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468962A.505_NOLSD
Nokia MetroSite EDGE BTS, Release 5

Field Upgrade

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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1 Overview of field upgrade

This document provides instructions for upgrading an existing Nokia MetroSite BTS installation. Field upgrades are done for the following reasons:

- Upgrade of TRXs from GSM to GSM/EDGE (including upgrade from 5W TRXs to 10W TRXs).

Note

For upgrades from 1W to 5W TRXs, consult the previous version of this manual.

- Upgrade of BTS capacity by chaining to include up to 12 TRXs.

This chapter describes the upgrade options in more detail and the working order for the upgrade procedures.

1.1 GSM to GSM/EDGE upgrade

A GSM MetroSite BTS installation is upgraded to EDGE by replacing the GSM TRX units with 5W GSM/EDGE TRXs or with 10W GSM/EDGE TRXs to any spare TRX slots in the BTS.

A software upgrade to CXM 3.3 or later is also required for upgrade to EDGE. This is done locally at the BTS during commissioning with Nokia BTS Manager.

Note

With the 5W GSM/EDGE TRXs, MetroSite can operate with either GSM or EDGE.

1.1.1 Working order for GSM/EDGE upgrade

The procedures to be completed and the working order in which they are done are presented below.

Upgrading TRXs to GSM/EDGE

1. Read the information in the *Preparing for upgrade* Chapter of this document. This chapter contains essential information about when to power down the BTS.

2. Check the type of TRX units currently installed to confirm that they are 5W TRXs.

3. Replace the existing TRX units with 10W GSM/EDGE TRXs, as described in the *Upgrading by replacing TRXs* Section of this document.

   OR

   Install new 5W GSM/EDGE TRXs to any spare TRX slots in the BTS, as described in the *Upgrading capacity by adding TRXs* Section of this document.

4. Follow the procedures for commissioning in the *Commissioning for upgrade* Chapter of this document.

5. Follow the procedures for completing the upgrade in the *Completing the upgrade* Chapter of this document.

1.1.2 Working order for 5W TRX power upgrade

The procedures to be completed and the working order in which they are done are presented below.

Upgrading TRXs from 5W to 10W

1. Read the information in the *Preparing for upgrade* Chapter of this document. This chapter contains essential information about when to power down the BTS.

2. Follow the procedures for replacing the power supply unit in the *Replacing the power supply unit* Chapter of this document.

3. Replace the existing TRX units with 10W GSM/EDGE TRXs, as described in the *Replacing or installing new TRX units* Chapter of this document.

4. Follow the procedures for commissioning in the *Commissioning for upgrade* Chapter of this document.

5. Follow the procedures for completing the upgrade in the *Completing the upgrade* Chapter of this document.

1.2 Capacity upgrade by BTS chaining

The capacity of a Nokia MetroSite BTS installation can be upgraded by connecting one or two slave BTSs to the master BTS with chaining cables via the interface units. Up to 12 TRXs can be connected and set up as one BCF unit. Only the master BTS needs a transmission unit.

Note

All BTS cabinets in a chain must be upgraded to the GSM/EDGE standard.

1.2.1 Working order for a MetroSite EDGE BTS chaining upgrade

The procedures to be completed and the working order in which they are done are presented below.

Chaining MetroSite BTSs

1. Read the information in the *Preparing for upgrade* Chapter of this document. This chapter contains essential information about when to power down the BTS.

2. Follow the procedures for chaining Nokia MetroSite EDGE BTSs in the *Chaining Nokia MetroSite EDGE BTSs* Chapter of this document.

3. Follow the procedures for commissioning the BTS chain in the *Commissioning the BTS chain* Section of this document.

4. Follow the procedures for completing the upgrade in the *Completing the upgrade* Chapter of this document.

2 Preparing for upgrade

Before starting any upgrade procedures, the procedures and precautions presented in this chapter should be read and implemented as required.

Warning

Some of the upgrade procedures require the BTS to be powered down. Read the Power supply precautions Section in this chapter before beginning the upgrade.

2.1 Power supply precautions

Warning

Potentially lethal voltages!

The BTS power must be switched OFF at the main disconnect device or circuit breaker before starting maintenance work which involves the risk of electric shocks.

Prevent injury to personnel or damage to the BTS equipment by following the power supply rules for maintenance and upgrade procedures presented in *Power supply rules during BTS upgrade or maintenance procedures* Table .

Note

The switch on the power supply unit (PSU) of the BTS has two positions: ON and Stand-by.

Table 1. Power supply rules during BTS upgrade or maintenance procedures

BTS upgrade or maintenance procedure	Power supply rule for BTS
Replacing a power supply unit or PSU cable	• Power OFF at main disconnect device • PSU switch to Stand-by • If a BBU is fitted, isolate power from BBU.
Replacing a grounding connection	• Power OFF at main disconnect device • PSU switch to Stand-by • If a BBU is fitted, isolate power from BBU.
Disconnecting or connecting antenna or diversity cables on a TRX	PSU can be switched to ON but TRX must be blocked
Replacing a TRX	PSU can be switched ON but TRX must be blocked
Disconnecting or connecting transmission cables	PSU can be switched ON but TRX must be blocked
Replacing a transmission unit	PSU switch to Stand-by
Connecting or disconnecting cables to the interface unit (VIFA)	PSU switch to Stand-by is advised
Connecting cables to the interface unit for BTS chaining	PSU switch to Stand-by
Replacing an interface unit	PSU switch to Stand-by
Replacing a fan unit	• Power OFF at main disconnect device • PSU switch to Stand-by

2.2 Checking warnings and cautions

The warnings and cautions applicable to the MetroSite BTSs are detailed in *Nokia MetroSite EDGE Base Station: Warnings and Cautions*. Read these before beginning a field upgrade.

2.3 Checking the upgrade deliveries

Check that the items delivered for the upgrade match the items required in your upgrade/installation plan. Check the condition of the delivered items to confirm that they are not damaged.

2.3.1 Parts required for a GSM/EDGE upgrade

Refer to the *Parts required for a GSM/EDGE upgrade on the Nokia MetroSite EDGE Base Station* Table for details of the parts required for a GSM/EDGE upgrade.

Table 2. Parts required for a GSM/EDGE upgrade on the Nokia MetroSite EDGE Base Station

Upgrade type	Parts required
5W GSM to 5W GSM/EDGE upgrade	• 5W GSM/EDGE TRX units • Nokia SiteWizard 3.1 with Nokia BTS Manager 3.2.2 or later and CXM 3.3 software or later. • FXC type transmission unit (if not already fitted)
5W GSM to 10W GSM/EDGE upgrade	• 10W GSM/EDGE TRX units • Nokia SiteWizard with Nokia BTS Manager 3.3 or later and CXM3.3 software or later (for 800, 900, 1800 and 1900 MHz frequency bands). • FXC type transmission unit • HVSA12, HVSB12, HVSD12 or CVSG higher capacity type power supply unit (see the *Replacing the power supply unit* Chapter for specifications)

2.3.2 Parts required for a BTS chaining upgrade

The following parts are required for a BTS chaining upgrade. The number of items depends on whether there will be one or two slave cabinets in the chain.

- One or two Nokia MetroSite EDGE BTS base stations with GSM/EDGE TRXs but without transmission units (depending on the number of slave BTS cabinets planned).

Note

The BTS cabinets will need to be installed as described in the document, *Nokia MetroSite EDGE Base Station: Installation.* The parts required for BTS installation are listed in that document.

- One or two Nokia MetroSite BTS extension cable kits (depending on the number of slave BTS cabinets planned). The kits contain a cable and a termination connector. There are three different lengths of extension cable, as follows:
  - extension cable kit, 3 metres (part number 467614A)
  - long extension cable kit, 5 metres (part number 469585A)
  - short extension cable kit, 1 metre (part number 469584A)
- Transmission unit shield (part number 467619A). One shield is required for each slave BTS.
- Nokia SiteWizard 3.1 with Nokia BTS Manager 3.2.2 or later and CXM 3.3 software or later.

2.4 Checking the site for an upgrade

Before beginning the upgrade, the site should be checked by the site supervisor. The site should be checked against a site preparation checklist and confirmed as correct according to the site drawings and plans.

The BTS site should be readily prepared according to the specifications given in *Nokia MetroSite EDGE Base Station: Requirements for Installation and Operation.* In the case of a BTS chaining upgrade, the extra BTS cabinets should be already installed and checked.

If the site does not meet the requirements in the checklist, complete the site deficiency reports and report to the Installation Manager / Site Manager before continuing with the upgrade.

2.4.1 Checking environmental conditions on the site

Check the site conditions before starting the upgrade procedures. In the case of precipitation (rain, snow or sleet), the site must be weather-guarded during the upgrading procedure to prevent damage to the units when the BTS cover is removed. Note the following:

- Rain or snow must not be allowed to fall on the internal surfaces of the equipment.
- The cover must not be removed during conditions where dust can be blown into the cabinet.

2.5 Checking the installation equipment

The *Tools and other equipment required for a field upgrade* Table presents a list of the tools and other equipment required for upgrading a Nokia MetroSite BTS.

Table 3. Tools and other equipment required for a field upgrade

Part	Notes
Laptop PC	The PC should be compatible with Nokia SiteWizard software version 3.0.
LMP cable	For connecting BTS Manager software to the BTS via the LMP port on the interface unit
Torque driver with 60 mm (2.4 in) shaft and: • T10 and T25 Torx bits • 4 mm Allen bit	Required for: • Unit retaining screws • Cable entry block screws
Torque key	For attaching diversity cables
Cable ties and side cutting pliers	For securing cable routing out of the BTS
ESD wrist strap	To prevent electro-static discharge damage

2.6 Removing the BTS cover

Before removing the cover of the BTS, refer to the information on power supply precautions and environmental conditions on the site, presented earlier in this chapter.

Note

Removing the cover issues an alarm to the BSC. Make sure that the BSC/NMS personnel is notified before removing the cover.

Removing the BTS cover

1. Unlock the cabinet lock at the bottom of the BTS.
2. Remove the cover by sliding it upwards to disengage the hooks at the side of the cover from the locking guides on the BTS chassis.
3. When the cover is free, pull it away from the cabinet and hang it on the hook at the top left side of the chassis.

   You can also remove the cover completely to place it on the floor. Remove the safety strap before pulling the cover away (see the *Nokia MetroSite EDGE BTS cover and safety strap* Figure).

2.7 ESD protection

Caution

Some units in the MetroSite BTS contain electro-static sensitive devices. The BTS is labelled with an electro-static sensitive device symbol as shown in the *Electro-static sensitive device symbol* Figure.

Always use an anti-static wrist strap connected to the cabinet ESD stud, whenever handling electro-static sensitive units. The wrist strap and connection stud is shown in the *Connecting the antistatic wrist strap* Figure.

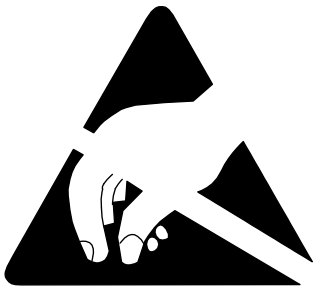


Figure 1. Electro-static sensitive device symbol

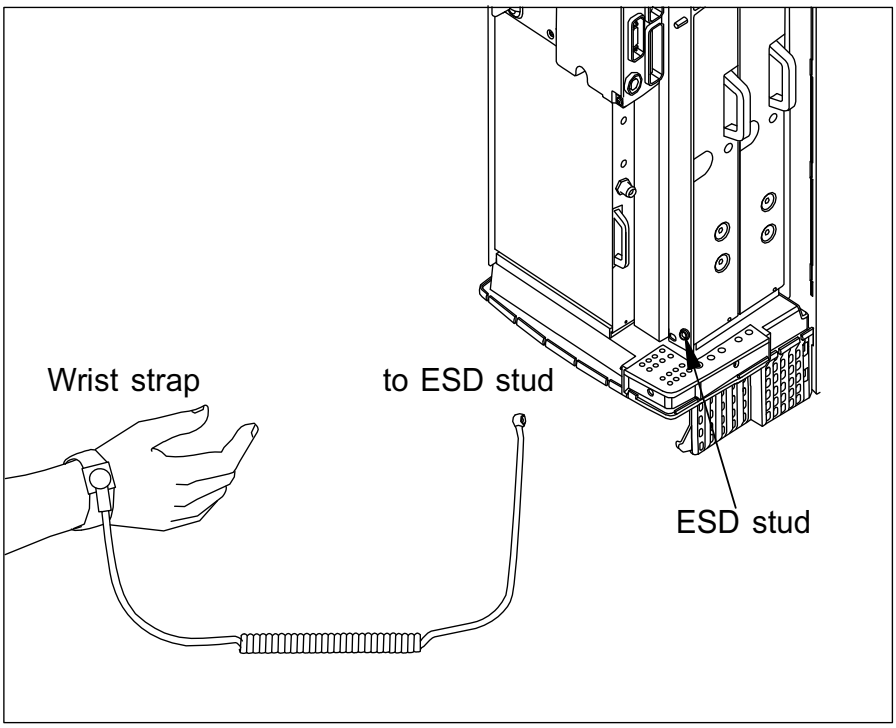


Figure 2. Connecting the antistatic wrist strap

3 Replacing the power supply unit

The power supply unit (PSU) must be replaced with a higher capacity version if the MetroSite BTS installation is being upgraded from a 5W TRX configuration. See the *PSU types used in MetroSite base stations* Table for the correct type of PSU replacements for a 10W TRX installation.

Note

The PSU does not need replacing for 5W GSM to 5W GSM/EDGE field upgrades.

Table 4. PSU types used in MetroSite base stations

Input voltage	5W TRX BTS installations	10W TRX BTS installations
AC 230 V	HVSA11	HVSA 12
AC 110 V	HVSB11	HVSB 12
DC +24 V	HVSC	HVSC 11
DC -48 V	HVSD11	HVSD 12
AC 230V (Wide range)	-	CVSG

3.1 PSU removal

Warning

Make sure that the power is turned OFF at the main disconnect device before working on the PSU.

Removing the PSU

1. Turn the PSU power switch to Stand-by and turn the power OFF at the BTS's main power disconnect device.
2. Open the power connector cover on the PSU by removing the retaining screws with a T10 Torx driver (see the *Power supply unit* Figure).
3. Unplug the power supply cable from the PSU.
4. Loosen the unit"s upper and lower retaining screws on the mounting brackets using a T10 Torx driver.
5. Slide the PSU unit out until it comes to a stop, then tilt the unit from the top and remove it (see the *Removing the units* Figures).

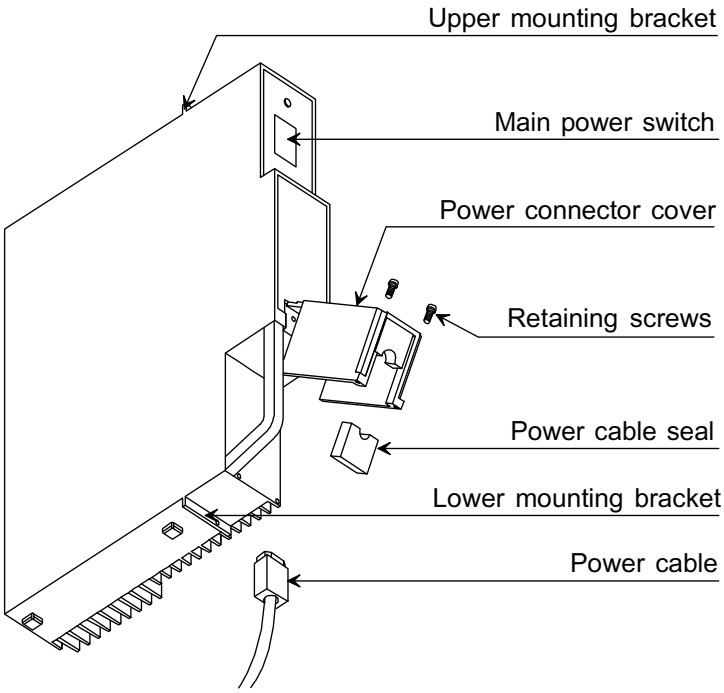


Figure 3. Power supply unit

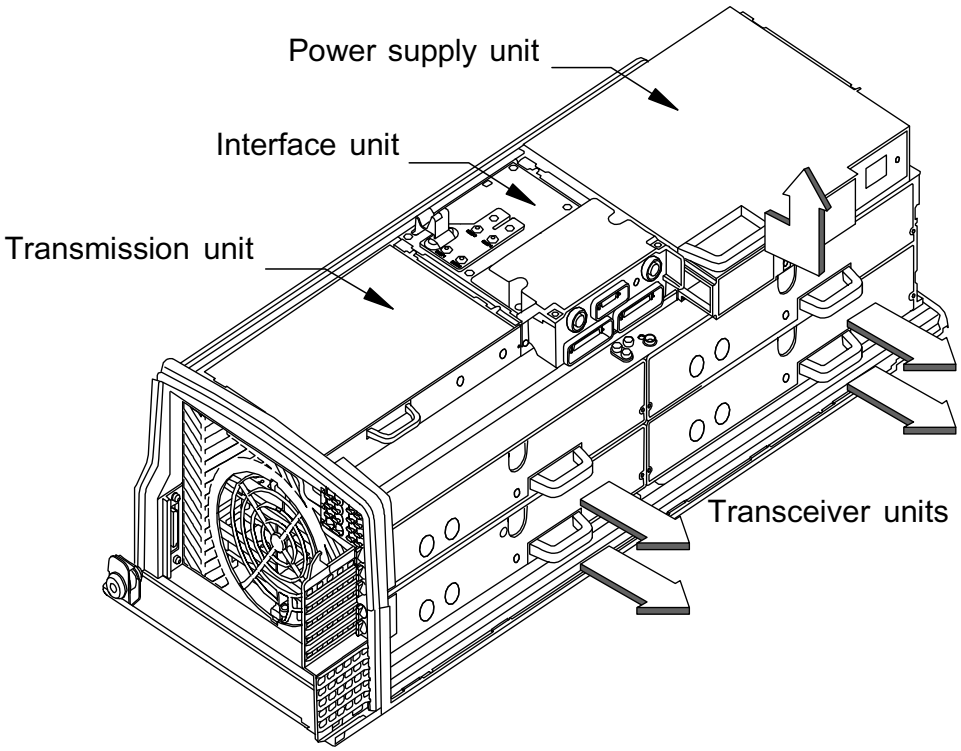


Figure 4. Removing the units

3.2 PSU installation

Installing the new PSU

1. Slide the PSU into the appropriate slot. See the *Removing the units* Figure.
2. Place the PSU into the bottom runner then push the top of the unit forward into the clearance slots provided in the top runners.
3. Press the unit carefully into the connector on the backplane. Do not use excessive force!
4. Tighten the two PSU mounting screws on the upper and lower mounting brackets using a T10 Torx torque driver. Tighten to 1.5 Nm (1.1 lb ft).
5. Loosen the two T10 Torx retaining screws on the connector cover and open the cover. See the *Power supply unit* Figure.

6. Plug the power supply cable connector into the PSU power input socket.

7. Fit the power cable seal into the power connector cover. Close the cover and tighten the retaining screws.

8. Turn the power ON at the BTS's main power disconnect device and then turn the PSU switch to the ON position.

4 Replacing or installing new TRX units

A MetroSite BTS can be upgraded to EDGE by replacing 5W GSM TRX units with 5W GSM/EDGE units or upgraded to a higher power output by replacing the 5W GSM/EDGE units with 10W GSM/EDGE units.

Additional TRXs can also be added to a single BTS (with less than four TRXs) in order to increase the BTS's capacity or to add EDGE capability.

Note

It is possible for a BTS to contain a mixture of 5W GSM and 5W GSM/EDGE or 10W GSM/EDGE TRX units.

A 5W GSM/EDGE TRX can be commissioned to operate on GSM or GSM/EDGE and the 10W GSM/EDGE TRX can be commissioned to operate on GSM/EDGE.

The *TRX slot order* Figure shows the slot order of TRX units in a MetroSite BTS. TRX 1 is always the master TRX.

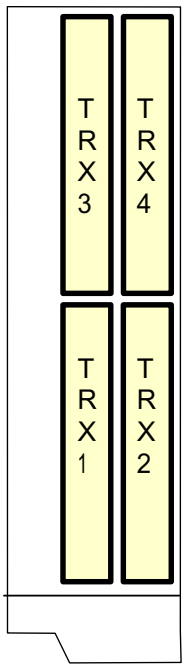


Figure 5. TRX slot order

4.1 Upgrading by replacing TRXs

4.1.1 Removing TRX units

Caution

Refer to the power supply requirements in the *Power supply rules during BTS upgrade or maintenance procedures* Table before working on the TRX units.

To make it easier to remove the antenna connectors, remove the TRX units in the following order: TRX 3, 4, 1, 2 (see the *TRX slot order* Figure).

Removing TRX units

1. Connect your Nokia BTS Manager PC to the LMP connector on the interface unit.

2. Block the TRX using Nokia BTS Manager (if the sector is not already locked from the BSC). In the *Supervision - Equipment View* window, right click on the TRX image and select the BLOCK button in the *Object Properties* dialogue window (see the *Example of blocking a TRX in Nokia BTS Manager* Figure).

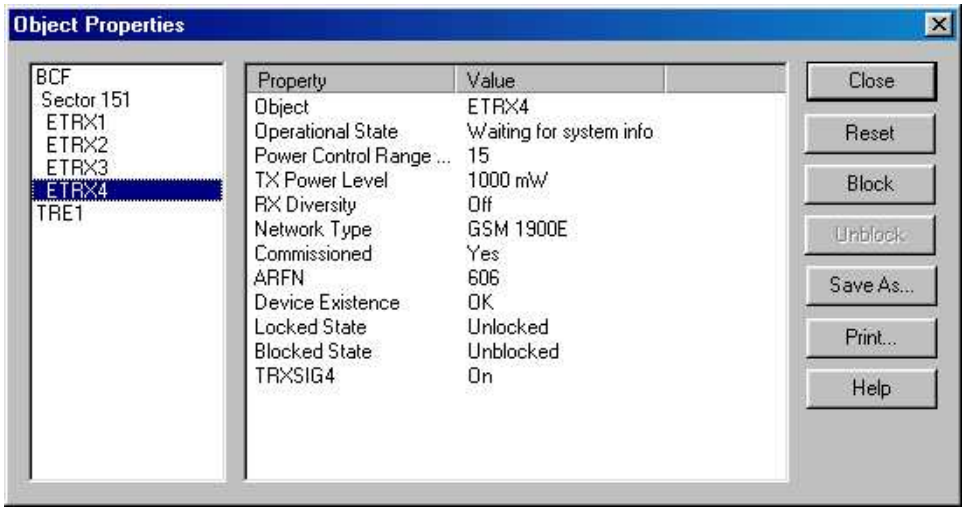


Figure 6. Example of blocking a TRX in Nokia BTS Manager

3. Make a note of the TRX cabling.

4. Disconnect the antenna and diversity cables from the TRX units to be removed.

5. Loosen the units' two retaining screws using a T10 Torx screwdriver.

6. Slide each TRX unit outwards to disengage it from the backplane connector and then pull the unit upwards to remove it (see the *Removing the units* Figure). Use the handle on the front of the TRX for pulling the unit.

4.1.2 Installing TRX units

In order to reach and tighten the antenna connectors with a torque spanner, it is necessary to install the TRX units in the following order: TRX 4, 3, 2, 1 (see the *TRX slot order* Figure). The master TRX is located in slot 1.

Note

If you are replacing a master TRX in a single TRX installation or increasing the number of TRXs, refer to *Nokia MetroSite EDGE Base Station: Maintenance* for more detailed information.

Installing TRX units

1. Slide the unit into the appropriate slot. See the *Nokia MetroSite EDGE Base Station 5W GSM/EDGE TRX unit* Figure.

2. Press each replacement unit carefully into the backplane to engage it in the connector. Do not use excessive force!

3. Fix and tighten the unit retaining screws to 1.5 Nm (1.11 lb ft) using a T10 Torx screwdriver.

4. Reconnect the diversity cables to form the planned diversity configuration. Refer to *Nokia MetroSite EDGE Base Station: Installation* for more information on diversity cabling.

5. Reconnect the antenna connectors according to the sectoring solution planned. Use a torque spanner/wrench to tighten the SMA type connectors to 1 Nm (0.74 lb ft).

6. If new TRX units have been added to replace formerly empty slots (fitted with shield units), route the associated cables through the cable entry block and secure them with cable ties. See the *Routing the cables and fitting the cable cover* Figure.

   The cable entry block must be removed in order to open it and route new cables through. Use a torque driver with a 4 mm Allen bit to remove and replace the two cable entry block screws.

7. Run the TRX test from Nokia BTS Manager (optional).

8. With Nokia BTS Manager, right-click the BCF object in the *Equipment View* window and carry out a BCF Object Reset, or, if locked from the BSC/NMS, request an unlock from the BSC/NMS (the BCF reset is automatic in this case).

9. If the green LED is lit on the TRX after the replacement procedure, the BTS is in service. If the LED is yellow or red, check the alarms and run the TRX test from the BSC/NMS.

4.2 Upgrading capacity by adding TRXs

The capacity of a single MetroSite EDGE BTS can be expanded to include up to four TRXs. For information on coverage patterns and sectoring, refer to *Nokia MetroSite EDGE Base Station: Product Description*.

The capacity of a MetroSite EDGE BTS can also be expanded by chaining. See the *Chaining Nokia MetroSite EDGE BTSs* Chapter of this document for information.

When an existing site is upgraded with new EDGE capable TRXs (and there is a corresponding difference in output power in GMSK) then Intelligent Coverage Enhancement Plus (ICE+) type feature may be enabled from the BSC.

Note

The new TRX object must be created at the BSC/NMS before the new TRX can start operation.

Adding a new TRX

1. Remove the shielding from the slot which is going to be populated with a new TRX. Use a Torx T10 driver to remove the retaining screws of the shielding unit.
2. Unpack the new TRX.
3. Insert the new TRX into the slot.
4. Connect your Nokia BTS Manager laptop PC to the LMP connector on the interface unit. .
5. Select TRANSMISSION | TRAFFIC MANAGER from the main menu in BTS Manager.
6. Allocate transmission capacity to the new TRX.
7. Run the TRX test from BTS Manager (optional).
8. If any objects are locked, unlock them from the BSC/NMS.

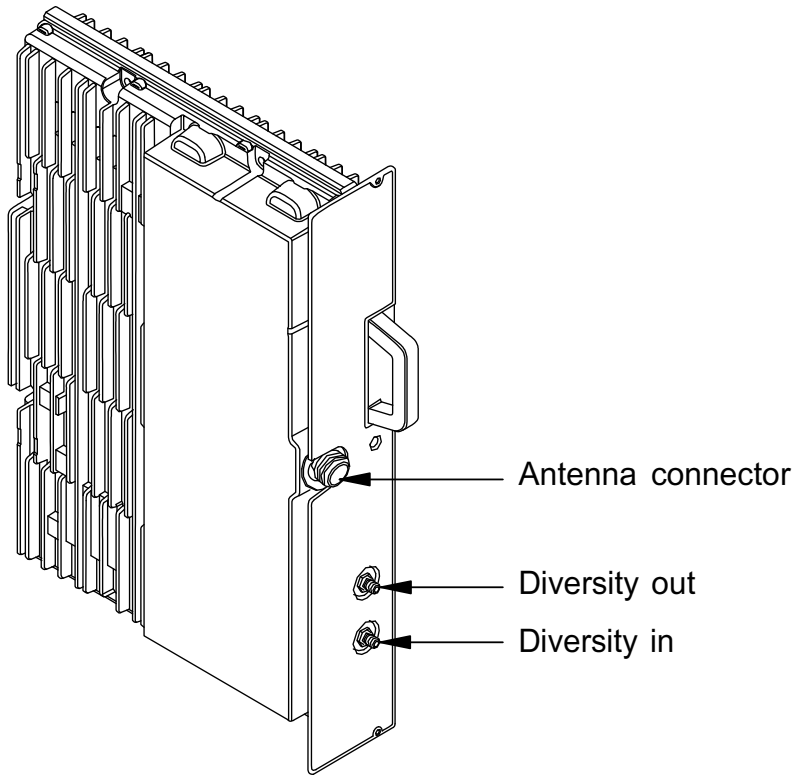


Figure 7. Nokia MetroSite EDGE Base Station 5W GSM/EDGE TRX unit

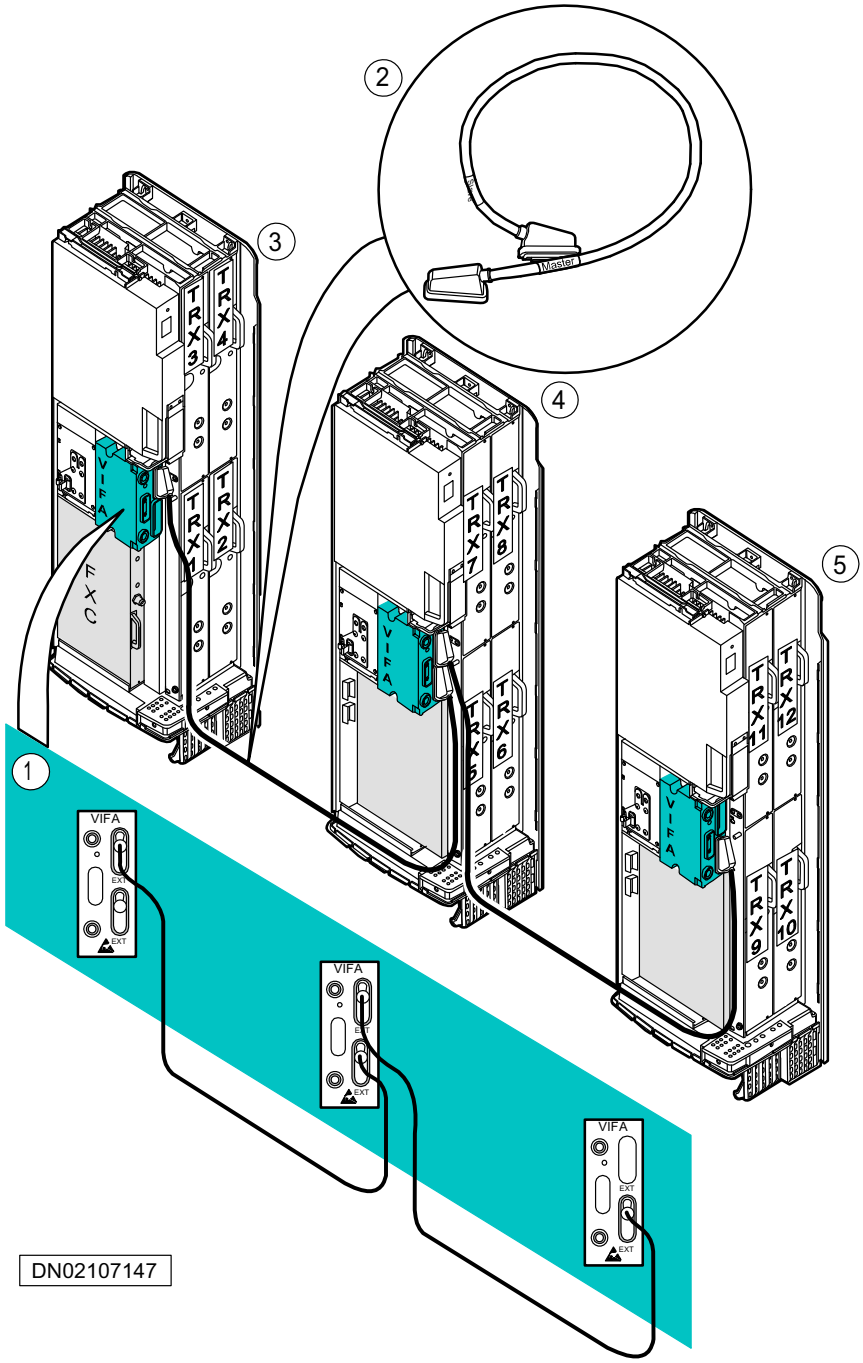
5 Chaining Nokia MetroSite EDGE BTSs

One or two Nokia MetroSite EDGE BTS cabinets can be added as slave cabinets to a master BTS, increasing the capacity to anything between five and 12 TRXs in one BCF object.

Chaining is done by connecting chaining cables from the interface unit (VIFA) of the master BTS to the interface unit of the slave BTS. If a three cabinet chain is required, a further cable is used to connect the first slave to the second slave in series. See the *Chaining connection for three Nokia MetroSite EDGE base stations* Figure for an illustration of the chaining connection.

The following requirements apply to the chaining feature:

- An FXC transmission unit is required in the master BTS. The slave BTS cabinets do not require a transmission unit.
- TRX 1 in the master BTS is the master TRX for the chained unit.
- CXM 3.3 software (or later) for 800, 900, 1800 and 1900 MHz frequency bands to be available at the BSC.



Legend:

1 Connections at the VIFA interface units. A two BTS chain is also possible. A termination connector is fitted to the first (master cabinet) “EXT” connector in the chain (connector supplied in the extension cable kit).

2 MetroSite BTS extension cable (chaining cable). The cable has a “master” connector on one end and a “slave” connector at the other. Three different lengths of cable are available: 1, 3 and 5 metres.

3 Master BTS cabinet, with FXC transmission unit and TRXs 1 to 4. TRX 1 is the master TRX for the chain.

4 Slave BTS cabinet 1, with TRXs 5 to 8. Fewer TRXs are possible. A transmission unit *must not* be fitted (a shield transmission unit is used instead - not shown in this figure).

5 Slave BTS cabinet 2, with TRXs 9 to 12. Fewer TRXs are possible. A transmission unit *must not* be fitted (a shield transmission unit is used instead - not shown in this figure).

Figure 8. Chaining connection for three Nokia MetroSite EDGE base stations

5.1 Setting up a chaining connection

Follow the procedure to set up a chaining connection.

Connecting MetroSite BTSs in a chain

1. Refer to your upgrade/installation plan and install the extra BTS cabinets as required. See the documents *Nokia MetroSite EDGE Base Station: Requirements for Installation and Operation* and *Nokia MetroSite EDGE Base Station: Installation* for instructions.

Note

The longest extension cable available for chaining is five metres. Make sure that you have got a suitable length of cable before mounting the extra BTS cabinets for chaining.

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2. Read the *Preparing for upgrade* Chapter in this document and familiarise yourself with the precautions and procedures. Remove the covers of the BTSs in the chain.

3. Confirm that all the BTS cabinets in the planned chain have been mounted correctly and contain the 5W GSM/EDGE TRXs as described in your site's transmission plan.

4. Confirm that the extra sectors and TRX have been added to the BCF in the BSC database, and remain in the locked state.

5. Request a BCF lock for the site from the BSC or NMS. You can check if the site has been locked by connecting a BTS Manager laptop to the master BTS in the chain, starting BTS Manager and checking TRX PROPERTIES in the *Supervision - Equipment View* window (right-click with the mouse over a TRX in the window).

6. Power OFF the master BTS. Inform your Operations Manager before doing this and follow the procedures for powering down a BTS.

Note

The site will already be "off air" if it has been locked.

Power OFF the master BTS by turning the switch on the power supply unit to Stand-by.

7. On the master BTS, connect the end of the chaining cable marked "Master" to the upper "EXT" connector on the interface unit. See the *Chaining connection for three Nokia MetroSite EDGE base stations* Figure for an illustration of the connection.

8. On the slave BTS, connect the "slave" end of the cable which comes from the master BTS to the lower "EXT" connector on the interface unit. See the *Chaining connection for three Nokia MetroSite EDGE base stations* Figure for an illustration of the connection.

9. If a second slave BTS cabinet is required (making a three BTS chain), connect the master end of the chaining cable from the upper "EXT" connector on the first slave BTS to the lower "EXT" connector on the interface unit of the second slave BTS (the third BTS in the chain). See the *Chaining connection for three Nokia MetroSite EDGE base stations* Figure for an illustration of the connection.

10. Fit a termination connector to the first, unused lower “EXT” connector in the chain. This will be in the master BTS, depending on the number of BTSs in the chain.

11. Route the cables through the appropriate slots cable entry blocks on the BTS cabinets and secure them with cable ties to the cable entry plate. The *Cable entry block, cable allocations* Figure shows the cable entry block.

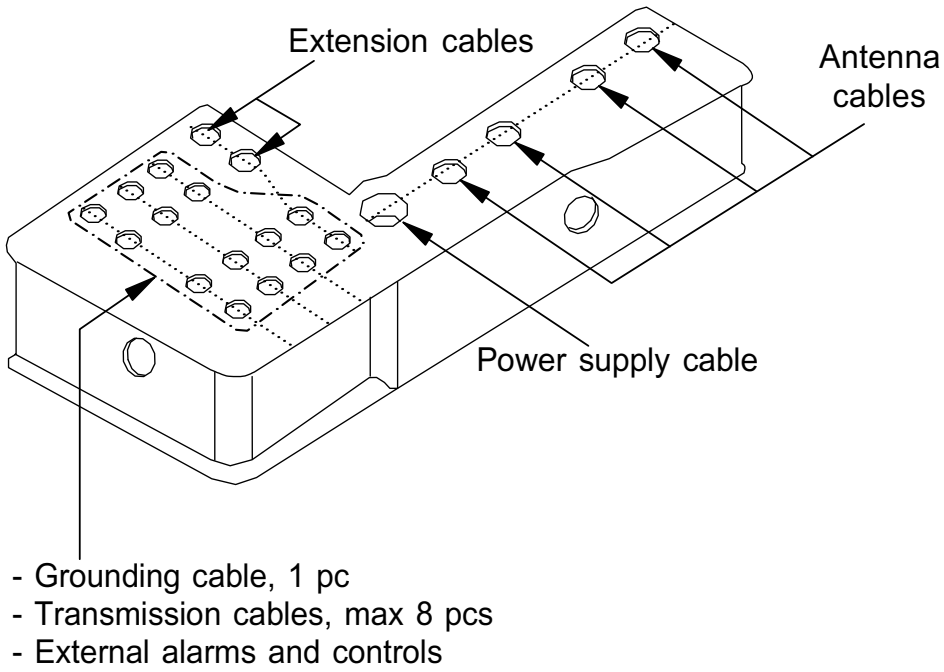

Figure 9. Cable entry block, cable allocations

12. Fit shield transmission units to the empty transmission unit slot in each slave BTS.

13. You can now commission the BTS chain. Follow the instructions given in the *Commissioning the BTS chain* Section of this document.

Note

The newly chained BTS site should remain in the locked state until you have completed the commissioning procedures. Do not request a BCF unlock until you have commissioned the BTS chain.

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6 Commissioning for upgrade

Whenever a Nokia MetroSite Base Station installation is upgraded to GSM/EDGE or for BTS chaining it must be re-commissioned locally with Nokia BTS Manager version 3.2.2. This includes downloading the appropriate CXM software to the master TRX from the BSC. For upgrades to GSM/EDGE, CXM 3.3 (for 800, 900, 1800 and 1900 MHz frequency bands) software (or later) to be available at the BSC. For chaining upgrades, CXM 3.3 or later is required.

Note

A Nokia MetroSite BTS installation fitted with 5W GSM/EDGE TRXs can be commissioned for GSM, EDGE, or a combination of both.

6.1 Commissioning the BTS for GSM/EDGE

Commissioning the BTS for GSM/EDGE upgrade

1. Make sure that all the units and cables are installed and connected correctly.

2. Connect the laptop PC loaded with Nokia BTS Manager 3.3 or later to the LMP connector on the BTS's interface unit. An LMP cable is required.

3. Switch ON the PSU at the BTS.

4. Start BTS Manager on your laptop. Wait until Site Supervisory condition is achieved. All units must show green LEDs.

5. With BTS Manager, uncommission the BTS. Follow the procedures found in *Nokia MetroSite EDGE Base Station: Commissioning.*

6. Carry out the commissioning procedures as instructed in *Nokia MetroSite EDGE Base Station: Commissioning.*

7. When commissioning is complete, disconnect the laptop from the BTS and carry out the procedures in the *Completing the upgrade* Chapter.

6.2 Commissioning the BTS chain

The chain of Nokia MetroSite EDGE base stations will be commissioned as one BCF object, with TRX 1 in the master BTS performing the BCF traffic functions for the chain. Otherwise, the master TRX in each cabinet controls only the heating/cooling and alarm functions.

Commissioning the BTSs for a chaining upgrade

1. Make sure that all the units and cables are installed and connected correctly.

2. Connect the laptop PC loaded with Nokia BTS Manager 3.3 or later to the LMP connector on the interface unit of the master BTS. An LMP cable is required.

3. Switch ON the PSUs at the master BTS and the slave BTSs.

4. Start BTS Manager on your laptop.

5. With BTS Manager, uncommission the master BTS by selecting COMMISSIONING | WIZARD from the main menu and selecting the 'Undo Commissioning' button.

Note

Before or during the commissioning of the BTS chain, CXM 3.3 (for 800 and 1900 MHz frequency bands) or CXM3.3-1 (for 900 and 1800 MHz frequency bands) software (or later) must be available at the BSC and loaded to the master BTS from the BSC.

Note

The newly chained BTS site should remain in the locked state until you have completed the commissioning procedures. Do not request a BCF unlock until you have commissioned the BTS chain.

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6. Carry out the commissioning process with BTS Manager's Commissioning Wizard, as described in the document *Nokia MetroSite EDGE Base Station: Commissioning.* At the stage of traffic allocation, follow the instructions called *Allocating transmission capacity for chaining* in the *Traffic Manager* chapter of the document.

Note

It is important that when commissioning has been completed, the new BTS are unlocked in the BSC database before the BCF is unlocked.

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7. When commissioning is complete, disconnect the laptop from the master BTS and carry out the procedures in the *Completing the upgrade* Chapter of this document.

7 Completing the upgrade

Warning

GROUNDING. Before refitting the cabinet cover, make sure that the grounding cable has been reconnected to the BTS cabinet.

Fitting the cabinet cover and completing the upgrade

1. Make sure that all the units and cables are correctly installed and connected.

2. Fit the cable cover (see the *Routing the cables and fitting the cable cover* Figure) as follows:

   a. Fit the cable cover support onto the hook at the end of the perforated plastic panel.

   b. Align the cable cover into the recesses on the cable cover support and slide it downwards until it locks into place.

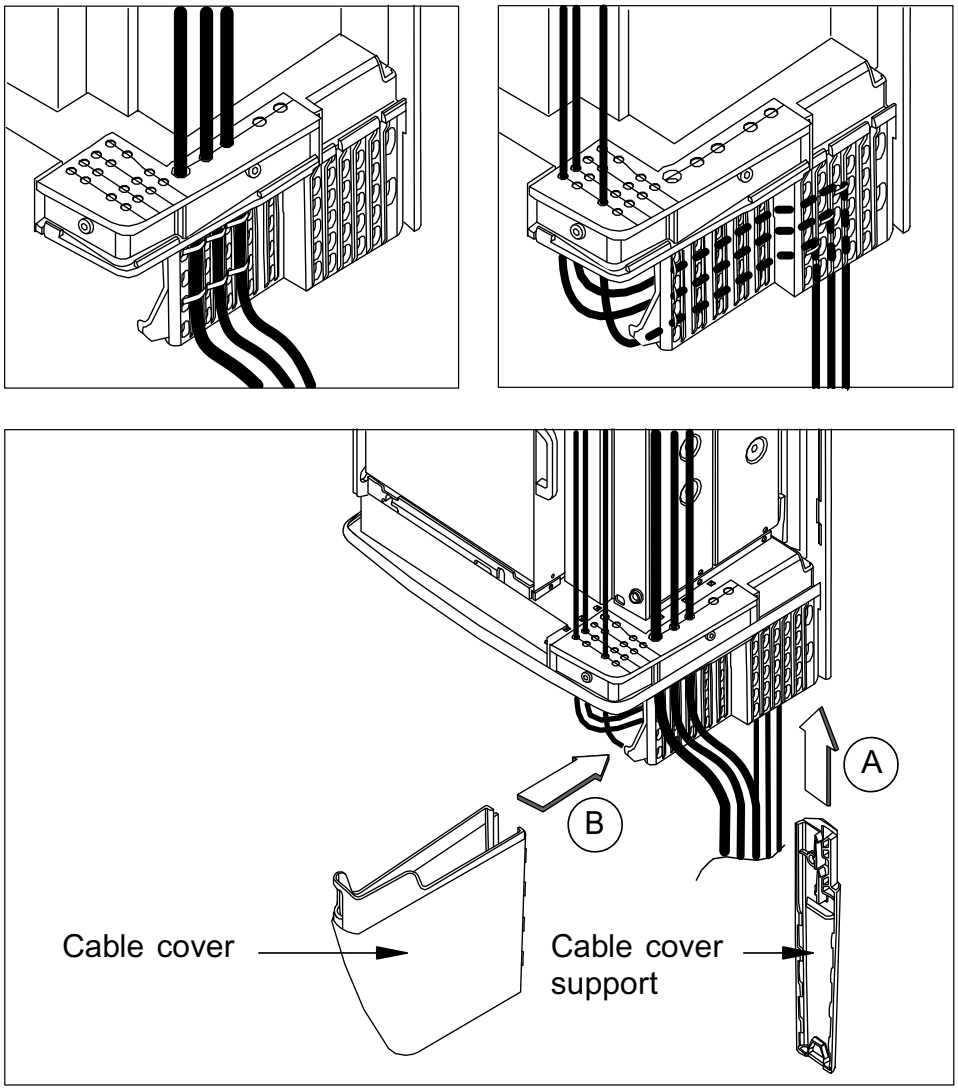

Figure 10. Routing the cables and fitting the cable cover

3. Turn ON the external power supply switch.

4. Turn ON the PSU in the BTS.

5. Refit the cabinet cover as follows (see also the *Nokia MetroSite EDGE BTS cover and safety strap* Figure):

a. Attach the safety strap to the fixing point on the top of the cabinet.
b. Place the cover over the cabinet and align the locking hooks on the cover to the locking rail on the chassis. Push the cover into the chassis and pull downwards to lock the hooks firmly into the rail.
c. You can check that the cover is securely fastened by pushing on its sides.

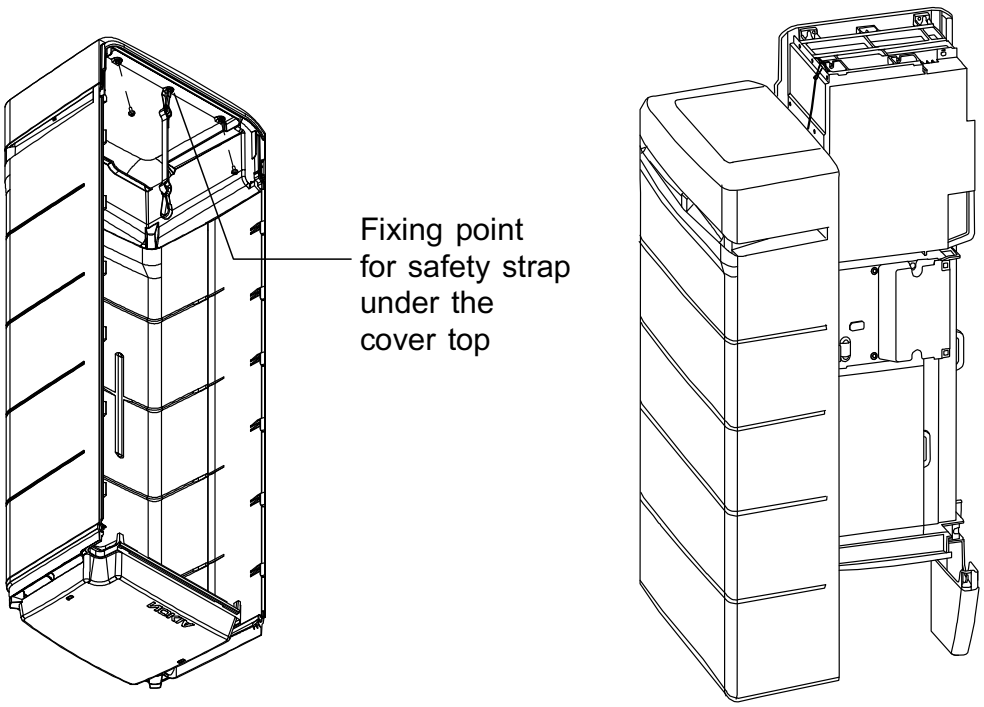

Figure 11. Nokia MetroSite EDGE BTS cover and safety strap

6. Lock the cabinet with the key.

7. Inform your Installation Manager / Site Manager that the upgrade is complete and fill in the appropriate site reports.

8. Recycle any applicable material.

Note

In case you need to dispose of replaced units, contact Nokia Professional Services for information on recycling. An environmental data package, including disassembly instructions and a material balance document is also available via Nokia Professional Services.

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