8 ft-lb).

Figure 4 Fixing the interface bracket



3 Mark the mounting screw locations on the wall and drill the holes for the screws.

Tip: Use the static mounting bracket keyholes as a template.

Figure 5 Static mounting bracket keyholes

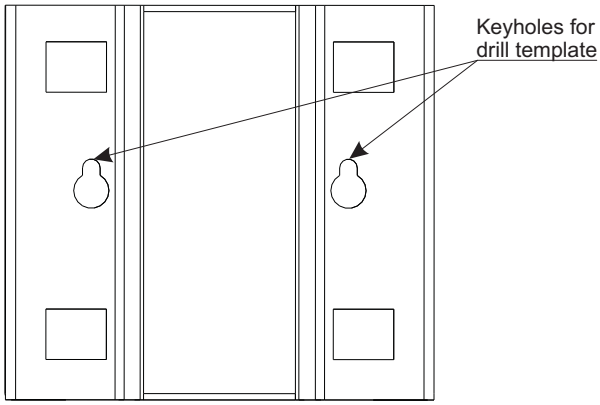
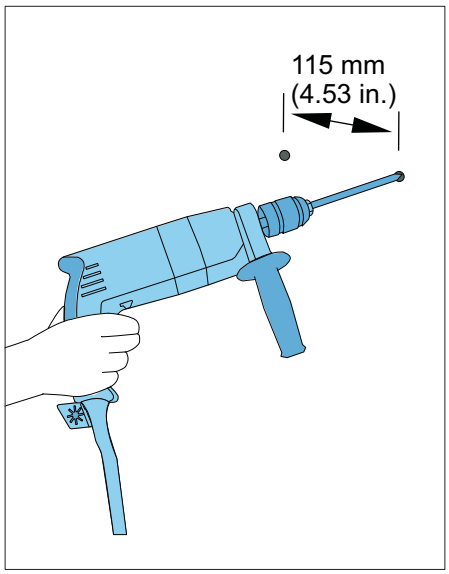


Figure 6 Drilling the holes

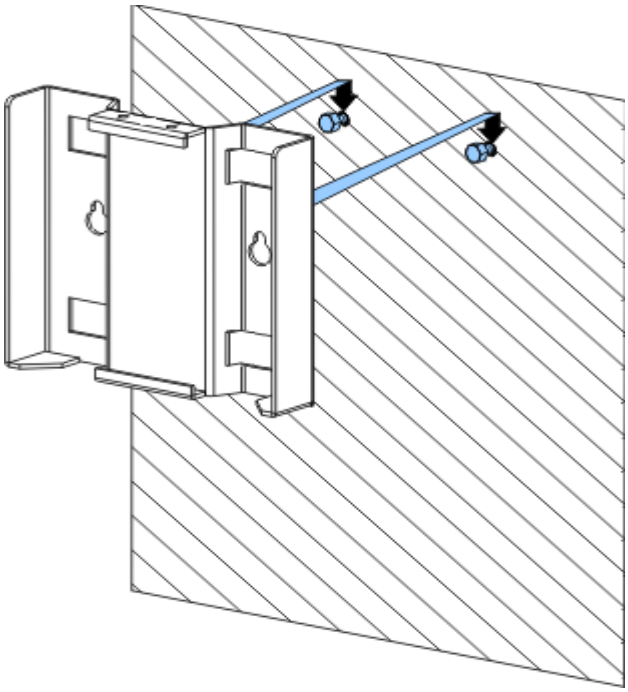


4 Fix the mounting bolts to the wall, and install the static mounting bracket on the wall.

The static mounting bracket keyholes are designed to suit M6 screws.

Check that the bracket is level.

Figure 7 Installing the static mounting bracket on the wall

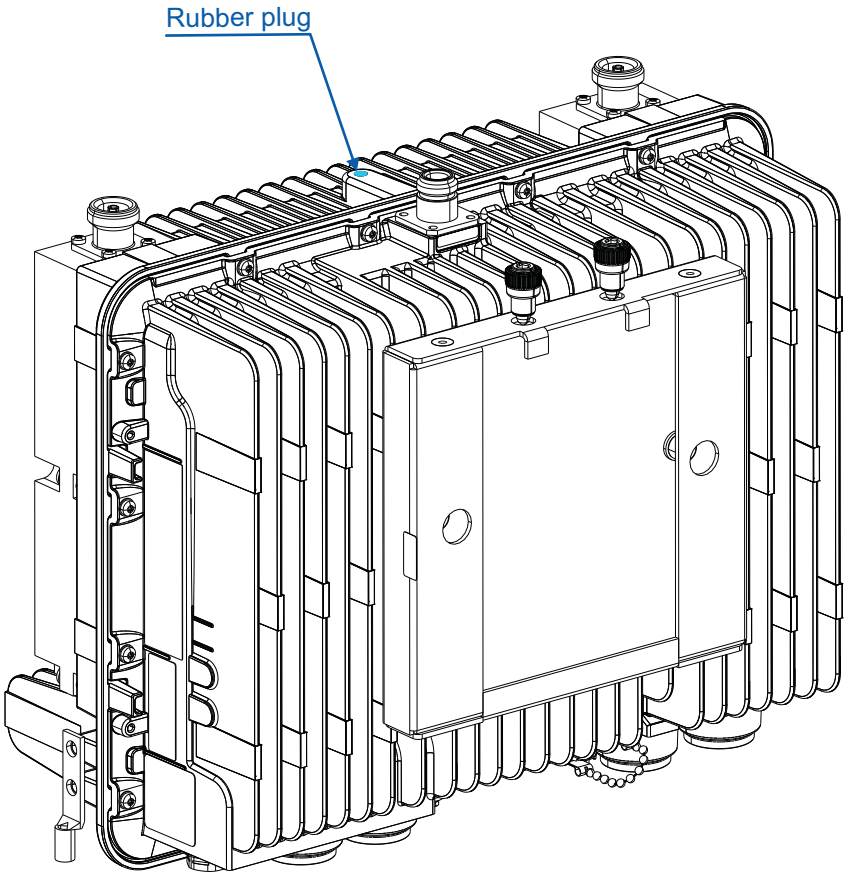


5 Tighten the bracket's fastener according to the manufacturer's instructions.

6 Install the BTS to the static mounting bracket.

NOTICE: If you lift the unit with a rope, use an M6 size eyebolt with a M6 x 1.0 thread. The eyebolt should be fixed to the top of the BTS, in place of the rubber plug. The eyebolt should be removed and replaced with the rubber plug after installing the BTS. The eyebolt is not part of the delivery and must be ordered separately.

Figure 8 Rubber plug location



a) Position the BTS with the interface bracket aligned directly above the static mounting bracket.
b) Slide down the BTS until it is fully located and seated onto the static bracket.
c) Hand start the thumb screws (M6) to secure BTS to static bracket.
d) Torque all M6 screws to 5.1 Nm (3.8 ft-lb).

Note: Before tightening the screws make sure that:

- the static mounting bracket is securely captivated in the interface bracket's slot.
- tabs on the interface bracket are captivated by the back surface of the static mounting bracket.

Figure 9 Correct bracket alignment

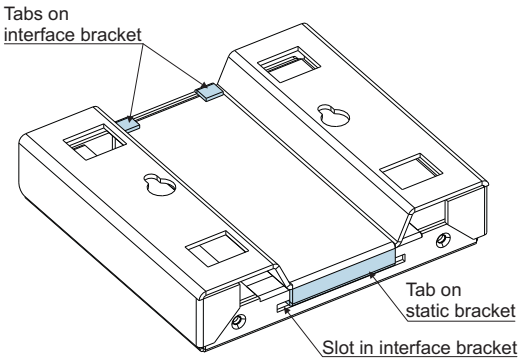
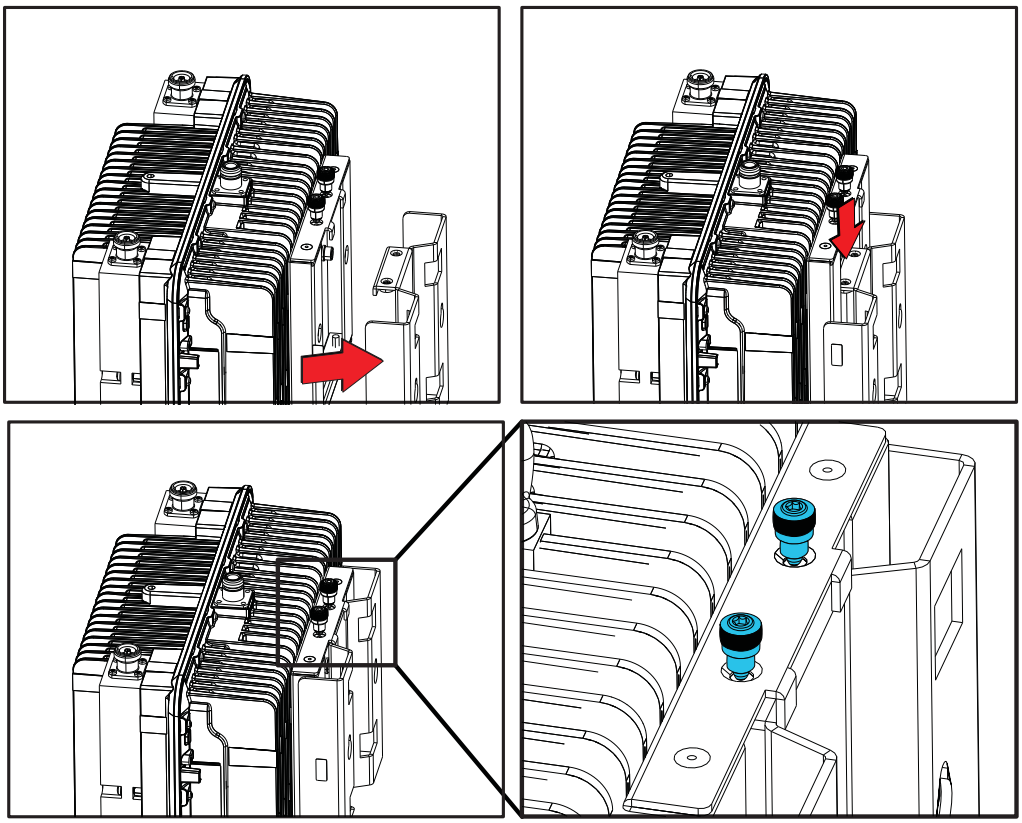


Figure 10 Installing the BTS on a wall



1.2 Installing Flexi Zone Micro BTS (FWHR) on a vertical pole

The procedure describes the installation on a vertical pole that is specific for FWHR.

Purpose

Use the Flexi Zone Wall and Pole Mounting Bracket (FMWA) (472858A) and band straps to install Flexi Zone Micro BTS on a pole. The band straps depend on the chosen pole diameter. The width of the band straps should be less than ¾" to properly fit into the slots of the mounting bracket.

Before you start

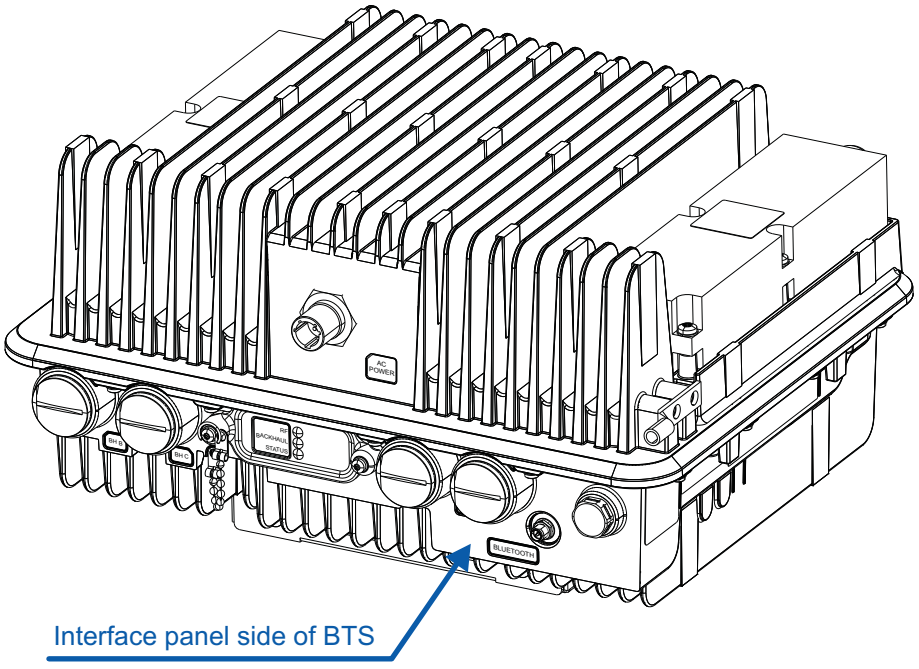
CAUTION! Risk of personal injury.
Ensure that the selected band straps can sustain the device under required circumstances.
The selected band straps should be rated for outdoor use and be capable of securing the BTS weight. A certified structural engineer should inspect and approve the mounting pole and hardware prior to installation.

NOTICE: Flexi Zone Micro BTS equipment must be installed by trained and qualified service personnel in accordance with all local codes and requirements.

NOTICE: Flexi Zone Micro BTS equipment is intended for installation in a restricted access location or equivalent.

NOTICE: The BTS interface panel should always face the ground. Any other installation position might cause overheating and possible damage to the BTS.

Figure 11 Flexi Zone Micro BTS (FWHR) interface panel



Note: The band straps are not part of the delivery and must be ordered separately.

When selecting a location to mount the BTS, keep in mind the following:

- Avoid mounting the BTS such that the antennas are blocked by other structures such as walls. A direct line of sight to the area to be covered will provide the best performance.
- Keep other metallic mounting features as far away from all antennas as possible.
- Keep cables routed and secured away from the LTE and Bluetooth antennas.
- Remotely locating the Bluetooth antenna is not allowed.
- Since only remotely connected antennas are supported, external lightning surge protection must be added. For more information on remotely mounting antennas, see section Installing antennas.

If side clearance is less than screw driver length, the grounding cable needs to be pre-installed. The minimum and recommended maintenance clearances are shown in Table 2: Flexi Zone Micro BTS (FWHR) maintenance clearances.

Table 3 Flexi Zone Micro BTS (FWHR) maintenance clearances

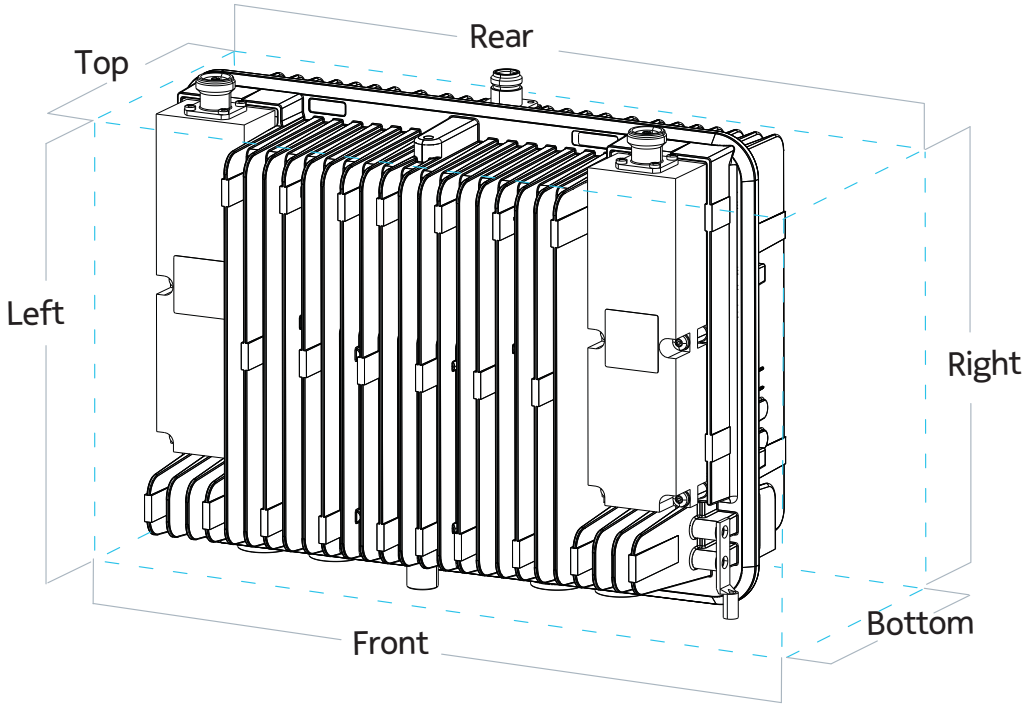
BTS side	Minimum clearances	Recommended clearances
Front	50 mm (1.97 in)	500 mm (19.68 in)
Rear	35 mm (1.38 in)(1)	35 mm (1.38 in)(1)
Top	100 mm (3.94 in)	Height of the unit + 10 mm (0.39 in)
Bottom	100 mm (3.94 in)	300 mm (11.81 in)
Left	10 mm (0.39 in)(2)	10 mm (0.39 in)(2)
Right	10 mm (0.39 in)	10/110 mm (0.39/4.33 in)(3)

(1) For wall and pole installations.

(2) For horizontal pole installations the clearance must be at least 20 mm (0.78 in).

(3) Depends on the screwdriver length.

Figure 12 Flexi Zone Micro BTS clearances

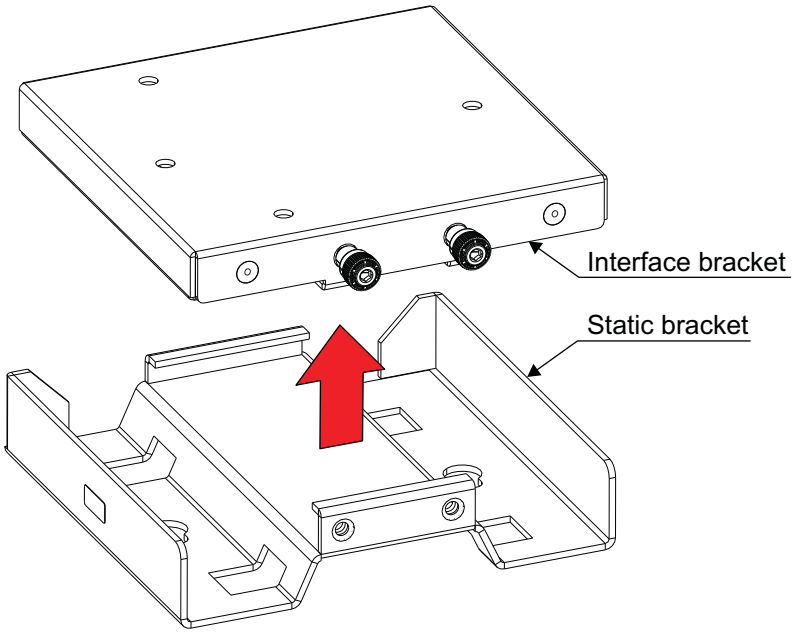


Procedure

1 Disassemble the mounting bracket.

The mounting bracket consists of two elements: the interface bracket and static bracket. Loosen the two thumb screws (M6), slide up the interface bracket and put aside the static bracket. Note that thumb screws (M6) are integral parts of the interface bracket.

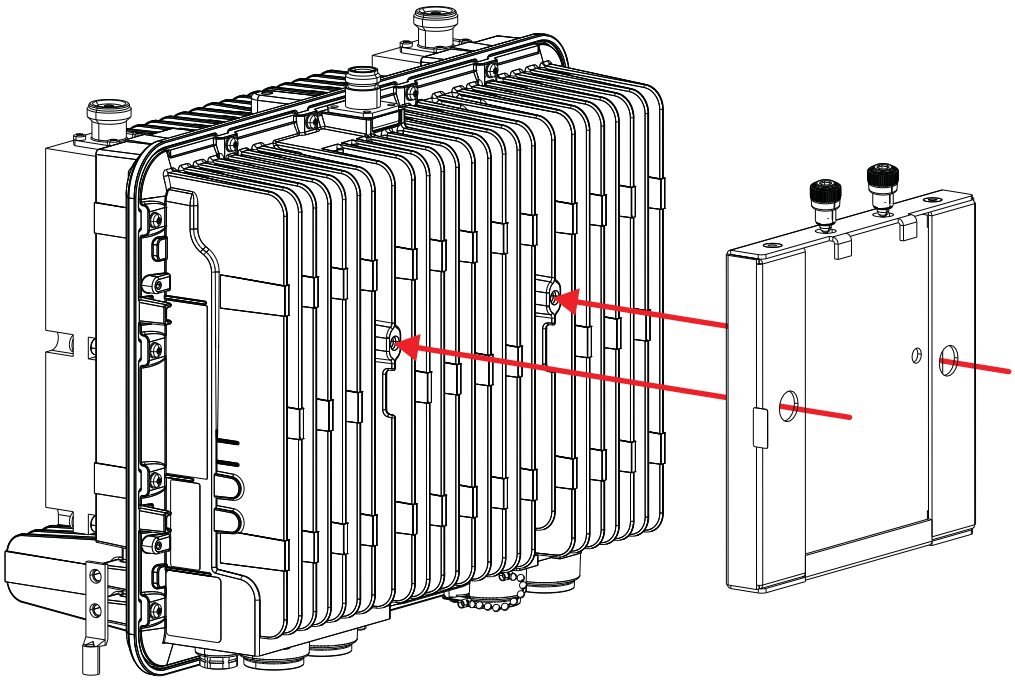
Figure 13 Disassembling the mounting bracket



2 Fix the interface bracket to the Flexi Zone Micro BTS using two M6 cap screws and washers included with the mounting bracket.

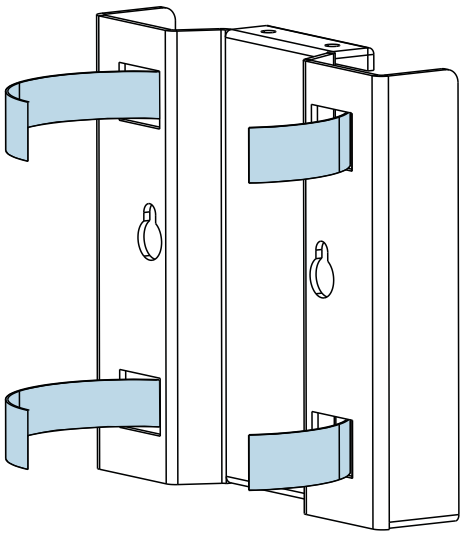
Tighten the screws to 5.1 Nm (3.8 ft-lb).

Figure 14 Fixing the interface bracket



3 Thread the straining straps to the static mounting bracket.

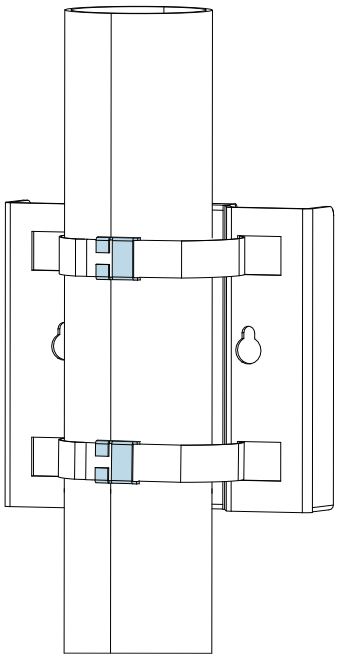
Figure 15 Threading the straining straps



4 Install the static mounting bracket to the pole with the straining straps.

Note: The straps should be tightened and secured according to the strap manufacturer's instructions and the bracket should be secure and immovable.

Figure 16 Installing the installation plate to the pole

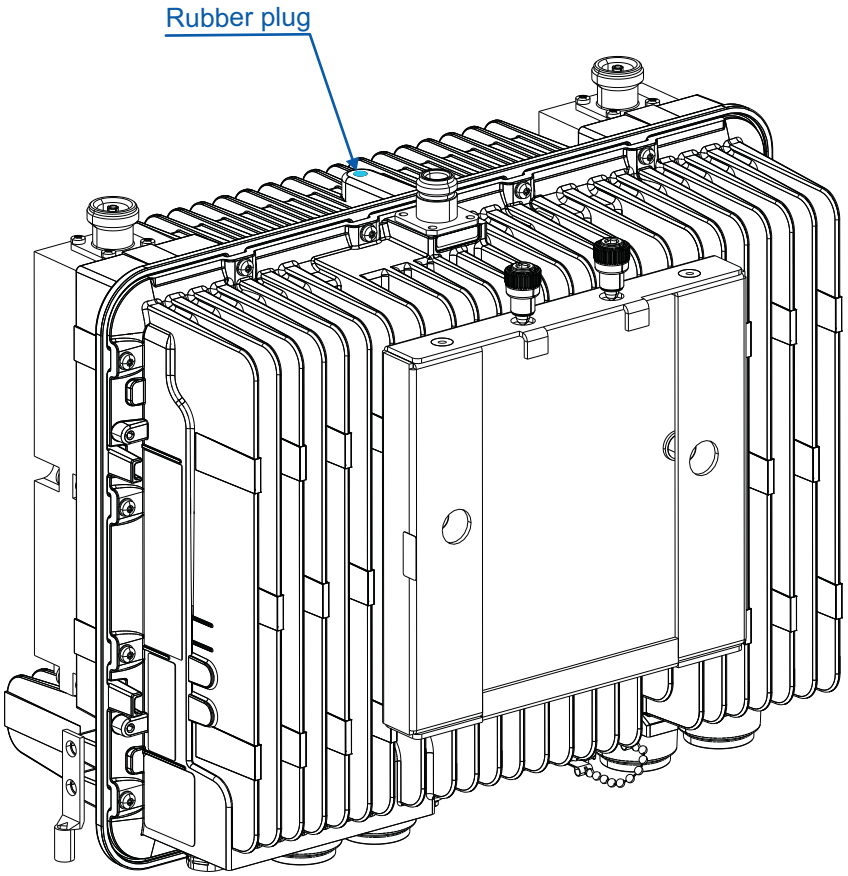


5 Tighten the straining straps around the pole.

6 Install the BTS to the static mounting bracket.

NOTICE: If you lift the unit with a rope, use an M6 size eyebolt with a M6 x 1.0 thread. The eyebolt should be fixed to the top of the BTS, in place of the rubber plug. The eyebolt should be removed and replaced with the rubber plug after installing the BTS. The eyebolt is not part of the delivery and must be ordered separately.

Figure 17 Rubber plug location



a) Position the BTS with the interface bracket aligned directly above the static mounting bracket.
b) Slide down the BTS until it is fully located and seated onto the static bracket.
c) Hand start the thumb screws (M6) to secure the BTS to the static bracket.
d) Torque all M6 screws to 5.1 Nm (3.8 ft-lb).

Note: Before tightening the screws make sure that:

- the static mounting bracket is securely captivated in the slot in the interface bracket.
- tabs on the interface bracket are captivated by the back surface of the static mounting bracket.

Figure 18 Correct bracket alignment

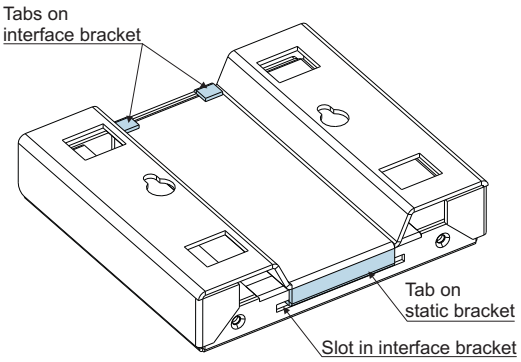
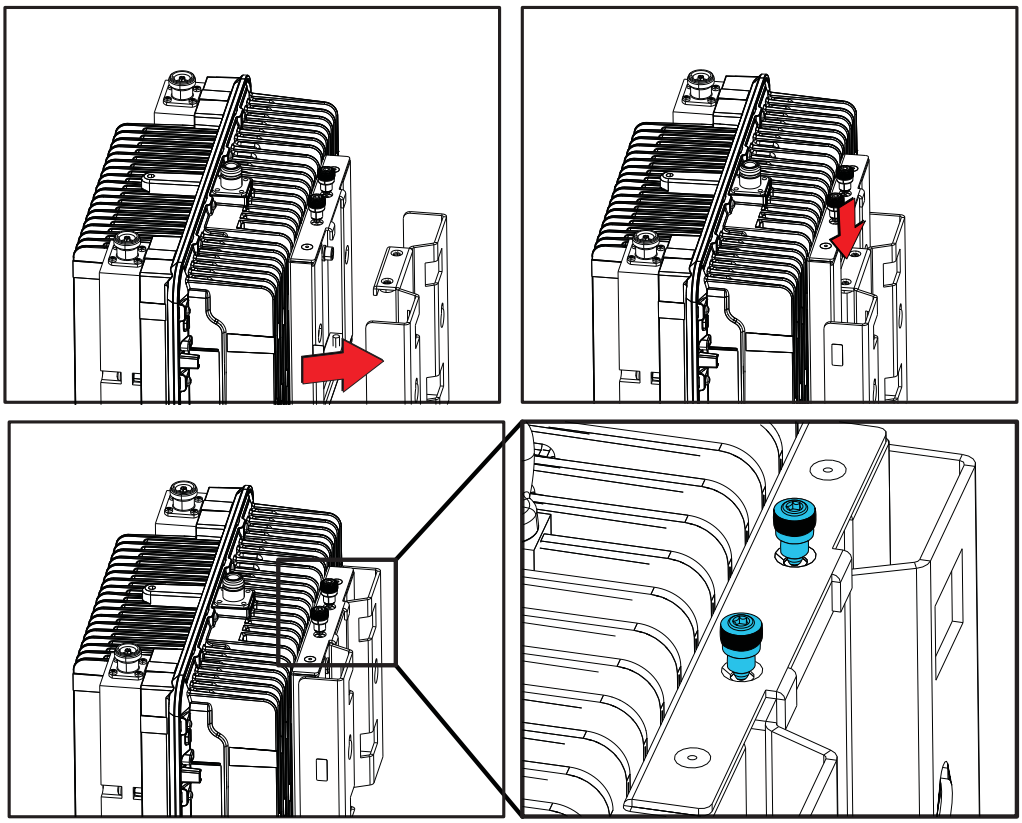


Figure 19 Installing the BTS on a vertical pole



1.3 Installing Flexi Zone Micro BTS (FWHR) on a horizontal pole

The procedure describes the installation on a horizontal pole that is specific for FWHR.

Purpose

Use the Flexi Zone Wall and Pole Mounting Bracket (FMWA) (472858A) and band straps to install Flexi Zone Micro BTS on a pole. The band straps depend on the chosen pole diameter. The width of the band straps should be less than ¾" to properly fit into the slots of the mounting bracket.

Before you start

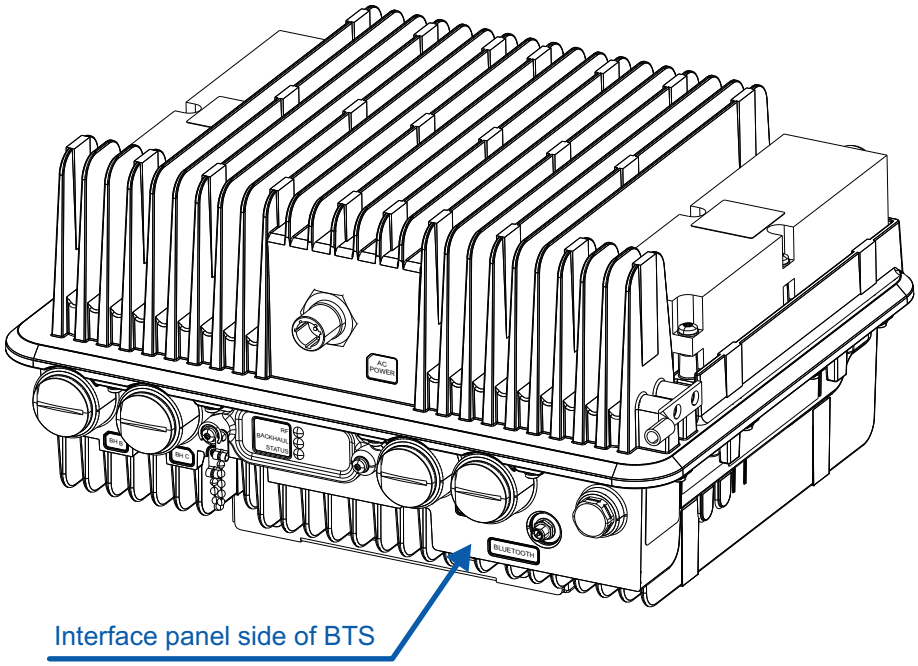
CAUTION! Risk of personal injury.
Ensure that the selected band straps can sustain the device under required circumstances.
The selected band straps should be rated for outdoor use and be capable of securing the BTS weight. A certified structural engineer should inspect and approve the mounting pole and hardware prior to installation.

NOTICE: Flexi Zone Micro BTS equipment must be installed by trained and qualified service personnel in accordance with all local codes and requirements.

NOTICE: Flexi Zone Micro BTS equipment is intended for installation in a restricted access location or equivalent.

NOTICE: The BTS interface panel should always face the ground. Any other installation position might cause overheating and possible damage to the BTS.

Figure 20 Flexi Zone Micro BTS (FWHR) interface panel



Note: The band straps are not part of the delivery and must be ordered separately.

When selecting a location to mount the BTS, keep in mind the following:

- Avoid mounting the BTS such that the antennas are blocked by other structures such as walls. A direct line of sight to the area to be covered will provide the best performance.
- Keep other metallic mounting features as far away from all antennas as possible.
- Keep cables routed and secured away from the LTE and Bluetooth antennas.
- Remotely locating the Bluetooth antenna is not allowed.
- Since only remotely connected antennas are supported, external lightning surge protection must be added. For more information on remotely mounting antennas, see section Installing antennas.

If side clearance is less than screw driver length, the grounding cable needs to be pre-installed. The minimum and recommended maintenance clearances are shown in Table 2: Flexi Zone Micro BTS (FWHR) maintenance clearances.

Table 4 Flexi Zone Micro BTS (FWHR) maintenance clearances

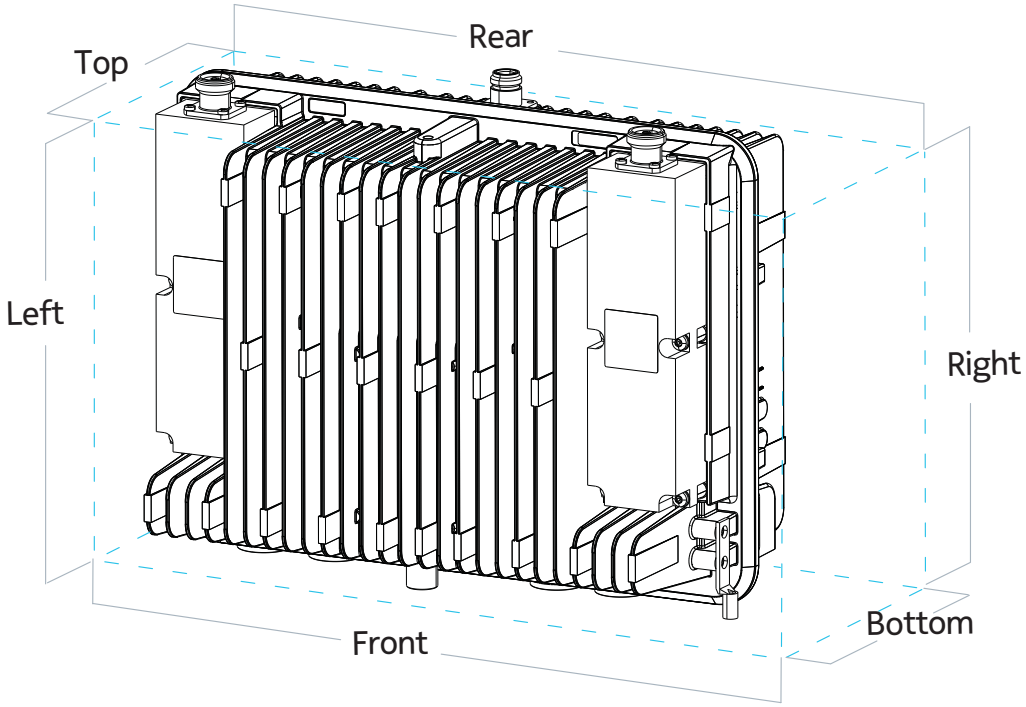
BTS side	Minimum clearances	Recommended clearances
Front	50 mm (1.97 in)	500 mm (19.68 in)
Rear	35 mm (1.38 in)(1)	35 mm (1.38 in)(1)
Top	100 mm (3.94 in)	Height of the unit + 10 mm (0.39 in)
Bottom	100 mm (3.94 in)	300 mm (11.81 in)
Left	10 mm (0.39 in)(2)	10 mm (0.39 in)(2)
Right	10 mm (0.39 in)	10/110 mm (0.39/4.33 in)(3)

(1) For wall and pole installations.

(2) For horizontal pole installations the clearance must be at least 20 mm (0.78 in).

(3) Depends on the screwdriver length.

Figure 21 Flexi Zone Micro BTS clearances

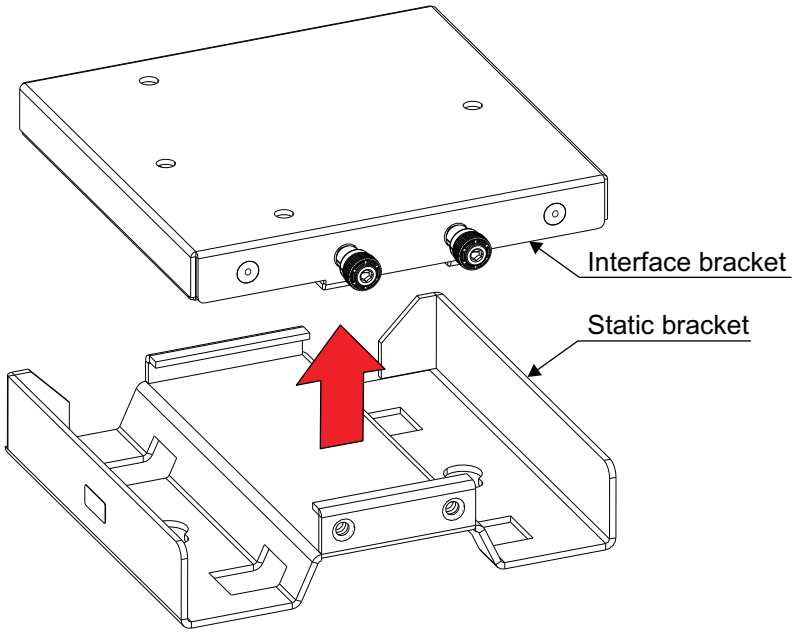


Procedure

1 Disassemble the mounting bracket.

The mounting bracket consists of two elements: the interface bracket and static bracket. Loosen the two thumb screws (M6), slide up the interface bracket and put aside the static bracket. Note that thumb screws (M6) are integral parts of the interface bracket.

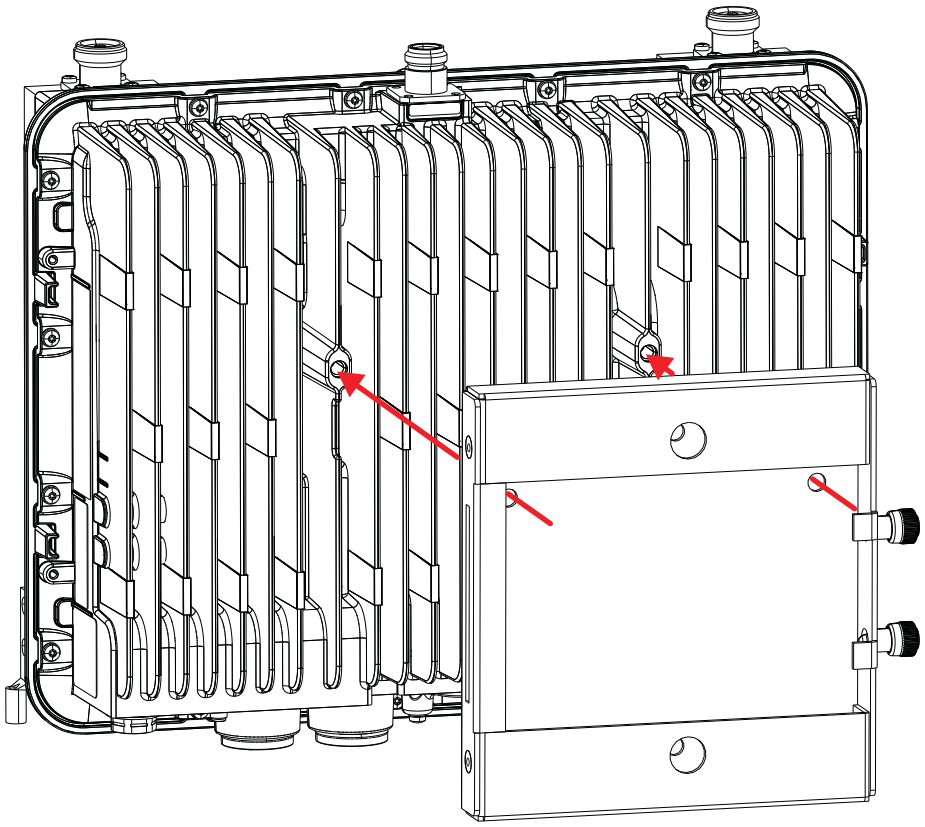
Figure 22 Disassembling the mounting bracket



2 Fix the interface bracket to the Flexi Zone Micro BTS using two M6 cap screws and washers included with the mounting bracket.

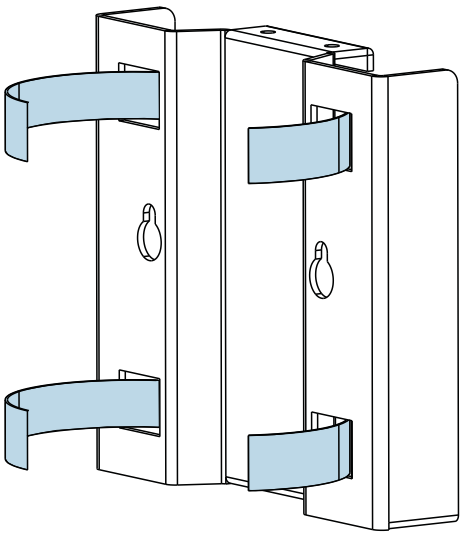
Tighten the screws to 5.1 Nm (3.8 ft-lb).

Figure 23 Fixing the interface bracket



3 Thread the straining straps to the static mounting bracket.

Figure 24 Threading the straining straps



4 Install the static mounting bracket on the pole with the straining straps.

Note: The straps should be tightened and secured according to the strap manufacturer's instructions and the bracket should be secure and immovable.

Figure 25 Installing the static mounting bracket on the pole