ERICSSON

Install Indoor Radio Units

Installation Instructions

55/1531-LZA 701 6001/1 Uen M2A

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Contents

1 Introduction

This instruction describes how to install an Indoor Radio Unit (IRU).

Figure 1 shows an IRU installed in an 8U subrack and as a distributed IRU in a support system.

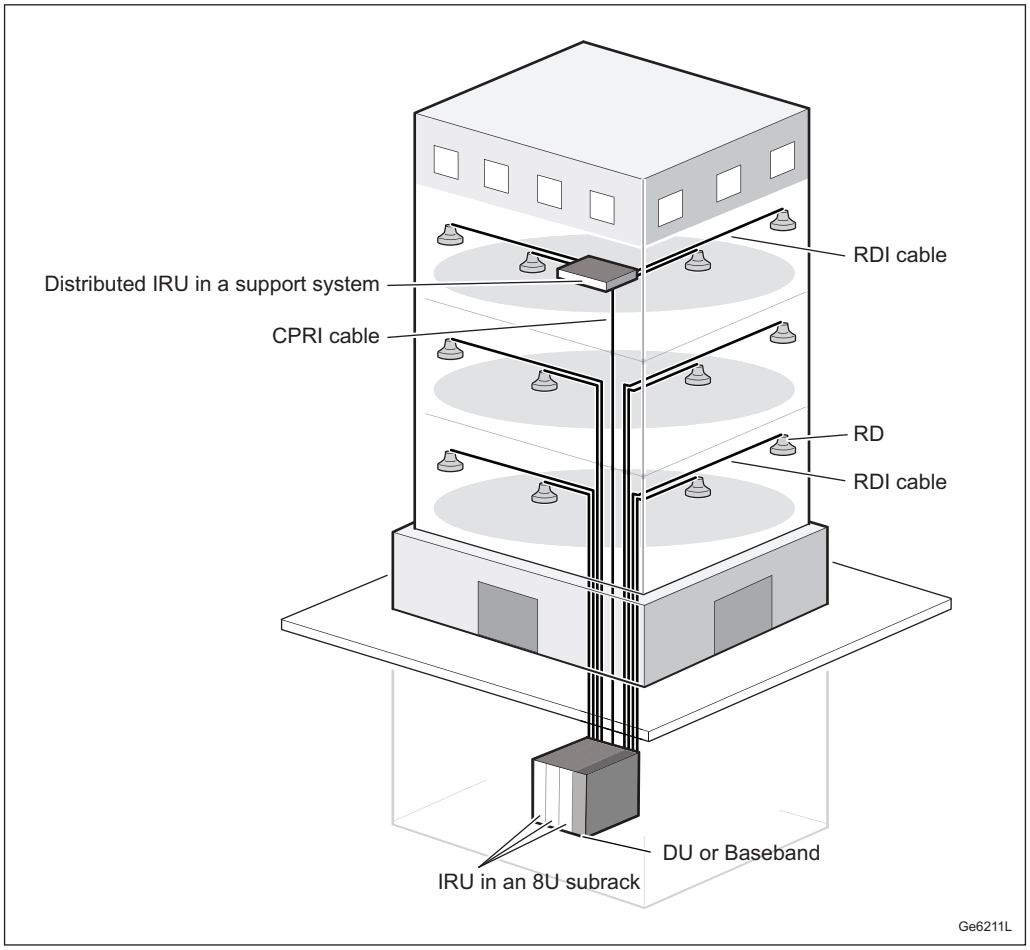


Figure 1 IRU Installed in an 8U Subrack and Installed As Distributed IRU in a Support System

1.1 Target Group

The target group of this document is installation and maintenance personnel.

2 Prerequisites

This section contains information on the documentation, tools, and conditions required for the installation procedure.

2.1 Documentation

Ensure that the following documents are read and understood:

— Personal Health and Safety Information

— System Safety Information

— Transportation and Storage

See References on page 19 for needed documents.

2.2 Tools

Table 1 and Table 2 list the tools required for installing an IRU.

Table 1 Tools Required for Installing an IRU in an 8U Subrack

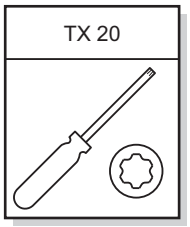
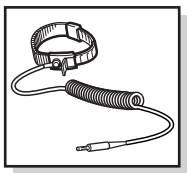
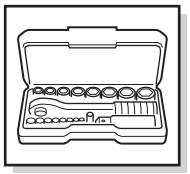
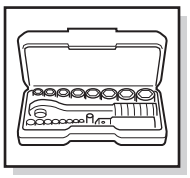
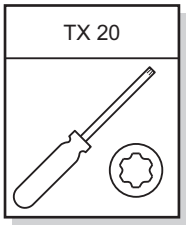
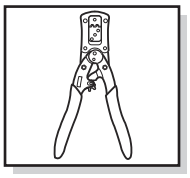
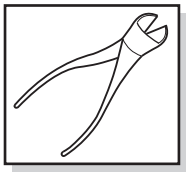
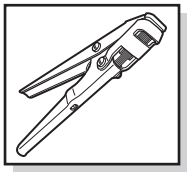
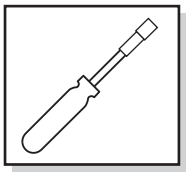
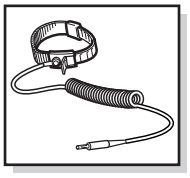
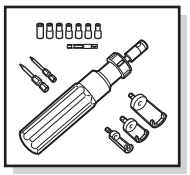
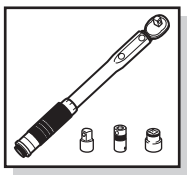
Tool	Product Name
	TORX screwdriver, T20
	Electrostatic Discharge (ESD) wrist strap
	Box socket set with - TORX bit, T20

Table 2 Tools Required for Installing a Distributed IRU in a Support System

Tools	Product Name
	Box socket set including the following: —TORX bit, T20 —Socket, 13 mm
	TORX screwdriver, T20
	Wire stripper 0.2–0.6 mm^2
	Side cutters (side cutting pliers)
	Tool for cable ties
	Screwdriver, 0.4 × 2.5 × 60 with interchangeable bits
	ESD wrist strap

Tools	Product Name
	Torque set, 0.5–4 Nm
	Torque set, 5–25 Nm with socket adapter 3/8 inch

2.3 Conditions

The conditions in this section must be fulfilled before starting work.

2.3.1 Before Going to Site

Before going to the site, ensure the following:

— Site access permission is received.

— Documents listed in Documentation on page 2 are available.

— All tools are available.

2.3.2 Before Starting Installation

Before starting the installation, ensure the following:

— The site is prepared according to the Customer Site Documentation.

— The ordered hardware is available.

2.4 Warranty Seal

The unit is equipped with a warranty seal sticker.

Note: Seals that have been implemented by Ericsson are not to be broken or removed, as it otherwise voids warranty.

3 Install IRU in 8U Subrack

This section describes how to install an IRU in an 8U subrack. For information on the location of the IRUs in the cabinet, refer to RBS Description for the applicable RBS.

Note: Installing a vertically or a horizontally mounted IRU has a similar procedure. The installation of a vertically mounted IRU is provided as an example in this document.

Do!

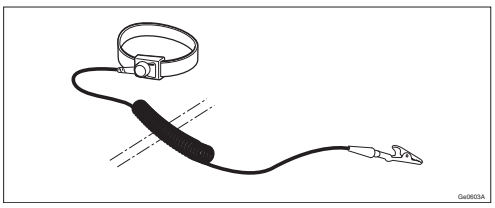
This product contains components sensitive to ESD. Use an approved ESD wrist strap, connected to the product grounding point, to avoid damaging these components.

Steps

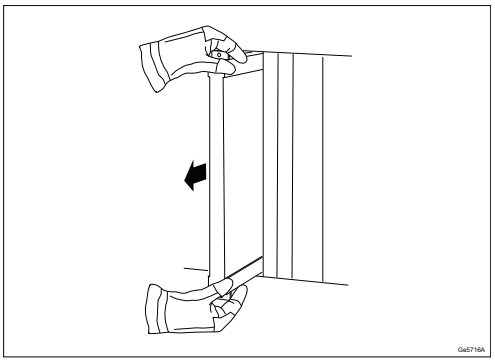
1. 

   Unpack the IRU and verify that it is undamaged.

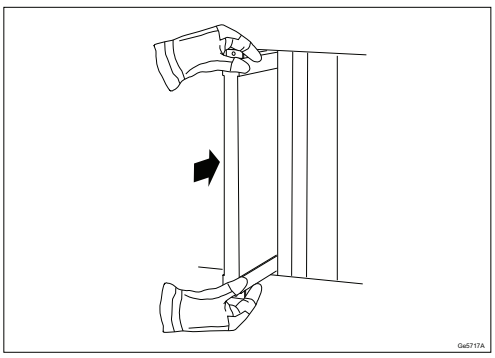
   If it is damaged, refer to Handling Faulty Equipment and Site Failure Note.

2. 

   Open the cabinet door if applicable. Put on the ESD wrist strap and connect to the grounding point of the cabinet.

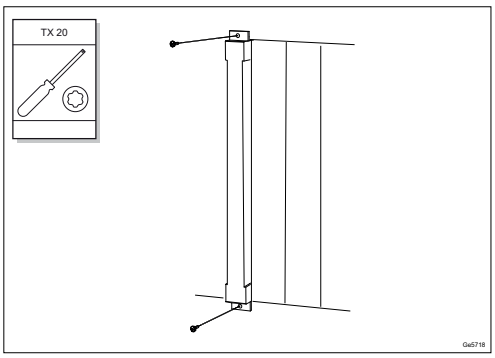
3. 

   If a dummy unit is installed, remove it and ensure that the cable holders are loosened.

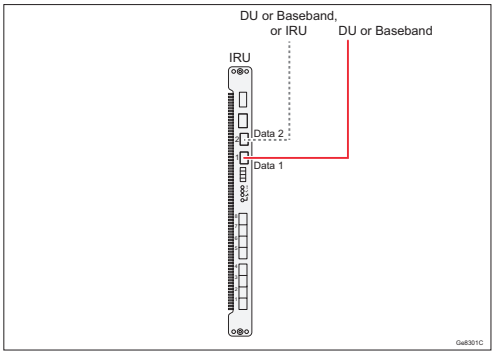
4. 

   Insert the IRU.

   Note: If there is an empty space beside the IRU insert a 31 mm dummy unit in the empty space.

5. 

   Tighten the screws.

6. 

   Connect the CPRI cables to the IRU.

   For electrical CPRI cables (up to three meters), proceed to Step 7.

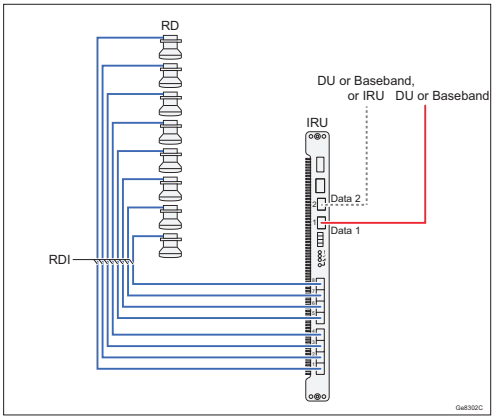
   For optical CPRI cables (more than three meters), proceed to Step 8.

7. Connect the electrical CPRI cable with integrated SFP module. Proceed to Step 9.

   For information about CPRI cables to the IRU, refer to Antenna and RF Connections.

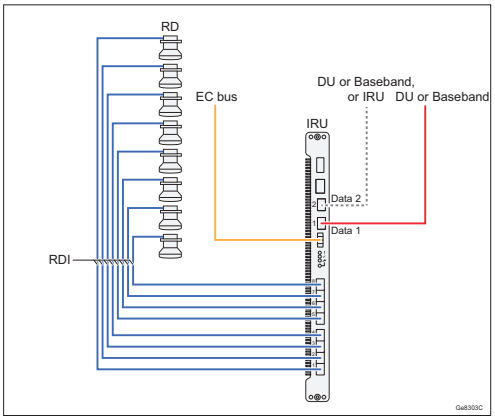
8. Insert an approved SFP module and connect an optical cable to the SFP module. Proceed to Step 9.

   For information about CPRI cables to the IRU, refer to RDS Site Products Overview. For information about SFP Modules refer to SFP Module Selector Guide, Handling SFP Modules and Optical Cables.

9. 

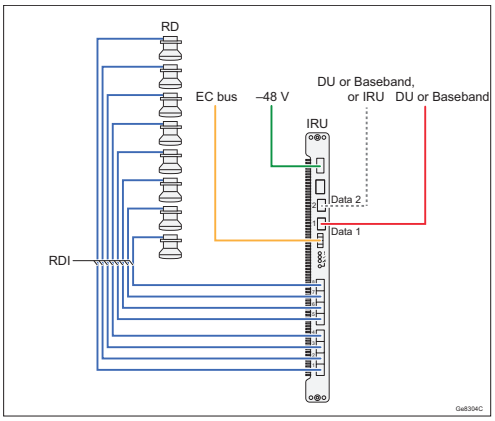
Connect the Radio Dot Interface (RDI) cables from the Radio Dots to the IRU.

For information about how to handle and route RDI, refer to RDI Guidelines.

10. 

Connect the EC bus (optional), to the IRU.

For information about strapping points and how to connect the EC bus to the IRU, refer to Non-RF Connections for the applicable RBS.

11. 

Connect the power cables to the IRU and verify that the IRU power and corresponding PDU power is on.

For information about strapping points and how to connect the power cable to the IRU, refer to Non-RF Connections for the applicable RBS.

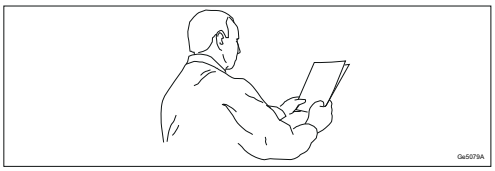
4 Install IRU in Support System

This section describes how to install an IRU in a support system. The support system is installed first and then the IRUs.

Do!

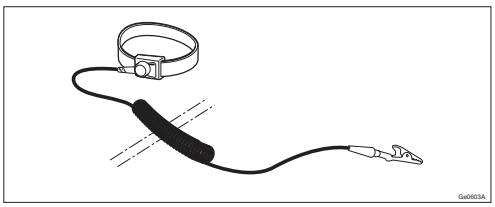
This product contains components sensitive to ESD. Use an approved ESD wrist strap, connected to the product grounding point, to avoid damaging these components.

Steps

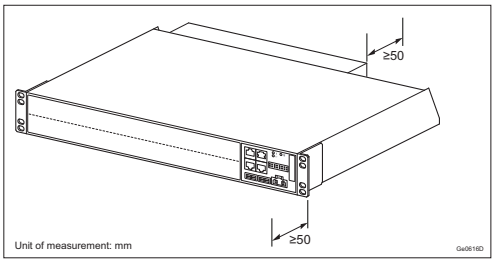
1. 

Unpack the support system and verify that it is undamaged.

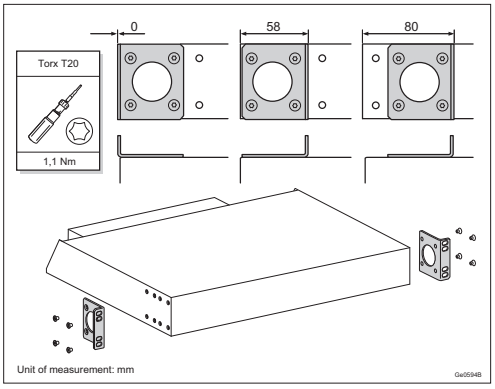
If it is damaged, refer to Handling Faulty Equipment and Site Failure Note.

2. 

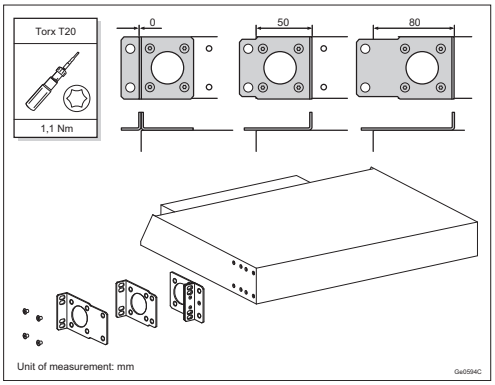
Open the cabinet door if applicable. Put on the ESD wrist strap and connect to the grounding point of the cabinet.

3. 

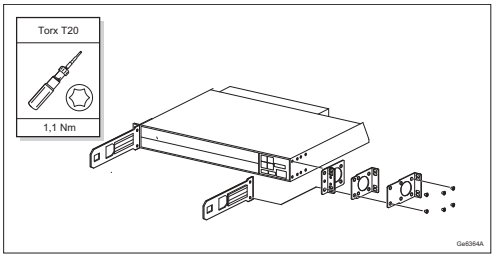
To fit the support system with standard brackets, measure the distance from the rear of the support system to the wall or rear rack wall, as well as the distance between the front of the support system and the door. If the distance is less than 50 mm, the brackets must be adjusted.

4. 

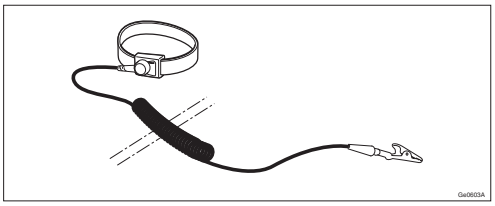
If the distance is less than 50 mm, the brackets must be adjusted. Place the bracket in the proper position, that is 0 mm, 58 mm, or 80 mm, and tighten the M4 screws.

5. 

To fit the support system with front cover brackets and railings, remove the standard brackets, and install the brackets that are supplied with the front cover. The front cover brackets are not movable and come in three different sizes. The length of the front cover is 170 mm and the protrusion is 170 mm, 220 mm, or 250 mm from the rack.

6. 

Install the railings on the support system, and tighten the M4 screws.

7. 

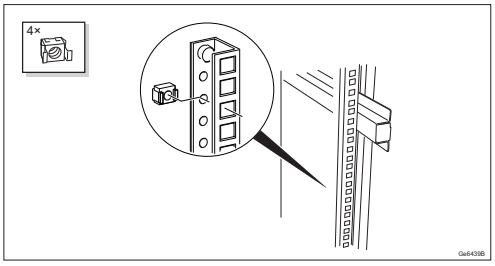
Connect the ESD strap to a suitable unpainted ground in the rack.

8. For general information about grounding principles, refer to Grounding Guidelines for RBS Sites.

   Ensure that the rack is grounded according to the *Customer Site Documentation*.

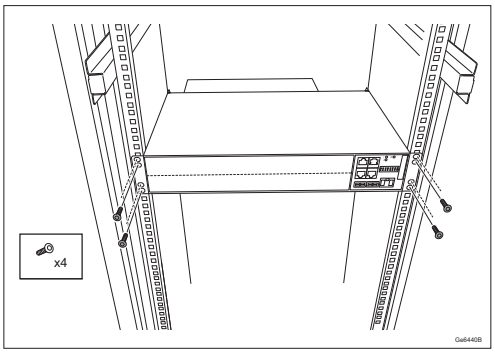
   Remove the grounding screw and washers using a 13 mm socket. Connect the protective grounding cable from the distribution central. Reinsert and tighten the hexagon screw.

Note: Take care not to damage the front when handling the support system.

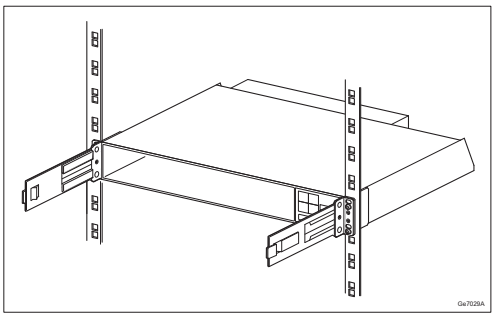
9. 

To install the support system with the standard brackets, select a 1.5 U directly above or below other units in the rack. It is important that there are no air gaps between the support system and other units to ensure correct airflow.

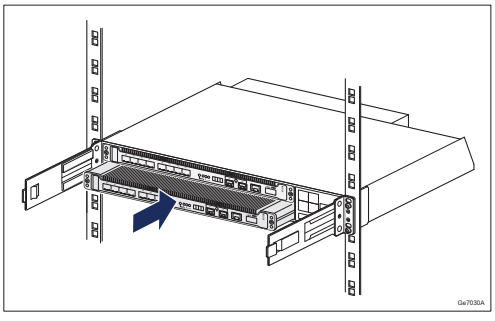
Insert the captive nuts in the rack.

10. 

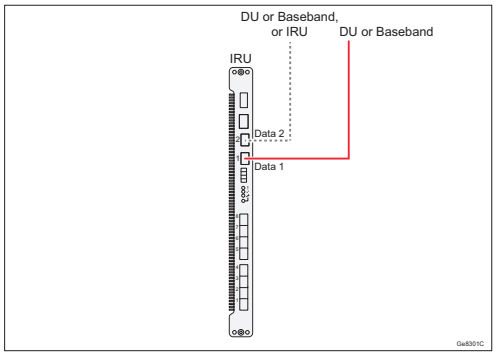
Insert and position the support system in the rack or cabinet. Tighten the screws on the brackets according to the specification of the rack or cabinet.

11. 

To install the support system with the front cover brackets (optional), insert, and position the support system in the rack or cabinet. Tighten the screws on the brackets using a prolonged screwdriver, according to the specification of the rack supplier or the cabinet.

12. 

Insert one IRU and one dummy unit or two IRUs into the support system, if the IRUs are not already factory preinstalled.

13. 

    Connect the CPRI cables to the IRU.

    For electrical CPRI cables (up to three meters), proceed to Step 14.

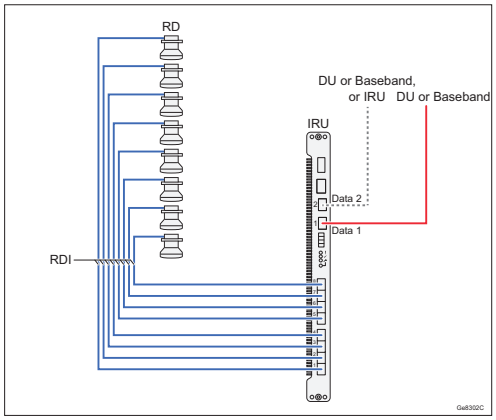
    For optical CPRI cables (more than three meters), proceed to Step 15.

14. Connect the electrical CPRI cable with integrated SFP module. Proceed to Step 16.

    For information about CPRI cables to the IRU, refer to Antenna and RF Connections.

15. Insert an approved SFP module and connect an optical cable to the SFP module. Proceed to Step 16.

    For information about CPRI cables to the IRU, refer to RDS Site Products Overview. For information about SFP Modules refer to SFP Module Selector Guide, Handling SFP Modules and Optical Cables.

16. 

    Connect the Radio Dots to the IRU.

    For information about how to handle and route RDI, refer to RDI Cabling Guidelines.

17. Connect the EC bus (optional), to the IRU.

    For information about strapping points and how to connect the EC bus to the IRU, refer to Non-RF Connections for the applicable RBS.

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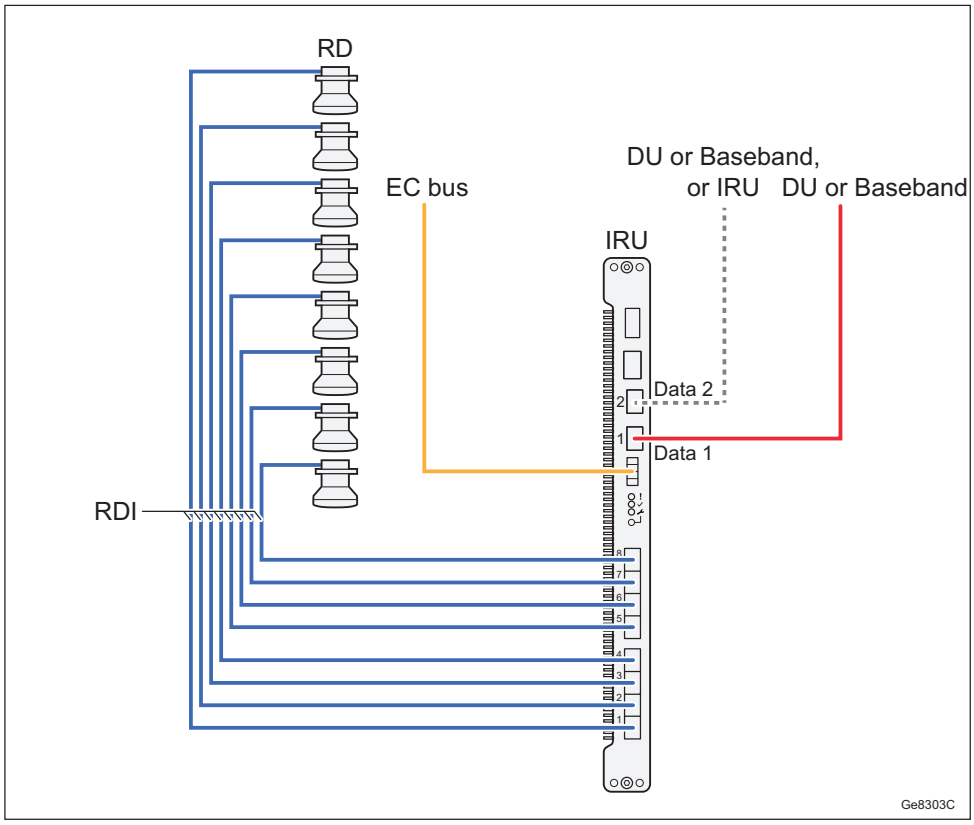
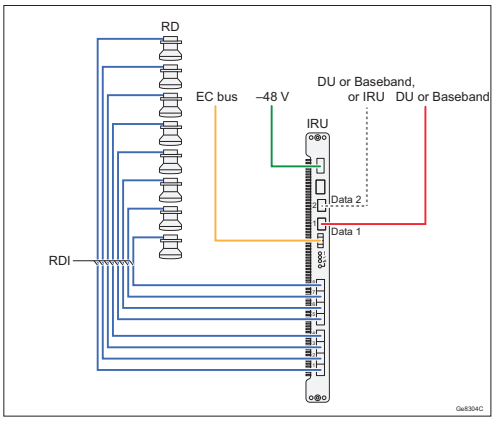
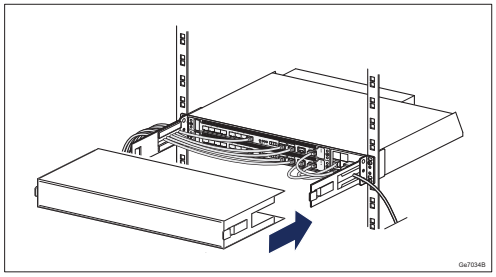


18. 

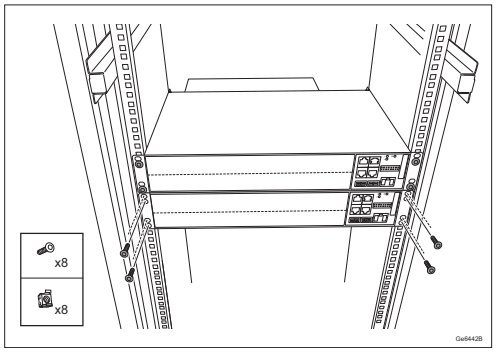
Connect the power cables to the IRU and verify that the IRU power and corresponding PDU power is on.

For information about strapping points and how to connect the power cables to the Radio Dots, refer to Non-RF Connections for the applicable RBS.

19. 

Route the cables from the IRUs in the support system using the rail openings, and place the front cover (optional) on the railings, and push the front cover until it snaps into place.

Connect all cables according to the cabling instructions in Antenna and RF Connections, Non-RF Connections, and RDI Guidelines.

20. 

To install a second main unit, select the 1.5 U immediately below the first main unit. It is important that there are no air gaps in between the main units to ensure correct airflow.

For main unit with standard brackets, follow the instructions in Step 3 and Step 4.

For main unit with front cover brackets, follow the instructions in Step 5 and Step 6.

5 Install IRU in a Remote IRU Enclosure 2242

This procedure describes how to install the IRU inside the Remote IRU Enclosure 2242. For information on how to install the enclosure in a 19-inch rack or on a wall, refer to Install Remote IRU Enclosure 2242, 1/1531-LZA 101 0308/1.

Steps

1. Carefully unpack the Remote IRU Enclosure and the accompanying material from the packaging box.
2. Using a TORX screw driver with a T-08 bit, unscrew the side, top and bottom screws (2.5 mm) off the faceplate.
3. Pull off the faceplate from the enclosure.
4. Insert the IRU by sliding it through the groves inside the enclosure.
5. Secure the IRU inside the enclosure by screwing both retention screws on the IRU brackets.
6. Screw the faceplate back on the enclosure.

   Note: Do not use more than 4 N·m of torque on the screws.

6 Verify IRU Installation in 8U Subrack

This section describes the verification procedure, to verify the installation of the IRU in an 8U subrack, before it is integrated with the radio network.

Table 3 Installation Checklist for Installing an IRU in an 8U Subrack

#	Item	YES	N/A (1)
1	The site prepared according to *Customer Site Documentation*?		
2	Equipment undamaged and free from contamination?		
3	All screws tightened to the correct torque?		
4	Equipment labeled as required according to *Customer Site Documentation*?		
Notes:			

(1) Not applicable

7 Verify IRU Installation in Support System

This section describes the verification procedure, to check an IRU installation in a support system, before it is integrated with the radio network.

Table 4 Installation Checklist for Installing an IRU in a Support System

#	Item	YES	N/A (1)
1	The site prepared according to *Customer Site Documentation*?		
2	Equipment undamaged and free from contamination?		
3	Minimum 50 mm between the support system and the rack, if applicable?		
4	Minimum 50 mm between the support system and the rear rack wall?		
5	The support system horizontally aligned with other units or equipment?		
6	The support system earthed, washer in place, and bolts tightened to torque of 15 Nm?		
7	Grounding cable insulation undamaged?		
8	All screws tightened to the correct torque?		
9	Equipment labeled as required according to *Customer Site Documentation*?		
10	If the optional front cover is used, the front cover filter in place and clean?		
Notes:			

(1) Not applicable

8 Perform Concluding Routines

Steps

Before leaving the site, perform the following procedure:

1. Inform the OMC operator that the IRU is to be put into service.
2. Ensure that the IRU is operational and that no alarms are active. For WCDMA and LTE, refer to Unlock Board or Manage Hardware Equipment.

   Reaching final indicator status can take up to 30 minutes.
3. Disconnect the ESD wrist strap.
4. Collect all tools.
5. Clean the site and remove objects such as wrapping paper and cable clippings.
6. Dispose of waste in accordance with local regulations.
7. Fill in the verification checklist in the *Customer Site Documentation*.
8. Report any faults according to local requirements.
9. Hand over the *Customer Site Documentation* to the person responsible for the site.
10. Lock all doors and gates to the site.

8.1 Environment

Ericsson strongly recommends that installers pay particular attention to the environment when cleaning the site after IRU installation. In particular, recycle all waste that can be recycled, and sort the rest so that they can be disposed of in accordance with local regulations. Use the checklist in Table 5 to recycle and sort waste after the procedures in this instruction are completed.

Table 5 Waste Recycling and Sorting Checklist

Recycle or Sort As	Item	Yes	N/A
Metals	Nuts bolts, washers, and screws		
	Pieces of cable with high metallic content		
	Waste metal from cable ladders		

Recycle or Sort As	Item	Yes	N/A
Paper	Paper		
Plastics	Bubble plastic		
	Cable insulation from crimping, brazing, or welding		
	Cable tie clippings		
	Foam		
	Packing chips		
	Pieces of cable with low metallic content		
	Polystyrene		
Wood	Wood		
Notes:			

9 References

Safety

— Personal Health and Safety Information, 124 46-2885

— System Safety Information, 124 46-2886

Generic

— Antenna and RF Connections, 26/1551-LZA 701 6001/1

— Grounding Guidelines for RBS Sites, 23/1551-LZA 701 6001/1

— Handling Faulty Equipment, 2/1541-LZA 701 6001/1

— Non-RF Connections (RBS 6202), 50/1551-LZA 701 6001/1

— Non-RF Connections (RBS 6601), 23/1551-LZA 701 6001/1

— RBS Description (RBS 6202), 45/1551-LZA 701 6001/1

— RBS Description (RBS 6601), 22/1551-LZA 701 6001/1

— RDI Cabling Guidelines, 56/1553-LZA 701 6009/1

— Site Failure Note, 1547-LZA 701 6001/EN

— Transportation and Storage, 114/1551-LZA 701 6001/1

LTE

— Lock Board, 41/1543-LZA 701 6008/1

— Manage Hardware Equipment, 24/1553-LZA 701 6014/1-V1

WCDMA

— Lock Board, 36/1543-LZA 701 6008

— Manage Hardware Equipment, 24/1553-LZA 701 6014/1-V1