



**471223A**

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

## **Removing UltraSite EDGE BTS Cabinet**



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# 1

## Summary of changes in Removing UltraSite EDGE BTS Cabinet

The following changes have taken place in the *Removing UltraSite EDGE BTS Cabinet* document:

- Warnings and cautions relocated from the beginning of the document to applicable procedures.



## 2 End of Life

Nokia Networks customers can contract with Nokia for environmentally responsible End of Life (EoL) treatment of obsolete equipment. The purpose is to recover the material and energy content of the obsolete products and to ensure safe treatment of substances that can cause harm to people or the environment, if disposed of untreated. In a life-cycle perspective, EoL treatment can compensate for some of the environmental impacts of the earlier stages of the product's life cycle.

Depending on customer needs, Nokia Networks offers a Recycling Service covering disassembly, transportation, selection of an authorised recycling company, contracts with the recycling company, and reporting. The Recycling Service is available per agreement for all Nokia Networks products sold globally. The service can also include third-party products and packaging, if the customer provides the necessary material information. Product treatment is subcontracted to a local, authorised recycling company. Nokia Networks has set requirements for EoL subcontractors and regularly audits them. Nokia requires that all subcontractors comply with the laws and settlements of local authorities and that they conduct business in an ethical manner.

In order to further facilitate EoL management, Nokia Networks provides information about the materials used in its products and disassembly instructions to recycling companies. This helps in choosing the optimal treatment method and results in minimised waste streams to landfill sites.





3

Storage and disposal of units



Steps

1. If storing a BTS unit

Then

Follow these guidelines:

- a. If storing a unit marked with the ESD sign, insert the unit into an antistatic envelope.
- b. Insert the antistatic envelope or unit into a 0.13 mm, 3-layer LD-HD-LD, polyethylene bag to protect against humidity and corrosion.
- c. Insert the appropriate amount of dehydrant into the polyethylene bag to protect against humidity and corrosion.

Table 1. Dehydrant requirements

Climate	Number of bags of dehydrant for 6-month storage period/m2
Temperate climate (relative humidity 80%, temperature +20 °C)	3
Tropical climate (relative humidity 95%, temperature +35 °C)	10

- d. Steam seal the polyethylene bag.
- e. Pack the unit individually into a sturdy, corrugated board or wood box.
- f. Maintain proper storage conditions for the unit.

Table 2. Climatic conditions for storage

Condition	Parameter
Temperature range	-45° C to +45° C (-49° F to +113° F)

Table 2. Climatic conditions for storage (cont.)

Condition	Parameter
Relative humidity	8% to 100%
Absolute humidity	0.03 to 30 g/m <sup>3</sup>
Change rate of temperature	0.5° C/min. maximum
Air pressure	70 to 106 kPa
Solar radiation	1120 W/m <sup>2</sup> maximum
Movement of surrounding air	<50 m/s

Table 3. Mechanical conditions for storage

Condition	Parameter
Stationary vibration, sinusoidal (peak value of displacement amplitude) at frequency range 9 to 200 Hz	10 mm
Non-stationary vibration, including shock: peak value of acceleration	100 m/s <sup>2</sup>
Static load	5 kPa

2. *If disposing of a BTS unit*

*Then*

**Contact a Nokia representative for proper end-of-life treatment procedures.**

Units are appropriately recycled with proper disposal of any hazardous materials according to Nokia's Environmental Policy.

Follow the Collection and disposal directive within European Union, if applicable.

# 4

## Powering down UltraSite EDGE BTS

### Before you start

Familiarise yourself with the installation procedures for the additional site equipment before powering down the site.

### Summary



#### Warning

**Risk of lethal voltages and electric shock exist when routing power cables. Verify that the mains power breaker is off and that the unit is properly grounded before attempting any connections to the unit.**

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#### Note

Follow all applicable national regulations when working with power supply and power cables.

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Maximum site downtime recommendations are provided by your Network Planning Engineer.



### Steps

1. **Read the site downtime recommendations before powering down the site.**
2. **Collect site equipment information.**
3. **Follow the powering down procedures of the relevant BTS or site support equipment's user manual.**



# 5

## Removing unit cables and units (optional)

### 5.1 Removing GSM/EDGE unit cables



#### Steps

1. Check the unit's cable configuration.
2. Disconnect the unit's cables.
3. Ensure that the cables do not become entangled when you slide the unit out of the cabinet.

### 5.2 Overview of removing GSM/EDGE 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.

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#### Caution

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

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## Summary



### Note

If installing replacement units, ensure that the new units are the same type and version as those being removed.



## Steps

1. **Connect the antistatic wrist strap to the BTS.**
2. **Remove GSM/EDGE unit cables.**
3. **Remove Bias Tee (BPxx) unit from the BTS.**
4. **Remove PWSx unit from the BTS.**
5. **Remove VXxx unit from the BTS.**



### Note

Remove the VXxx unit cables before moving the unit.

6. **Remove BB2x unit from the BTS.**
7. **Remove BOIx unit from the BTS.**
8. **Remove M2xA or M6xA unit from the BTS.**
9. **Remove TSxx unit from the BTS.**
10. **Remove DU2A unit from the BTS.**
11. **Remove DVxx unit from the BTS.**
12. **Remove RTxx unit from the BTS.**
13. **Remove WCxA unit from the BTS.**

# 6

## Removing cabinet cables

### 6.1 Overview of removing external cables

#### Summary



#### Warning

**Danger of lethal voltages! When connecting power cables, there is a risk of lethal voltages and electric shock. Make sure that the site power is off.**



#### Note

To access cabinet interface connections, remove the cabinet roof from the BTS and replace the roof when all work is complete.



#### Note

Depending on the position of the antenna box, you need to remove the dummy cable entry panel adjacent to the power connector or remove the screws securing the antenna box to the cabinet core and lift the antenna box to access the connector screws.



#### Steps

1. Remove the AC power cables from the BTS.
2. Remove the DC power cables.
3. Remove the transmission unit cables.

4. Remove the grounding cables.

## 6.2 Removing AC power cables

### Before you start



#### Note

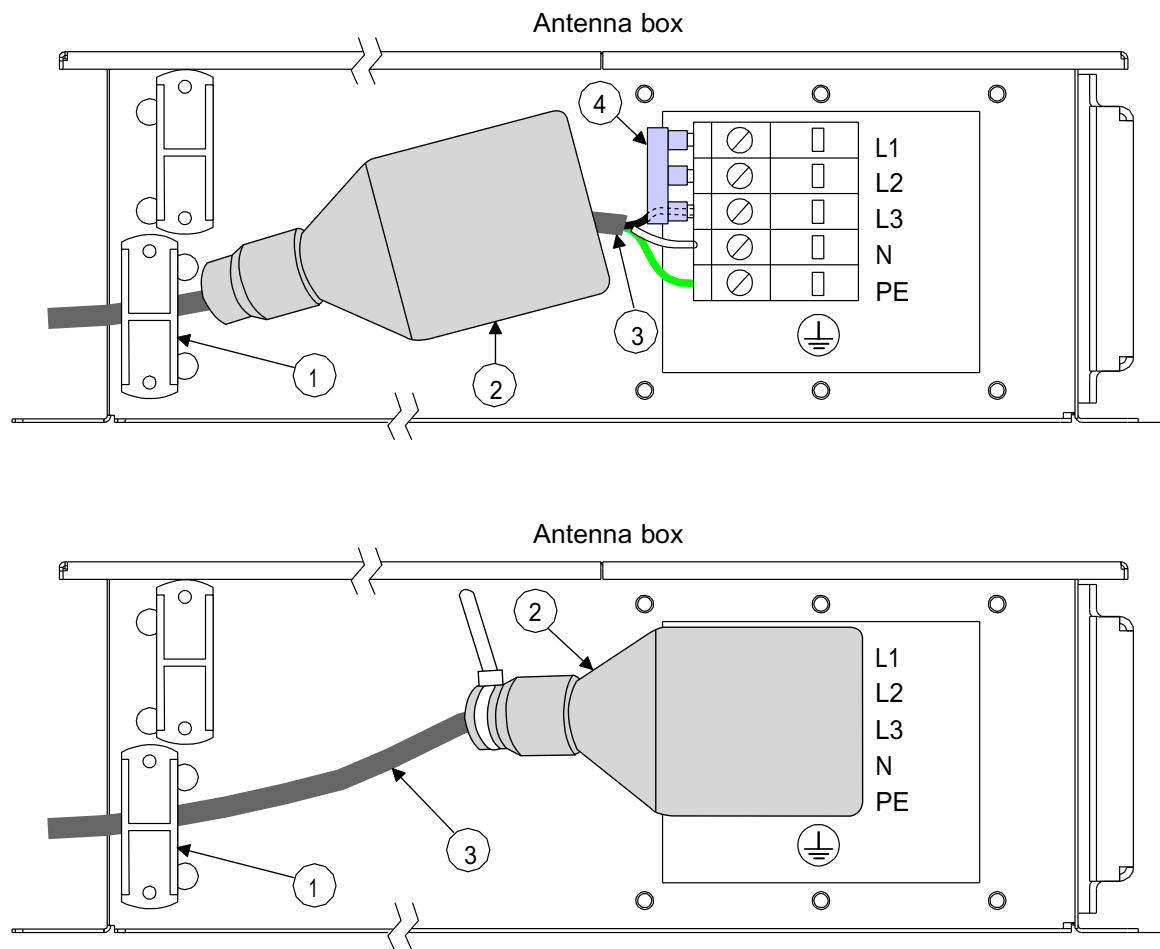
Depending on the position of the antenna box, you need to remove the dummy cable entry panel adjacent to the power connector to access the connector screws. As an alternative, you can remove the screws securing the antenna box to the cabinet and lift the antenna box to access the connector screws.

---

### Summary

The following information describes how to remove single-phase AC power cables for BTS cabinets located within the USA and Canada (two wires with ground) and Europe (one wire with neutral and ground). It also describes how to remove three-phase AC power cables for BTS cabinets located within Europe.



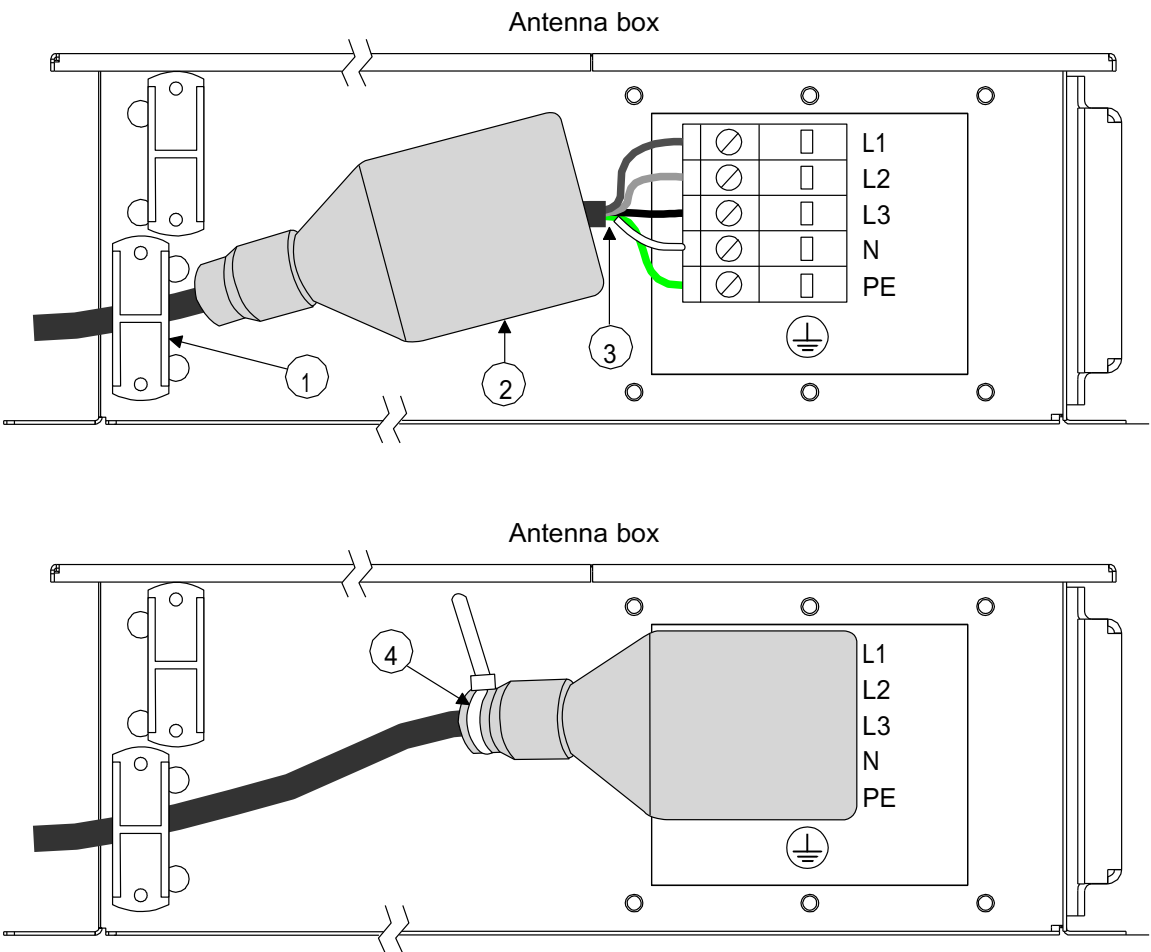


NOTE: Power input wiring must adhere to local codes.  
L1, L2, L3 (Shorted), N = Neutral, PE = Ground

DN03418592

Figure 1. Single-phase AC power to the BTS (USA, Canada and Europe)

1	Strain relief
2	Shorting bar
3	AC Power input cable



NOTE: Power input wiring must adhere to local codes.  
L1 = Phase 1, L2 = Phase 2, L3 = Phase 3,  
N = Neutral, PE = Ground

DN03418608

Figure 2. Three-phase AC power to the BTS (Europe)

1	Strain relief
2	AC Power input cable



### Steps

1. Power down the BTS.
2. Turn the mains power breaker off.

3. *If you are removing the single-phase AC power cable (USA and Canada),*  
*Then*

**Perform the following steps:**

- a. Loosen the screws on the strain relief.
- b. Turn the screw of the N connector to the left to open the connector. Remove the live wire.
- c. Turn the screw of the L3 connector to the left to open the connector. Remove the live wire.
- d. Turn the screws of the L1 and L2 connectors to the left to open the connectors. Remove the shorting bar from L1, L2, and L3.
- e. Turn the screw of the PE connector to the left to open the connector. Remove the ground wire.
- f. Turn the screws of the L1, L2, L3, N and PE Phoenix connector terminals to the right to close them.
- g. Remove the power cable from the strain relief.

4. *If you are removing the single-phase AC power cable (Europe),*  
*Then*

**Perform the following steps:**

- a. Loosen the screws on the strain relief.
- b. Turn the screw of the N connector to the left to open the connector. Remove the neutral wire.
- c. Turn the screw of the L3 connector to the left to open the connector. Remove the live wire.
- d. Turn the screws of the L1 and L2 connectors to the left to open them. Remove the shorting bar from L1, L2, and L3.
- e. Turn the screw of the PE connector to the left to open the connector. Remove the ground wire.
- f. Turn the screws of the L1, L2, L3, N, and PE Phoenix connector terminals to the right to close them.
- g. Remove the power cable from the strain relief.

5. *If you are removing the three-phase AC power cable (Europe),*  
*Then*

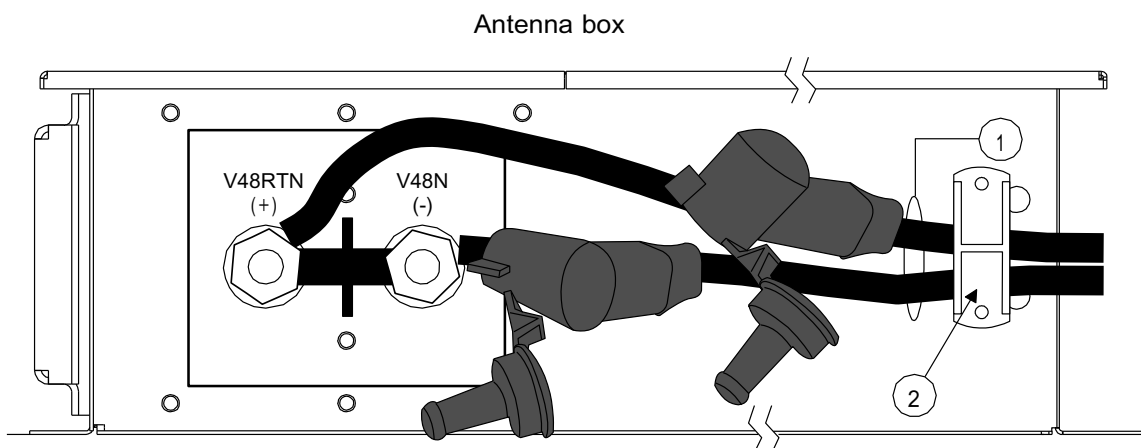
**Perform the following steps:**

- a. Loosen the screws on the strain relief.
- b. Turn the screws of the L1, L2, and L3 connectors to the left to open them. Remove the three live wires from these connectors.

- c. Turn the screw of the N connector to the left to open the connector. Remove the neutral wire.
- d. Turn the screw of the PE connector to the left to open the connector. Remove the ground wire.
- e. Turn the screws of the L1, L2, L3, N, and PE Phoenix connector terminals to the right to close them.
- f. Remove the power cable from the strain relief.

## 6.3 Removing DC power cables

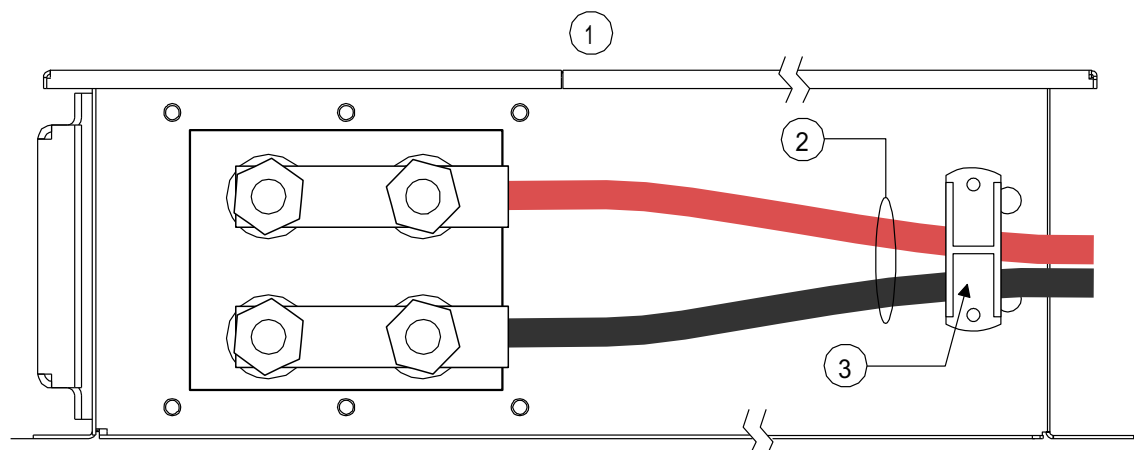
### Summary



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1	DC Power input cable
2	Strain relief

Figure 3. -48 VDC power to the BTS



DN03418577

1	Antenna box
2	DC Power input cables
3	Strain relief

Figure 4. +24 VDC power to the BTS



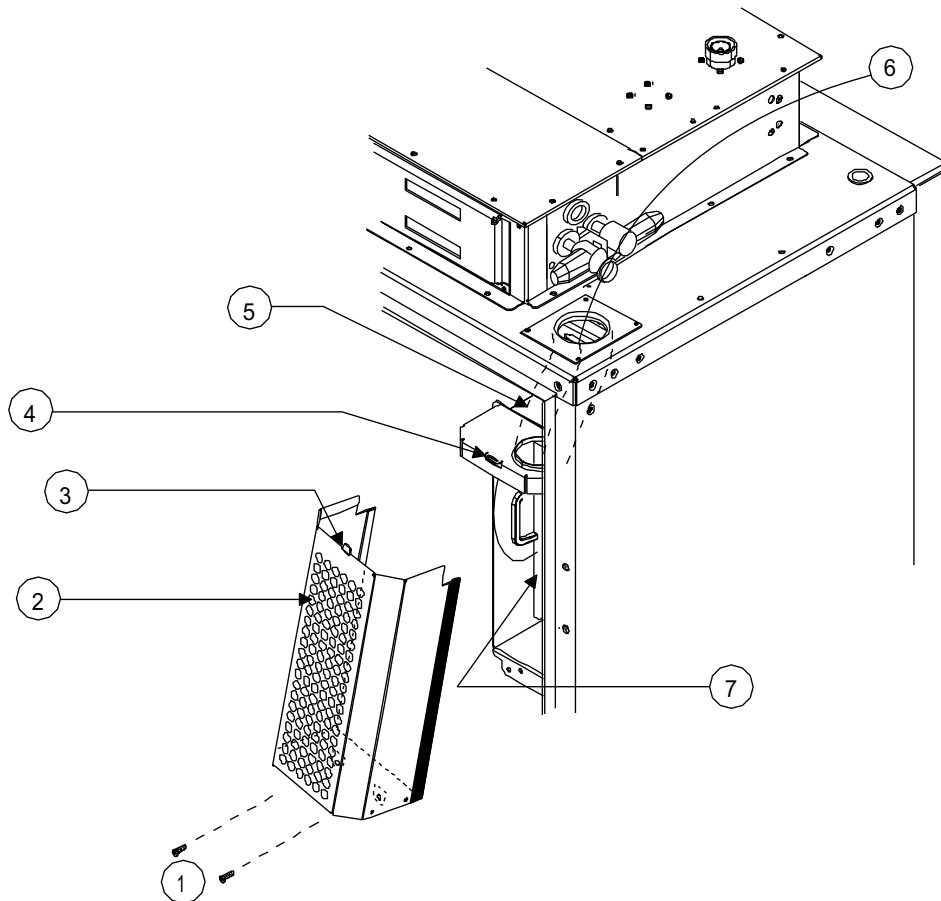
## Steps

1. **Power down the BTS.**
2. **Turn the main power breaker OFF.**
3. **Loosen the screws on the strain relief.**
4. **Remove the -48 VDC power cables.**
  - a. Slide the filter covers off the terminal bolts.
  - b. Remove the bolt securing the blue (-) cable and disconnect the blue (-) cable.
  - c. Remove the bolt securing the black (+) cable and disconnect the black (+) cable.
  - d. Remove the wires from the strain relief on the cable box.
5. **Remove the +24 VDC power cables.**

- a. Untie the lacing cord binding the positive and negative power cables together.
- b. Loosen and remove the two M4x12 mounting screws and two M4 nuts.
- c. Remove the terminal cover.
- d. Untie the cable from the strain relief bracket.
- e. Loosen the four installed nuts.
- f. Remove the nuts from the -24VN(-) threaded studs of the DCFB and remove the black -24VN(-) cable lug from the studs.
- g. Remove the nuts from the +24VP(+) threaded studs of the DCFB and remove the red +24VP(+) cable lug from the studs.
- h. Remove the cables from the strain relief on the antenna box.

## 6.4 Removing transmission unit (VXxx) cables

### Summary



DN04165153

Figure 5. Route of the Abis cable with VXxx unit cover removed from the IDCA cabinet



### Steps

1. **Power down the BTS.**
2. **Turn the main power breaker OFF.**
3. *If you are removing the Abis cable,*  
*Then*

**Disconnect the Abis cable and pull it through the EMC sleeve.**

4. *If you are removing the cable from the radio transmission unit,*

*Then*

**Perform the following steps:**

- a. Loosen the connector nut.
- b. Remove the RX/TX Flexbus cable from the TNC connector on the FXC RRI transmission unit.

5. *If you are removing the cable from the wireline transmission unit,*

*Then*

**Perform the following steps:**

- a. Loosen the connector nut.
- b. Remove the TX/RX cable from the front of the unit.

6. *If you are removing the cable from the FXC STM-1 transmission unit,*

*Then*

**Perform the following steps:**

- a. Remove (slide) the weather cover from the LC connector.
- b. Remove the protective caps from the LC connector plugs.
- c. Remove the TX cable from the upper port.
- d. Remove the RX cable from the lower port.

## 6.5 Removing external antenna jumper cables from the indoor cabinet



### Steps

1. **Disconnect each external antenna jumper cable from the end of the internal (ATCA) antenna cable.**



## 6.6 Removing external antenna jumper cables from the outdoor cabinet

### Summary

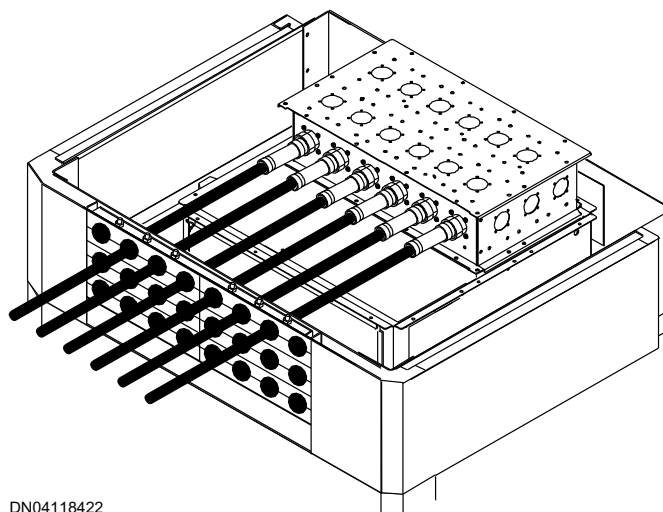


Figure 6. Removing the external jumper cables from the outdoor cabinet

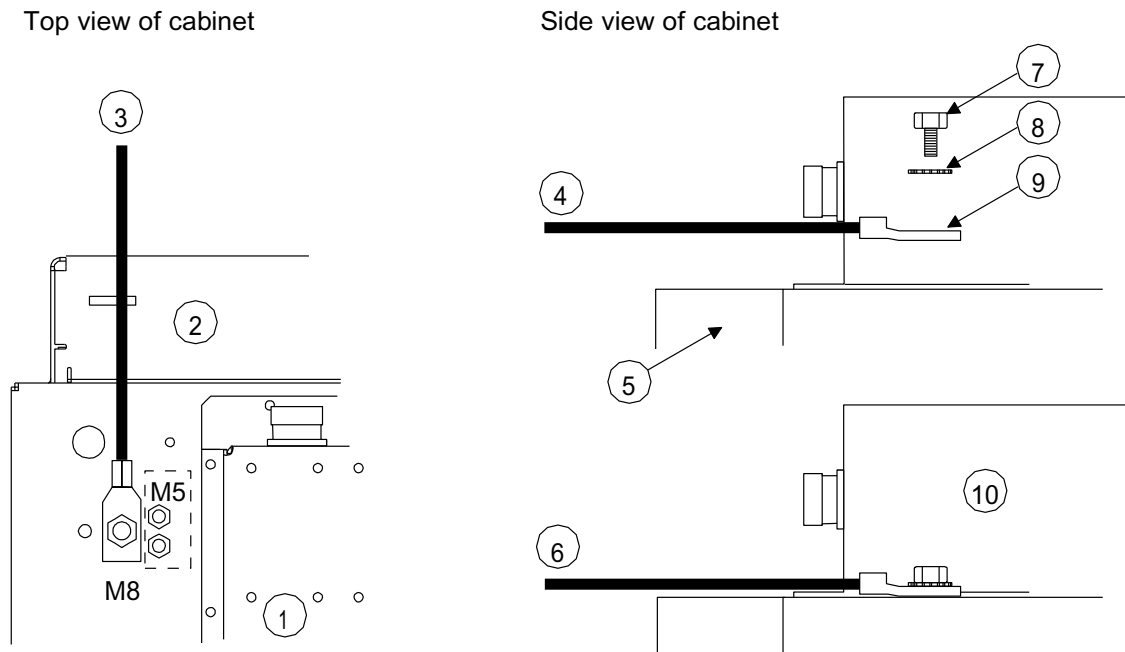


### Steps

1. **Disconnect the external antenna cables from the internal antenna cables from the outside of the antenna box.**
2. **Remove the external antenna cables from the cable entry blocks.**

## 6.7 Removing grounding cables

### Summary

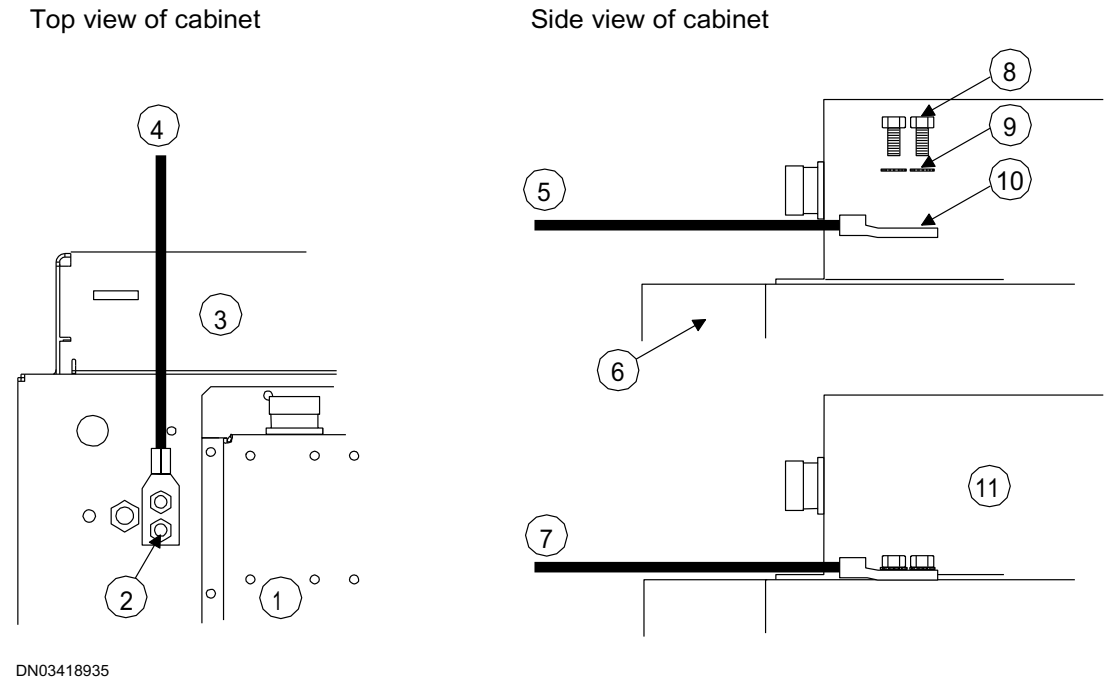


NOTE: M8/M5 bolts are provided to accommodate different types of ground lugs

DN03418923

Figure 7. Grounding the cabinet in a standard installation

1	Antenna box
2	Back wall
3	Cabinet grounding cable
4	Cabinet grounding cable
5	Back wall
6	Cabinet grounding cable
7	Bolt
8	Star washer
9	Ground lug
10	Antenna box



1	Antenna box
2	M5 (2 places)
3	IDCM back
4	Cabinet grounding cable
5	Cabinet grounding cable
6	Back wall
7	Cabinet grounding cable
8	Bolt
9	Star washer
10	Ground lug
11	Antenna box

Figure 8. Grounding the cabinet in a NEBS installation



Steps

1. Power down the BTS.
2. Turn the mains power breaker off.

3. At the top left of the cabinet, loosen the grounding bolt and remove the ground bolt and star washer.
4. Remove the lug end of the grounding cable.
5. Replace the grounding bolt and star washer and tighten them.

# 7

## Removing the indoor IDCA or Midi indoor IDCC cabinet

### 7.1 Installing the optional lifting handle kit (WLHA) of the indoor cabinet

#### Summary

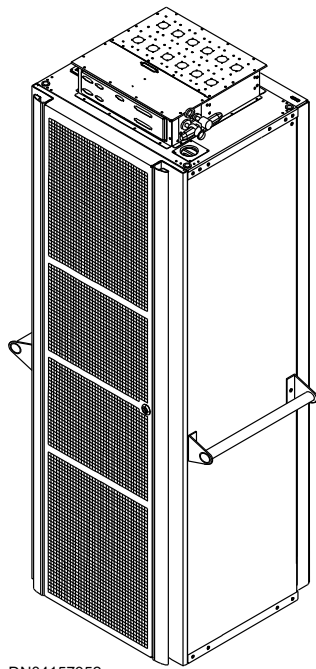
The WLHA can be installed on a BTS cabinet for horizontal and vertical (staircase) lifting. For horizontal lifting, the handles are installed on the sides of the cabinet. For vertical lifting, the handles are installed at the top and bottom of the cabinet using adapter plates and the cabinet feet.



#### Note

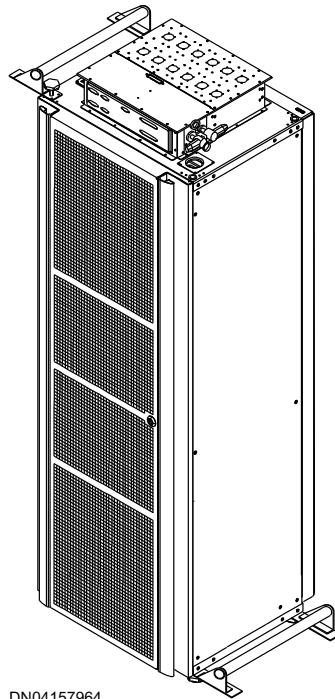
Vertical lifting is not available for the Midi cabinet.

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DN04157952

Figure 9. Lifting handles for horizontal lifting



DN04157964

Figure 10. Lifting handles for vertical lifting



## Steps

1. *If you are installing the lifting handles for horizontal lifting,*

*Then*

### **Perform the following steps.**

- a. Install each handle in the middle of each cabinet side using the M5 screws provided in the WLHA.
- b. To lift the cabinet, have each person hold a handle using both hands.

2. *If you are installing the lifting handles for vertical lifting,*

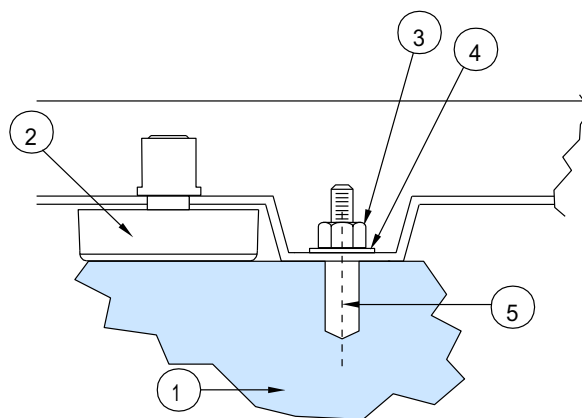
*Then*

### **Perform the following steps.**

- a. Position the adapter plates under the handles so that the large M12 holes are facing inside and the M5 holes are lined up.
- b. Connect the adapter plates to the handles using the M5 screws provided in the WLHA.
- c. Remove the cabinet feet.
- d. Position a handle on either side at the top of the cabinet so that the empty M12 holes on the adapter plates are lined up with the empty M12 holes on the side of the cabinet.
- e. Install the handles using two of the cabinet feet as M12 bolts.
- f. Position the other handle on the bottom side opposite of where the top handle was installed. The empty M12 holes on the adapter plates should be lined up with the empty M12 holes on the bottom of the cabinet.
- g. Install the handles using the cabinet feet as M12 bolts.
- h. To lift the cabinet, have one person hold the top handle with both hands. Tilt the cabinet back, while the other person holds the bottom handle with both hands.
- i. Once the cabinet is at the site, remove the lifting handles and re-install the levelling feet.

## 7.2 Removing the indoor IDCA and Midi indoor IDCC cabinets

### Summary



DN04154207

1	Mounting base
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2	Levelling feet
3	M10 or M12 nut
4	Washer
5	M10 or M12 anchor bolt

Figure 11. Removing the anchor bolt(s)



## Steps

1. *If* the cabinet is attached to the base with a single anchor bolt,

*Then*

### Perform the following steps.

- a. Hold the lower nut under the cabinet floor with an open end wrench, while you loosen the upper nut.
- b. Remove the upper and lower nuts and the washer; then remove the anchor bolt.
- c. Reposition the cabinet backstop inward.
- d. Lift the cabinet from the base.

2. *If* the cabinet is in an earthquake zone and attached with anchor bolts,

*Then*

### Perform the following steps.

- a. Loosen and remove the nuts and washers from the four anchor bolts attached to the base of the cabinet.
- b. Lift the cabinet from the base.
- c. Remove the anchor bolts from the anchor holes.



# 8

## Removing the outdoor ODCA/ODCF or Midi outdoor ODCC cabinet

### 8.1 Installing the optional lifting handle kit (WLHA) of the outdoor cabinet

#### Summary

The WLHA can be installed on a BTS outdoor cabinet for horizontal and vertical (staircase) lifting. For horizontal lifting, the handles are installed on the sides of the cabinet. For vertical lifting, the handles are installed at the top and bottom of the cabinet using adapter plates and the cabinet feet.



#### Note

Vertical lifting is not available for the Midi cabinet.

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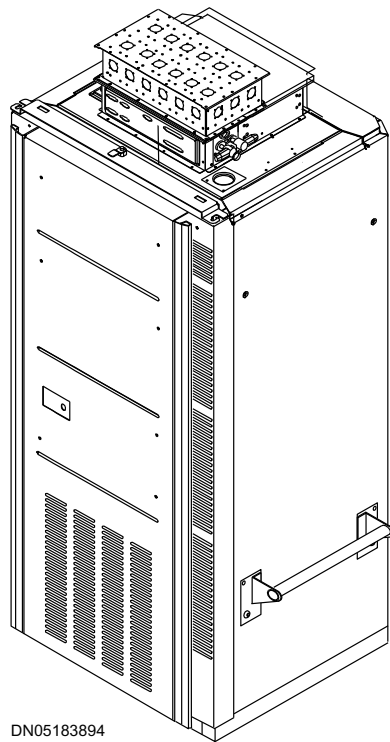


Figure 12. Lifting handles for horizontal lifting

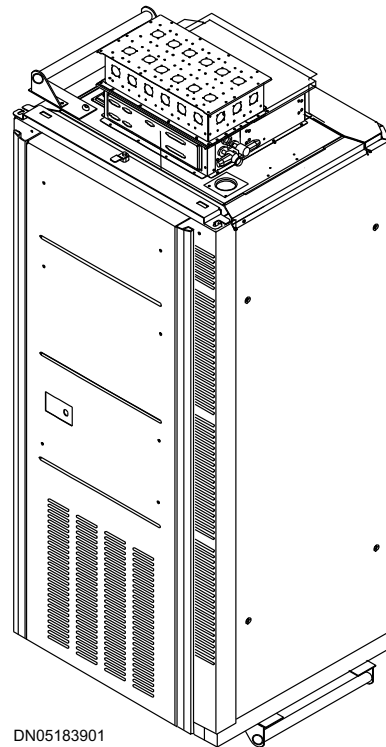


Figure 13. Lifting handles for vertical lifting



## Steps

1. *If you are installing the lifting handles for horizontal lifting,*

*Then*

**Perform the following steps.**

- a. Install a handle on each side of the cabinet (as shown in the figure) using the M5 screws provided in the WLHA.
- b. To lift the cabinet, have each person hold a handle using both hands.

2. *If you are installing the lifting handles for vertical lifting,*

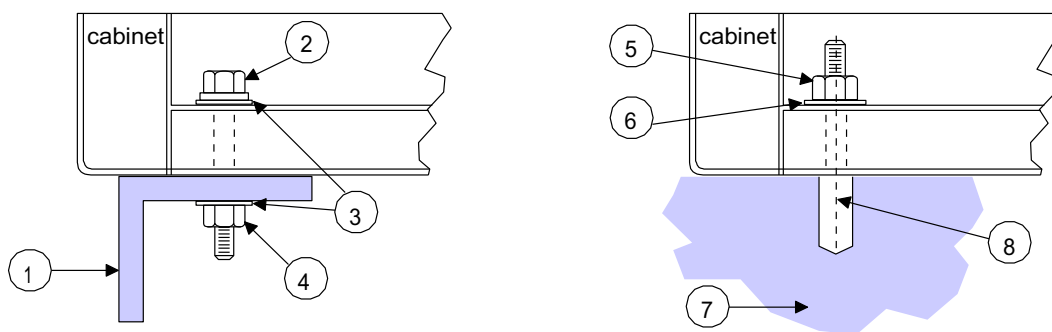
*Then*

**Perform the following steps.**

- a. Position the adapter plates under the handles so that the large M12 holes are facing inside, and the M5 holes are lined up.
- b. Connect the adapter plates to the handles using the M5 screws provided in the Lifting Handle Kit (WLHA).
- c. Position a handle on either side at the top of the cabinet so that the empty M12 holes on the adapter plates are lined up with the empty M12 holes on the side of the cabinet.
- d. Install the top handle using two of the roof mounting bolts.
- e. Position the other handle on the bottom side opposite of where the top handle was installed. The empty M12 holes on the adapter plates should be lined up with the empty M12 holes on the bottom of the cabinet.
- f. Install the handle using M12 bolts and nuts.
- g. To lift the cabinet, have one person hold the top handle with both hands. Tilt the cabinet back, while the other person holds the bottom handle with both hands.
- h. Once the cabinet is at the site, remove the lifting handles.

## 8.2 Removing the outdoor ODCA/ODCF and Midi outdoor ODCC cabinet

### Summary



NOTE: The recommended bolt length is 60 mm (2.36 in.)

DN03418047

Figure 14. Removing the cabinet from the base

**Note**

1-4 identify the components for attaching to a metal frame. 5-8 identify the components for attaching to a concrete base.

1	Metal frame
2	M10 or M12 bolt
3	Washers
4	M10 or M12 nut
5	M10 or M12 nut
6	Washers
7	Concrete base
8	M10 or M12 bolt

**Steps**

1. *If this is a concrete base,*

*Then*

**Loosen and remove the four nuts and washers that secure the cabinet to the base.**

2. *If a metal mounting frame installation,*

*Then*

**Loosen and remove the four nuts and eight washers that secure the cabinet to the frame.**

3. **Remove the four bolts.**
4. **Remove any shims, if found.**
5. **Remove the cabinet from the base.**