NOKIA

RRIC Indoor Unit Installation

C33513.85--H0

Contents

List of figures

Summary of changes

Document	Date	Comment
C33513020SE_00	11 Jun 1999	
C33513020SE_A0	21 Oct 1999	Instructions updated
DN99589429 Issue 1-0 en	05 Jan 2000	New document numbering scheme adopted
DN99589429 Issue 3-0 en	07 Jul 2000	Information on AC power supply added
DN99589429 Issue 4-0 en	2001	Minor updates

1 About this document

This document describes the installation of the RRIC radio indoor unit. RRIC can be installed in the Nokia Intratalk and Nokia Citytalk GSM 900/GSM 1800 Base Transceiver Stations.

The document covers the following topics:

- precautions when installing RRIC
- tools and work order of the installation
- installing RRIC in the base station
- connecting interfaces.

RRIC indoor unit can be used with Nokia FlexiHopper and Nokia MetroHopper outdoor units. The instructions in this document apply irrespective of the outdoor unit used.

Refer to the *Installation Overview* part of this manual for general work order and precautions when installing Nokia microwave radios. Refer to the *Outdoor Unit Installation* part when installing the outdoor units.

In addition to this manual, *Nokia Intratalk GSM 900/ GSM 1800 BTS User Manual* or *Nokia Citytalk GSM 900/ GSM 1800 BTS User Manual* is needed when installing the RRI units.

T55291.01 RPSS Quick Reference Guide is needed when installing AC/DC Power Supply Set for RRIC in Nokia Intratalk BTS.

2 Precautions

This chapter describes the issues which must be taken into account when installing the RRIC indoor unit. Familiarise yourself thoroughly with the installation instructions before starting the installation.

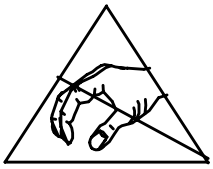
2.1 Warnings and cautions

Electrical safety

Caution

Never connect or disconnect the Flexbus cable when power is on. Damage to the equipment may result. Ensure that the Flexbus LED is not on or blinking. Power can be switched off using the manager software.

Electrostatic sensitive devices



CAUTION:
Always use a wrist grounding device or equivalent antistatic protection when handling plug-in units removed from their antistatic packaging.

2.2 Precautions

Before starting the installation, verify that you have the correct equipment and that the equipment has not been damaged during transport.

2.3 Installation restrictions

Consider the following restrictions before installing the indoor unit:

- The ambient temperature of the installation location must be within the range given in technical specifications.
- RRIC needs a 40 to 72 V DC power supply from the base station, to be able to supply the outdoor unit(s) the required power. Make sure that the base station is connected to appropriate power supply.
  - When RRIC is installed in a DC-powered base station, no extra considerations are required.
  - When RRIC is installed in an AC-powered Nokia Citytalk BTS, the necessary power is provided by HCUB and routed via a DC power adapter cable. See *Nokia Citytalk GSM 900/ GSM 1800 BTS User Manual* for instructions.
  - When RRIC is installed in an AC-powered Nokia Intratalk BTS, AC/DC Power Supply Set for RRIC is needed in addition to the normal BTS components. See *T55291.01 RPSS Quick Reference Guide* for instructions.
- RRIC can be installed in the same base station with DMR 18-38I / Nokia DynaHopper I Radio Relay Interfaces (RRIA or RRIB). However, these units are not compatible with Nokia FlexiHopper or Nokia MetroHopper outdoor units. Also, RRIC is not compatible with DMR 18-38 / Nokia DynaHopper outdoor units. Therefore special care must be taken to make sure the IU-OU cables are connected to the right units (see Chapter 5).
- RRIA/B repeater bus and RRIC Flexbus 3 are not compatible.
- When connecting the jumper cables inside the base station cabinet to the RRIC unit, connect only those cables which are actually needed.

3 Work order

This chapter lists the required parts and tools and gives the suggested work order for the installation of the RRIC indoor unit.

3.1 Parts

The only part required is the RRIC indoor unit.

3.2 Tools

The following tool is required in the installation of RRIC:

- Phillips screwdriver (Ph1); needed when removing the dummy panel and mounting RRIC into the slot.

3.3 Task list

Plan the work in advance.

The following order is recommended for the installation of RRIC:

1. Install RRIC (Chapter 4).
2. Connect Flexbus cables (Chapter 5).

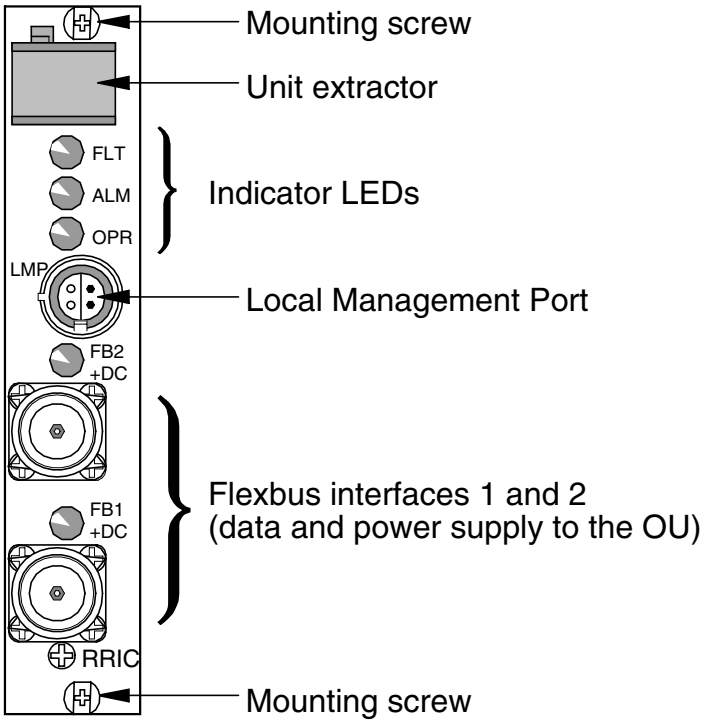


Figure 1. RRIC

4 Installing RRIC

This chapter describes the installation of the RRIC indoor unit in the base station. The chapter covers:

- the installation of RRIC in Intratalk or Citytalk BTS
- the removal of RRIC.

4.1 Installing RRIC in the base station

RRIC can be installed in the Nokia Intratalk and Nokia Citytalk GSM 900/GSM 1800 Base Stations. Nokia Intratalk and Nokia Citytalk contain two unit slots for the RRI units. Nokia Flexitalk GSM BTS cannot accommodate RRI units.

In the Intratalk BTS, the RRIs are located to the left of the TRUs (Figure 2) and in the Citytalk BTS to the right of the TRUs (Figure 3).

Installing the RRIC unit

To install RRIC in the base station:

1. Remove the dummy panel or the previous RRI unit.
2. Slide the RRIC unit gently into its place.
3. Fasten the mounting screws with a Phillips screwdriver (Ph1).

Jumper cables to the connector board on top of the BTS cabinet (see Figure 6)

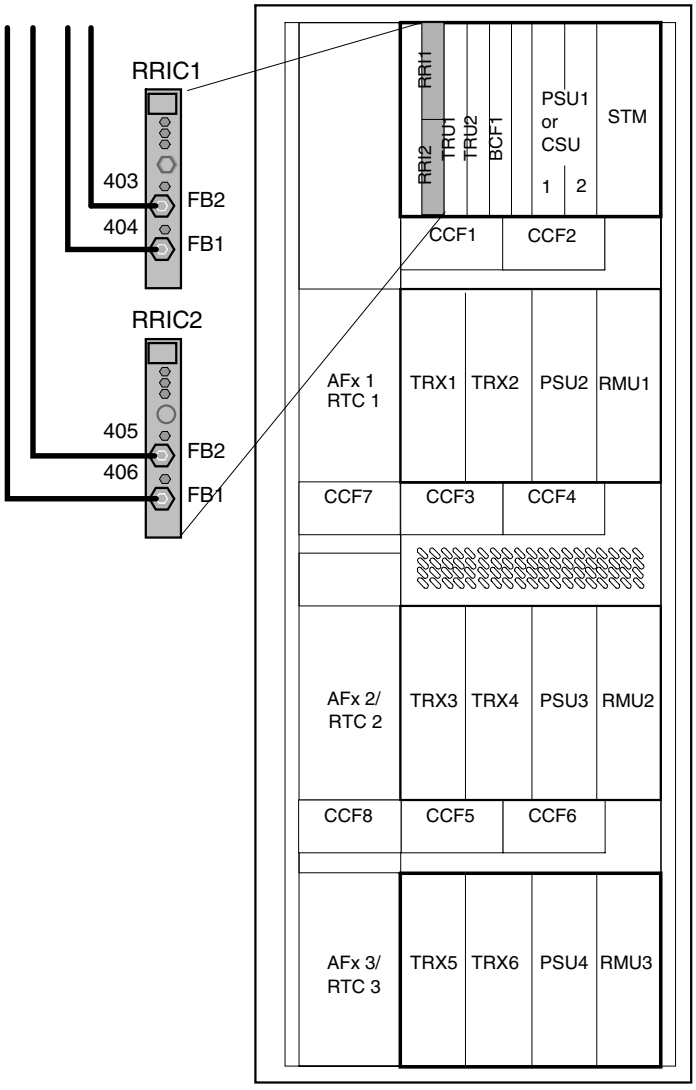


Figure 2. RRI unit location and connection of jumper cables to RRI units in Nokia Intratalk GSM 900/GSM 1800 BTS

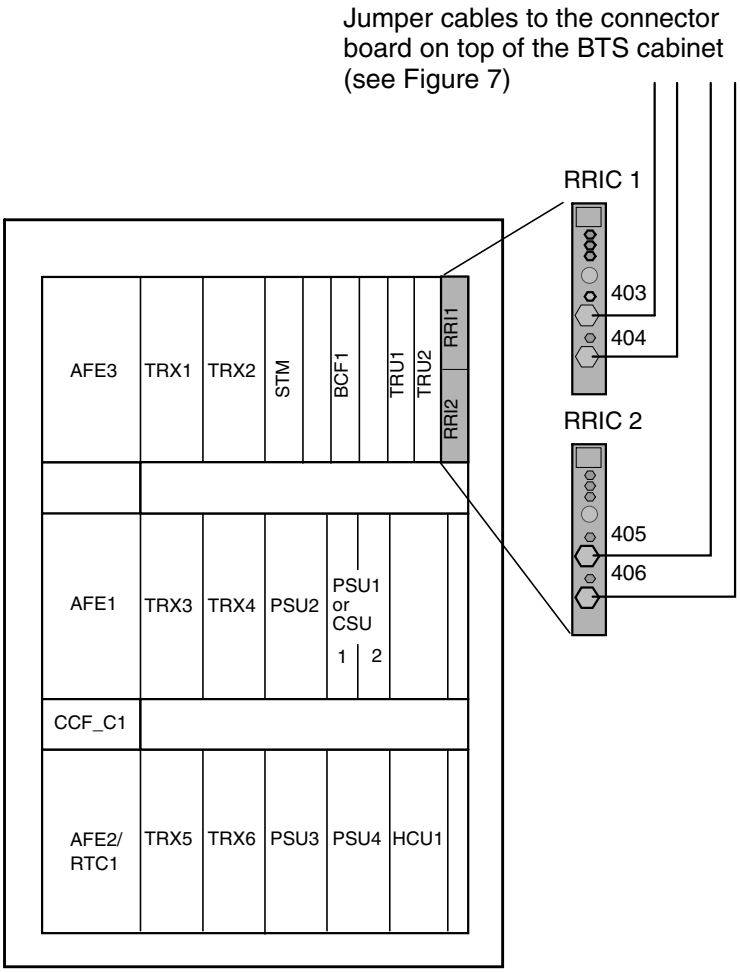


Figure 3. RRI unit location and connection of jumper cables to RRI units in Nokia Citytalk GSM 900/GSM 1800 BTS

4.2 Removing RRIC

Caution

Switch the Flexbus power off (with the node manager) before removing RRIC units.

Removing the RRIC unit:

To remove RRIC:

1. Open the mounting screws with a Phillips screwdriver (Ph1).
2. Push up the unit extractor lever.
3. Pull the RRIC unit gently out of its place.

5 Connecting interfaces

This chapter describes how to connect interfaces of RRIC. The chapter does not contain instructions on making cables and connectors. The chapter covers:

- interfaces of RRIC
- connecting cables in the base station cabinet.

5.1 RRIC interfaces

RRIC has the following items marked on the front panel (Figure 1):

- LMP: Local management port (BQ connector)
- FB1 +DC: Flexbus interface 1, with power feed to the outdoor unit (N-connector)
- FB2 +DC: Flexbus interface 2, with power feed to the outdoor unit (N-connector).

In addition, the front panel has three LEDs (red, yellow, green) to indicate RRIC status and two green LEDs to indicate the Flexbus interface power status. Furthermore, there is a measurement interface (SMB connector) located on the printed circuit board (Figure 4).

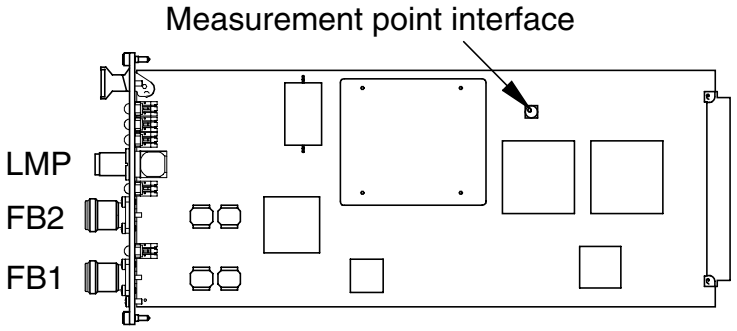


Figure 4. Location of interfaces

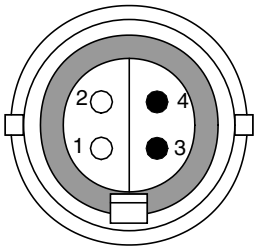
5.1.1 Flexbus (N-connector)

Before connecting the cables, verify that the Flexbus OU power supply is off (Flexbus LEDs are off). If this is not the case, turn the Flexbus OU power supply off with Nokia Hopper Manager (see *Commissioning and Maintenance*). The RRIC power can be switched off from the common unit subrack but this may be undesirable, since it will cut the power from the whole subrack (see the BTS user manual).

Connect the Flexbus jumper cables to the Flexbus interfaces (N-connector). See also Section 5.2 ‘Connecting cables in the base station cabinet’.

5.1.2 Local management port (BQ connector)

When managing the node locally with Nokia Hopper Manager, connect the communication cable to the local management port (BQ connector). See *Commissioning and Maintenance* for details.



1	LMP in
2	+5 V
3	LMP out
4	GND

Figure 5. Local management port

5.1.3 Measurement point (SMB connector)

Measurement point output can be used for monitoring signals from the RRIC unit. The signals can be selected with Nokia Hopper Manager. See *Commissioning and Maintenance* for details. The signal level is 5V-TTL.

5.2 Connecting cables in the base station cabinet

5.2.1 Jumper cables

The BTS contains four jumper cables (RG-223 with N-connectors) going to a connector board on the top of the base station cabinet. Connect the jumper cables to the RRIC units as shown in Figures 2 (Intratalk) and 3 (Citytalk).

Make sure that the cables are connected to the right equipment (RRI 1 and RRI 2) and to the right connector. Check markings on the cables (403 - 406) before connecting them.

5.2.2 IU-OU Flexbus cable

Connect the IU-OU Flexbus cable (N-TNC) to the connector board (N-connectors) on the top of the base station cabinet. The order of connectors is shown in Figures 6 (Intratalk) and 7 (Citytalk).

Label the connector board with the stickers included in the RRIC package.

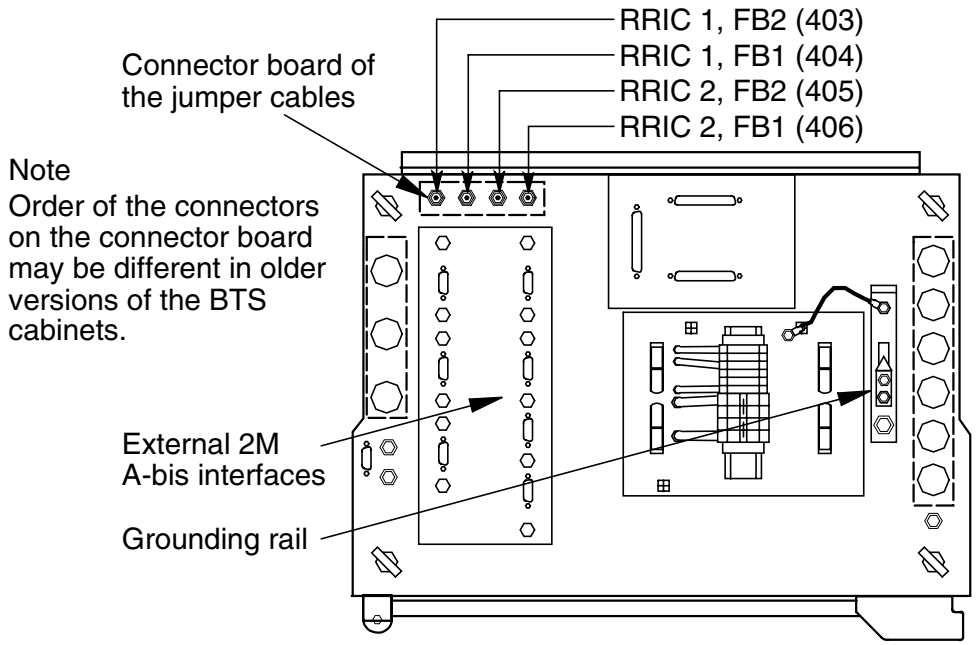


Figure 6. Connecting jumper cables in Nokia Intratalk BTS, as seen from the top of the BTS

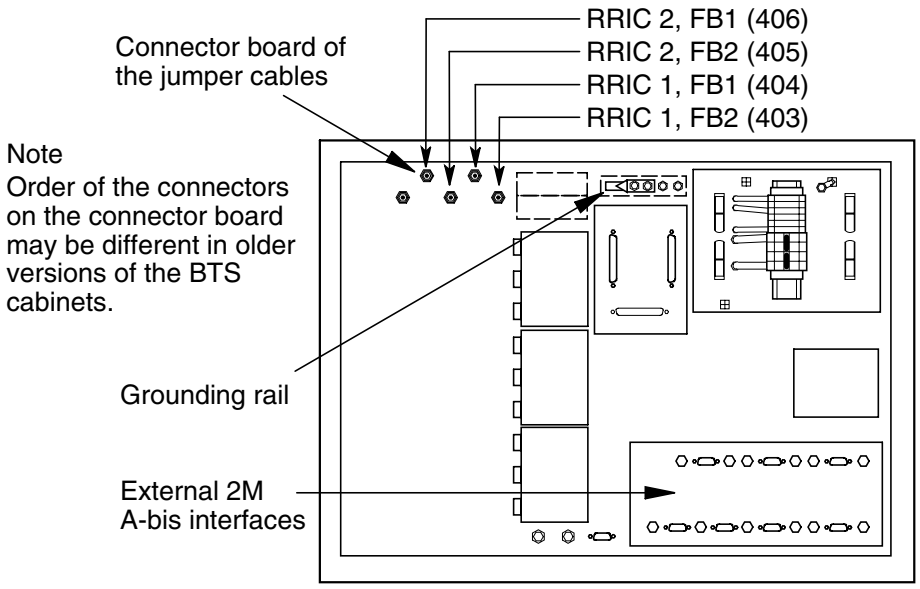


Figure 7. Connecting jumper cables in Nokia Citytalk BTS, as seen from the top of the BTS