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Nokia UltraSite EDGE BTS, Rel. CX5, Product Documentation, v.1

Installing and Cabling UltraSite EDGE BTS Units

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1 Summary of changes in Installing and Cabling UltraSite EDGE BTS Units

The following changes have taken place in the *Installing and Cabling UltraSite EDGE BTS Units* document:

- The following section including Mini Outdoor information added:
  - Overview of cabling GSM/EDGE units in the Mini outdoor cabinet
- The following sections updated with Mini Outdoor information:
  - Connecting the antistatic wrist strap
  - Overview of installing GSM/EDGE units
  - Installing a Dual Variable Gain Duplex Filter (DVxx) unit
  - Installing a Transceiver (TSxx) unit
  - Installing a Receiver Multicoupler (M2xA or M6xA) unit
  - Installing a Base Operations and Interfaces (BOIx) unit
  - Installing a Transceiver Baseband (BB2x) unit
  - Installing a Transmission (VXxx) unit
  - Installing a Power Supply (PWSx) unit
  - Cabling a GSM/EDGE antenna
  - Connecting cables to the FXC STM-1 transmission unit

2 Preparing to install units

2.1 Overview of installing units

Summary

Have the following tools available on site when installing the BTS units:

- Nokia BTS key
- Antistatic wrist strap
- PC with Nokia BTS Manager SW
- Local Managements Port (LMP) cable

Note

When installing a unit within Nokia UltraSite EDGE BTS Mini Outdoor, make sure that the unit is properly secured with mounting screws so that the unit stays in place and is adequately earthed (grounded).

Steps

1. **Verify that the installation tools are available on site.**
2. **Connect the antistatic wrist strap to the BTS.**
3. **Unpack the units.**
4. *If* units have ejectors,

   Then

   See Installing units with ejectors.
5. *If* units have handles,

Then

See Using handles in unit installation.

2.2 Handling and unpacking units

Before you start

Warning

Unit-mounting fasteners may be nickel-plated. Personnel who are sensitive to nickel should wear protective gloves when handling units.

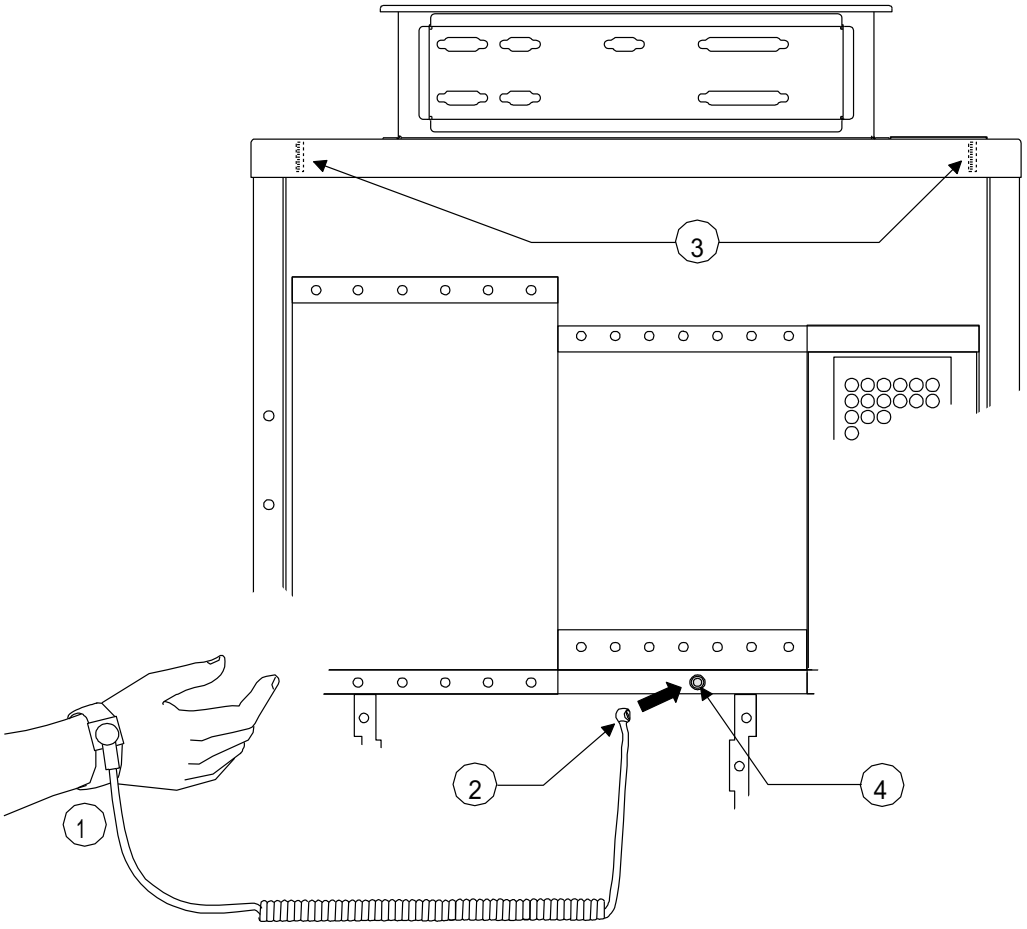
Steps

1. **Unpack the unit from its protective package and check for damage.**
2. **Check the contents of the delivery.**
3. **Recycle the packing material.**

   Nokia recommends that a suitable sampling of packing material be retained for shipment of faulty units when necessary.

2.3 Connecting the antistatic wrist strap

Summary



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1	Wrist strap
2	To ESD snap
3	Grounding stud behind front flange
4	ESD snap

Figure 1. Connecting antistatic wrist strap in UltraSite EDGE BTS

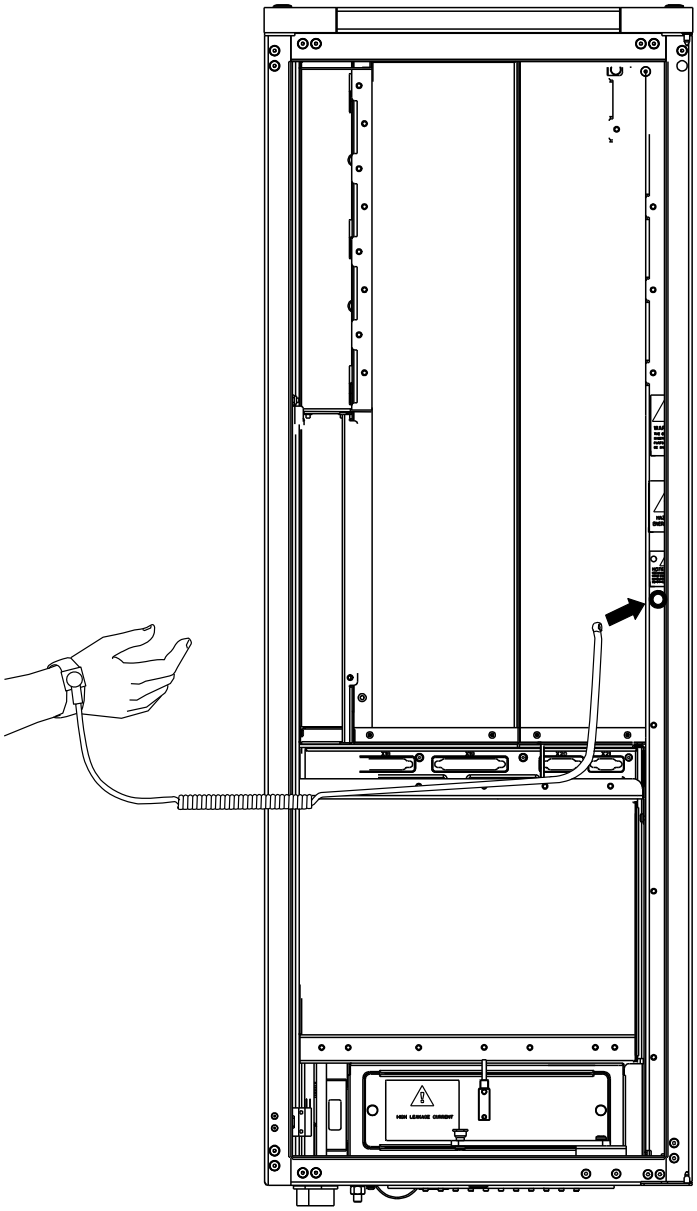

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Figure 2. Connecting antistatic wrist strap in UltraSite EGDE BTS Mini Outdoor

Steps

1. **Discharge to ground any electrostatic charges that may have accumulated (before you touch the assembly) by touching the ground stud with your bare hand. A ground stud is provided on all system units.**

2. **Use a grounding to remain discharged. The grounding wriststrap should be worn around your bare wrist and attached to the ground stud until you have completed work with the ESD-sensitive unit or assembly. Do not handle any exposed connector contacts.**

2.4 Installing units with ejectors

Before you start

Ensure that the site is ready for unit installation.

Summary

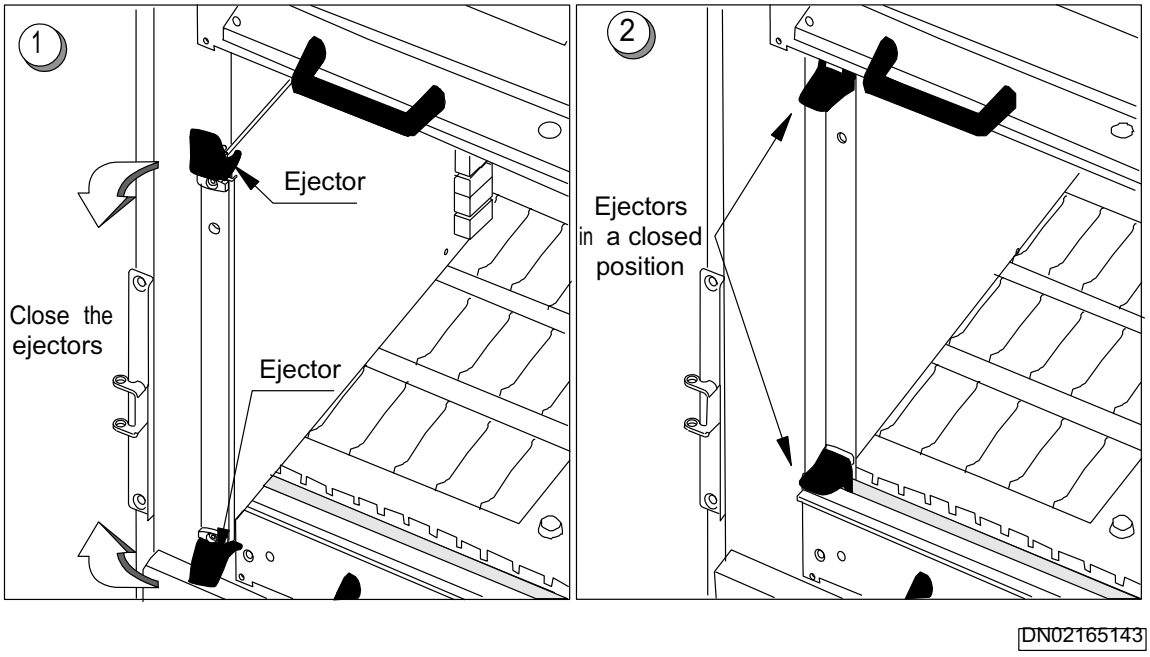


Figure 3. Using ejectors in unit installation

Steps

1. **Slide the unit into the rack, keeping the ejectors in an open position.**

Note

It is important to lift the units when tightening the screws. This prevents damage to the thread of the screws. Support the unit while tightening the screws.

2. **Once the unit is in place, close the ejectors.**

   Once the unit is in place, with the ejectors behind the channel, close the ejectors.

3. **When all the units in the rack are in place, tighten the screws.**

   Slightly lift the unit and tighten the retaining screws on the unit front panel. Lifting the units eases tightening. Use a TORX bit T10 screwdriver.

2.5 Using handles in unit installation

Before you start

Ensure that the site is ready for unit installation.

Steps

1. **Align the unit and rack guides.**

   Line up the unit's top and bottom guides or the left and right side guide trails to the guide trails of the rack.

2. **Slide the plug-in unit in until the rear connectors are fully engaged.**

3. **When all the units in the rack are in place, tighten the screws.**

   Slightly lift the unit and tighten the screws on the front panel. Lifting the units eases the tightening. Use a TORX bit 10 screwdriver.

3 Installing GSM/EDGE units

3.1 Overview of installing GSM/EDGE units

Before you start

Ensure that the site is ready for unit installation.

Warning

Risk of electric shock. Always install the earthing (grounding) cable before installing the units. See the earthing (grounding) cabling instructions.

Summary

The GSM/EDGE unit positions in the cabinet are pre-determined. You can launch the Site Hardware Configuration Manager from the SiteWizard to check the configuration.

Warning

Electrical hazards exist while installing DVxx cables to the RFU backplane of a powered Nokia BTS. Hold the cable being connected clear of all conductive surfaces during installation.

Caution

The Mini Outdoor cabinet does not contain dust filters. Protect all unused connectors and slots in the outdoor cabinet with connector caps and sealing units.

Note

When installing a unit within the cabinet, make sure that the unit is properly secured with mounting screws so that the unit stays in place and is adequately earthed (grounded).

Tip

The online help provides information on using SiteWizard, Nokia BTS Manager, and Site Hardware Configuration Manager.

Tip

You can use the PWSA, PWSB, and PWSC units in either cabinet.

Tip

Install the DVxx cable to the RFU backplane before you install the Transceiver RF unit in the cabinet.

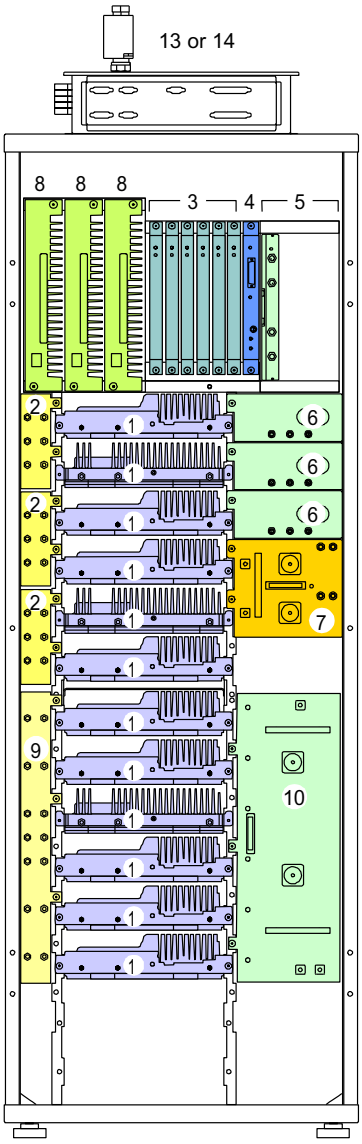
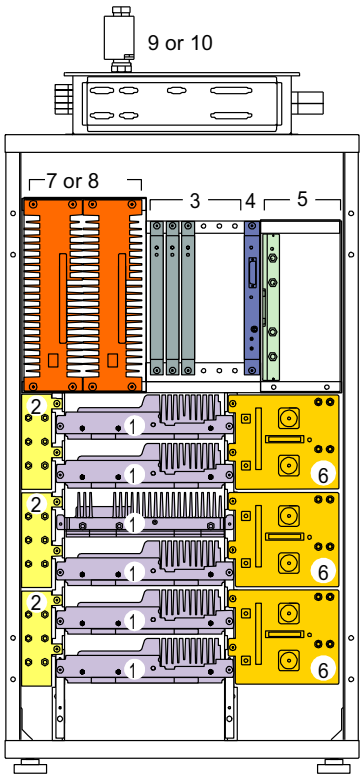


Figure 4. Unit positions in the BTS

1	Transceiver unit (TSxx)
2	2-way Receiver Multicoupler unit (M2xA)
3	Transceiver Baseband unit (BB2x)

4	Base Operations and Interfaces unit (BOIx)
5	Transmission unit (VXxx)
6	Wideband Combiner unit (WCxA/WCxT)
7	Dual Variable Gain Duplex Filter unit (DVxx)
8	DC/DC Power Supply unit (PWSB)
9	6-way Receiver Multicoupler unit (M6xA)
10	Remote Tune Combiner unit (RTxx)
11	AC/DC Power Supply unit (PWSA)
12	DC/DC Power supply unit (PWSC)
13	Bias Tee unit (BPxx)[1]
14	Dual Band Diplex Filter unit (DU2A)[1]

[1]Items 13 and 14 are not plug-in units.



UltraSite MIDI cabinet core

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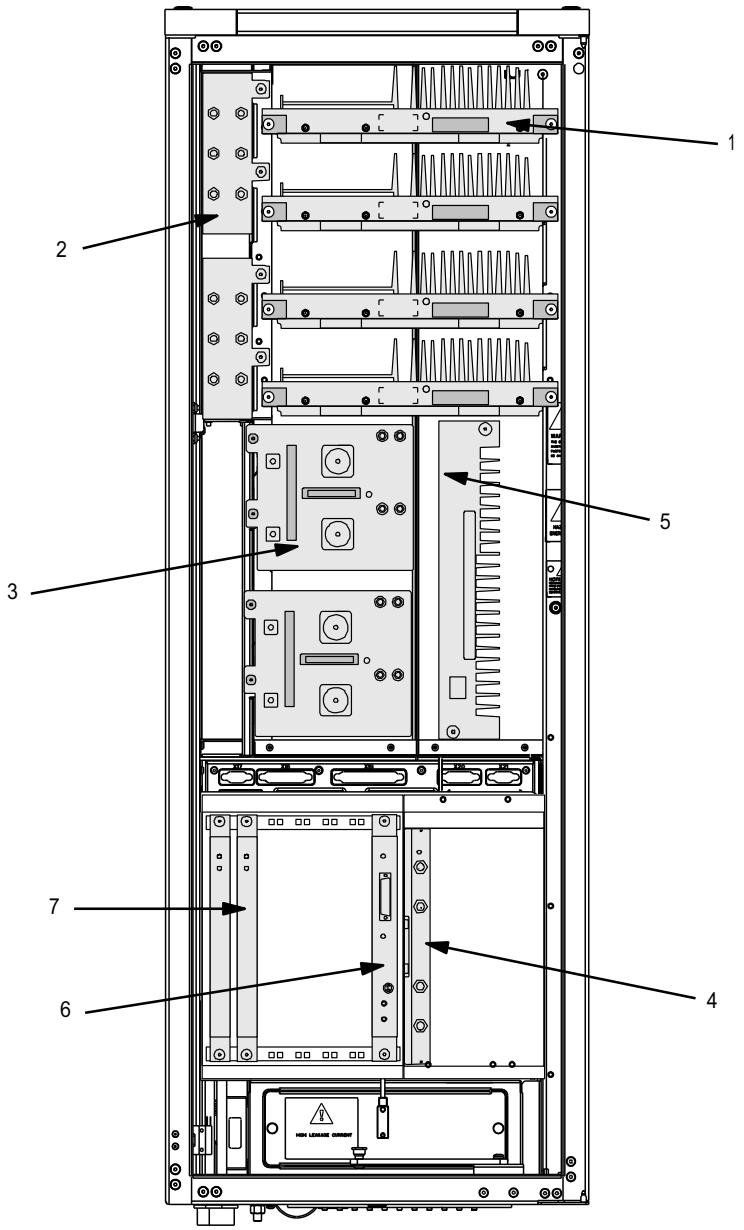
1	Transceiver unit (TSxx)
2	2-way Receiver Multicoupler unit (M2xA)
3	Transceiver Baseband unit (BB2x)
4	Base Operations and Interfaces unit (BOIx)
5	Transmission unit (VXxx)
6	Dual Variable Gain Duplex Filter unit (DVxx)
7	AC/DC Power Supply unit (PWSA)
8	DC/DC Power Supply unit (PWSC)
9	Bias Tee unit (BPxx)[1]
10	Dual Band Diplex Filter unit (DU2A)[1]

[1]Items 9 and 10 are not plug-in units.

Figure 5. Unit positions in the Midi BTS



ID #	Description
1	Transceiver unit (TSxx)
2	2-way Receiver Multicoupler unit (M2xA)
3	Dual Variable Gain Duplex Filter Unit (DVxx)

ID #	Description
4	Transmission unit (VXxx)
5	Power Supply Unit (PWSx)
6	Base Operations and Interfaces unit (BOIx)
7	Transceiver Baseband unit (BB2x)

Figure 6. Unit positions in Mini outdoor BTS

Steps

1. **Install a Wideband Combiner (WCxA/WCxT) unit (not applicable in Mini outdoor).**
2. **Install a Remote Tune Combiner (RTxx) unit (not applicable in Mini outdoor).**
3. **Install a Dual Variable Gain Duplex Filter (DVxx) unit.**
4. **Install a Dual Band Diplex Filter (DU2A) unit (not applicable in Mini outdoor).**
5. **Install a Transceiver (TSxx) unit.**
6. **Install a Receiver Multicoupler (M2xA or M6xA) unit.**
7. **Install a Base Operations and Interfaces (BOIx) unit.**
8. **Install a Transceiver Baseband (BB2x) unit.**
9. **Install a Transmission unit.**
10. **Install a Power Supply (PWSx) unit.**
11. *If* you are installing units to an indoor cabinet,

    Then

    See Installing a Bias Tee (BPxx) unit in an indoor BTS antenna box.
12. *If* you are installing units to an outdoor cabinet,

    Then

See Installing a Bias Tee (BPxx) unit inside an outdoor BTS antenna box, or Installing a Bias Tee (BPxx) unit outside an outdoor BTS antenna box.

3.2 Installing a Wideband Combiner (WCxA) unit

Summary

UltraSite EDGE BTS cabinet holds a maximum of nine Wideband Combiner (WCxA) units. In Mini Outdoor cabinet, the WCxA unit is not in use.

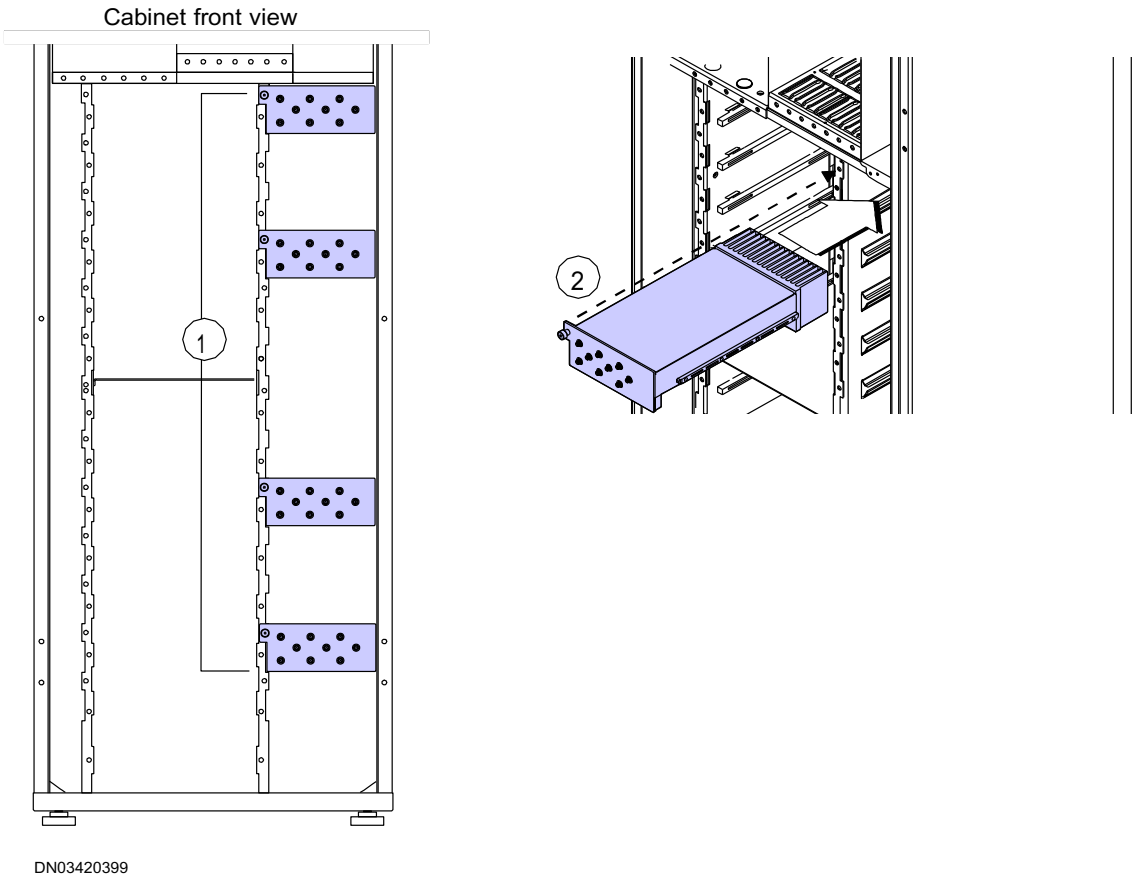


Figure 7. WCxA unit installation

1	WCxA
2	WCxA

Steps

1. **Use the handles on the front of the unit to slide the unit into the cabinet core.**
2. **Tighten the unit retaining screw.**
3. **Repeat the previous steps for each additional WCxA unit.**
4. **Connect the unit cables.**
5. **Unblock the BCF either locally using Nokia BTS Manager or from the BSC.**
6. **Make a test call on the TRXs.**

3.3 Installing a Triple Wideband Combiner (WCxT) unit

Summary

UltraSite EDGE BTS cabinet holds a maximum of four WCxT units. The following figure shows the WCxT units in slots 1, 4, 9, and 12. In Mini outdoor cabinet, the unit is not in use.

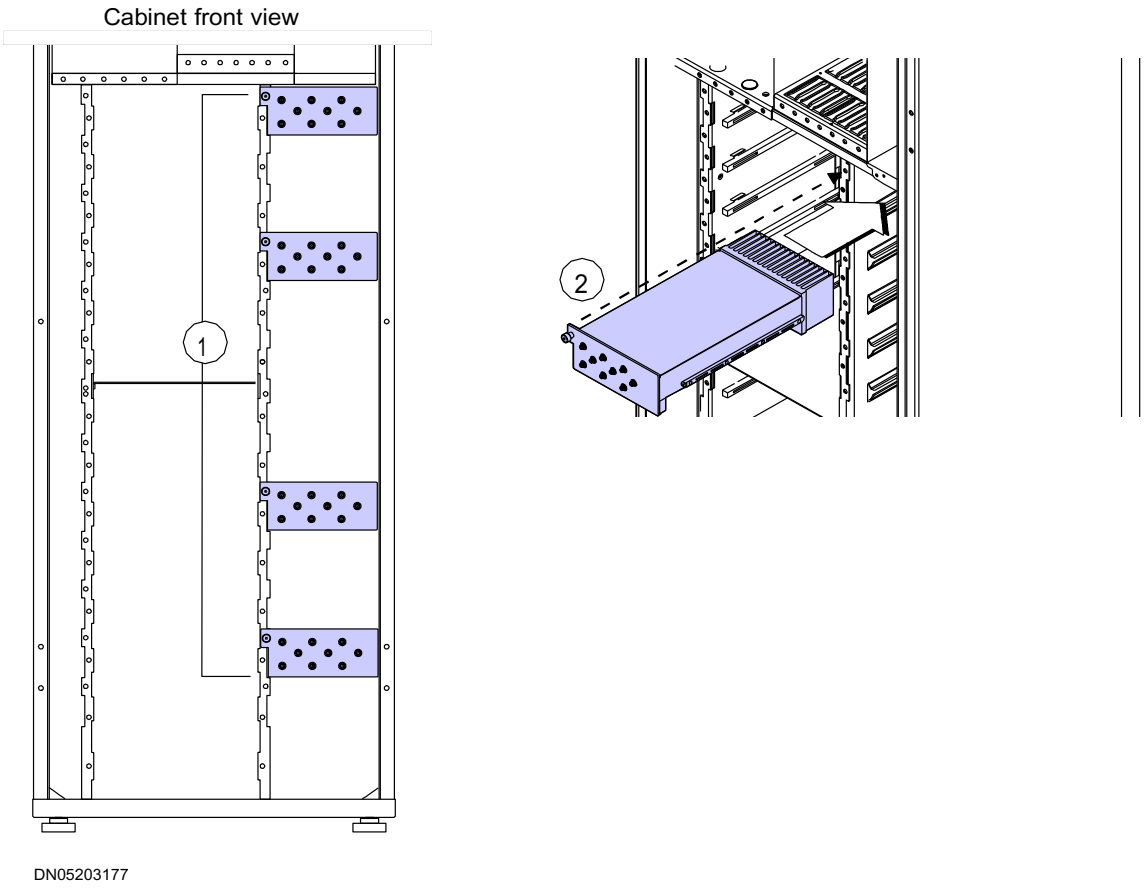


Figure 8. WCxT unit installation

1	WCxT
2	WCxT

Steps

1. **Use the tightening screw on the front of the unit to slide the unit into the cabinet core.**
2. **Tighten the unit retaining screw.**
3. **Repeat steps 1 and 2 for each additional WCxT unit.**
4. **Connect the unit cables.**

5. **Unblock the BCF either locally using Nokia BTS Manager or from the BSC.**

6. **Make a test call on the TRXs.**

3.4 Installing a Remote Tune Combiner (RTxx) unit

Summary

In UltraSite EDGE BTS, two slots are available for RTxx units (upper and lower). The (RTxx) unit is not in use in Mini Outdoor cabinet.

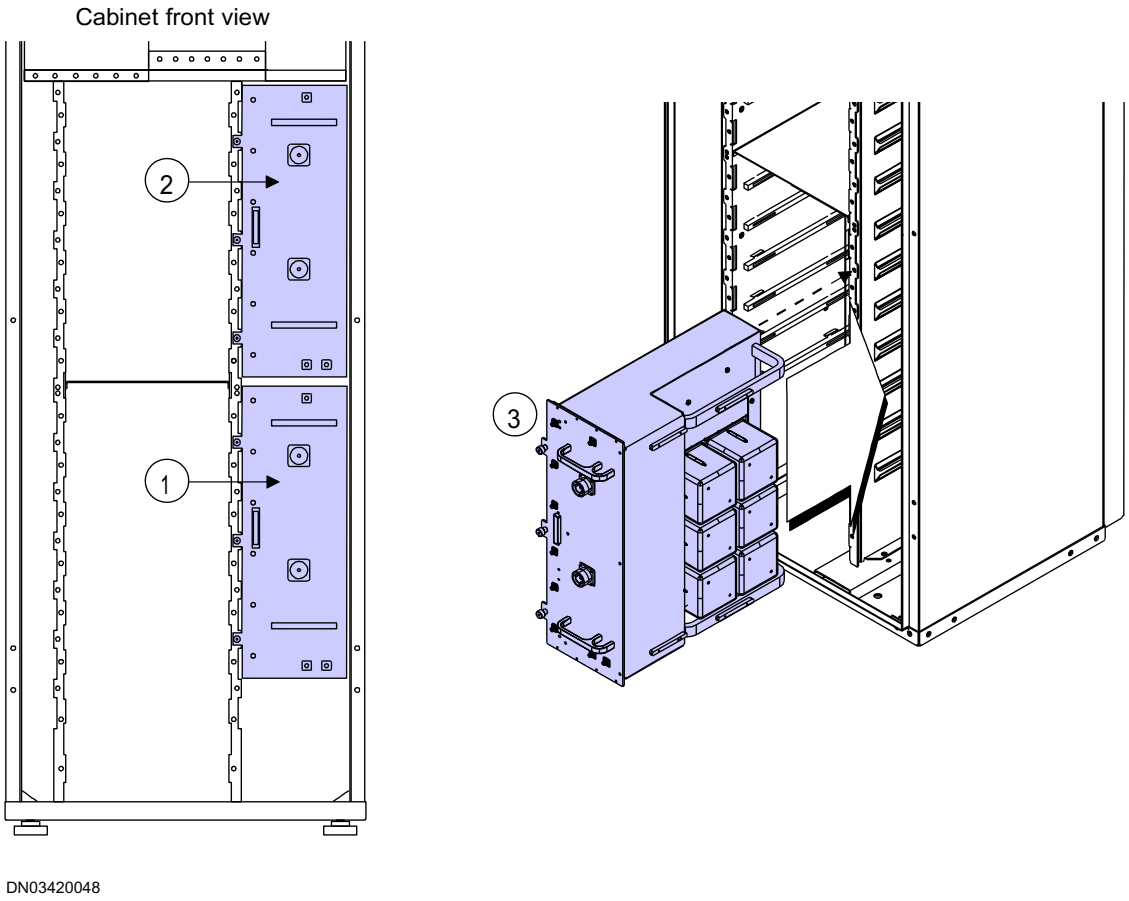


Figure 9. RTxx unit installation

1	RTxx #2

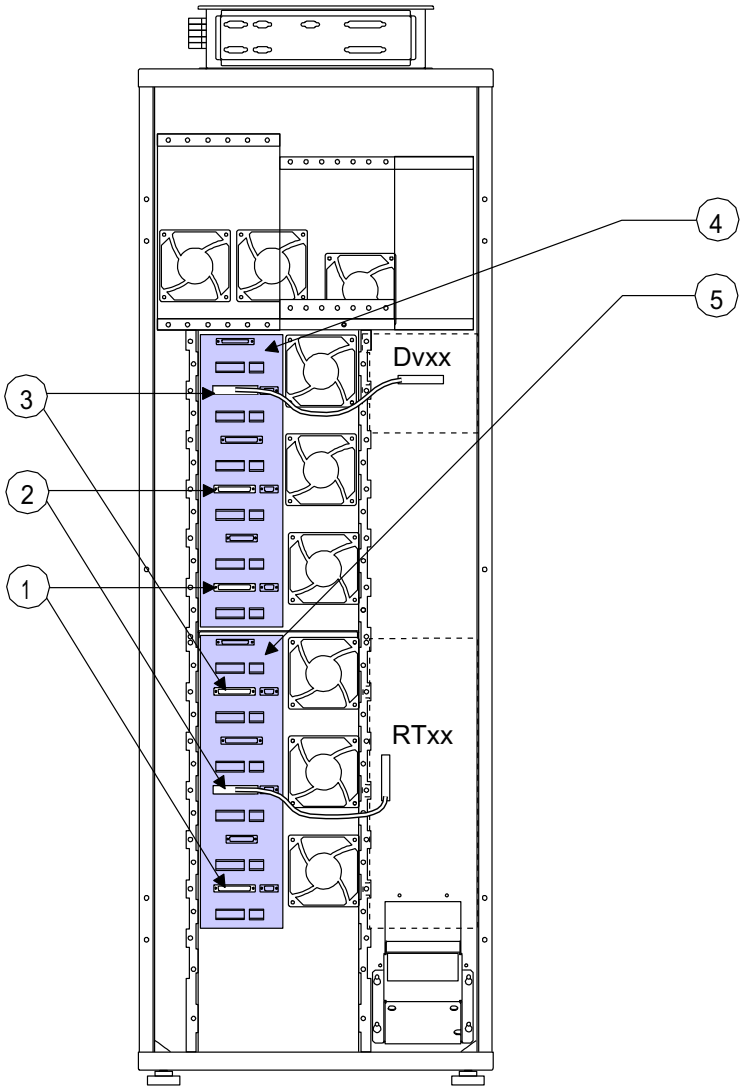
2	RTxx #1
3	RTxx

Steps

1. **Align the top and bottom RTxx unit guides with those on the rack.**
2. **Use the handles on the front of the unit to slide the unit into the cabinet.**
3. **Check that the rear connectors are fully engaged.**
4. **Tighten the unit retaining screws.**
5. **Connect the RTxx cable from the X14 connector on the RFU backplane to the RTxx unit.**

Note

You can only connect the RTxx cable to the centre D-37 connector on each RFU backplane, as shown in the following figure.



UltraSite cabinet core

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1	X23
2	X14
3	X5
4	Upper RFU backplane
5	Lower RFU backplane

Figure 10. Installation of DVxx or RTxx power supply cables to the RFU backplane

6. **Repeat steps 1 - 5 for each additional RTxx unit.**

3.5 Installing a Dual Variable Gain Duplex Filter (DVxx) unit

Summary

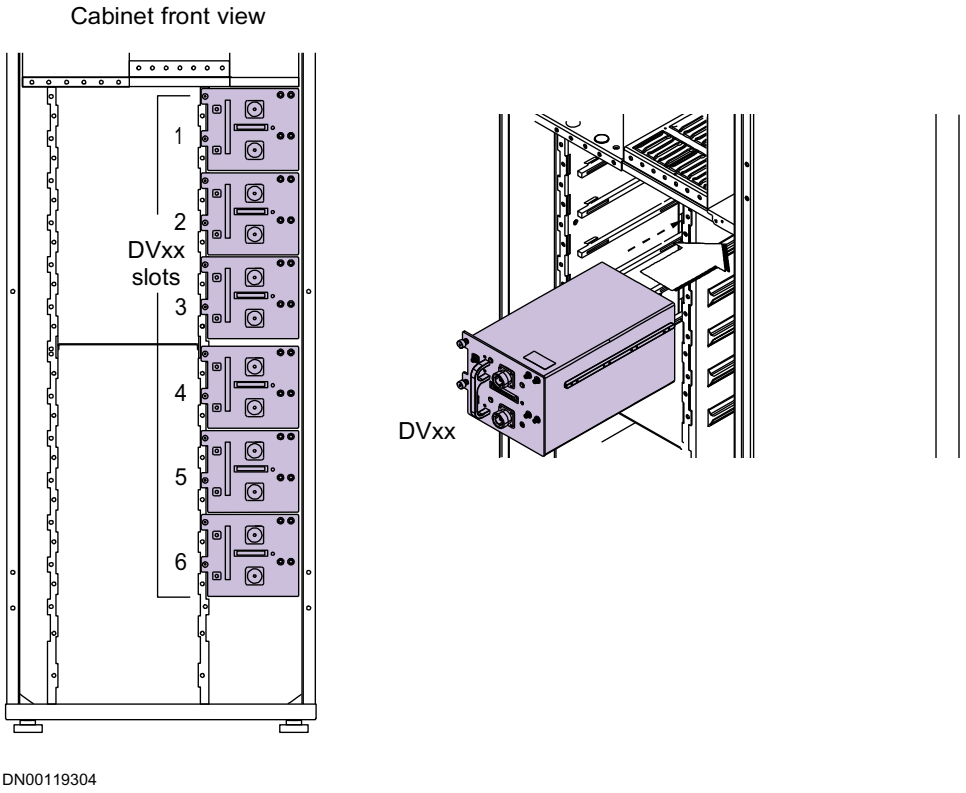


Figure 11. DVxx unit installation

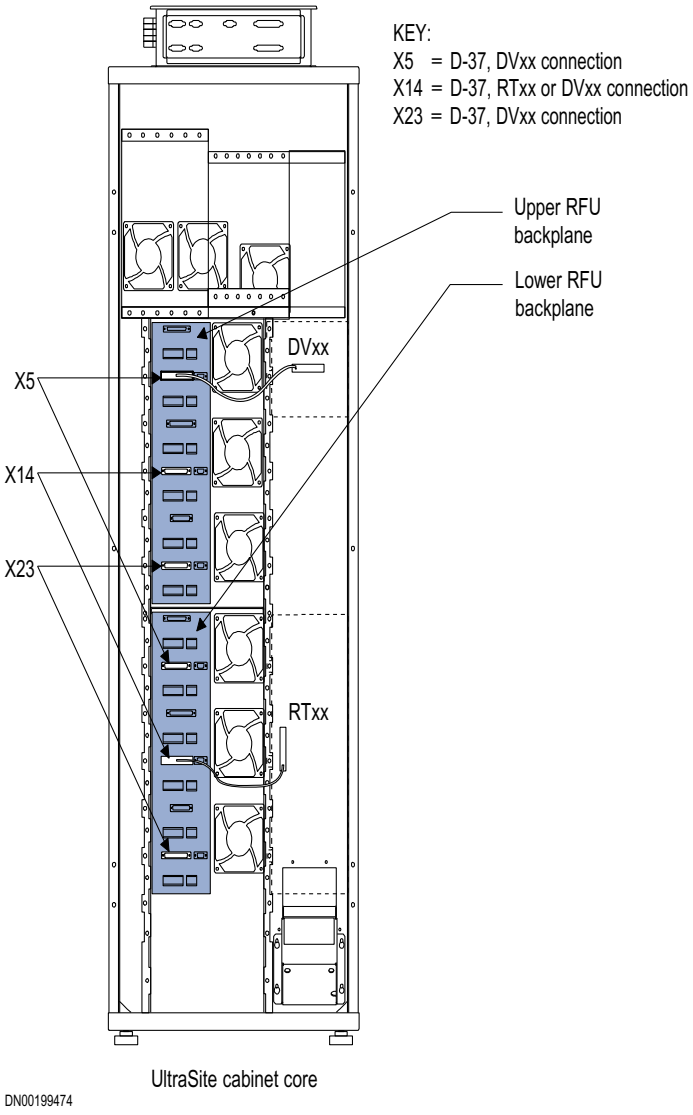


Figure 12. Installation of DVxx or RTxx power supply cables to the RFU backplane

The cabinet provides slots for up to six DVxx units, three in the upper and three in the lower right area of the cabinet.

The Mini Outdoor cabinet provides only two slots for DVxx units. See *Overview of installing GSM/EDGE units* for DVxx unit positions in the Mini Outdoor cabinet.

Steps

1. **Align the top and bottom RTxx unit (DVxx unit in Mini Outdoor) guides with those on the rack.**
2. **Use the handle on the front of the unit to slide the unit into the cabinet.**
3. **Check that the rear connectors are fully engaged.**
4. **Tighten the unit retaining screws.**
5. **Remove the connector cap from the backplane.**
6. **Connect the DVxx cable from the X14 connector on the RFU backplane to the DVxx unit.**
7. **Repeat steps 1 - 6 for each additional DVxx unit.**

3.6 Installing a Dual Band Diplex Filter (DU2A) unit

Summary

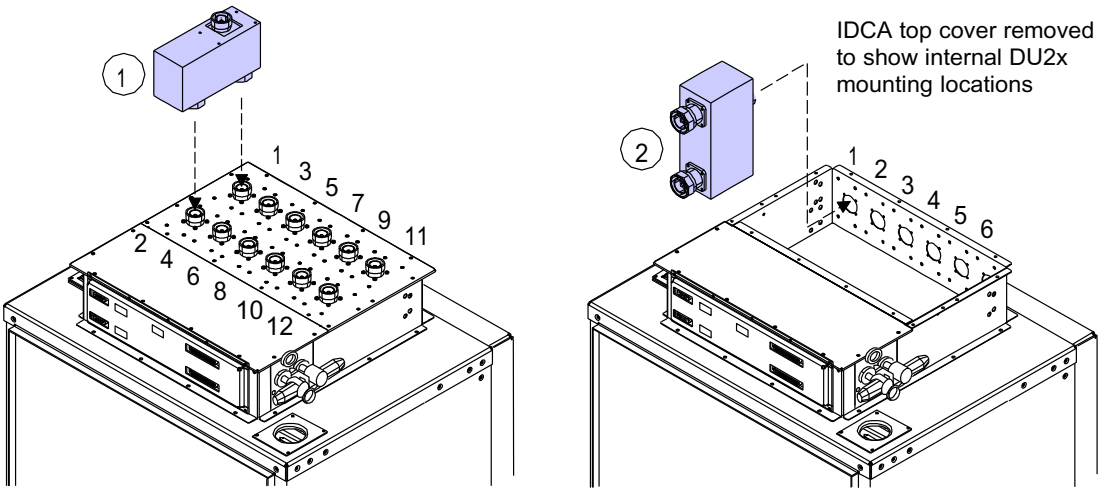


Figure 13. DU2A unit installation in Indoor cabinet

1	DU2x
2	DU2x

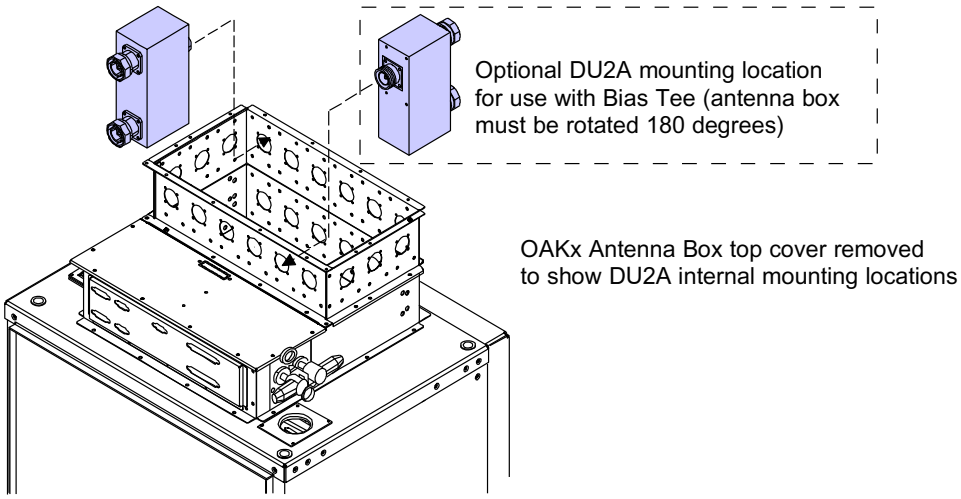


Figure 14. DU2A unit installation in Outdoor cabinet

You can install up to six DU2A units to the inside of the ODCA antenna box, or to the inside or outside of the IDCA antenna box, depending on your space requirements.

Steps

1. Install the DU2A unit to the outside of the IDCA antenna box.

a. Mount the DU2A unit to the antenna connectors on top of the antenna box.

b. Tighten the antenna cable to the DU2A unit.

c. Repeat steps a and b for additional DU2A units.

2. Install the DU2A unit inside the IDCA antenna box.

a. Remove the antenna box cover.

b. Mount the DU2A unit to the inside of the antenna box.

c. Insert the four retaining screws into the DU2A unit through the screw holes in the antenna box.

d. Tighten the site antenna cable(s) to the DU2A unit.

e. Repeat steps a - d for each additional DU2A unit.

f. Replace the antenna box cover.

3. **Install the DU2A to an ODCA cabinet.**
   a. Remove the antenna box cover.
   b. Mount the DU2A unit to the rear of the antenna box.
   c. Insert the four retaining screws into the DU2A unit through the screw holes in the antenna box.
   d. Tighten the site antenna cable(s) to the DU2A unit.
   e. Repeat steps a - d for each additional DU2A unit.
   f. Replace the antenna box cover.

3.7 Installing a Transceiver (TSxx) unit

Before you start

Before you start the installation, remove the connector caps prefitted in the Mini Outdoor cabinet.

Summary

Caution

The connector pins are fragile. Use minimum force to avoid breaking any connector pins.

Caution

The cabinet does not contain dust filters. Protect all unused connectors and slots in the outdoor cabinet with connector caps and sealing units.

Note

A connector cap is only necessary for outdoor installations.

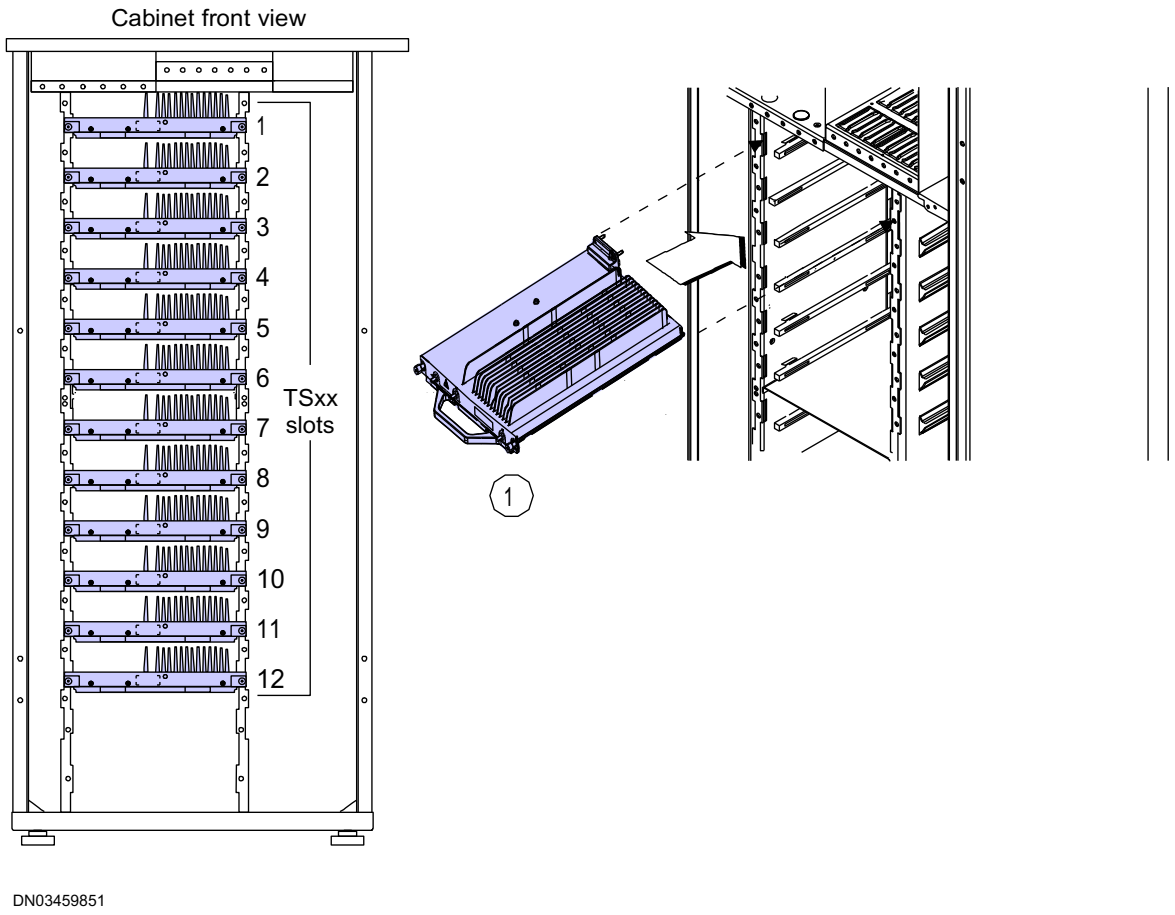


Figure 15. TSxx unit installation

1	TSxx

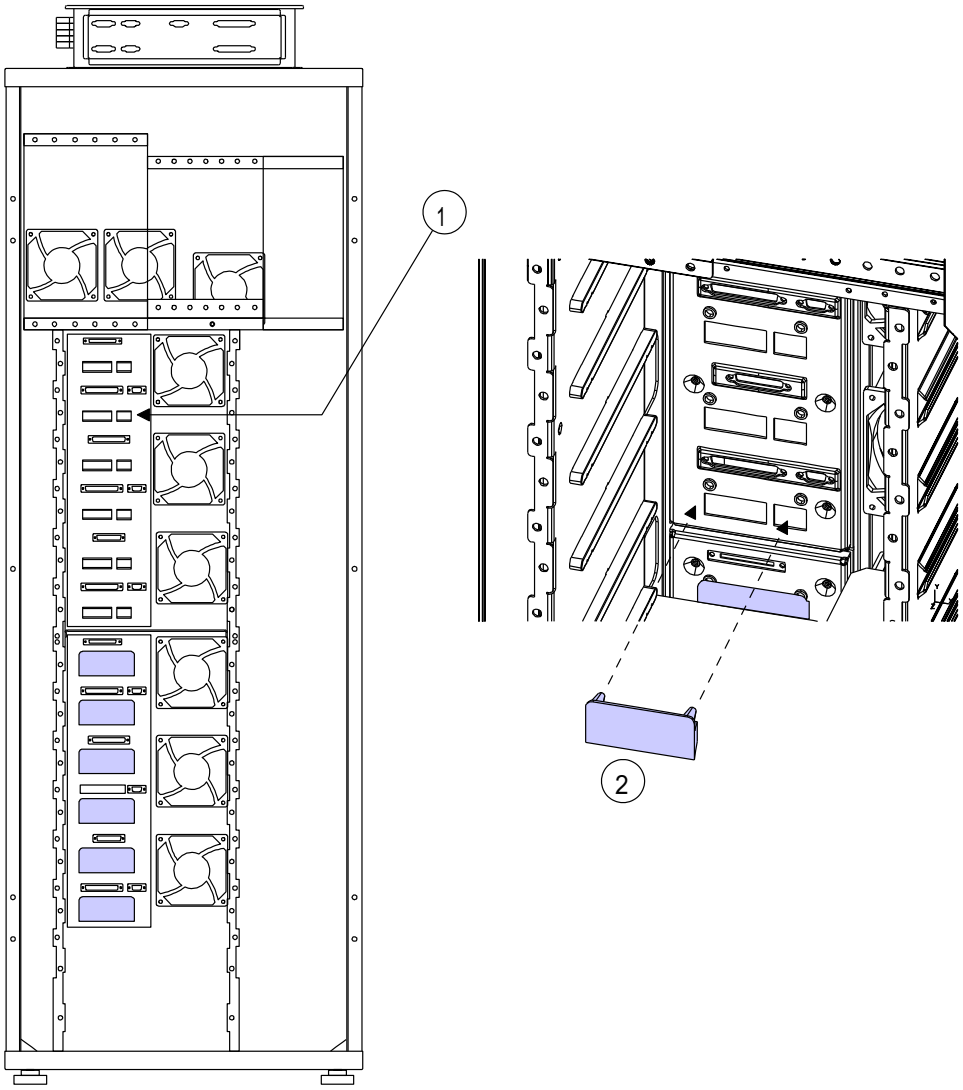


Figure 16. TSxx connector cap installation

1	TSxx connector (12 places per cabinet)
2	TSxx connector cap

The TSxx unit consists of one transmitter, one main receiver, and one diversity receiver. The slots in the middle of the cabinet can hold up to 12 TSxx units from top to bottom.

The Mini Outdoor cabinet provides only four slots for TSxx units. See *Overview of installing GSM/EDGE units* for TSxx unit positions in the Mini Outdoor cabinet.

Steps

1. **Insert the TSxx unit into a free slot.**
2. **Push the TSxx unit into the RFU backplane carefully but promptly and without hesitation.**
3. **Tighten the retaining screws to 1.0 Nm (0.74 ft lb) with a T20 Torx driver.**
4. **Repeat steps 1, 2 and 3 for each additional TSxx unit.**
5. **Connect TSxx cables.**
6. **Place one connector cap on each unused connector slot (outdoor cabinet only).**

3.8 Installing a Receiver Multicoupler (M2xA or M6xA) unit

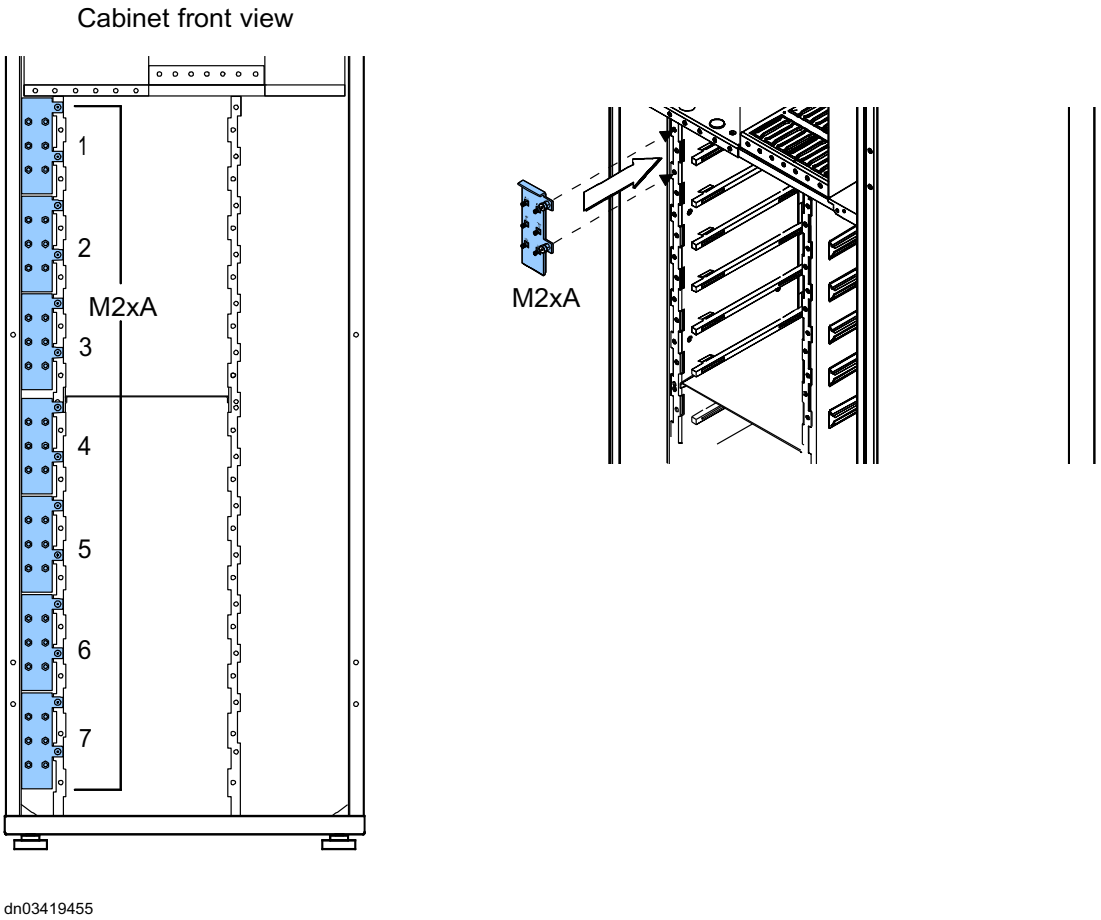
Summary

UltraSite EDGE BTS cabinet core holds up to seven M2xA units or two M6xA units (on the left side).

The Mini Outdoor cabinet provides two slots for M2xA units. See Figure *Unit positions in Mini Outdoor cabinet* in section *Overview of installing GSM/EDGE units* for M2xA unit positions in the Mini Outdoor cabinet.

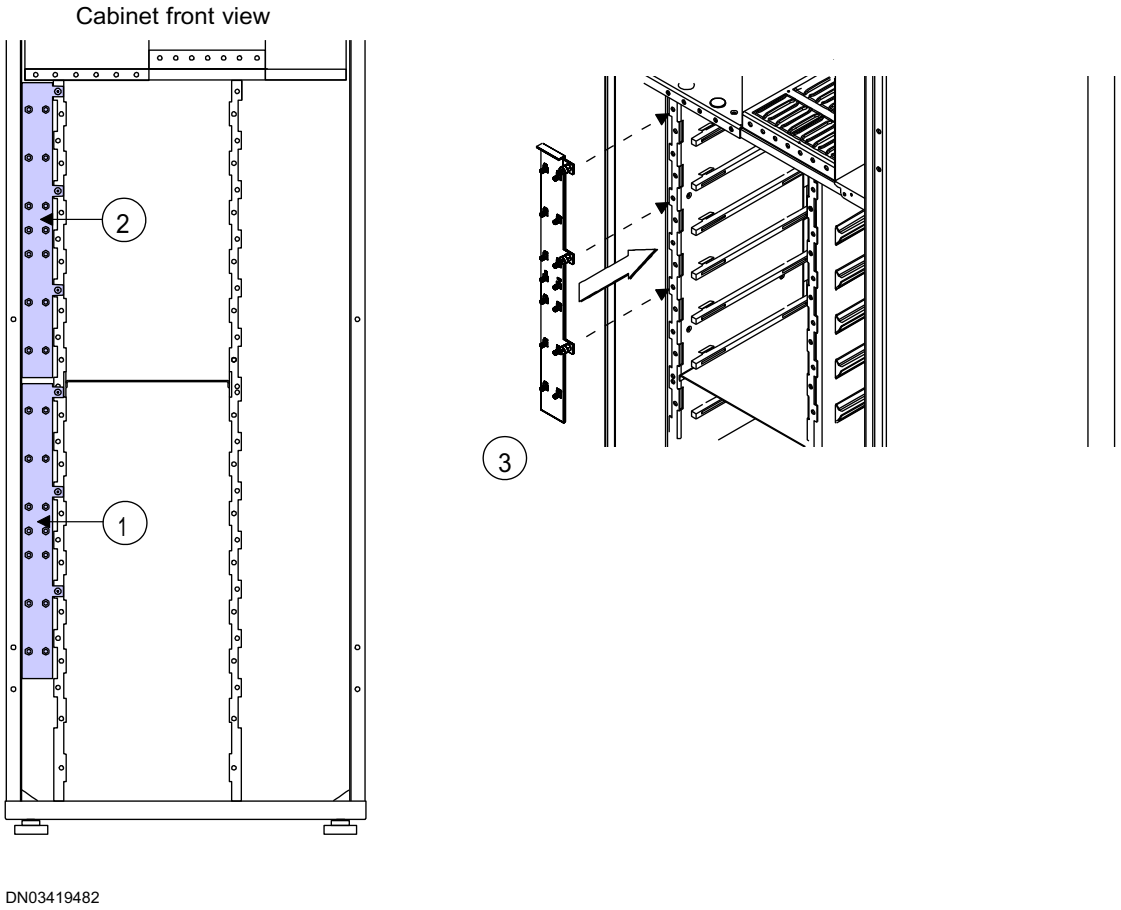
Note

M6xA unit cannot be fitted in Mini Outdoor cabinet.



1	M2xA

Figure 17. M2xA unit installation



1	M6xA #2
2	M6xA #1
3	M6xA

Figure 18. M6xA unit installation

Steps

1. **Mount the unit in the left front area of the cabinet.**
2. **Tighten the unit retaining screws.**
3. **Repeat steps 1 and 2 for each additional M2xA or M6xA unit.**

3.9 Installing a Base Operations and Interfaces (BOIx) unit

Before you start

See *Overview of installing GSM/EDGE units* for BOIx unit position in the Mini Outdoor cabinet. In the Mini outdoor cabinet, there is a metal plate preinstalled in the cabinet to cover the BOIx unit. When the unit is installed to the cabinet, reinstall the plate. Cable ties holding the BOIx cable must not be removed.

Summary

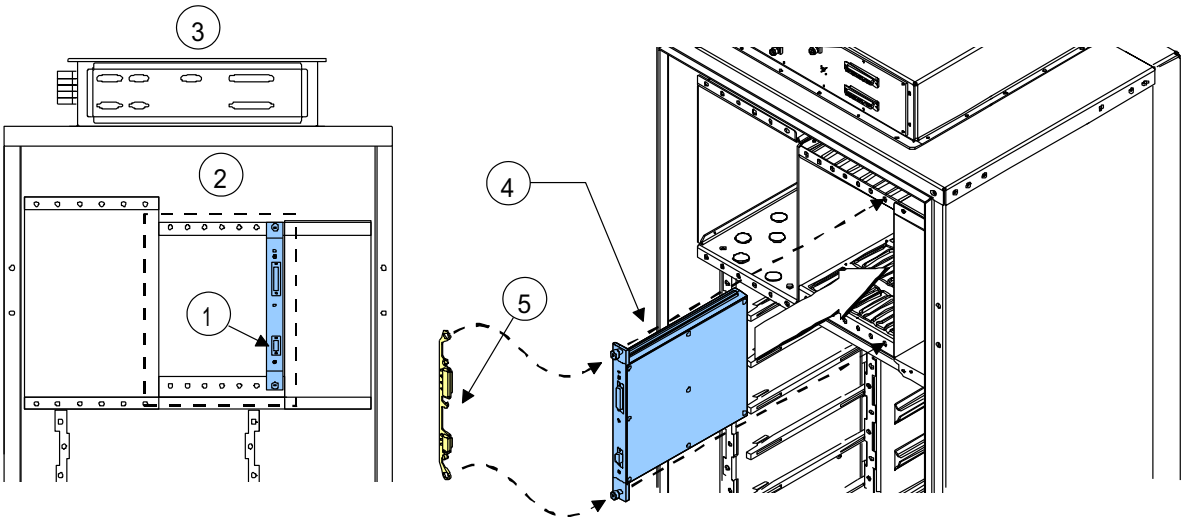


Figure 19. BOIx unit installation

1	BOIx
2	Common rack area
3	Cabinet front view
4	BOIx
5	Rubber cover

Steps

1. **Insert the BOIx unit into the far right slot of the common rack area of the cabinet (bottom left in the Mini Outdoor cabinet).**

Warning

Ensure that the Faraday cage surrounding the FXC cards is not removed (or that it is replaced if already removed) before removing the BOIA card.

2. **Attach a rubber cover to the BOIx unit (not applicable to Mini outdoor cabinet).**

3. **Tighten the retaining screws.**

3.10 Installing a Transceiver Baseband (BB2x) unit

Purpose

The BB2x unit consists of two independent baseband modules. Each module functions with its respective TSxx unit. The cabinet provides slots from left to right for up to six BB2x units.

The Mini Outdoor cabinet provides only two slots for BB2xx units. See *Overview of installing GSM/EDGE units* for BB2xx unit positions in the Mini Outdoor cabinet.

Before you start

Caution

Always use an ESD wrist strap when handling units labelled with the ESD sign. Labelled units are sensitive to electrostatic discharge.

Note

The far right slot of the common subrack area in the Mini Outdoor cabinet is reserved for installation of a BOIx unit. Do not install BB2x unit into this slot.

Note

BB2x units can be in any position when flexible cross-connects are used. You must install them from left to right in sequential order when the flexible cross-connects are not used.

Note

A dummy unit is required for each unused BB2x slot in an OAKx.

Summary

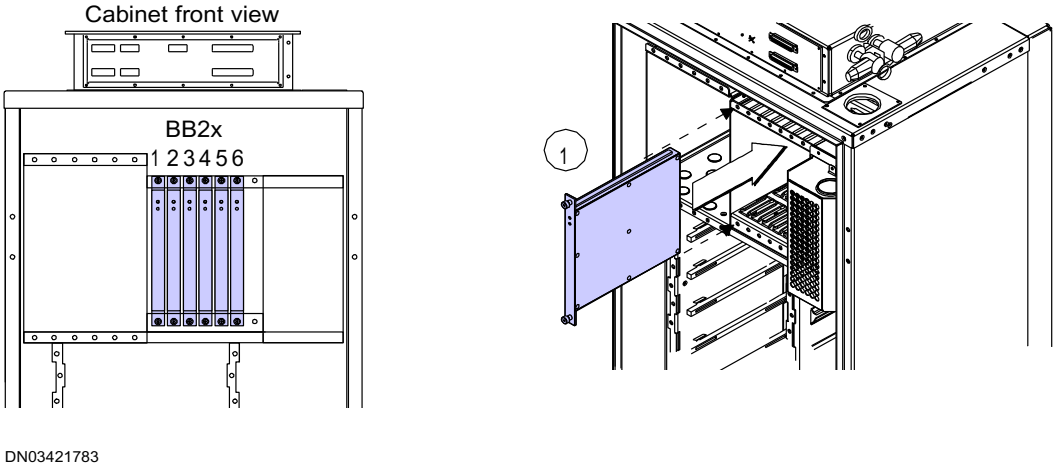


Figure 20. BB2x unit installation

1	BB2x

Steps

1. **Remove the BB2x unit from its protective package and check for visible damage.**

2. **Insert the BB2x unit into an unused slot.**

3. **Tighten the retaining screws to 1.0 Nm (0.74 ft lb) with a T20 Torx driver.**

4. **Repeat steps 1 - 3 for each additional BB2x unit.**

5. **Install dummy BB2x units, if required.**

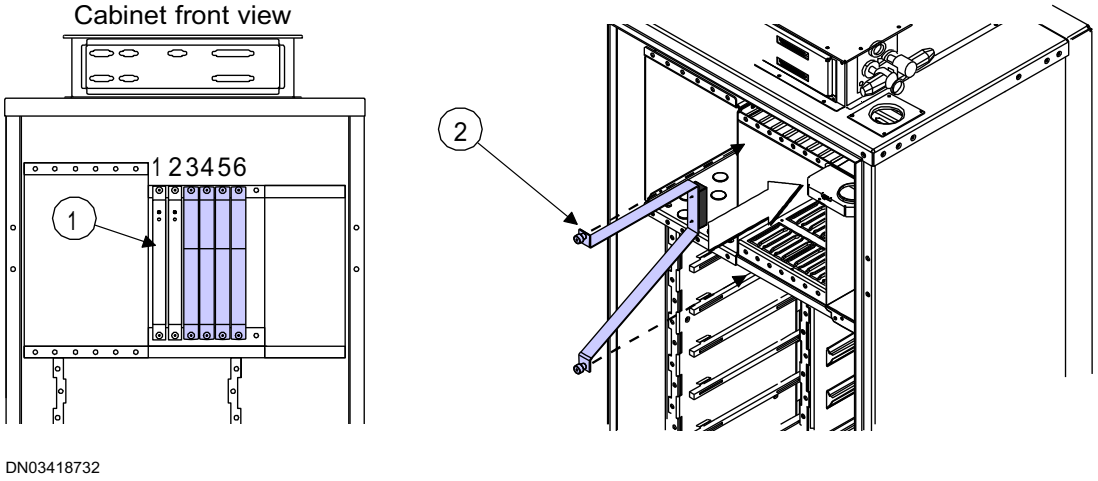


Figure 21. Dummy BB2x unit installation

1	BB2x
2	Dummy BB2x unit

a. Unpack the dummy BB2x unit from its protective package and check for visible damage.
b. Insert the dummy unit into the unused slot.
c. Tighten the unit retaining screws with a T20 Torx driver.
d. Repeat steps a - c for additional unused slots.

6. **Recycle the packing material.**

3.11 Installing a Transmission (VXxx) unit

Summary

The upper right cabinet holds up to four VXxx units. The unit positions are 1 to 4 from left to right.

See *Overview of installing GSM/EDGE units* for VXxx unit positions in the Mini Outdoor cabinet.

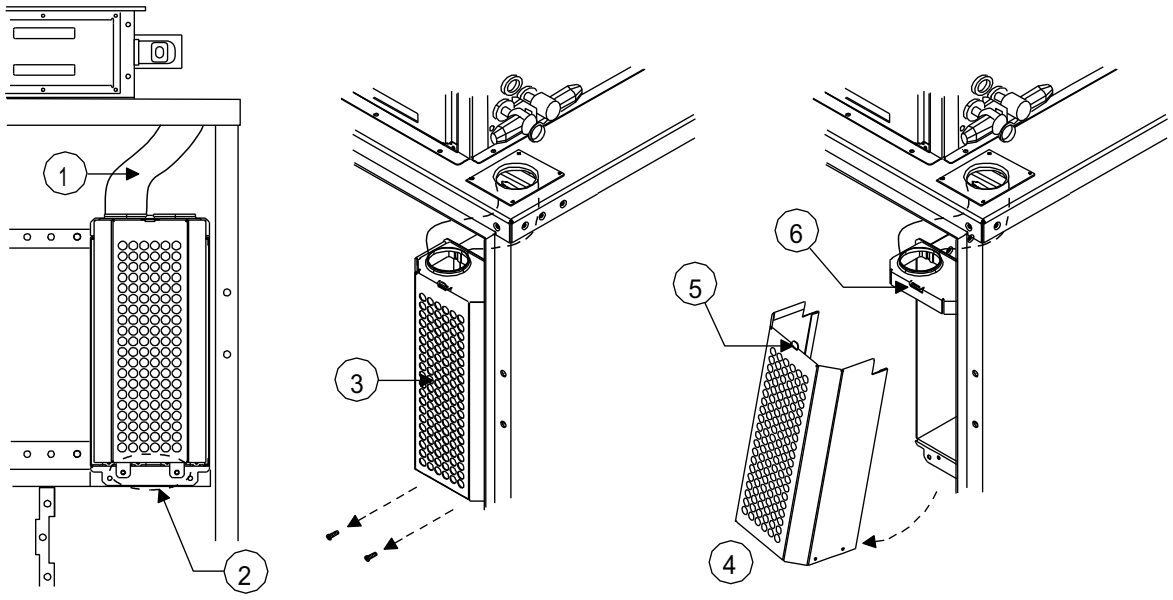
You can install only one FC E1/T1 transmission unit per cabinet, and you must use slot 1 (far left). You can install up to four FXC transmission units, but you must install one of the units in slot 1. The other units can be installed in any slot, with the exception of the following:

- Both FXC STM-1 and FXC Bridge must be installed for the intended SDH functionality. If there is no FXC Bridge present, the FXC STM-1 unit will be limited in operation.

  Install the FXC STM-1 and FXC Bridge units side by side with the FXC Bridge unit on the left, if possible.
- Do not install an FXC STM-1 unit in the first slot, as the FXC STM-1 does not support node master functionality.
- Do not install more than one FXC STM-1 unit or more than one FXC Bridge unit.

The indoor cabinet has only one EMC sock.

Indoor cabinet front view

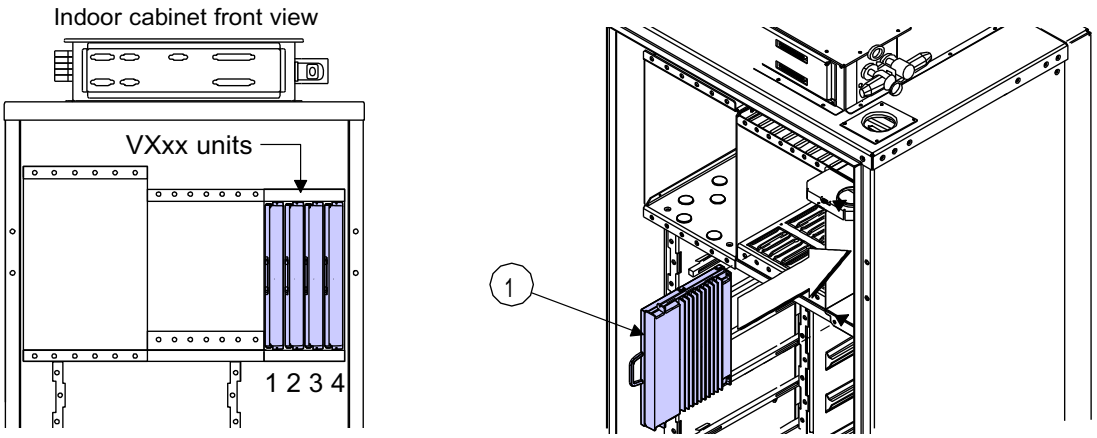


DN03427532

1	Cable sleeve
2	Screws
3	Transmission unit cover

4	Transmission unit cover, removed Screws
5	Tab
6	Slot

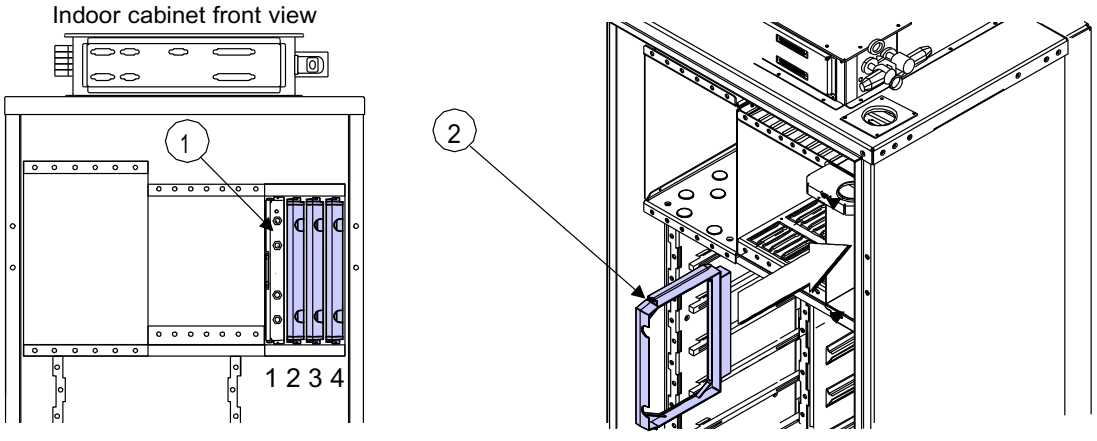
Figure 22. Removing VXxx unit cover from UltraSite EDGE BTS cabinet



DN03420348

1	VXxx unit

Figure 23. VXxx unit installation in UltraSite EDGE BTS cabinet



DN03418744

1	VXxx unit
2	VXxx unit Dummy transmission unit

Figure 24. Dummy Transmission unit installation

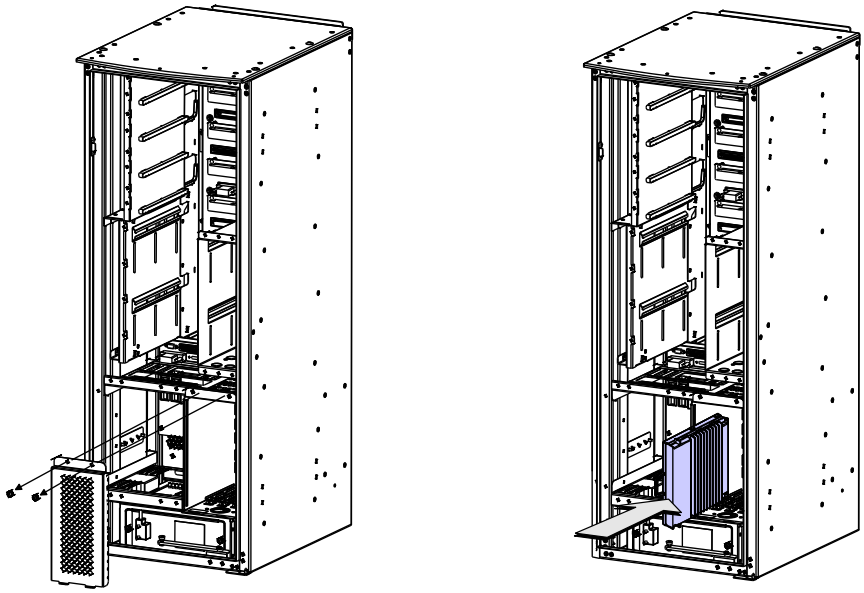


Figure 25. Removing VXxx unit cover and installing VXxx unit in Mini Outdoor cabinet

Steps

1. Remove the VXxx unit cover.

a. Remove the two screws from the VXxx unit box.

b. Pull out the bottom of the VXxx unit cover while pulling down to disengage the tab.

c. Remove the cover and set aside until after you route the interface cables.

2. Install VXxx units.

Caution

The backplanes and connectors are fragile. Do not force the transmission (VXxx) unit into position during installation. Gently tilt the rear of the transmission (VXxx) unit up to engage the backplane connector.

a. Insert the VXxx unit into the cabinet.
b. Tighten the retaining screws.
c. Repeat steps a and b for each additional VXxx unit.

3. Install dummy VXxx unit.

a. Insert the dummy unit into an unused slot.
b. Tighten the two retaining screws.
c. Repeat steps a and b for each additional dummy VXxx unit.
d. Recycle the packing material.

4. Install VXxx unit box cover.

a. After you route the interface cables, place the cover on the VXxx unit box.
b. Insert and tighten the two screws until the cover is flush on the VXxx unit box.

3.12 Installing a Power Supply (PWSx) unit

Summary

You can install two PWSA or PWSC units or three PWSB units into the BTS cabinet. PWSA and PWSC units are fully redundant in installations of six TSxx units or less.

See *Overview of installing GSM/EDGE units* for PWSx unit positions in the Mini Outdoor cabinet.

Steps

1. Move backplane connectors for PWSA or PWSC installation (not applicable when installing units in Mini Outdoor cabinet).

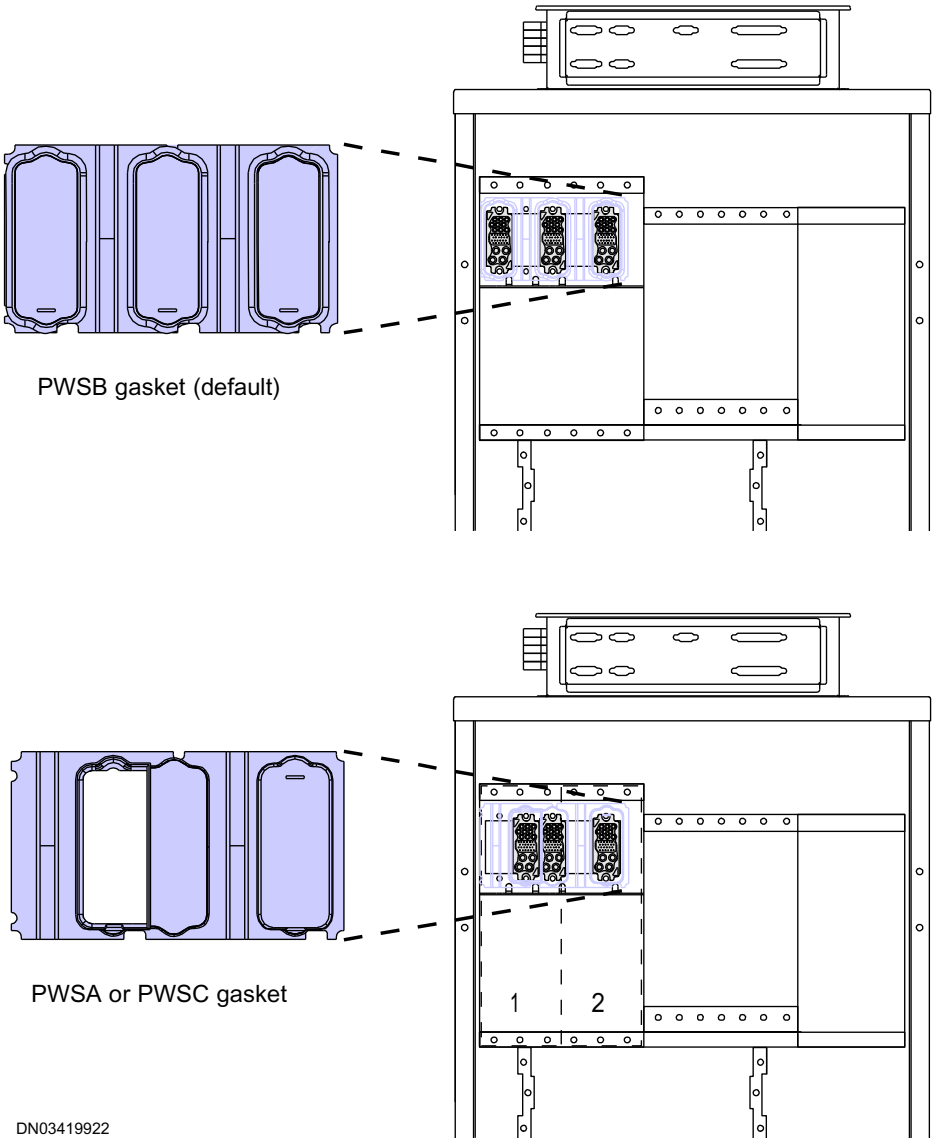


Figure 26. PWSA, PWSB, and PWSC gasket installation

Note

Gaskets only apply to outdoor installations.

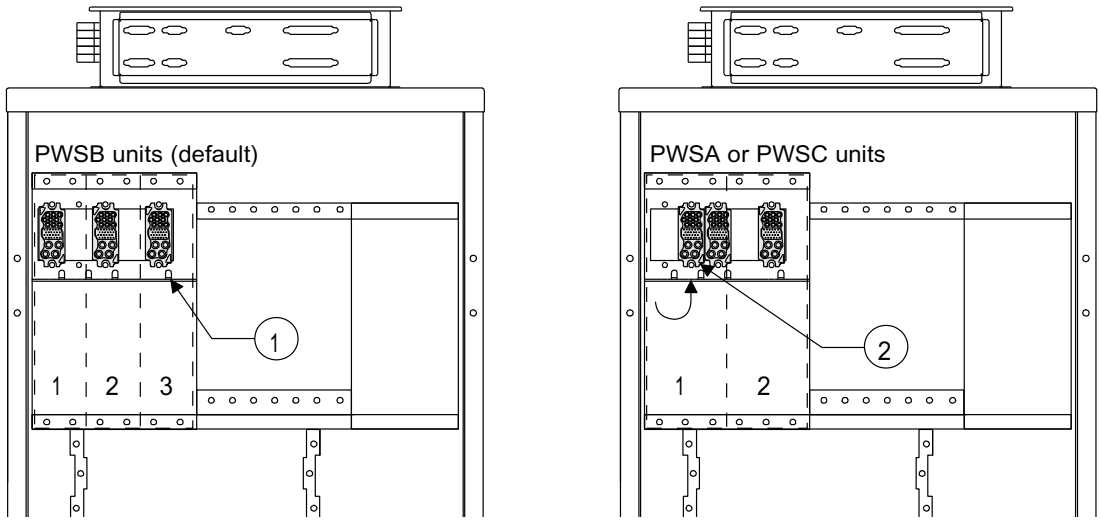


Figure 27. Moving the backplane connector to install the PWSA or PWSC

1	Hole for PWSx locating pin (four places)
2	Relocated connector

a. Remove the default PWSB gasket from the connector.
b. Remove the two screws that secure the far left connector to the backplane.
c. Slide the connector to the right and align it with the screw holes.
d. Replace the two screws.
e. Install the PWSA gasket.

2. Install AC or DC power supply units.

Warning

Danger of lethal voltages! Make sure that the mains power breaker is off before repositioning the backplane connectors of the PWSx power-supply unit.

Caution

Do not insert PWSx units if the power supply switch is in the ON position.

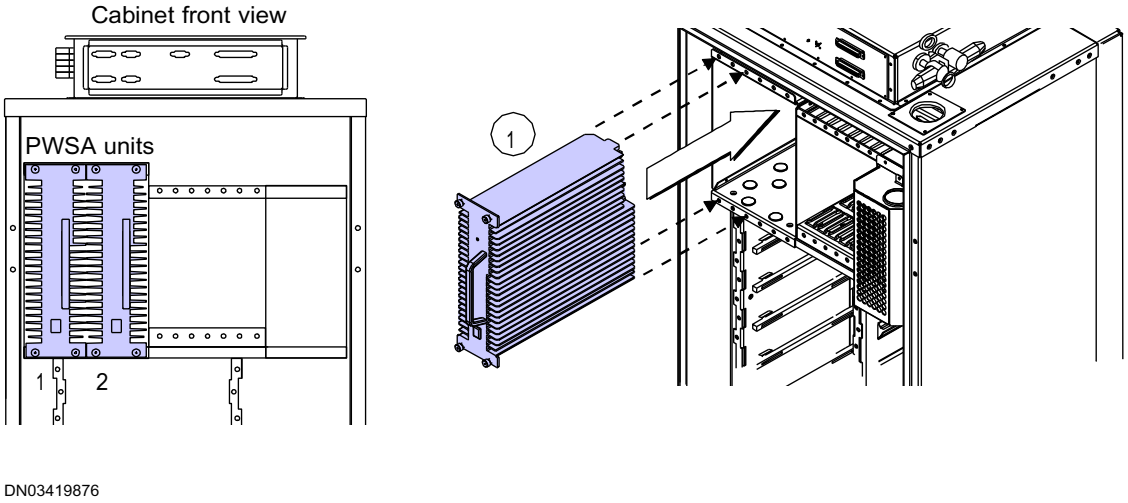


Figure 28. PWSA unit installation

1	PWSA

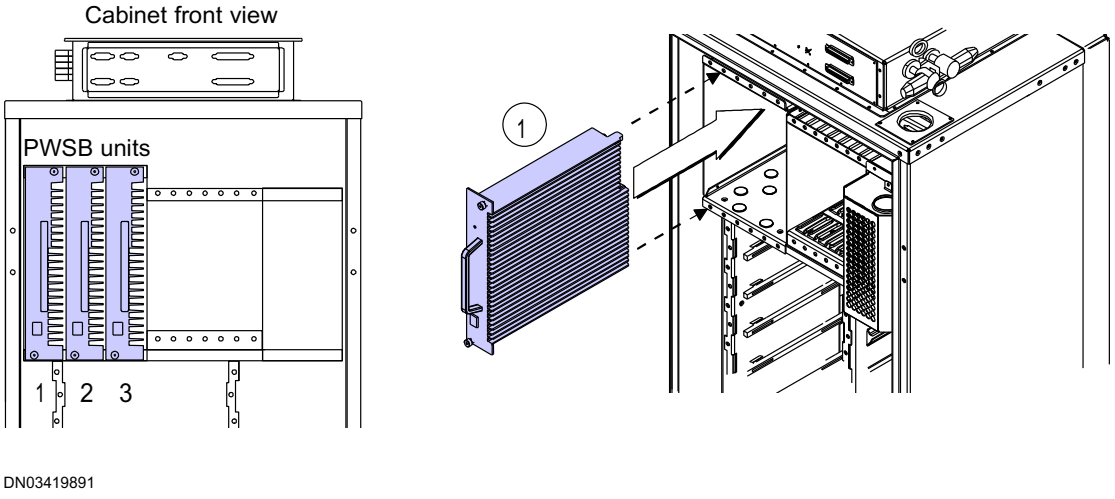


Figure 29. PWSB unit installation

1	PWSB

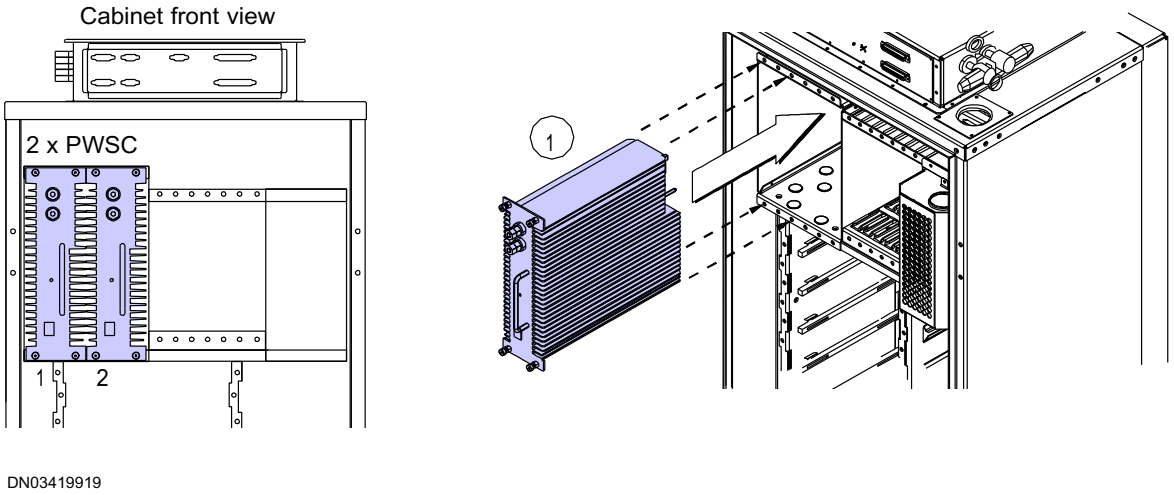


Figure 30. PWSC unit installation

1	PWSC

Note

The default -48 VDC Filter module is replaced with +24 VDC Filter module (DCFB) for PWSC unit installation.

a. Ensure that the power supply switch of the PWSx unit is in STAND BY position.

b. Slide the PWSx unit into the top left area of the cabinet (middle right area in the Mini Outdoor cabinet). Ensure that the locating pins are within the cabinet locating holes.

Note

Ensure that the locating pin for the power supply connector engages with the locating hole in the rack.

c. Tighten the PWSx retaining screws.

d. Repeat steps a - c for each additional PWSx unit.

3.13 Installing a Bias Tee (BPxx) unit in an indoor BTS antenna box

Summary

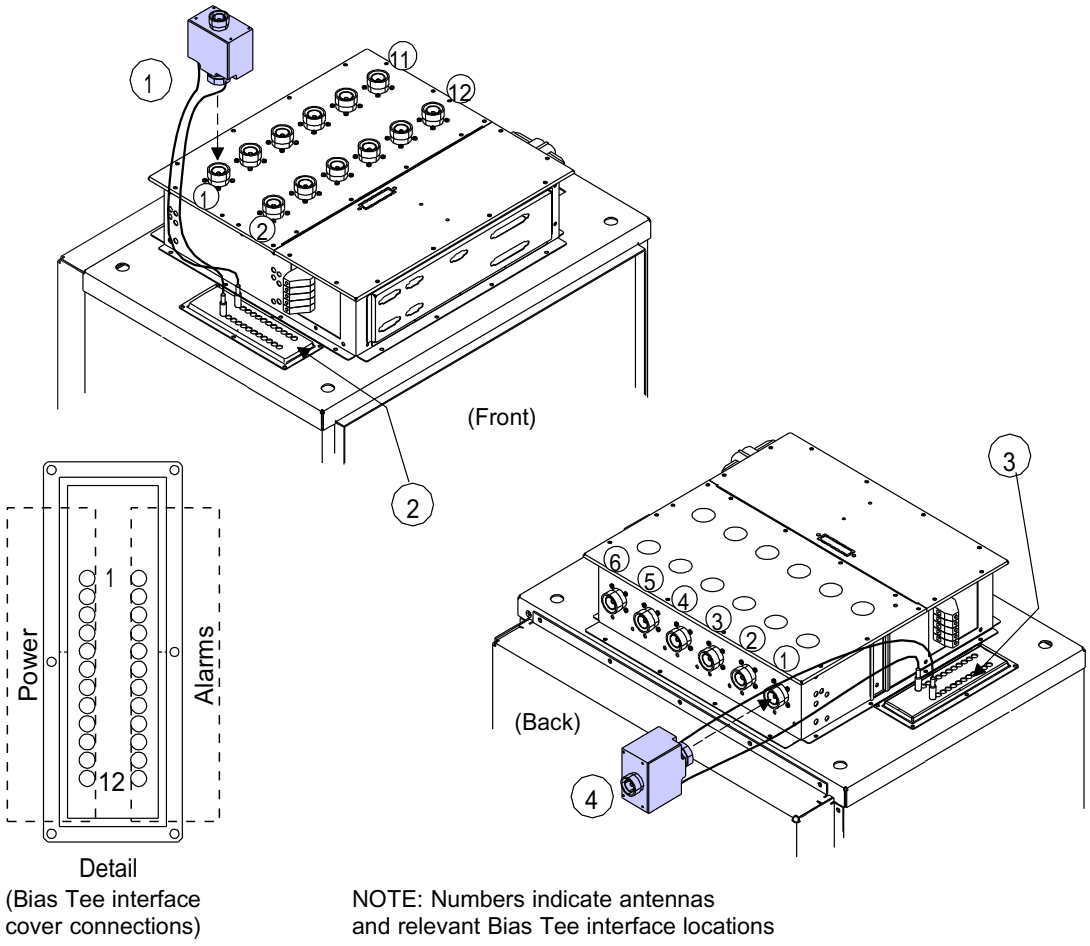


Figure 31. BPxx installation in Indoor cabinet

1	Bias Tee top mount
2	Bias Tee interface
3	Bias Tee interface
4	Bias Tee back mount

Steps

1. **Connect the power supply and antenna monitoring cables to the BPxx unit.**

2. **Install and tighten the BPxx unit to the antenna box connector to 25 Nm (18.44 ft-lb).**

3. **Connect the power supply and antenna monitoring cables from the BPxx unit to the BPxx interface on top of the cabinet.**

4. **Repeat steps 1 - 3 for additional BPxx units.**

3.14 Installing a Bias Tee (BPxx) unit inside an outdoor BTS antenna box

Summary

If more than six Bias Tee units are required, the unit is installed inside the outdoor BTS antenna box.

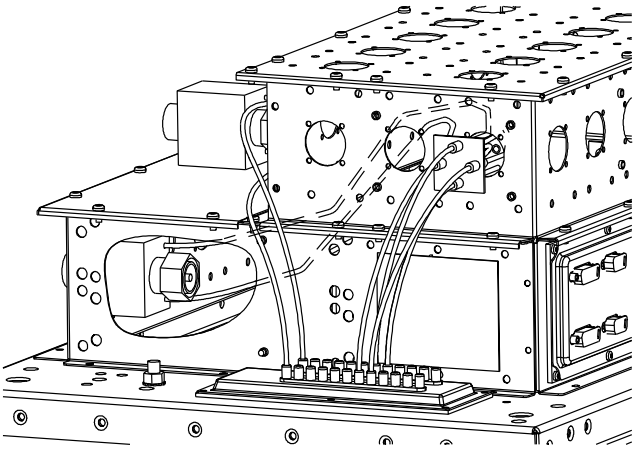


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Figure 32. Installing a Bias Tee (BPxx) unit inside an outdoor BTS antenna box

1	Bias Tee unit
2	Bias Tee termination plate
3	Bias Tee interface

Note

When installing the BPxx unit inside the outdoor cabinet, rotate the BPxx interface board by 180 degrees to complete the cabling inside the cabinet. If the AC filter module interferes, use an extra cable kit with termination plate.

Steps

1. **Connect the power supply with optional VSWR antenna monitoring cables to the BPxx unit.**

2. **Remove the desired antenna knock-out and install the BPxx termination plate to the antenna box.**

3. **Connect the power supply and antenna monitoring cables from the BPxx unit to the BPxx termination plate.**

4. **Install and tighten the BPxx unit to the antenna box connector.**

5. **Remove rubber connector shields.**

   For each BPxx interface connection used, remove the tips of the rubber connector shield by tearing or cutting them off.

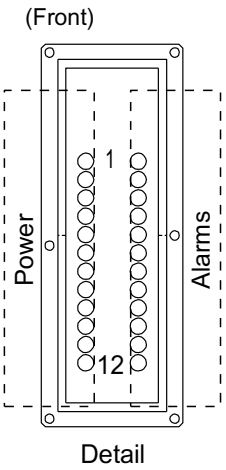
6. **Connect the cables.**

   Connect the power supply and optional VSWR antenna monitoring cables from the BPxx unit to the BPxx terminal plate on the antenna box.

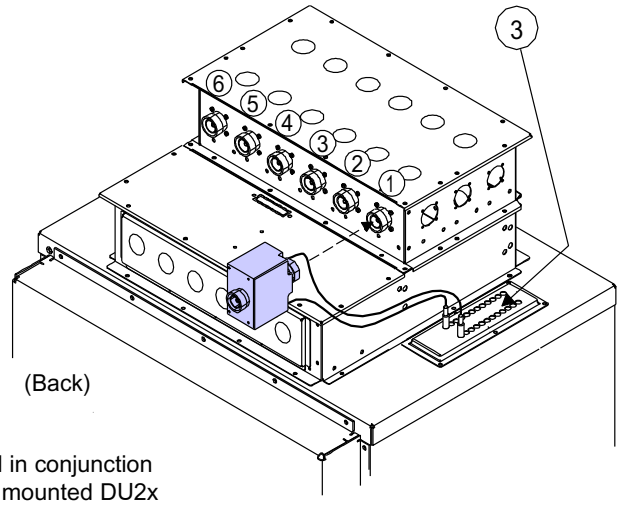
7. **Repeat steps 1 - 6 for additional BPxx units.**

3.15 Installing a Bias Tee (BPxx) unit outside an outdoor BTS antenna box

Summary



(Bias Tee interface cover connections)



Bias Tee used in conjunction with internally mounted DU2x

NOTE: Numbers indicate antennas and relevant Bias Tee interface locations

DN03418311

DN03418311

1	Bias Tee unit
2	Bias Tee termination plate
3	Bias Tee interface

Figure 33. BPxx installation in Outdoor cabinet

Steps

1. **Position the antenna box as required.**

2. **Connect the power supply and antenna monitoring cables from the BPxx unit to the BPxx interface on top of the cabinet.**

3. **Install and tighten the BPxx unit to the connector.**

4. **Remove rubber connector shields**

   For each BPxx interface connection used, remove the tips of the rubber connector shield by tearing or cutting them off.

5. **Connect the cables.**

   Connect the power supply and antenna monitoring cables from the BPxx unit to the BPxx interface.

6. **Repeat steps 2 through 5 for additional BPxx units.**

4 Installing optional core units

4.1 Installing a +24 VDC filter module

Before you start

Warning

Risk of electric shock. Ensure that the mains power supply is off before starting the installation of the AC filter unit, the DC filter unit, and the heater unit (HETA).

Note

The filter module in not in use in Mini Outdoor cabinet.

Summary

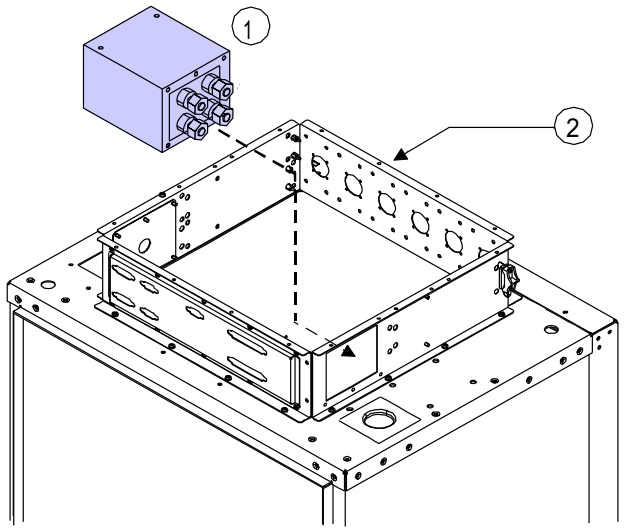


Figure 34. +24 VDC filter module installation

1	+24 VDC filter unit
2	Antenna box, top removed

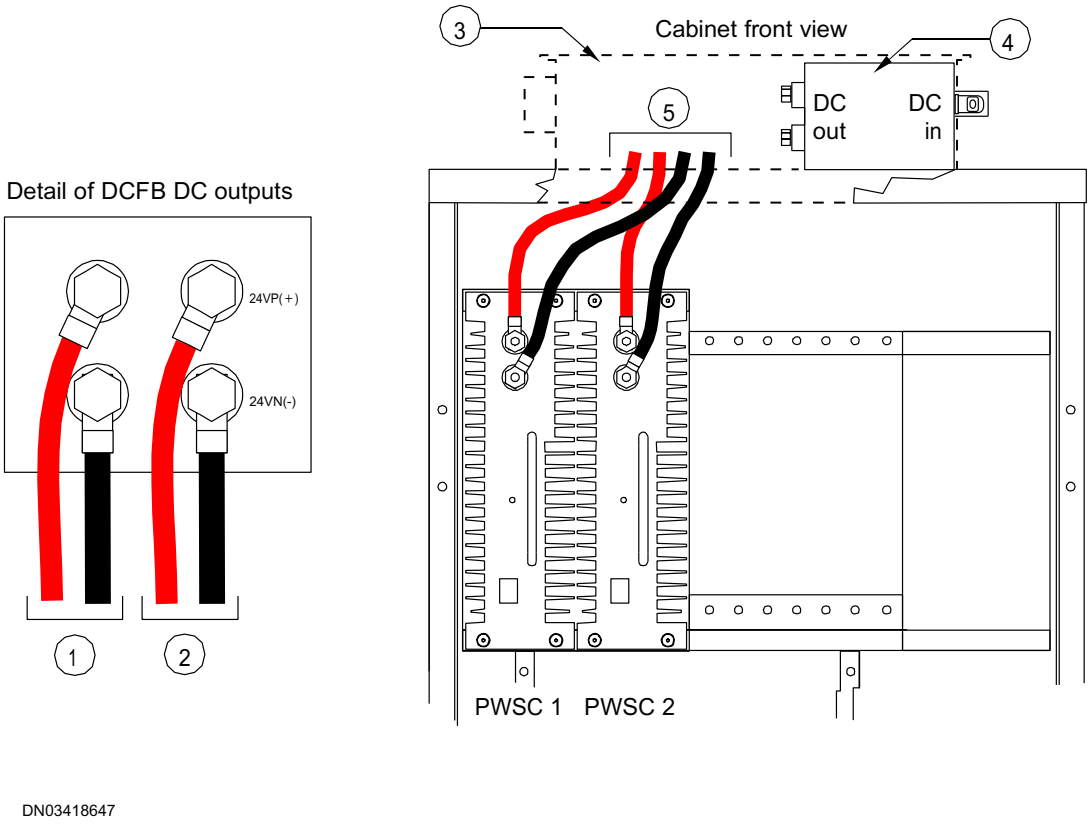


Figure 35. DCFB filter module cable routing to PWSC

1	To PWSC 2
2	To PWSC 1
3	Antenna box
4	DCFB
5	To DCFB DC out

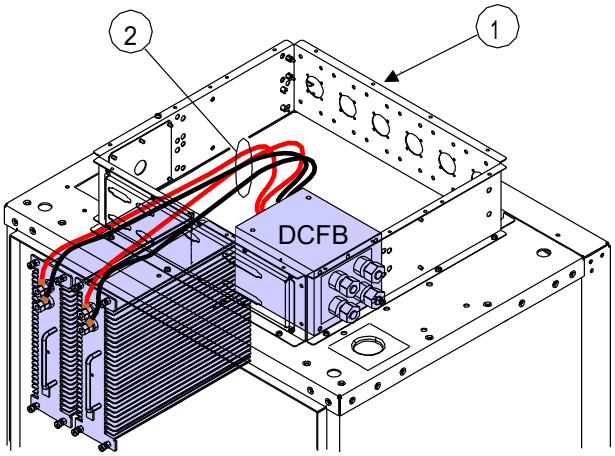


Figure 36. Internal cabinet cable routing from DCFB to PWSC

1	Antenna box, top removed
2	Cable tie

The +24 VDC filter module (DCFB) is required when installing +24 VDC power.

Note

If you are installing the heater (HETA) unit, install the AC filter unit in addition to any DC filter unit. The AC filter unit does not replace the DC filter unit.

Steps

1. **Install the power cables on the filter.**

2. **Connect DCFB filter module cables to the power supply.**

Note

If you are using only one power supply, do not install the second set of cables.

a. Locate the red and black power cable assemblies included as part of the PWKA Installation Kit. One kit is provided for each PWSC power supply unit.
b. Remove the protective plastic covers from the applicable cable ends of the DCFB connection terminals.
   - If you are using one power supply, remove only one set of protective covers from the filter terminals.
   - If you are using two power supplies, remove all sets of protective covers from the filter terminals.
c. Attach the opposite ends of the red and black power cables to the left positive (+) and negative (-) output terminal pair on the DCFB filter module.
d. Install rubber boots in place over the DCFB output power terminals. Ensure that boots completely cover the terminals.

3. Install the DCFB filter module.

a. Insert the DCFB filter module into the opening on the right side of the antenna box where the original unit had been installed.

   Orient the positive (+) terminals toward the top of the cabinet.
b. Secure the DCFB filter module using four M4 mounting screws in the centre and right-side holes of the DCFB.

Note

The remaining mounting screws are installed following the connection of input power to the DCFB. The two front M4x8 screws and the two threaded studs are used to secure the protective cover over the DCFB power input connections.

4. Attach power cables to the power terminals.

a. Attach a red power cable to the (+) input power terminal on the left PWSC unit, if installed
b. Attach a black power cable to the (-) input power terminal on the left PWSC unit, if installed.
c. Install the rubber boots in place over the PWSC input power terminals. Ensure that the boots completely cover the terminals.

d. Repeat the previous steps for the right PWSC unit, if installed, using the right output terminal pair on the DCFB filter module.

e. Install a tie wrap at the back of the power supply subrack at approximately midway of the cables.

5. Recycle the packing material.

4.2 Installing an AC filter unit

Before you start

Warning

Risk of electric shock. Ensure that the mains power supply is off before starting the installation of the AC filter unit, the DC filter unit, and the heater unit (HETA).

Note

You can remove the integrated AC filter cover only once. You cannot reinstall the AC filter cover if it is removed.

Note

The filter unit is not in use in Mini Outdoor cabinet.

Summary

The AC filter unit is required when you install PWSA units.

Steps

1. Install AC filter unit.

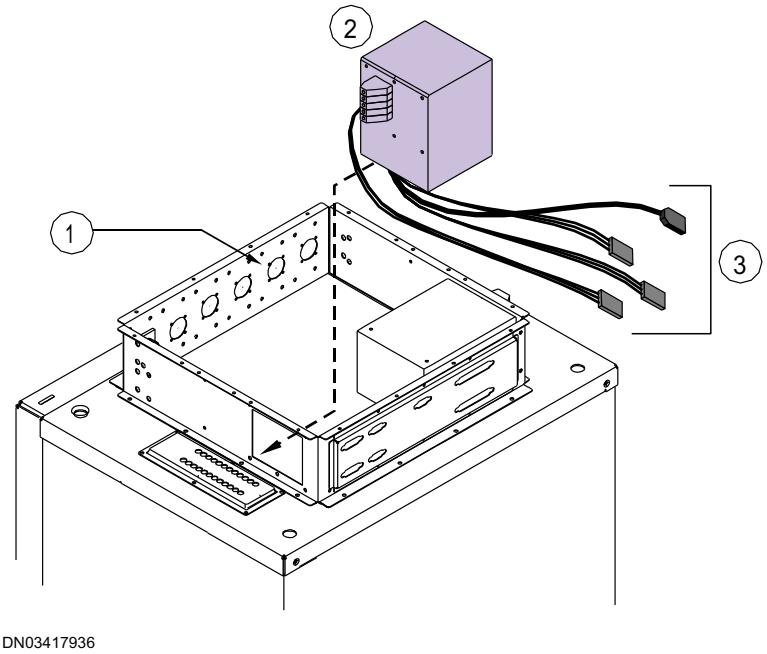


Figure 37. AC filter unit installation

1	Antenna box, top removed
2	AC filter unit
3	AC filter unit outputs

a. Remove the AC filter unit from its protective package and check for visible damage.

b. Loosen the finger screws securing the left most D-37 interconnect cable from the back of the interface unit and set them aside.

c. Remove the AC filter unit 'knock-out plate' on the external interface from the antenna connector box and discard the knock-out plate.

d. Insert the AC filter unit into the unused slot on the left side of the antenna box external interface.

e. Insert and tighten six fixing screws to secure the AC filter unit to the antenna box.

f. Connect the D-37 interconnect cable and secure the finger screws.

g. Recycle the packing material.

2. Route AC filter unit cables in the cabinet.

Warning

Danger of lethal voltages! Make sure that the mains power breaker is off before routing the AC filter unit cables.

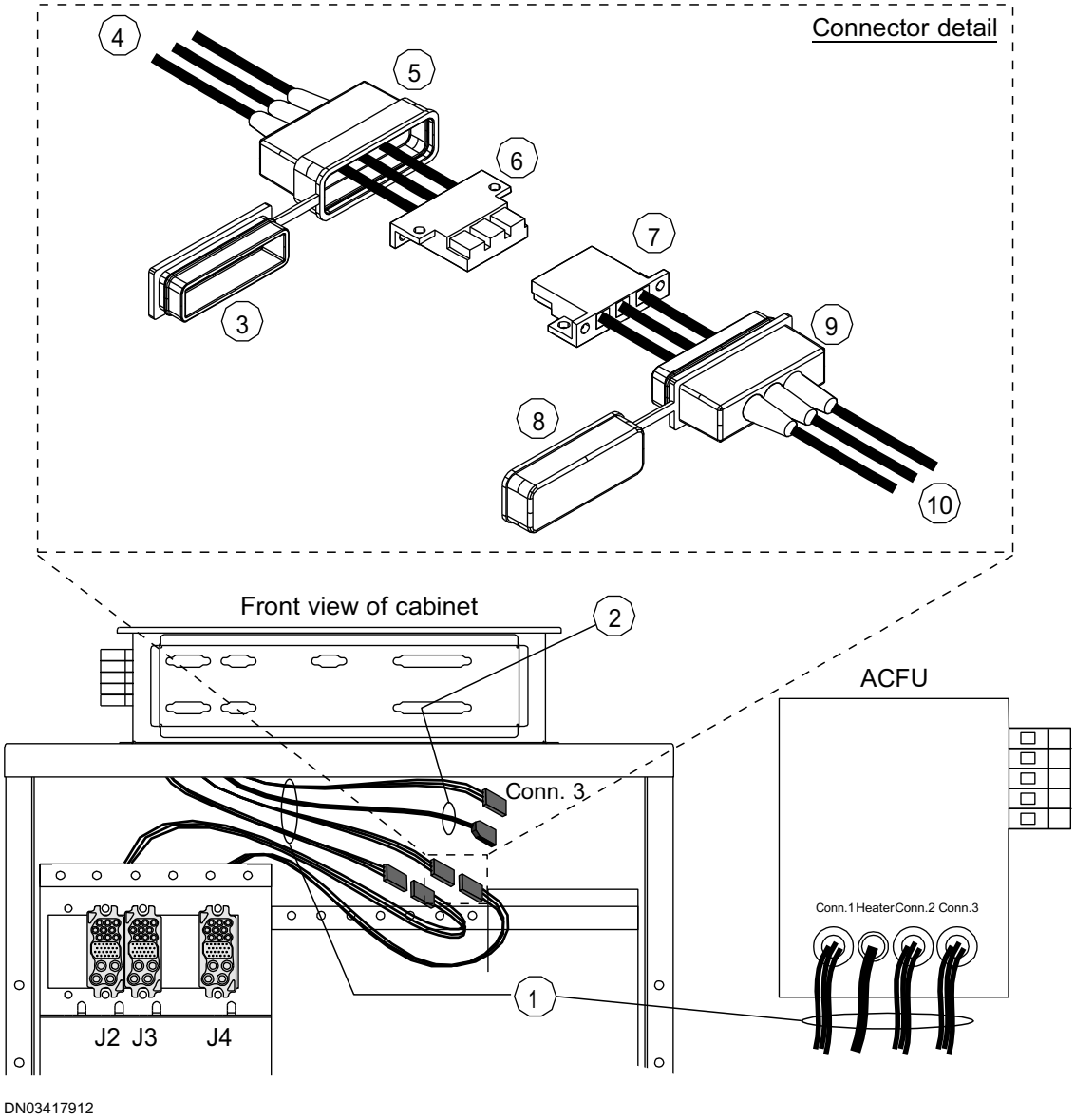


Figure 38. AC filter unit cable routing

1	ACFU Outputs
2	IEC receptacle (to optional HETA)
3	Rubber boot cover
4	From ACFU
5	Rubber boot
6	Power connector
7	Cabinet Connector J2A or J4A
8	Rubber boot cover
9	Rubber boot
10	To J2 or J4 (cabinet connectors)

a. Locate the output cables inside the cabinet that run from the AC filter unit and the cabinet core.

b. Open the rubber boot covers on each connector.

c. Attach the power connector within the rubber boot from the AC filter unit connector 1 to the J4A cabinet connector of the ADUx AC cable harness.

d. Depending on the connector ends, use a cable tie to secure the two connectors.

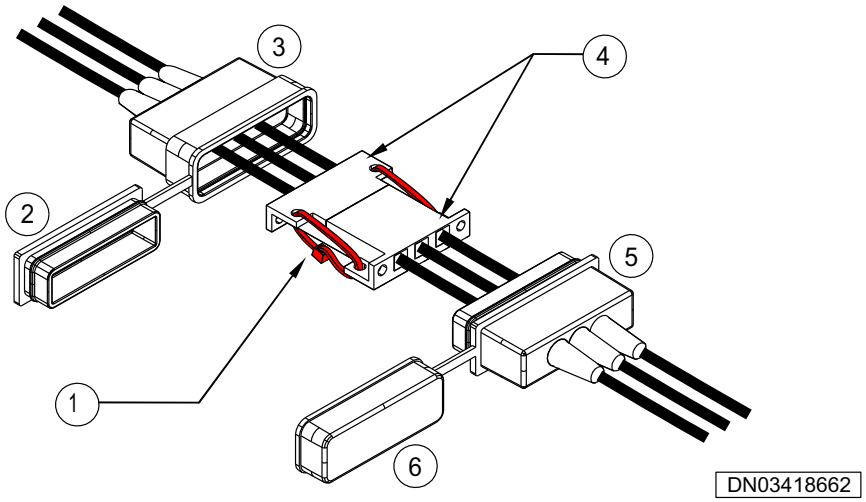
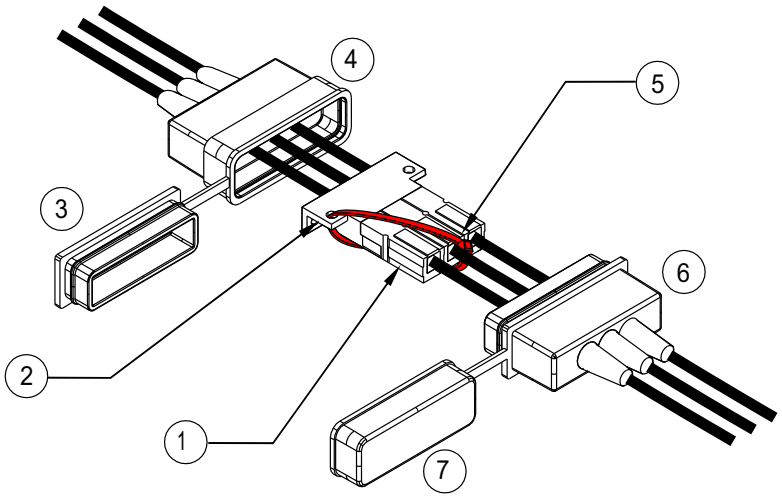


Figure 39. Default AC filter unit cable tie installation

1	Cable tie, two places (trim cable tie mid-way between connectors)

2	Rubber boot cover
3	Rubber boot
4	Power connectors
5	Rubber boot
6	Rubber boot cover

ALTERNATE 1



ALTERNATE 2

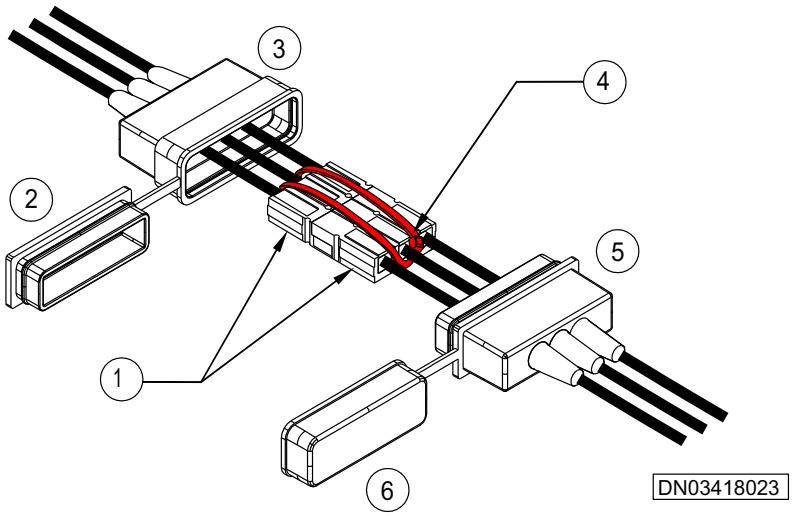


Figure 40. Alternate cable tie installations

	Alternate 1	Alternate 2

1	Type 2 power connector	Type 2 power connectors
2	Type 1 power connector	Rubber boot cover
3	Rubber boot cover	Rubber boot
4	Rubber boot	Cable tie, (trim cable tie between cables)
5	Cable tie, (trim cable tie between cables)	Rubber boot
6	Rubber boot	Rubber boot cover
7	Rubber boot cover	N/A

e. Secure the rubber boot covers.

f. Repeat the previous steps for connector 2 from the AC filter unit to the J2A cabinet connector.

g. Connect the Heater connector to the (optional) HETA unit cable, if present.

3. Insert and tighten the twelve fixing screws to secure the top front cover.

4.3 Installing a GSM/EDGE heater (HETA) unit

Before you start

Warning

Risk of electric shock. Ensure that the mains power supply is off before starting the installation of the AC filter unit, the DC filter unit, and the heater unit (HETA).

Caution

Cables may be damaged if they are caught between the door and the doorframe. Use the doorstop to hold the door open. When you close the door, ensure that the cables are not caught.

Note

You can remove the integrated AC filter cover only once. You cannot replace the AC filter cover if it is removed.

Summary

The HETA unit is optional in the outdoor cabinet door (full-size and Midi).

Note

If you install the HETA unit in the Midi cabinet door, it is installed in the same lower area of the door as the full-size cabinet.

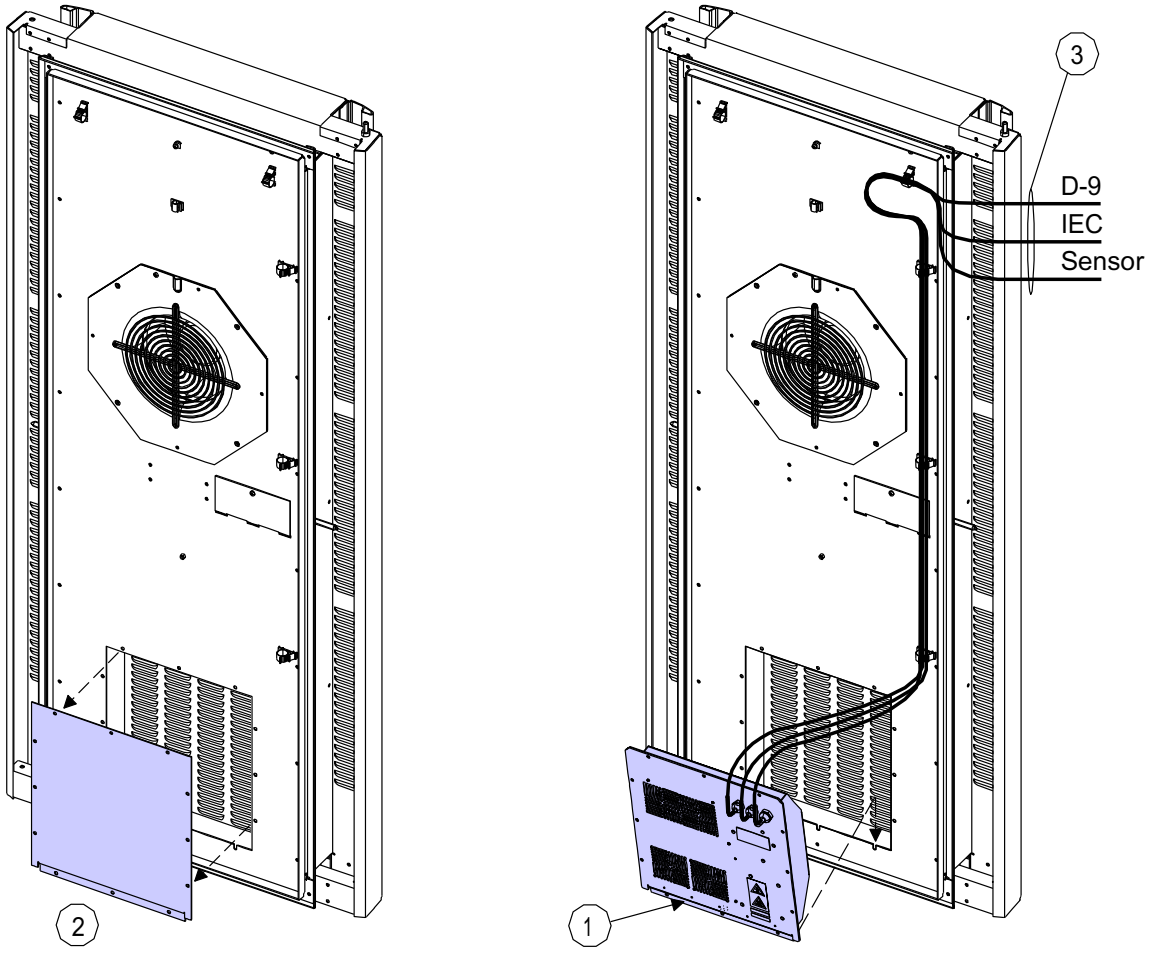


Figure 41. HETA unit installation in left-hand outdoor cabinet door

1	Installing the bottom of HETA unit (first step)
2	Cover plate
3	Wiring to HETA power and control for left hand door

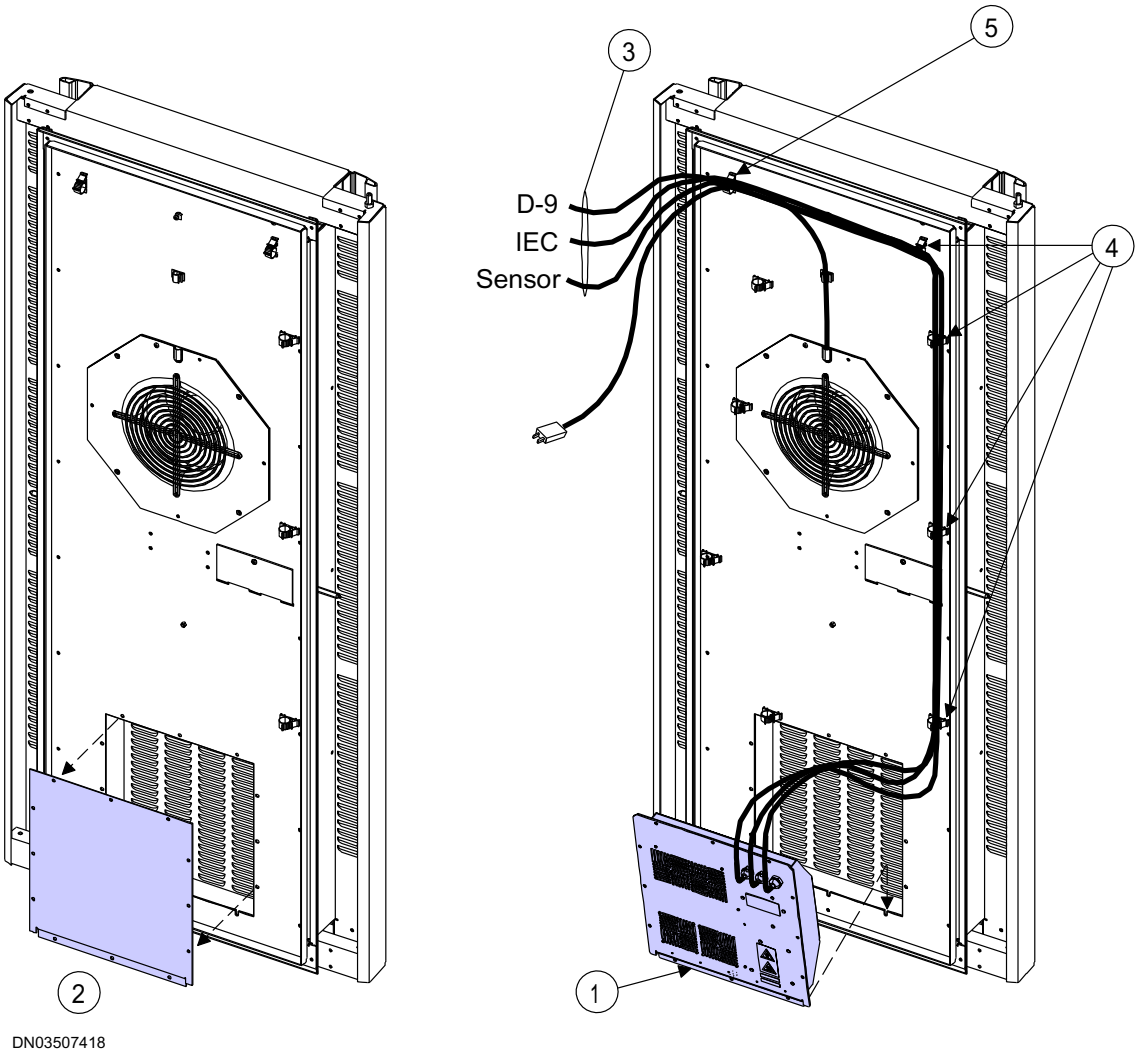


Figure 42. HETA unit installation in right-hand outdoor cabinet door

1	Installing the bottom of HETA unit (first step)
2	Cover plate
3	Wiring to HETA power and control for right hand door
4	Cable clamp
5	Cable clamp

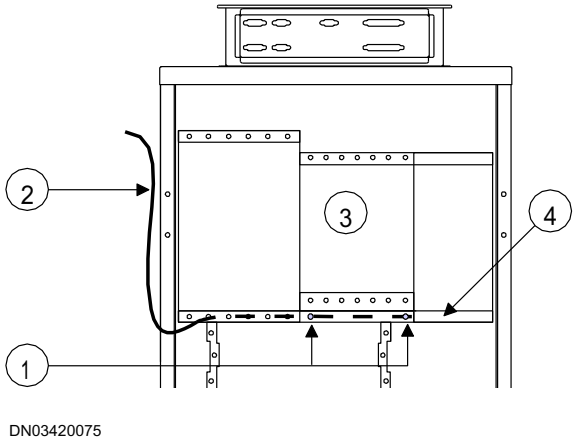


Figure 43. Sensor cable installation for left-hand door

1	Routing cable behind front flange of upper rack and securing with plastic cable clamps
2	Sensor cable from left hand door mounted HETA unit (Note)
3	Upper rack
4	Front flange

Note

If the door is on the right hand side, the sensor cable will come from the right hand side door mounted HETA unit.

Steps

1. **Remove the HETA unit from its protective package and check for visible damage.**

Note

Do not open a faulty HETA unit. Return a faulty unit to Nokia Service.

2. **Remove the cover plate from the outdoor cabinet door and store for future installation if the HETA unit is removed.**

Note

The cover plate maintains the airflow in the cabinet if the HETA unit is removed from the outdoor cabinet door.

3. **Insert the bottom of the HETA unit into the outdoor cabinet door.**

4. **Tilt the top of the HETA unit into the outdoor cabinet door.**

5. **Tighten the mounting screws.**

6. **Connect the HETA control interface (adjacent to the cabinet fan connection) to the door switch box.**

7. **Connect the HETA unit to the AC Power Supply (IEC plug located behind the AC Filter module).**

8. *If* the door is on the left hand side,

   Then

   Route the sensor cable from the left hand side door mounted HETA unit.

   Else

   Route the sensor cable from the right hand side door mounted HETA unit.

9. **Route the sensor cable behind the front flange of the upper rack.**

10. **Secure the sensor cable to the front flange with plastic cable clamps.**

11. **Secure the cables within the appropriate cable clamps on the outdoor cabinet door.**

Note

The HETA power cable is 230 VAC. Route cables between the door and the cabinet so that it prevents damage to the cables during door opening and closing.

5 Cabling GSM/EDGE units

5.1 Overview of cabling GSM/EDGE units

Summary

The required cable kit accompanies the units in the BTS delivery package.

Note

The installer determines the exact route of the connecting cable, except in the case of power cable routing. Cable illustrations show one possible path for connecting two ports.

Note

Use tie-wrap or lacing cord to tie cables every metre, when appropriate.

Note

Terminate unused RX outputs and use dust caps for any unused antenna ports.

Table 1. Unit cable kits

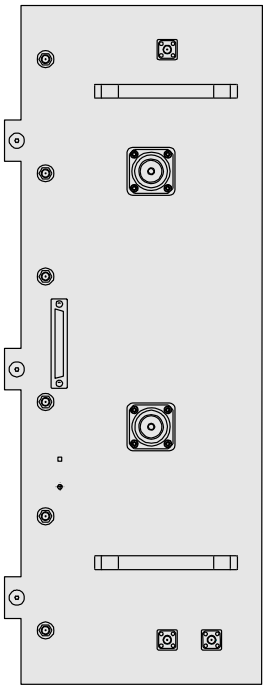
Category	Property	Cable quantity	From unit	To unit
066643x	994081x (M2xA)	2 each	DVxx or RTxx	M2xA
066644x	993856x (M6xA)	2 each	DVxx or RTxx	M6xA
066647x	993747x (WCxA)	1 each	WCxA	WCxA or DVxx

Table 1. Unit cable kits (cont.)

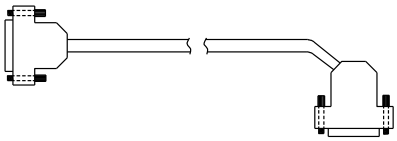
Category	Property	Cable quantity	From unit	To unit
069314x	993935x (Bias Tee)	2 each (Indoor cabinet) 4 each (Outdoor cabinet) 1 - Adaptor plate	Bias Tee Interface Module	BPxx
066646x	993997x (RTxx)	1 each	RTxx	RFU backplane
	993997x (DVxx)	1 each	DVxx	RFU backplane
069313x	993744x (or 994751) (Antenna: 2.0 m (6.6 ft))	2 each	DVxx or RTxx	Antenna box
	993936x (or 994750) (Antenna: 1.4 m (4.6 ft))	2 each	DVxx or RTxx	Antenna box
	993937x (or 994752) (Antenna: 1.7 m (5.6 ft))	2 each	DVxx or RTxx	Antenna box
083529x	995060x (WCxT)	3 each	TSxx WCxT (Block A, B, or C) WCxT (Block A, B, or C)	WCxT (Block A, B, or C) WCxT (Block A, B, or C) DVxx
066641x	993857xx (TSxx)	2 each	TSxx WCxT (Block A, B, or C)	M2xA or M6xA DVxx or RTxx or WCxA WCxT (Block A, B, or C) WCxT (Block A, B, or C) DVxx

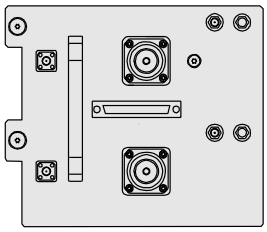
Note

One set of the 069313x cables are pre-installed on the cabinet.

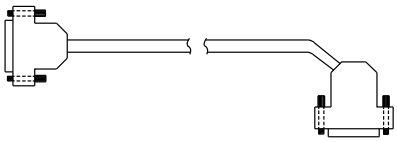


RTxx to RFU Backplane
Kit # 066646x.xxx / Part #993997x, quantity one





DVxx to RFU Backplane
Kit # 066646x.xxx / Part #993997x, quantity one



Antenna cable kit

Kit #069313x.xxx
Part:
#994751x, 2.0m long, quantity two
#994752x, 1.7m long, quantity two
#994750x, 1.4m long, quantity two

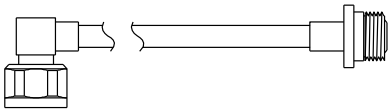


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Figure 44. Plug-in units with cable kits

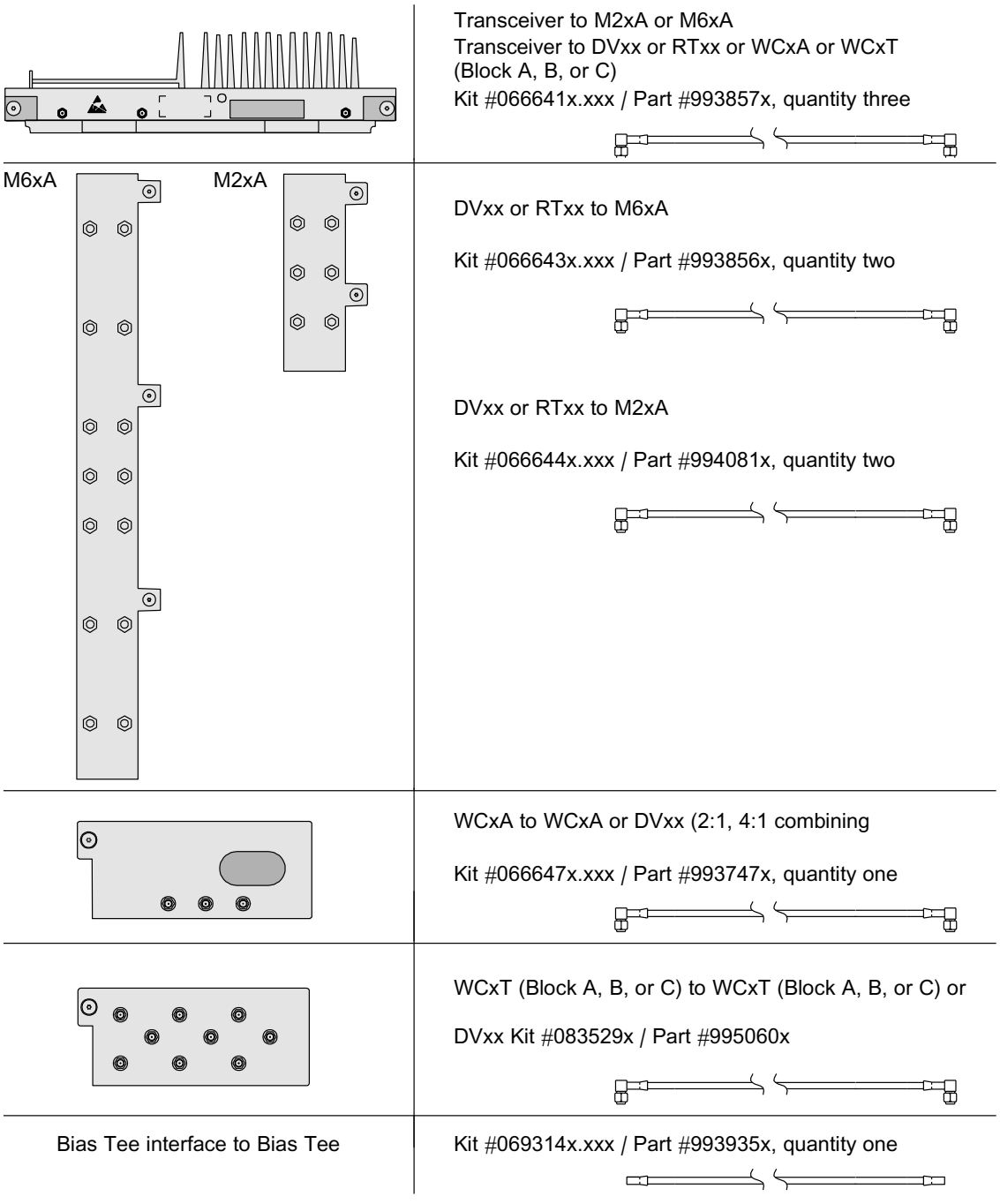


Figure 45. Plug-in units with cable kits

Steps

1. **Route the transmission cables.**
2. **Cable the FC E1/T1 transmission unit.**
3. **Cable the FXC E1 transmission unit.**
4. **Cable the FXC E1/T1 transmission unit.**
5. **Connect the Flexbus cable to the FXC RRI transmission unit.**
6. **Cable the FXC STM-1 transmission unit.**
7. **Cable a DC filter module to the PWSx unit.**
8. **Cable DVxx and WCxA units with the SXCA kit.**

5.2 Cabling a GSM/EDGE antenna

Summary

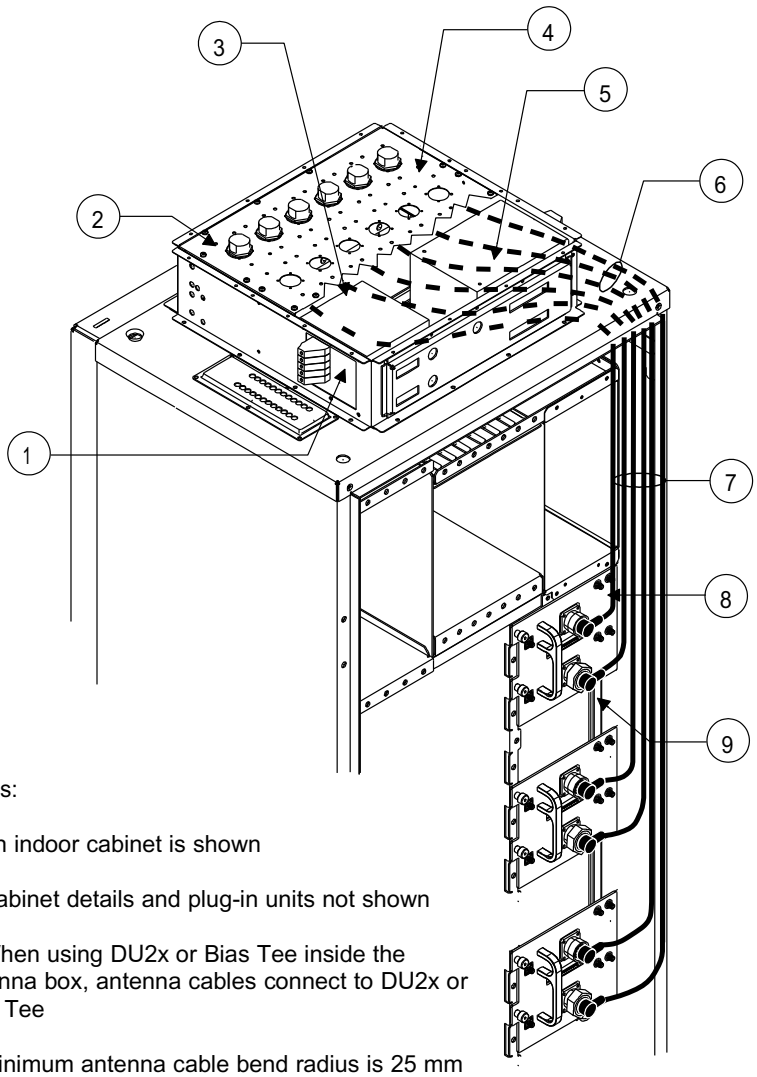
Note

The IDCA has six pre-installed antenna cables.

Note

After you route cables, ensure all antenna cables are tied or secured to the cable retainer plates located in the right side of the cabinet.

When installing cables, Nokia recommends starting from left to right and top to bottom, meaning the first cable you connect should be in the furthest slot to the left at the top of the cabinet and connect to the top DVxx (or RTxx) connector inside the cabinet. The next cable you install should be connected to the next slot to the right and the next DVxx (or RXxx) connector slot down.



Notes:

1. An indoor cabinet is shown

2. Cabinet details and plug-in units not shown

3. When using DU2x or Bias Tee inside the antenna box, antenna cables connect to DU2x or Bias Tee

4. Minimum antenna cable bend radius is 25 mm (1.0 in.)

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Figure 46. General antenna cable routing in the cabinet

1	AC PWS filter (optional)
2	Antenna cable connector, female, secured from outside of panel (Note 3)
3	Antenna cable excess length must be looped and stowed to facilitate cable routing in antenna box (Note 4)

4	Antenna box
5	DC PWS filter (cables routed underneath)
6	Antenna cables routed beneath power supply filters into antenna box
7	Antenna feeds (maximum 12): 1.4 m (4.6 ft) 1.7 m (5.6 ft) 2.0 m (6.6 ft)
8	DVxx (or RTxx)
9	Antenna connector, male

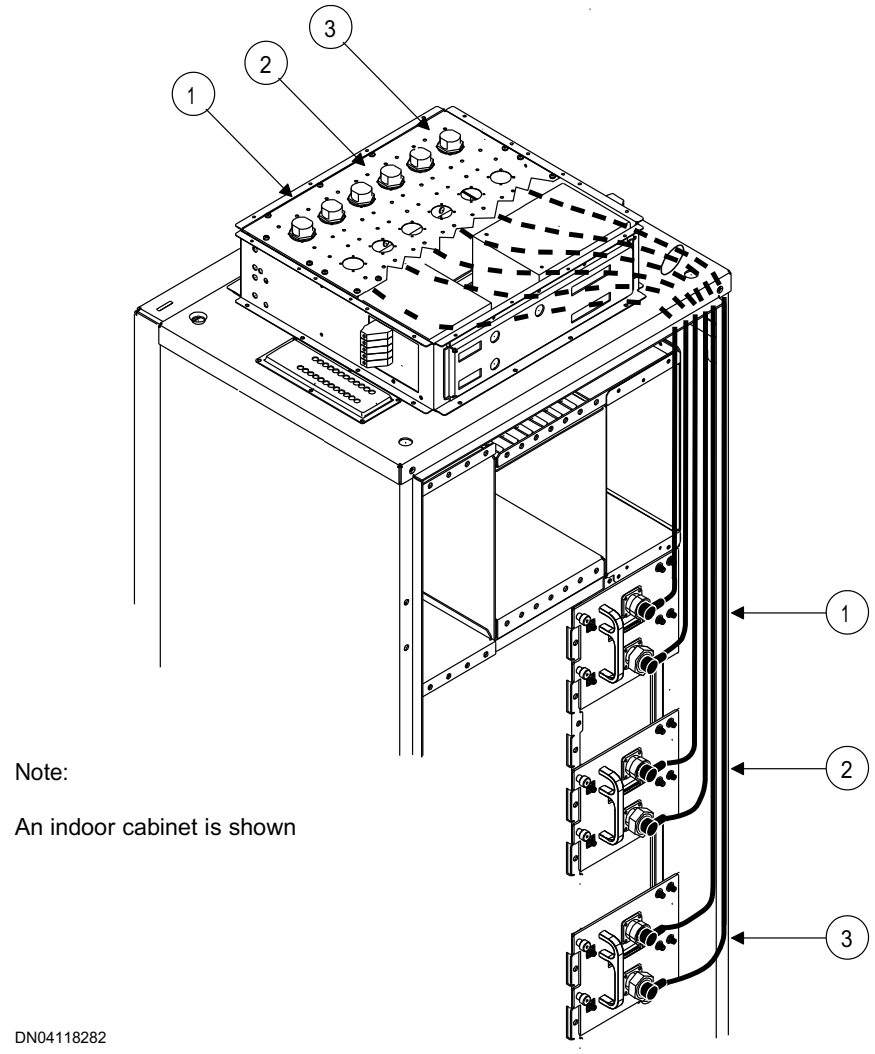


Figure 47. ATCA Installation Order

1	Main/DIV Top set 1.4 m (4.6 ft) cables
2	Main/DIV Middle set 1.7 m (5.6 ft) cables

3	Main/DIV Bottom set 2.0 m (6.6 ft) cables

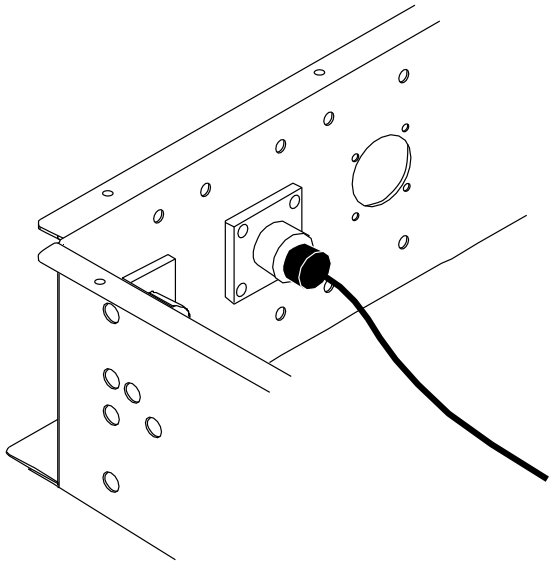


Figure 48. Antenna cable washer

Steps

1. *If* cabling an antenna for an IDCA requiring six antenna cables

   Then

   Cut the tie wraps from the pre-installed cables.

2. *If* cabling an antenna for an ODCA requiring up to 12 cables or an IDCA requiring more than six cables

   Then

   Perform the following steps for each cable to be installed:

   a. Remove the knockout covering the opening on the antenna box at the top of the cabinet.

   b. Remove the protective covering, circular washer, and hexagon nut from the antenna cable.

c. Install the square washer on the straight end of the antenna cable with the four small protrusions facing upwards.

d. Route the straight end of the antenna cable through the opening on the antenna box. Make sure the protrusions line up with the four small holes around the opening.

e. Install the circular washer and hexagon nut on the exposed end of the antenna outside of the antenna box to secure the antenna cable.

When using DU2x or Bias Tee inside the antenna box, antenna cables connect to DU2x or Bias Tee.

f. Route antenna cables behind the power supply filters, EMC sock, and then down the right side of the cabinet.

The supplied antenna cable lengths are 1.4 m (4.6 ft), 1.7 m (5.6 ft), and 2.0 m (6.6 ft).

3. Connect the antenna cables to the DVxx (or RTxx) units inside the cabinet.

4. Secure or tie all antenna cables to the cable retainer plates located in the right side of the cabinet.

5. Stow antenna cable excess length behind the transmission (VXxx) unit in the top right of the cabinet.

The minimum antenna cable bend radius is 25 mm (1.0 in.).

5.3 Connecting cables to the FC E1/T1 transmission unit

Summary

Caution

Use either separate 75 Ω RX and TX connectors (BT-43) or one 120/100 Ω TX/RX connector (TQ).

Caution

The 75 Ω TX is grounded only when the grounding bridge between the TX and RX connectors is in place.)

The grounding bridge connects the outmost wires of both connectors. To ground the outmost wire of Rx connector directly, leave the grounding bridge in place. To ground the outmost wire of Rx connector capacitively, remove the grounding bridge. Loosen the connector and pull the grounding bridge off. Store it for future use.

Remember to tighten the connectors properly after the grounding bridge has been removed. The torque is 1.5 Nm (1.11 ft-lb).

Caution

If you remove the grounding bridge, the grounding of the RX connector's outer conductor changes from direct grounding to capacitive.

Note

When routing the cables, make sure that the cable connector and shrinking sleeve combination is not too long so that the cable has enough space to bend when you install the cabinet cover.

The FC E1/T1 unit has the following cables:

- one coaxial 75 Ω TX/RX connector for E1 use
- one twisted pair 120/100 Ω TX/RX interface connector for either E1 or T1 use

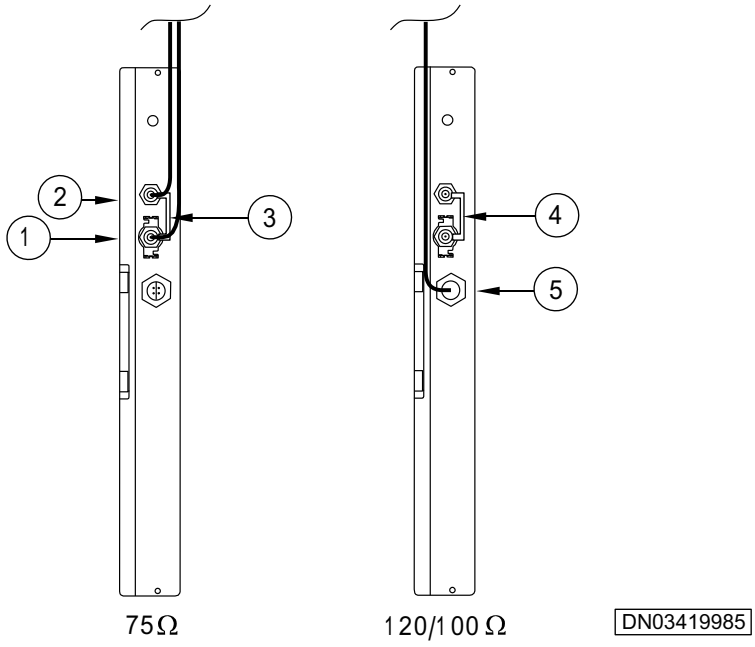
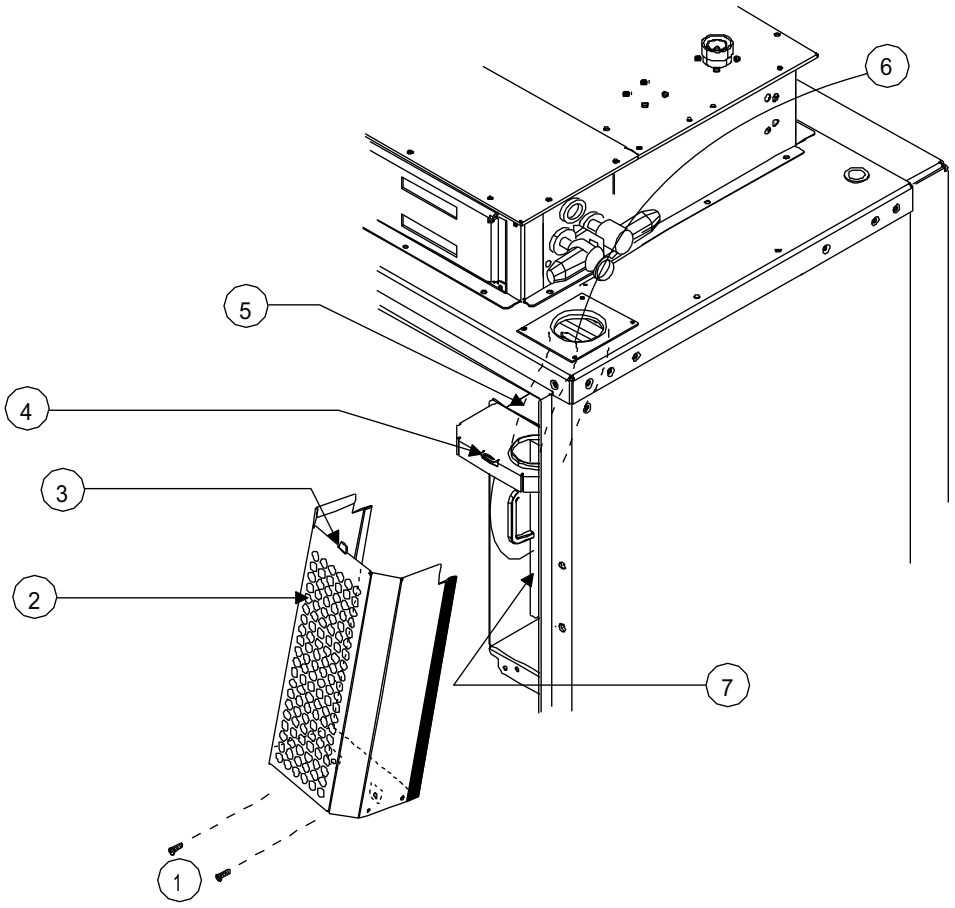


Figure 49. Routing cables to the FC E1/T1 unit

1	RX line
2	TX line
3	Grounding bridge
4	Grounding bridge
5	RX/TX line



1	Screws (two places)
2	Transmission unit cover
3	Tab
4	Slot in cable entry top
5	EMC mesh sleeve (allows cable access to transmission units from outside)
6	Transmission cable(s)
7	Transmission unit(s)

Figure 50. Route of the Abis cable with VXxx unit cover removed

Steps

1. **Remove the transmission cover.**

2. **Route the transmission cable(s) through the EMC sleeve.**

3. *If* you are routing cables to the 75 Ω connector,

   Then

   Perform the following steps:

   a. Remove the grounding bridge with a 10 mm (0.39 in.) spanner (wrench).
   b. Connect the RX cable to the 75 Ω RX connector on the front of the FC E1/ T1 unit.
   c. Connect the TX cable to the 75 Ω TX connector on the front of the FC E1/ T1 unit.
   d. Tighten the connector nut.

4. *If* you are routing cables to the 120/100 Ω connector,

   Then

   Perform the following steps:

   a. Connect the TX/RX cable to the 120/100 Ω TX/RX connector on the front of the FC E1/T1 unit.
   b. Tighten the connector nut.

5.4 Connecting cables to the FXC E1 transmission unit

Summary

FXC E1 has four pairs of 75 Ω connectors (type BT-43). Each pair forms a transmission interface (IF). The upper connector is always the Tx connector of any given transmission interface. The lower connector is always the Rx connector of any given transmission interface.

Note

It is possible to use IF4 as a synchronisation interface by connecting a synchronisation cable to it.

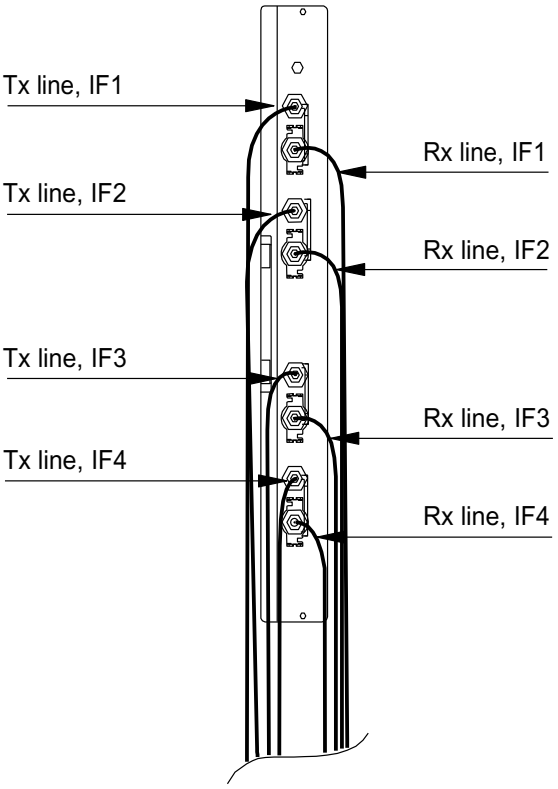


Figure 51. Cabling of FXC E1

Steps

1. **Connect the connector of the received (Rx) signal line to the 75 Ω Rx connector on the IF1.**

2. **Connect the connector of the transmitted (Tx) signal line to the 75Ω Tx connector on the IF1.**

3. **Cable the other IFs in the same manner.**

   See the figure above.

4. **Make sure that the cable connector and shrinking sleeve combination is not too long so that the cable has enough space to bend when you install the cabinet cover.**

Further information

Grounding the Rx connector

The grounding of Rx connector of FXC E1 is implemented with a grounding washer under the Rx connector. It connects the outmost wires of the connector.

To ground the outmost wire of Rx connector directly, leave the grounding washer in place.

To ground the outmost wire of Rx connector capacitively, remove the grounding washer. Loosen the connector and pull the grounding washer off. Store it for future use.

Note

Remember to tighten the connector properly after the grounding washer has been removed! The torque is 1.5 Nm (1.11 ft-lb).

5.5 Connecting cables to the FXC E1/T1 transmission unit

Summary

FXC E1/T1 has four 100/120 Ω Tx/Rx connectors (type TQ).

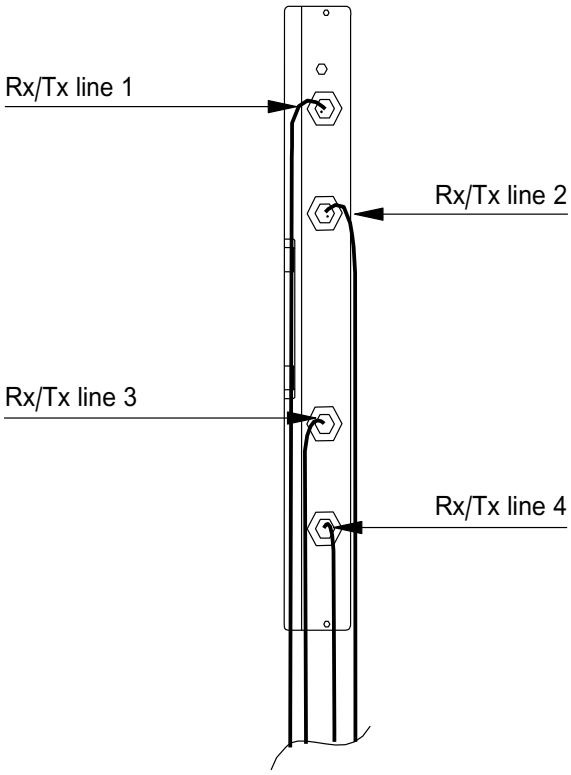


Figure 52. Cabling of FXC E1/T1

Steps

1. **Connect the connectors of Tx/Rx signal lines to the 100/120 Ω Tx/Rx connectors on the FXC E1/T1 front panel.**

2. **Tighten the connector nut properly.**

   The torque needed is 2 Nm (1.5 ft-lb).

3. **Make sure that the cable connector and shrinking sleeve combination is not too long so that the cable has enough space to bend when you install the cabinet cover.**

5.6 Connecting the Flexbus cable to the FXC RRI transmission unit

Summary

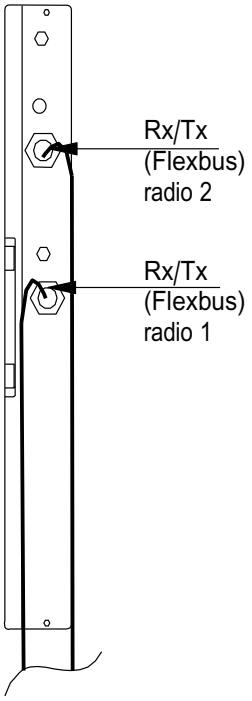


Figure 53. Cabling of FXC RRI

Steps

1. **Connect the coaxial Rx/Tx (Flexbus) cable from the radio outdoor unit to the TNC connector(s) on the FXC RRI transmission unit.**

2. **Tighten the connector nut properly.**

   The torque needed is 2 Nm.

3. **Make sure that the cable connector and shrinking sleeve combination is not too long so that the cable has enough space to bend when you install the cabinet cover.**

5.7 Connecting cables to the FXC STM-1 transmission unit

Summary

The FXC STM-1 transmission unit has two long-haul, optical STM-1 interfaces.

Caution

The optical fibre cable is fragile. Be careful when connecting the optical fibre cable to FXC STM-1.

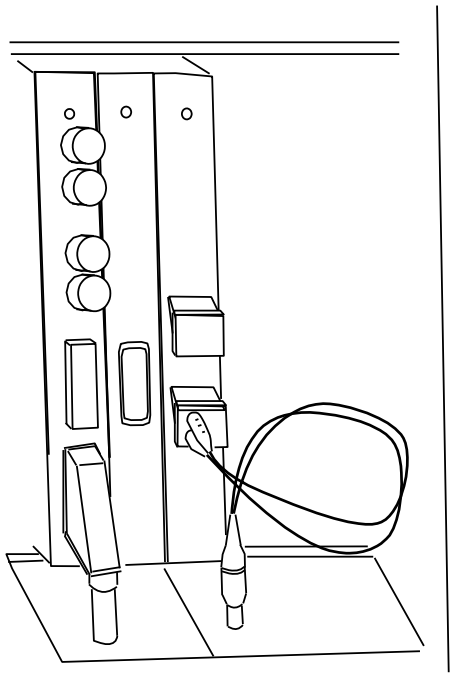


Figure 54. Installation example of fibre within the UltraSite EDGE BTS cabinet

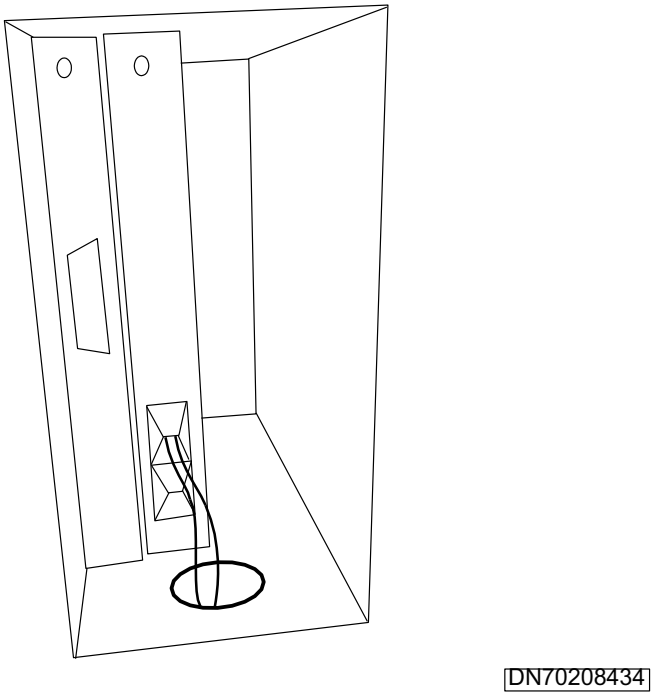


Figure 55. Installation example of fibre within the UltraSite EDGE BTS Mini Outdoor cabinet

Note

Overbending the optical fibre cables damages the cables and can detach or damage the connectors. Do not bend optical fibre cables to a radius smaller than the minimum radius of 75 mm (3 inches).

Steps

1. **Remove the protective caps from the LC connector plugs.**

Note

Do not touch the connector tips with your fingers.

2. **Feed the LC connector plugs into the LC holes in the weather cover.**

Feed the LC connector plugs into the LC interface holes in the weather cover. Take care not to strain the small latch lever of the LC connector plug.

3. **Connect the transmitter (Tx) fibre cable to the upper optical port.**

4. **Connect the receiver (Rx) fibre cable to the lower optical port.**

5. **Slide the weather cover over the LC connector.**

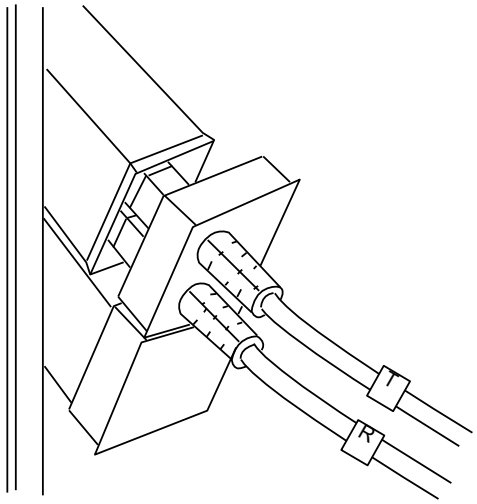


Figure 56. LC connectors with weather covers plugged into FXC STM

6. **Make sure the lips of the rubber shield are properly in place over the LC connector.**

Expected outcome

The fibre optic cables are connected to the LC plugs on the FXC STM-1 transmission unit. The weather cover is in place.

Further information

Note

If the receiving power is above -10 dBm, attenuate the optical input power in order to prevent the laser module from damage.

5.8 Cabling a DC filter module to the Power Supply unit

Before you start

Warning

Danger of lethal voltages! The power is switched on in the GSM/EDGE part of the base transceiver station (BTS). Be careful when handling the PWSx or WPS power supply units and power cables.

Summary

The optional +24 VDC filter module (DCFB) is required when installing +24 VDC power.

Note

Cabling is not needed for +48 VDC filter module only.

Note

This procedure describes the installation of the DCFB filter module only.

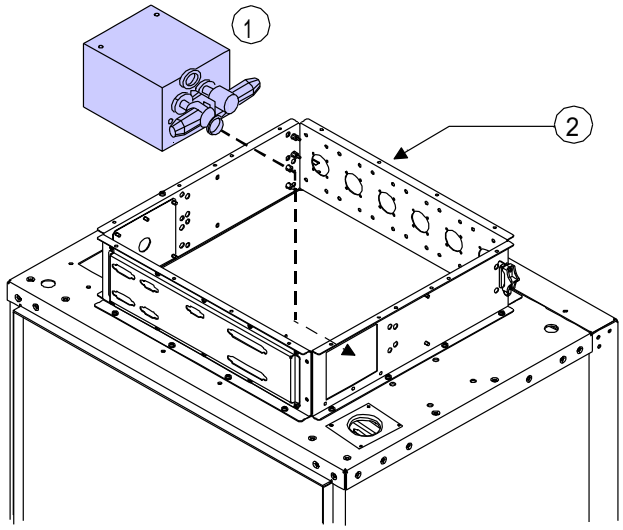


Figure 57. DCFB filter module installation

1	DCFB filter
2	Antenna box, top removed

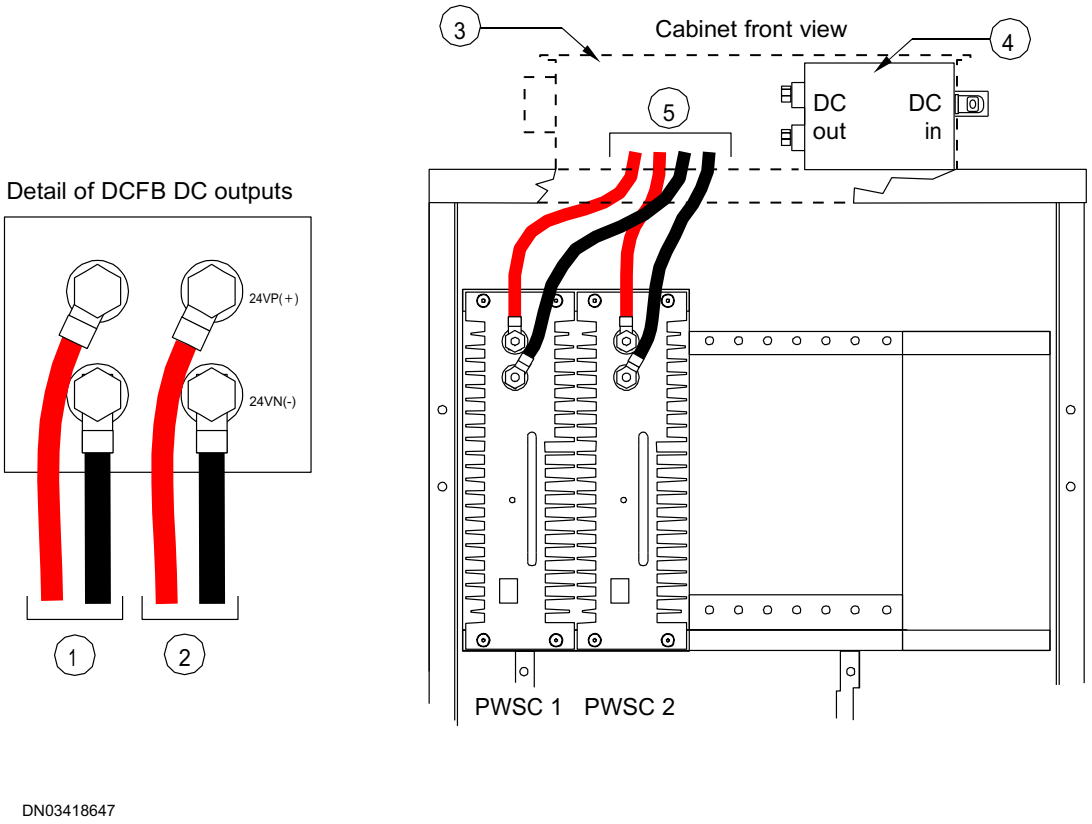


Figure 58. DCFB filter module cable routing to PWSC

1	To PWSC 1
2	To PWSC 2
3	Antenna box
4	DCFB

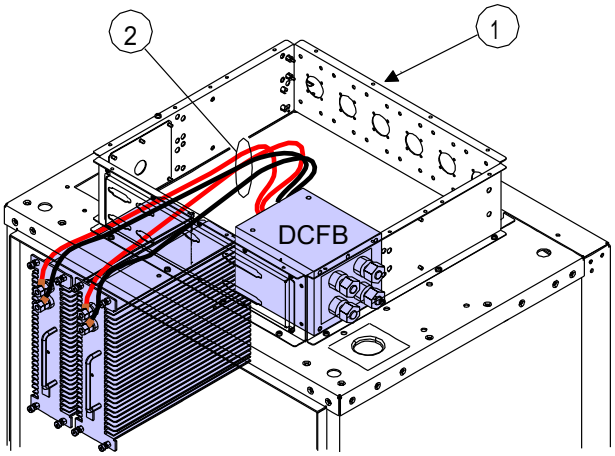


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Figure 59. Internal cabinet cable routing from DCFB to PWSC

1	Antenna box, top removed
2	24V power cables

Steps

1. **Install the DCFB filter module (carry out the following steps in case of -24 VDC filter modules).**
   a. Locate the existing -48 VDC filter module in the right side of the antenna box.
   b. Disconnect the blue and black filter cables from inside the cabinet and secure the caps to the protective boots of each cable.
   c. Remove the mounting screws securing the filter module to the antenna box and remove the unit.
   d. Remove the DCFB filter module from its protective package and check for visible damage.
   e. Insert the DCFB filter module into the opening on the right side of the antenna box where the original unit had been installed. Orient the positive (+) terminals toward the top of the cabinet.

f. Secure the DCFB filter module using four M4 mounting screws in the centre and right hand side holes of the DCFB.

Note

Install the remaining mounting screws after connecting input power to the DCFB. Use the two front M4x8 screws and the two threaded studs to secure the protective cover over the DCFB power input connections.

g. Recycle the packing material.

2. **Connect DCFB filter module cables to the power supply (carry out the following steps in case of -24 VDC filter modules).**
   a. Locate the Red and Black power cable assemblies included as part of the PWKA Installation Kit and remove protective plastic covers from applicable cable ends and DCFB/PWSC connection terminals. One kit is provided for each PWSC power supply unit.
   b. Attach a Red power cable to the (+) input power terminal on the left PWSC unit, if installed. Torque fastener.
   c. Attach a Black power cable to the (-) input power terminal on the left PWSC unit, if installed. Torque fastener.
   d. Attach the opposite ends of the Red and Black power cables to the left positive (+) and negative (-) output terminal pair on the DCFB filter module. Torque fasteners.
   e. Install rubber boots in place over the PWSC input power terminals and the DCFB output power terminals. Ensure that the boots completely cover the terminals.
   f. Repeat the previous steps for the right PWSC unit, if installed, using the right output terminal pair on the DCFB filter module.

5.9 Cabling Dual Variable Gain Duplex Filter and Wideband Combiner units with the SXCA kit

Summary

This procedure describes how to install the SXCA kit for 5+5+5 or larger configurations.

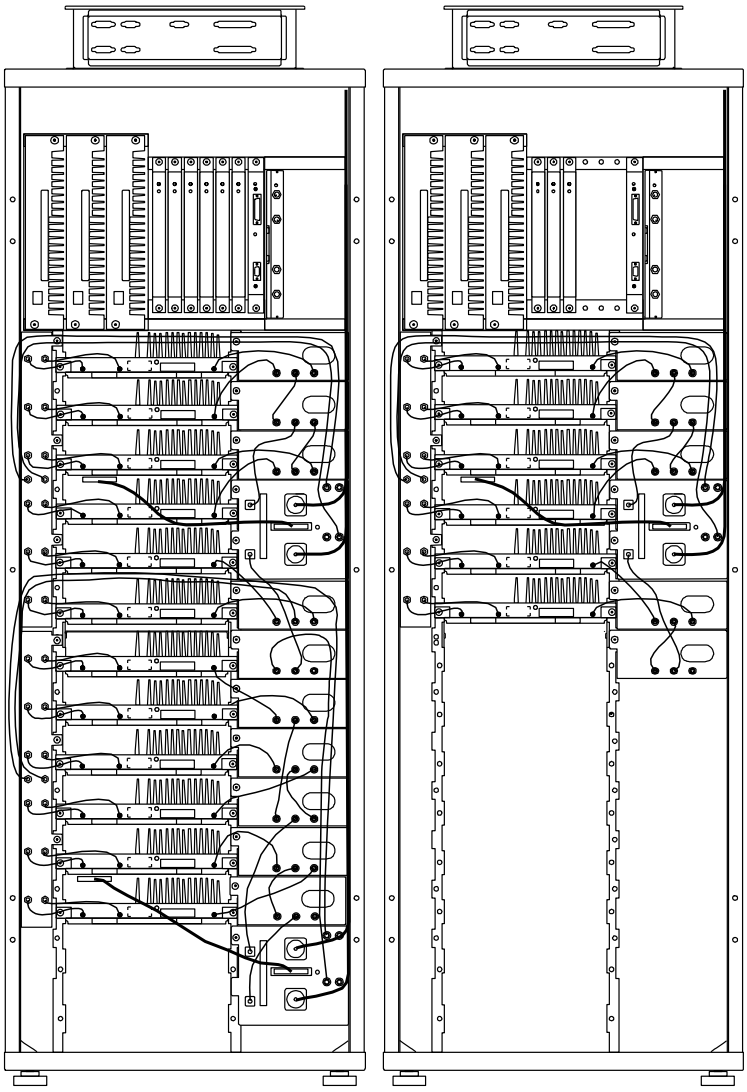

Figure 60. 5+5+5 with SXCA configuration

Steps

1. **Configure units using the figure for reference.**
2. **Install cables.**

Connect intracabinet cables using the cables provided in the SXCA kit for connection between the lower DVxx units and the WCxx units attached to them.

Related Topics

Overview of installing units

Descriptions

Overview of configuration and combining options

Torque settings

Overview of installing GSM/EDGE units

Reference

Torque settings

Instructions

Overview of cabling GSM/EDGE units of UltraSite EDGE BTS

Installing a Wideband Combiner (WCxA) unit

Instructions

Replacing a WCxA unit

Cabling DVxx and WCxA units with the SXCA kit

Reference

WCxA unit technical description

Installing a Dual Variable Gain Duplex Filter (DVxx) unit

Instructions

Cabling the DVxx unit

Removing the DVxx unit

Descriptions

Technical description of a DVxx unit

Installing a Dual Band Diplex Filter (DU2A) unit

Instructions

Overview of cabling GSM/EDGE units

Replacing the DU2A unit

Descriptions

DU2A unit technical description

Installing a Base Operations and Interfaces (BOIx) unit

Instructions

Replacing the BOIx unit

Descriptions

BOIx unit technical description