

DBS3900(ICR)

Installation Guide

Issue **01**

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About This Document

Purpose

This document describes the procedures for installing the DBS3900 devices on the Indoor Centralized Rack (ICR).

Product Version

The following table lists the product versions related to this document.

Product Name	Product Version
DBS3900	V100R004
DBS3900 WCDMA	V200R013
DBS3900 LTE	V100R003C00
DBS3900 GSM	V100R013

Intended Audience

This document is intended for:

- Base station installation engineers

Organization

1 Changes in the DBS3900 (ICR) Installation Guide

2 Installation Preparations

This chapter describes the tools and instruments required for installation and the skills and prerequisites required for onsite installation engineers.

3 Information About the Installation

This chapter describes the information about the installation, including exterior, installation scenario, and space requirements

4 Unpacking the Equipment

Unpack and check the delivered equipment to ensure that all the materials are included and intact.

5 Obtaining the ESN

The Electronic Serial Number (ESN) is a unique identifier of a Network Element (NE). Record the ESN for later commissioning of the base station before installation.

6 Installation Process

This section describes the process of installing the DBS39000 on the ICR.

7 Assembling the IFS06

This chapter describes the procedure for assembling the IFS06.

8 Installing the IFS06

This chapter describes the procedure for installing the IFS06 on the concrete floor and ESD floor.

9 Installing the Main Bracket for the RRU

This chapter describes the procedure for installing the main bracket for the DC RRU and AC RRU.

10 Installing the GPS Surge Protector

This chapter describes the procedure for installing the GPS surge protector.

11 Installing the IMB03

This chapter describes the procedure for installing the IMB03.

12 Installing the Equipotential Cable and PGND Cable

This chapter describes the procedures for installing the equipotential cable and PGND cable.

13 Installing Devices in the IMB03

This chapter describes the installation of the devices in the IMB03.

14 Installing the RRU

This section describes the procedure for installing the AC RRU and DC RRU.

15 Installing Cables

This chapter describes the procedure for installing all the cables.

16 Checklist for the DBS3900 Hardware Installation

This section describes the checklist for the DBS3900 hardware installation.

17 Performing the DBS3900 Power-On Check

After all devices are installed, you need to check the power-on status of the BBU and RRU.






18 Installing the Cover Plate for the IMB03

This section describes the procedure for installing the cover plate for the IMB03.

Conventions

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 DANGER	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazard with a medium or low level of risk, which if not avoided, could result in minor or moderate injury.
 CAUTION	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
 TIP	Indicates a tip that may help you solve a problem or save time.
 NOTE	Provides additional information to emphasize or supplement important points of the main text.

General Conventions

The general conventions that may be found in this document are defined as follows.

Convention	Description
Times New Roman	Normal paragraphs are in Times New Roman.
Boldface	Names of files, directories, folders, and users are in boldface . For example, log in as user root .
<i>Italic</i>	Book titles are in <i>italics</i> .
Courier New	Examples of information displayed on the screen are in Courier New.

Command Conventions

The command conventions that may be found in this document are defined as follows.

Convention	Description
Boldface	The keywords of a command line are in boldface .
<i>Italic</i>	Command arguments are in <i>italics</i> .

Convention	Description
[]	Items (keywords or arguments) in brackets [] are optional.
{ x y ... }	Optional items are grouped in braces and separated by vertical bars. One item is selected.
[x y ...]	Optional items are grouped in brackets and separated by vertical bars. One item is selected or no item is selected.
{ x y ... }*	Optional items are grouped in braces and separated by vertical bars. A minimum of one item or a maximum of all items can be selected.
[x y ...]*	Optional items are grouped in brackets and separated by vertical bars. Several items or no item can be selected.

GUI Conventions

The GUI conventions that may be found in this document are defined as follows.

Convention	Description
Boldface	Buttons, menus, parameters, tabs, window, and dialog titles are in boldface . For example, click OK .
>	Multi-level menus are in boldface and separated by the ">" signs. For example, choose File > Create > Folder .

Keyboard Operations

The keyboard operations that may be found in this document are defined as follows.

Format	Description
Key	Press the key. For example, press Enter and press Tab .
Key 1+Key 2	Press the keys concurrently. For example, pressing Ctrl+Alt+A means the three keys should be pressed concurrently.
Key 1, Key 2	Press the keys in turn. For example, pressing Alt, A means the two keys should be pressed in turn.

Mouse Operations

The mouse operations that may be found in this document are defined as follows.

Action	Description
Click	Select and release the primary mouse button without moving the pointer.
Double-click	Press the primary mouse button twice continuously and quickly without moving the pointer.
Drag	Press and hold the primary mouse button and move the pointer to a certain position.

Contents

About This Document.....	iii
1 Changes in the DBS3900 (ICR) Installation Guide.....	1-1
2 Installation Preparations.....	2-1
2.1 Making Documents Available.....	2-2
2.2 Tools and Instruments.....	2-2
2.3 Skills and Requirements for Onsite Personnel.....	2-3
3 Information About the Installation.....	3-1
3.1 Overview of Devices.....	3-2
3.2 Installation Options.....	3-5
3.2.1 Height-Restricted Scenario.....	3-5
3.2.2 Height-Unrestricted Scenario.....	3-17
3.3 Dimensions and Installation Clearance Requirements.....	3-35
4 Unpacking the Equipment.....	4-1
5 Obtaining the ESN.....	5-1
6 Installation Process.....	6-1
7 Assembling the IFS06.....	7-1
8 Installing the IFS06.....	8-1
8.1 Installing the IFS06 on the Concrete Floor.....	8-2
8.2 Installing the IFS06 on the ESD Floor.....	8-6
9 Installing the Main Bracket for the RRU.....	9-1
9.1 Installing the Main Bracket for the DC RRU.....	9-2
9.2 Installing the Main Bracket for the AC RRU.....	9-3
10 Installing the GPS Surge Protector.....	10-1
11 Installing the IMB03.....	11-1
11.1 Installing the IMB03 on the Upper Level Separately.....	11-2
11.2 Installing the IMB03 on the Lower Level Separately.....	11-3
11.3 Installing the IMB03s on the Upper and Lower Levels.....	11-5
12 Installing the Equipotential Cable and PGND Cable.....	12-1

13 Installing Devices in the IMB03.....	13-1
13.1 Installing the BBU.....	13-2
13.2 Installing the DCDU-03B.....	13-3
13.3 (Optional) Installing the Power Equipment (DC/DC).....	13-4
13.4 (Optional) Installing the Power Equipment (AC/DC).....	13-6
14 Installing the RRU.....	14-1
14.1 Installing the DC RRU.....	14-2
14.2 Installing the AC RRU.....	14-5
15 Installing Cables.....	15-1
15.1 Cabling Requirements.....	15-3
15.2 Cable Connections.....	15-4
15.2.1 Cable Connections (-48 V DC, Six RRU3008s).....	15-5
15.2.2 Cable Connections (-48 V DC, Six RRU3804s).....	15-7
15.2.3 Cable Connections (-48 V DC, Six RRU3201s).....	15-8
15.2.4 Cable Connections (-48 V DC, Six RRU3908s).....	15-10
15.2.5 Cable Connections (-48 V DC, Three RRU3908s+Three RRU3804s).....	15-12
15.2.6 Cable Connections (-48 V DC, Three RRU3008s+Three RRU3804s).....	15-16
15.2.7 Cable Connections (-48 V, Three RRU3908s + Three RRU3201s).....	15-18
15.2.8 Cable Connections (-48 V DC, Three RRU3008s+Three RRU3201s).....	15-22
15.2.9 Cable Connections (-48 V DC, Three RRU3804s+Three RRU3201s).....	15-24
15.2.10 Cable Connections (-48 V DC, Six RRU3008s+Six RRU3804s).....	15-26
15.2.11 Cable Connections (-48 V DC, Six RRU3908s+Six RRU3804s).....	15-28
15.2.12 Cable Connections (-48 V DC, Six RRU3908s+Six RRU3201s).....	15-33
15.2.13 Cable Connections (-48 V DC, Six RRU3008s+Six RRU3201s).....	15-39
15.2.14 Cable Connections (-48 V DC, Six RRU3804s+Six RRU3201s).....	15-41
15.2.15 Cable Connections (AC RRU).....	15-43
15.2.16 Cable Connections (220 V AC).....	15-44
15.2.17 Cable Connections (+24 V DC).....	15-45
15.3 Cable Installation Process.....	15-46
15.4 Cable Routes.....	15-47
15.5 Installing the PGND Cable for the RRU.....	15-48
15.6 Installing the Power Cable for the BBU.....	15-50
15.7 Installing the Input Power Cable.....	15-51
15.8 (Optional) Installing the Power Cable and Monitoring Signal Cable for the DCDU.....	15-54
15.9 Installing the Power Cable for the RRU.....	15-56
15.10 Installing the E1/T1 Cable (FE/GE Cable or FE/GE Optical Cable).....	15-59
15.11 Installing the CPRI Optical Cable.....	15-61
15.12 Installing the Antenna Jumper for the RRU.....	15-64
15.13 Installing a GPS Clock Signal Cable.....	15-67
16 Checklist for the DBS3900 Hardware Installation.....	16-1
17 Performing the DBS3900 Power-On Check.....	17-1

18 Installing the Cover Plate for the IMB03.....18-1

Figures

Figure 3-1 DCDU-03B.....	3-3
Figure 3-2 BBU3900.....	3-3
Figure 3-3 RRU.....	3-4
Figure 3-4 Power equipment (AC/DC).....	3-4
Figure 3-5 Power equipment (DC/DC).....	3-5
Figure 3-6 Height-restricted scenario.....	3-6
Figure 3-7 Height-restricted scenario (-48 V DC).....	3-7
Figure 3-8 Height-restricted scenario (-48 V DC).....	3-8
Figure 3-9 Height-restricted scenario (-48 V DC).....	3-9
Figure 3-10 Installation of the DC RRUs on the IFS06.....	3-10
Figure 3-11 Height-restricted scenario (220 V AC).....	3-11
Figure 3-12 Height-restricted scenario (220 V AC).....	3-12
Figure 3-13 Installation of the DC RRU on the IFS06.....	3-13
Figure 3-14 Installation of AC RRUs on the IFS06.....	3-14
Figure 3-15 Height-restricted scenario (+24 V DC).....	3-15
Figure 3-16 Height-restricted scenario (+24 V DC).....	3-16
Figure 3-17 Installation of the DC RRUs on the IFS06.....	3-17
Figure 3-18 Height-unrestricted scenario.....	3-18
Figure 3-19 Height-unrestricted scenario (-48 V DC).....	3-19
Figure 3-20 Height-unrestricted scenario (-48 V DC).....	3-20
Figure 3-21 Height-unrestricted triple-mode scenario (-48 V DC).....	3-21
Figure 3-22 Height-unrestricted scenario (-48 V DC).....	3-22
Figure 3-23 Height-unrestricted triple-mode scenario (-48 V DC).....	3-23
Figure 3-24 Installation of the DC RRUs on the IFS06.....	3-24
Figure 3-25 Height-unrestricted scenario (220 V AC).....	3-25
Figure 3-26 Height-unrestricted scenario (220 V AC).....	3-26
Figure 3-27 Height-unrestricted scenario (220 V AC).....	3-27
Figure 3-28 Height-unrestricted triple-mode scenario (220 V AC).....	3-28
Figure 3-29 Installation of the DC RRUs on the IFS06.....	3-29
Figure 3-30 Installation of AC RRUs on the IFS06.....	3-30
Figure 3-31 Height-unrestricted scenario (+24 V DC).....	3-31
Figure 3-32 Height-unrestricted scenario (+24 V DC).....	3-32
Figure 3-33 Height-unrestricted scenario (+24 V DC).....	3-33

Figure 3-34 Height-unrestricted triple-mode scenario (+24 V DC).....	3-34
Figure 3-35 Installation of the DC RRUs on the IFS06.....	3-35
Figure 3-36 Dimensions of the IFS06.....	3-36
Figure 3-37 Dimensions of the IMB03.....	3-36
Figure 3-38 Recommended clearance for the ICR (DC-RRU-based).....	3-37
Figure 3-39 Recommended clearance for the ICR (AC-RRU-based).....	3-38
Figure 3-40 Minimum clearance for the ICR in the height-unrestricted scenario.....	3-39
Figure 3-41 Minimum clearance for the ICR in the height-restricted scenario.....	3-40
Figure 3-42 Minimum clearance for the ICR (AC-RRU-based).....	3-41
Figure 3-43 Clearance requirements for combined cabinets.....	3-42
Figure 5-1 Obtaining the ESN (1).....	5-1
Figure 5-2 Obtaining the ESN (2).....	5-2
Figure 6-1 Installation process.....	6-2
Figure 7-1 Installing the rear feet.....	7-1
Figure 7-2 Installing the front feet.....	7-2
Figure 7-3 Moving down the adjustable beam.....	7-3
Figure 7-4 Installing the cable rack.....	7-4
Figure 7-5 Installing the adapting piece for the GPS surge protector.....	7-5
Figure 8-1 Marking anchor points.....	8-2
Figure 8-2 Drilling holes.....	8-3
Figure 8-3 Assembling an expansion bolt.....	8-3
Figure 8-4 Installing an expansion bolt.....	8-4
Figure 8-5 Removing a bolt.....	8-4
Figure 8-6 Installing the bolts.....	8-4
Figure 8-7 Pre-tightening the bolts.....	8-5
Figure 8-8 Checking and adjusting the level of the IFS06.....	8-5
Figure 8-9 Tightening the bolts.....	8-6
Figure 8-10 Support for installing the ESD floor.....	8-6
Figure 8-11 Marking anchor points.....	8-7
Figure 8-12 Drilling holes.....	8-8
Figure 8-13 Installing the support.....	8-8
Figure 8-14 Removing the bolts.....	8-9
Figure 8-15 Install the IFS06.....	8-10
Figure 8-16 Pre-tightening the bolts.....	8-10
Figure 8-17 Checking and adjusting the level of the ICR.....	8-11
Figure 8-18 Tightening the bolts.....	8-11
Figure 9-1 Main and auxiliary brackets for the RRU.....	9-1
Figure 9-2 Installing the main bracket in the height-unrestricted scenario.....	9-2
Figure 9-3 Installing the main bracket in the height-restricted scenario.....	9-3
Figure 9-4 Installing the main bracket in the height-unrestricted scenario.....	9-4
Figure 9-5 Installing the main bracket in the height-restricted scenario.....	9-5
Figure 10-1 GPS surge protector.....	10-1

Figure 10-2 Removing the insert nut and toothed washer.....	10-2
Figure 10-3 Installing the connector.....	10-2
Figure 10-4 Installing the GPS surge protector.....	10-2
Figure 10-5 Installing the PGND cable for the GPS surge protector.....	10-3
Figure 11-1 Removing the protection plates.....	11-2
Figure 11-2 Installing mounting ears horizontally.....	11-2
Figure 11-3 Securing the IMB03 to the feet of the ICR.....	11-3
Figure 11-4 Removing the protection plates.....	11-4
Figure 11-5 Installing mounting ears vertically.....	11-4
Figure 11-6 Securing the IMB03 on the feet of the ICR.....	11-5
Figure 11-7 Removing the protection plates from the lower-level IMB03.....	11-5
Figure 11-8 Installing mounting ears vertically.....	11-6
Figure 11-9 Securing the IMB03 to the feet of the ICR.....	11-6
Figure 11-10 Removing the protection plates from the upper-level IMB03.....	11-7
Figure 11-11 Installing mounting ears horizontally on the upper-level IMB03.....	11-7
Figure 11-12 Securing the IMB03 to the feet of the ICR.....	11-8
Figure 12-1 Installation of the equipotential cable and PGND cable.....	12-2
Figure 13-1 Configurations of the slots in the IMB03.....	13-1
Figure 13-2 Removing the mounting ears.....	13-2
Figure 13-3 Installing the mounting ears reversely.....	13-2
Figure 13-4 Installing the BBU into the slot in the IMB03.....	13-3
Figure 13-5 Installing the DCDCU-03B into the slot in the IMB03.....	13-4
Figure 13-6 Installing the PGND cable for the DCDCU-03B.....	13-4
Figure 13-7 Reinstalling the mounting ears.....	13-5
Figure 13-8 Installing the power equipment (DC/DC) in the IMB03.....	13-5
Figure 13-9 Installing the PGND cable for the power equipment (DC/DC).....	13-6
Figure 13-10 Installing the power equipment (AC/DC) in the IMB03.....	13-7
Figure 13-11 Installing the PGND cable for the power equipment (AC/DC).....	13-8
Figure 14-1 Removing the adapting piece and cover plate.....	14-2
Figure 14-2 Removing the screws.....	14-3
Figure 14-3 Reinstalling the adapting piece and cover plate.....	14-3
Figure 14-4 Connecting the PGND cable for the RRU to the wiring terminal at the bottom.....	14-4
Figure 14-5 Installing the RRU on the main bracket.....	14-4
Figure 14-6 Installing six RRUs.....	14-5
Figure 14-7 Connecting the PGND cable for the RRU to the wiring terminal at the bottom.....	14-6
Figure 14-8 Installing the AC RRU on the main bracket.....	14-7
Figure 15-1 Cable connections (-48 V DC, six RRU3008s).....	15-6
Figure 15-2 Cable connections (-48 V DC, six RRU3804s).....	15-7
Figure 15-3 Cable connections (-48 V DC, six RRU3201s).....	15-9
Figure 15-4 Cable connections (-48 V DC, six RRU3908s).....	15-11
Figure 15-5 Cable connections in the dual-mode scenario (-48 V, three RRU3908s + three RRU3804s).....	15-13
Figure 15-6 Cable Connections in triple-mode scenario (-48 V DC, Three RRU3908s + Three RRU3804s)	15-15

Figure 15-7 Cable connections (-48 V DC, three RRU3008s+three RRU3804s).....	15-17
Figure 15-8 Cable connections in the dual-mode scenario (-48 V, three RRU3908s + three RRU3201s).....	15-19
Figure 15-9 Cable connections in the triple-mode scenario (-48 V, three RRU3908s + three RRU3201s)....	15-21
Figure 15-10 Cable connections (-48 V DC, three RRU3008s+three RRU3201s).....	15-23
Figure 15-11 Cable connections (-48 V DC, three RRU3804s+three RRU3201s).....	15-25
Figure 15-12 Cable connections (-48 V DC, six RRU3008s+six RRU3804s).....	15-27
Figure 15-13 Cable connections in the dual-mode scenario (-48 V, six RRU3908s + six RRU3804s).....	15-29
Figure 15-14 Cable connections in the GSM+LTE scenario (-48 V, six RRU3908s).....	15-31
Figure 15-15 Cable connections in the UMTS Only scenario (-48 V, six RRU3804s).....	15-32
Figure 15-16 Cable connections in the dual-mode scenario (-48 V, six RRU3908s + six RRU3201s).....	15-34
Figure 15-17 Cable connections in the GSM+UMTS Only scenario (-48 V DC, six RRU3908s).....	15-36
Figure 15-18 Cable connections in the LTE Only scenario (-48 V DC, six RRU3201s).....	15-38
Figure 15-19 Cable connections (-48 V DC, six RRU3008s+six RRU3201s).....	15-40
Figure 15-20 Cable connections (-48 V DC, six RRU3804s+six RRU3201s).....	15-42
Figure 15-21 Cable connections (AC RRU).....	15-43
Figure 15-22 Cable connections (220 V AC).....	15-45
Figure 15-23 Cable connections (+24 V DC).....	15-46
Figure 15-24 Process of installing the ICR-related cables.....	15-47
Figure 15-25 Cable routes.....	15-48
Figure 15-26 Connections of the PGND cables for the DC RRU.....	15-49
Figure 15-27 Connections of the PGND cables for the AC RRU.....	15-50
Figure 15-28 Installing the power cable for the BBU.....	15-51
Figure 15-29 Installing the input power cable.....	15-53
Figure 15-30 Installing the power cable and monitoring signal cable (+24 V DC).....	15-55
Figure 15-31 Installing the power cable and monitoring signal cable (220 V AC).....	15-56
Figure 15-32 Connections of the power cable for the DC RRU.....	15-57
Figure 15-33 Connections of the power cable for the AC RRU.....	15-59
Figure 15-34 Connections of the E1/T1 cable.....	15-60
Figure 15-35 Installing the optical module.....	15-61
Figure 15-36 Connections of the CPRI optical cable for six DC RRUs.....	15-62
Figure 15-37 Connections of the CPRI optical cable for 12 DC RRUs.....	15-63
Figure 15-38 Installing the optical module.....	15-63
Figure 15-39 Connections of the CPRI optical cable for AC RRUs.....	15-64
Figure 15-40 Connections of the antenna jumper for the DC RRU.....	15-66
Figure 15-41 Connections of the antenna jumper for the AC RRU.....	15-67
Figure 15-42 GPS clock signal cable.....	15-68
Figure 17-1 BBU power-on check process.....	17-2
Figure 17-2 RRU power-on check process.....	17-3
Figure 18-1 Installing the cover plate.....	18-1
Figure 18-2 Securing the cover plate.....	18-2

Tables

Table 3-1 Installation of three RRUs (on the lower part of the IFS06 by default).....	3-7
Table 3-2 Installation of 6 RRUs (in GSM+UMTS mode).....	3-8
Table 3-3 Installation of 6 RRUs (in GSM+LTE mode).....	3-8
Table 3-4 Installation of 6 RRUs (in UMTS+LTE mode).....	3-9
Table 3-5 Installation of 12 RRUs (in GSM+UMTS mode).....	3-9
Table 3-6 Installation of 12 RRUs (in GSM+LTE mode).....	3-9
Table 3-7 Installation of 12 RRUs (in UMTS+LTE mode).....	3-10
Table 3-8 Installation of three RRUs (on the lower part of the IFS06 by default).....	3-11
Table 3-9 Installation of 6 RRUs (in GSM+UMTS mode).....	3-12
Table 3-10 Installation of 6 RRUs (in GSM+LTE mode).....	3-12
Table 3-11 Installation of 6 RRUs (in UMTS+LTE mode).....	3-13
Table 3-12 Installation of three RRUs (on the lower part of the IFS06 by default).....	3-15
Table 3-13 Installation of 6 RRUs (in GSM+UMTS mode).....	3-16
Table 3-14 Installation of 6 RRUs (in GSM+LTE mode).....	3-16
Table 3-15 Installation of 6 RRUs (in UMTS+LTE mode).....	3-17
Table 3-16 Installation of three RRUs (on the lower part of the IFS06 by default).....	3-19
Table 3-17 Installation of 6 RRUs (in GSM+UMTS mode).....	3-20
Table 3-18 Installation of 6 RRUs (in GSM+LTE mode).....	3-20
Table 3-19 Installation of 6 RRUs (in UMTS+LTE mode).....	3-21
Table 3-20 Installation of six RRUs (in GSM+UMTS+LTE mode).....	3-21
Table 3-21 Installation of 12 RRUs (in GSM+UMTS mode).....	3-22
Table 3-22 Installation of 12 RRUs (in GSM+LTE mode).....	3-22
Table 3-23 Installation of 12 RRUs (in UMTS+LTE mode).....	3-22
Table 3-24 Installation of six RRUs (in GSM+UMTS+LTE mode).....	3-23
Table 3-25 Installation of three RRUs (on the lower part of the IFS06 by default).....	3-25
Table 3-26 Installation of 6 RRUs (in GSM+UMTS mode).....	3-26
Table 3-27 Installation of 6 RRUs (in GSM+LTE mode).....	3-26
Table 3-28 Installation of 6 RRUs (in UMTS+LTE mode).....	3-27
Table 3-29 Installation of 12 RRUs (in GSM+UMTS mode).....	3-27
Table 3-30 Installation of 12 RRUs (in GSM+LTE mode).....	3-27
Table 3-31 Installation of 12 RRUs (in UMTS+LTE mode).....	3-28
Table 3-32 Installation of six RRUs (in GSM+UMTS+LTE mode).....	3-28
Table 3-33 Installation of three RRUs (on the lower part of the IFS06 by default).....	3-31

Table 3-34 Installation of 6 RRUs (in GSM+UMTS mode).....	3-32
Table 3-35 Installation of 6 RRUs (in GSM+LTE mode).....	3-32
Table 3-36 Installation of 6 RRUs (in UMTS+LTE mode).....	3-33
Table 3-37 Installation of 12 RRUs (in GSM+UMTS mode).....	3-33
Table 3-38 Installation of 12 RRUs (in GSM+LTE mode).....	3-33
Table 3-39 Installation of 12 RRUs (in UMTS+LTE mode).....	3-34
Table 3-40 Installation of 12 RRUs (in GSM+UMTS+LTE mode).....	3-34
Table 15-1 Cable description.....	15-6
Table 15-2 Cable description.....	15-8
Table 15-3 Cable description.....	15-10
Table 15-4 Cable description.....	15-11
Table 15-5 Cable description.....	15-13
Table 15-6 Cable description.....	15-16
Table 15-7 Cable description.....	15-18
Table 15-8 Cable description.....	15-19
Table 15-9 Cable description.....	15-22
Table 15-10 Cable description.....	15-23
Table 15-11 Cable description.....	15-25
Table 15-12 Cable description.....	15-28
Table 15-13 Cable description.....	15-30
Table 15-14 Cable description.....	15-31
Table 15-15 Cable description.....	15-33
Table 15-16 Cable description.....	15-35
Table 15-17 Cable description.....	15-36
Table 15-18 Cable description.....	15-39
Table 15-19 Cable description.....	15-41
Table 15-20 Cable description.....	15-43
Table 15-21 Cable description.....	15-44
Table 16-1 Hardware installation checklist.....	16-1

1 Changes in the DBS3900 (ICR) Installation Guide

01 (2011-03-30)

This is the first official release.

Compared with Draft A (2011-01-30), no content is changed.

Compared with Draft A (2011-01-30), no content is added.

Compared with Draft A (2011-01-30), no content is deleted.

Draft A (2011-01-30)

This is the draft issue.

Compared with MBTS V100R003C00, WCDMA-NodeB V200R012C00, GSM-BTS V100R012C00 and eNodeB V100R002C00, , this issue incorporates the following changes:

Content	Change Description
3.2 Installation Options	The structure of the section is changed.

Compared with MBTS V100R003C00, WCDMA-NodeB V200R012C00, GSM-BTS V100R012C00 and eNodeB V100R002C00, this issue is added with the following topics:

- The triple-mode installation scenario is added.
- The cable connections in the triple-mode installation scenario is added.

Compared with MBTS V100R003C00, WCDMA-NodeB V200R012C00, GSM-BTS V100R012C00 and eNodeB V100R002C00, no content is deleted.

2 Installation Preparations

About This Chapter

This chapter describes the tools and instruments required for installation and the skills and prerequisites required for onsite installation engineers.

[2.1 Making Documents Available](#)

Before installing the DBS3900, obtain related information from the following document:

[2.2 Tools and Instruments](#)

This section describes the tools and instruments required for installation.

[2.3 Skills and Requirements for Onsite Personnel](#)

Onsite personnel must be qualified and trained. Before performing any operation, onsite personnel must be familiar with correct operation methods and safety precautions.

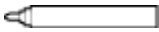












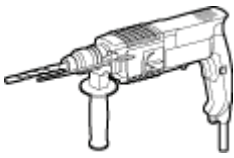


2.1 Making Documents Available




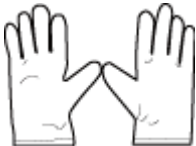

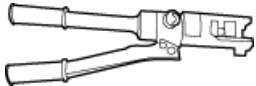
Before installing the DBS3900, obtain related information from the following document:

- Installation Reference
- BBU3900 Hardware Description
- BBU3900 Hardware Maintenance Guide

2.2 Tools and Instruments

This section describes the tools and instruments required for installation.

Marker 	Phillips screwdriver (M4, M5, M6, and M8)  Flat-head screwdriver (M4, M5, M6, and M8) 	Diagonal pliers 
Adjustable wrench (capacity ≤ 19 mm) 	Socket wrench (M10 and M12) 	Torque wrench (30 N·m to 50 N·m) 
Phillips torque screwdriver 	Crimping tool 	Wire clippers 
Rubber mallet 	Guarded blade utility knife 	Wire stripper 
Hammer drill ($\varnothing 16$) 	Heat gun 	Level 

<p>Multimeter</p> 	<p>Measuring tape</p> 	<p>Vacuum cleaner</p> 
<p>ESD gloves</p> 	<p>ESD wrist strap</p> 	<p>Hydraulic pliers</p> 

2.3 Skills and Requirements for Onsite Personnel

Onsite personnel must be qualified and trained. Before performing any operation, onsite personnel must be familiar with correct operation methods and safety precautions.

Before the installation, pay attention to the following items:

- The customer's technical engineers must be trained by Huawei and be familiar with the proper installation and operation methods.
- The number of onsite personnel depends on the engineering schedule and installation environment. Generally, only three to five onsite personnel are necessary.

3 Information About the Installation

About This Chapter

This chapter describes the information about the installation, including exterior, installation scenario, and space requirements

[3.1 Overview of Devices](#)

This chapter describes the devices involved in the installation of the DBS3900.

[3.2 Installation Options](#)

The installation options vary according to height-restricted and height-unrestricted scenarios.

[3.3 Dimensions and Installation Clearance Requirements](#)

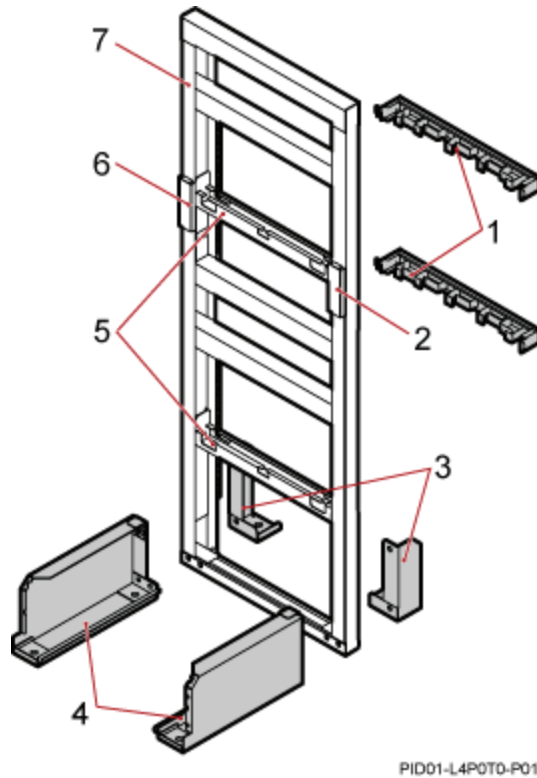
This section describes the dimensions and installation clearance requirements for the relevant devices.

3.1 Overview of Devices

This chapter describes the devices involved in the installation of the DBS3900.

IFS06

The IFS06 is an Indoor Floor Installation Support (IFS). It is used for installing DBS3900 devices in a centralized manner.



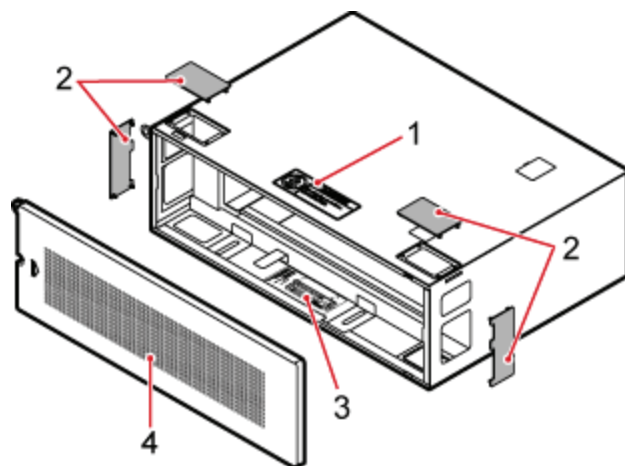
- | | | | |
|---------------------|------------------|----------------|----------------|
| (1) Cable rack | (2) Ground bar 2 | (3) Rear foot | (4) Front foot |
| (5) Adjustable beam | (6) Ground bar 1 | (7) Main frame | - |

NOTE

In this document, the cable colors and exteriors of the devices are for reference only.

IMB03

The IMB03 is an Indoor Mini Box (IMB). It is used for installing the BBU and power devices.



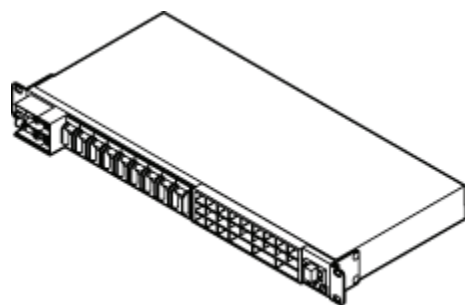
PID02-L4P0T0-P01

- (1) NO STEPPING sign
- (3) Slot assignment label

- (2) Protection plate
- (4) Cover plate

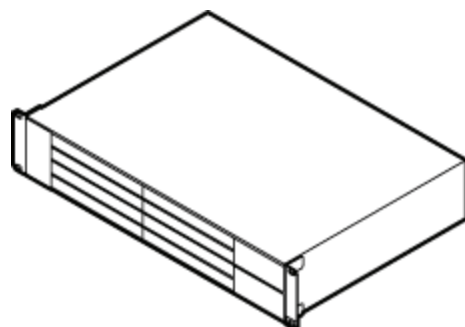
Other Devices

Figure 3-1 DCDU-03B



PID06-L4P0T0-P01

Figure 3-2 BBU3900



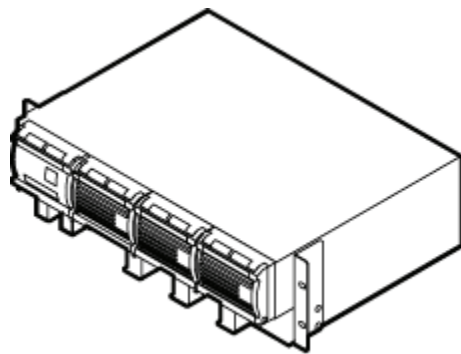
PID04-L4P0T0-P01

Figure 3-3 RRU

PID03-L0P0T0-P01

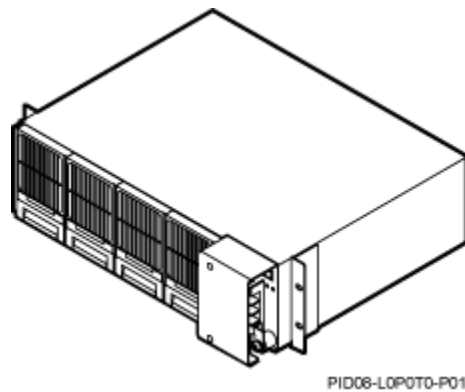
**WARNING**

- Place the foam pad or cardboard under the RRU to prevent any damage to the housing of the RRU.
- The load-bearing capacity of the RF ports at the bottom of the RRU is low. Do not stand the RRU upright.

Figure 3-4 Power equipment (AC/DC)

PID07-L0P0T0-P01

Figure 3-5 Power equipment (DC/DC)



3.2 Installation Options

The installation options vary according to height-restricted and height-unrestricted scenarios.

NOTE

The ICR is an indoor centralized rack, integrating the IFS06 with the IMB03.

The IFS06 is an indoor floor installation support.

The IMB03 is an indoor mini box.

3.2.1 Height-Restricted Scenario

This section describes the installation of the DBS3900 on the ICR in the height-restricted scenario.

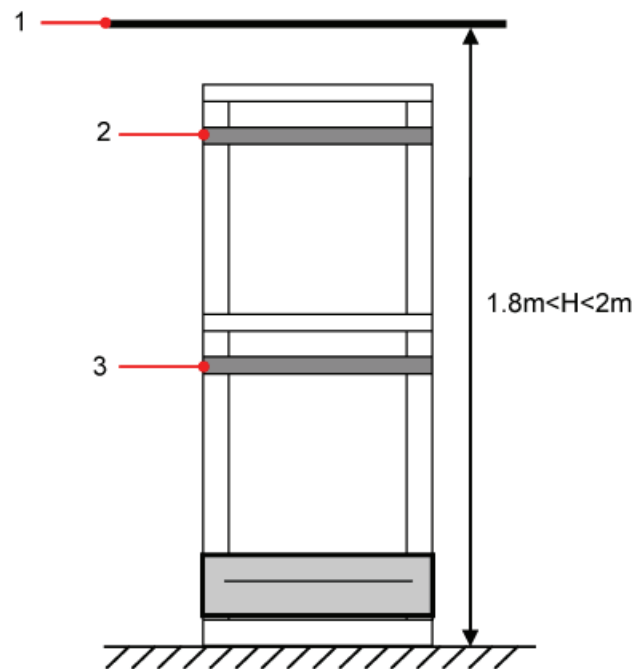
3.2.2 Height-Unrestricted Scenario

This section describes the installation of the DBS3900 on the ICR in the height-unrestricted scenario.

3.2.1 Height-Restricted Scenario

This section describes the installation of the DBS3900 on the ICR in the height-restricted scenario.

In the scenario where a cable rack is 1.8 m to 2 m above the floor (hereinafter referred to as the height-restricted scenario), the RRUs are installed on beam 2 and beam 4, as shown in [Figure 3-6](#).

Figure 3-6 Height-restricted scenario

ISD09-L1P0T0-P02

(1) Cable rack

(2) Beam 2

(3) Beam 4

Height-Restricted Scenario (-48 V)

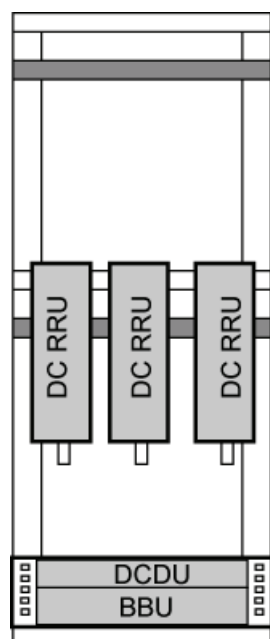
This section describes the -48 V height-restricted scenario. In this scenario, RRUs can be installed on the IFS06 with the IMB03 or on the IFS06 independently.

RRU and IMB03 combination installation scenario (IFS06+IMB03+RRU)

In this scenario, three RRUs, six RRUs, or 12 RRUs are installed.

- IFS06+IMB03+RRU (Three DC RRUs)

Figure 3-7 Height-restricted scenario (-48 V DC)



ISD09-L0P0T0-P01

Table 3-1 Installation of three RRUs (on the lower part of the IFS06 by default)

Position	GSM Mode	UMTS Mode	LTE Mode	GSM+UMTS/ GSM+LTE
Lower part	Three RRU3008s, or three RRU3004s	Three RRU3804s, three RRU3801Es, three RRU3806s, three RRU3808s, or three RRU3805s	Three RRU3201s, three RRU3211s, three RRU3203s, three RRU3233s, three RRU3222s, or three RRU3232s	Three RRU3908s, or three RRU3920s

NOTE

The RRU3008, and RRU3004 support the GSM mode. The following description is based on the RRU3008.

The RRU3804, RRU3801E, RRU3806, RRU3808, and RRU3805 support the UMTS mode. The following description is based on the RRU3804.

The RRU3201, RRU3211, RRU3203, RRU3233, RRU3222, and RRU3232 support the LTE mode. The following description is based on the RRU3201.

The RRU3908 and RRU3920 support the multi-mode . The following description is based on the RRU3908.

- IFS06+IMB03+RRU (Six DC RRUs)

Figure 3-8 Height-restricted scenario (-48 V DC)

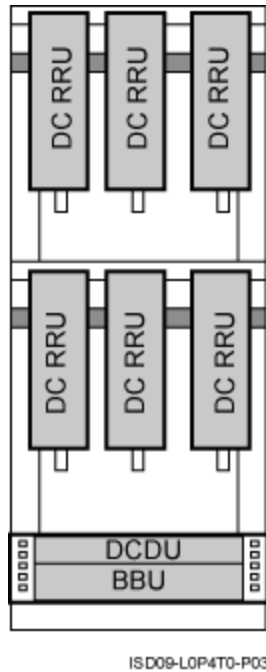


Table 3-2 Installation of 6 RRUs (in GSM+UMTS mode)

Position	GSM Mode	UMTS Mode	GSM +UMTS Mode	GSM +UMTS Hybrid Co-Cabinet	GSM +UMTS Co-Cabinet
Upper part	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3908s	Three RRU3008s
Lower part	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3804s	Three RRU3804s

Table 3-3 Installation of 6 RRUs (in GSM+LTE mode)

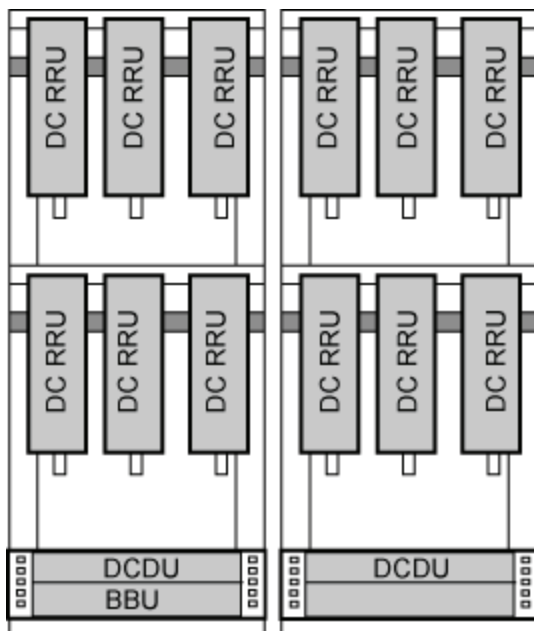
Position	GSM Mode	LTE Mode	GSM+LTE Hybrid Co-Cabinet	GSM+LTE Co-Cabinet
Upper part	Three RRU3008s	Three RRU3201s	Three RRU3908s	Three RRU3008s
Lower part	Three RRU3008s	Three RRU3201s	Three RRU3201s	Three RRU3201s

Table 3-4 Installation of 6 RRUs (in UMTS+LTE mode)

Position	UMTS Mode	LTE Mode	UMTS+LTE Co-Cabinet
Upper part	Three RRU3804s	Three RRU3201s	Three RRU3804s
Lower part	Three RRU3804s	Three RRU3201s	Three RRU3201s

- IFS06+IMB03+RRU (12 DC RRUs)

Figure 3-9 Height-restricted scenario (-48 V DC)



ISD09-L0P4T0-P04

Table 3-5 Installation of 12 RRUs (in GSM+UMTS mode)

Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR1	Six RRU3908s	Six RRU3008s
ICR2	Six RRU3804s	Six RRU3804s

Table 3-6 Installation of 12 RRUs (in GSM+LTE mode)

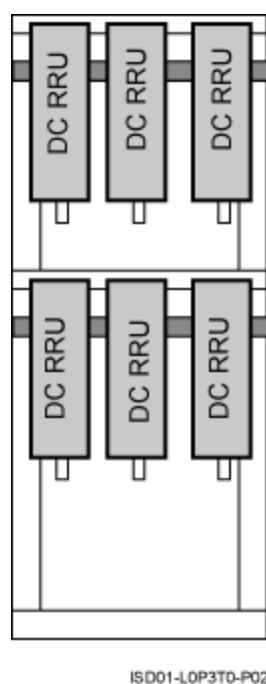
Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR1	Six RRU3908s	Six RRU3008s
ICR2	Six RRU3201s	Six RRU3201s

Table 3-7 Installation of 12 RRUs (in UMTS+LTE mode)

Position	UMTS+LTE Co-Cabinet
ICR1	Six RRU3804s
ICR2	Six RRU3201s

Independent RRU installation scenario (IFS06+RRU)

In this scenario, three RRUs or six RRUs are installed. The configurations and installations of the RRUs in the IFS06+RRU scenario and in the IFS06+IMB03+RRU scenario are the same. For details, see [RRU and IMB03 combination installation scenario \(IFS06+IMB03+RRU\)](#). **Figure 3-10** takes the installation of six RRUs as an example.

Figure 3-10 Installation of the DC RRUs on the IFS06

Height-Restricted Scenario (220 V)

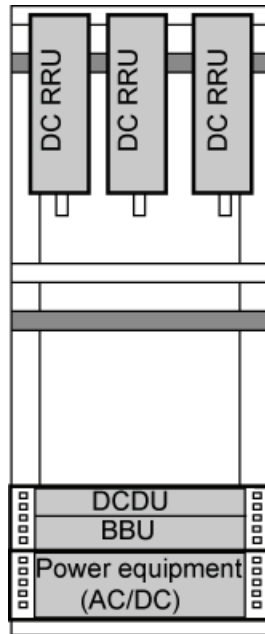
This section describes the 220 V height-restricted scenario. In this scenario, RRUs can be installed on the IFS06 with the IMB03 or on the IFS06 independently.

RRU and IMB03 combination installation scenario (IFS06+IMB03+RRU)

In this scenario, three RRUs or six RRUs are installed.

- IFS06+IMB03+RRU (Three DC RRUs)

Figure 3-11 Height-restricted scenario (220 V AC)



ISD09-L0P0T0-P02

Table 3-8 Installation of three RRUs (on the lower part of the IFS06 by default)

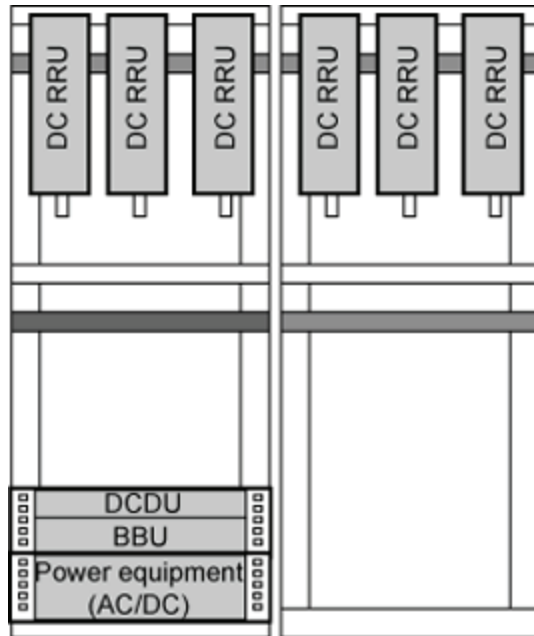
Position	GSM Mode	UMTS Mode	LTE Mode	GSM+UMTS/ GSM+LTE
Upper part	Three RRU3008s, or three RRU3004s	Three RRU3804s, three RRU3801Es, three RRU3806s, three RRU3808s, or three RRU3805s	Three RRU3201s, three RRU3211s, three RRU3203s, three RRU3233s, three RRU3222s, or three RRU3232s	Three RRU3908s, or three RRU3920s

NOTE

The RRU3008, and RRU3004 support the GSM mode. The following description is based on the RRU3008.
 The RRU3804, RRU3801E, RRU3806, RRU3808, and RRU3805 support the UMTS mode. The following description is based on the RRU3804.
 The RRU3201, RRU3211, RRU3203, RRU3233, RRU3222, and RRU3232 support the LTE mode. The following description is based on the RRU3201.
 The RRU3908 and RRU3920 support the multi-mode . The following description is based on the RRU3908.

- IFS06+IMB03+RRU (Six DC RRUs)

Figure 3-12 Height-restricted scenario (220 V AC)



ISD09-L0P1T0-P01

Table 3-9 Installation of 6 RRUs (in GSM+UMTS mode)

Position	GSM Mode	UMTS Mode	GSM +UMTS Mode	GSM +UMTS Hybrid Co-Cabinet	GSM +UMTS Co-Cabinet
ICR1	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3908s	Three RRU3008s
ICR2	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3804s	Three RRU3804s

Table 3-10 Installation of 6 RRUs (in GSM+LTE mode)

Position	GSM Mode	LTE Mode	GSM+LTE Hybrid Co-Cabinet	GSM+LTE Co-Cabinet
ICR1	Three RRU3008s	Three RRU3201s	Three RRU3908s	Three RRU3008s
ICR2	Three RRU3008s	Three RRU3201s	Three RRU3201s	Three RRU3201s

Table 3-11 Installation of 6 RRUs (in UMTS+LTE mode)

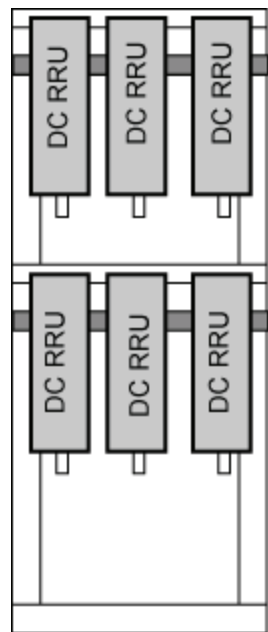
Position	UMTS Mode	LTE Mode	UMTS+LTE Co-Cabinet
ICR1	Three RRU3804s	Three RRU3201s	Three RRU3804s
ICR2	Three RRU3804s	Three RRU3201s	Three RRU3201s

Independent RRU installation scenario (IFS06+RRU)

- IFS06+RRU (DC RRU)

In this scenario, three RRUs or six RRUs are installed. The configurations and installations of the RRUs in the IFS06+RRU scenario and in the IFS06+IMB03+RRU scenario are the same. For details, see [RRU and IMB03 combination installation scenario \(IFS06+IMB03+RRU\)](#). [Figure 3-13](#) takes the installation of six RRUs as an example.

Figure 3-13 Installation of the DC RRU on the IFS06



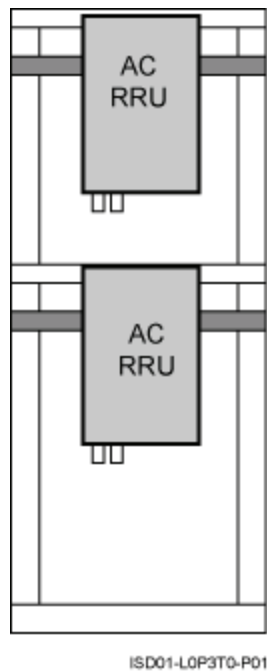
ISD01-L0P3T0-P02

- IFS06+RRU (AC RRU)

[Figure 3-14](#) shows the installation of AC RRUs on the IFS06.

NOTE

The description of the AC RRU in this document is based on the AC RRU3908.

Figure 3-14 Installation of AC RRUs on the IFS06

Height-Restricted Scenario (+24 V)

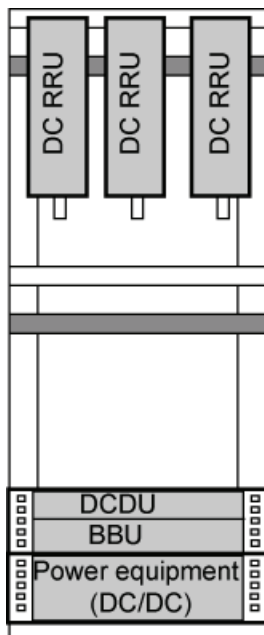
This section describes the +24 V height-restricted scenario. In this scenario, RRUs can be installed on the IFS06 with the IMB03 or on the IFS06 independently.

RRU and IMB03 combination installation scenario (IFS06+IMB03+RRU)

In this scenario, three RRUs or six RRUs are installed.

- IFS06+IMB03+RRU (Three DC RRUs)

Figure 3-15 Height-restricted scenario (+24 V DC)



ISD09-L0P0T0-P03

Table 3-12 Installation of three RRUs (on the lower part of the IFS06 by default)

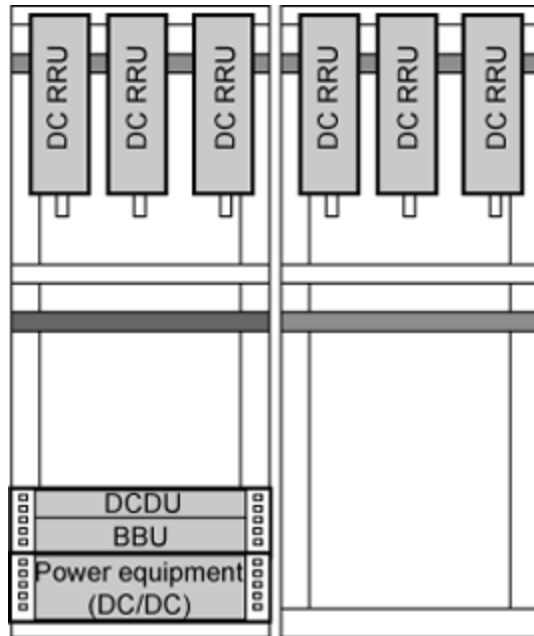
Position	GSM Mode	UMTS Mode	LTE Mode	GSM+UMTS/ GSM+LTE
Upper part	Three RRU3008s, or three RRU3004s	Three RRU3804s, three RRU3801Es, three RRU3806s, three RRU3808s, or three RRU3805s	Three RRU3201s, three RRU3211s, three RRU3203s, three RRU3233s, three RRU3222s, or three RRU3232s	Three RRU3908s, or three RRU3920s

NOTE

The RRU3008, and RRU3004 support the GSM mode. The following description is based on the RRU3008.
 The RRU3804, RRU3801E, RRU3806, RRU3808, and RRU3805 support the UMTS mode. The following description is based on the RRU3804.
 The RRU3201, RRU3211, RRU3203, RRU3233, RRU3222, and RRU3232 support the LTE mode. The following description is based on the RRU3201.
 The RRU3908 and RRU3920 support the multi-mode . The following description is based on the RRU3908.

- IFS06+IMB03+RRU (Six DC RRUs)

Figure 3-16 Height-restricted scenario (+24 V DC)



ISD09-L0P2T0-P01

Table 3-13 Installation of 6 RRUs (in GSM+UMTS mode)

Position	GSM Mode	UMTS Mode	GSM +UMTS Mode	GSM +UMTS Hybrid Co-Cabinet	GSM +UMTS Co-Cabinet
ICR1	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3908s	Three RRU3008s
ICR2	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3804s	Three RRU3804s

Table 3-14 Installation of 6 RRUs (in GSM+LTE mode)

Position	GSM Mode	LTE Mode	GSM+LTE Hybrid Co-Cabinet	GSM+LTE Co-Cabinet
ICR1	Three RRU3008s	Three RRU3201s	Three RRU3908s	Three RRU3008s
ICR2	Three RRU3008s	Three RRU3201s	Three RRU3201s	Three RRU3201s

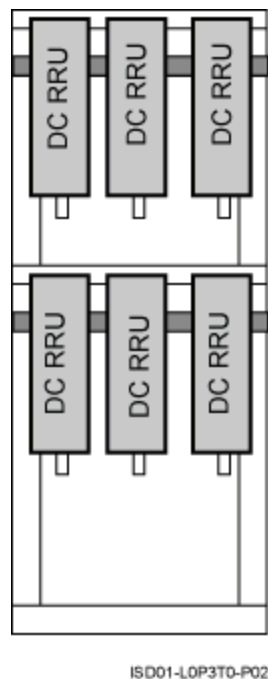
Table 3-15 Installation of 6 RRUs (in UMTS+LTE mode)

Position	UMTS Mode	LTE Mode	UMTS+LTE Co-Cabinet
ICR1	Three RRU3804s	Three RRU3201s	Three RRU3804s
ICR2	Three RRU3804s	Three RRU3201s	Three RRU3201s

Independent RRU installation scenario (IFS06+RRU)

In this scenario, three RRUs or six RRUs are installed. The configurations and installations of the RRUs in the IFS06+RRU scenario and in the IFS06+IMB03+RRU scenario are the same. For details, see [RRU and IMB03 combination installation scenario \(IFS06+IMB03+RRU\)](#). [Figure 3-17](#) takes the installation of six RRUs as an example.

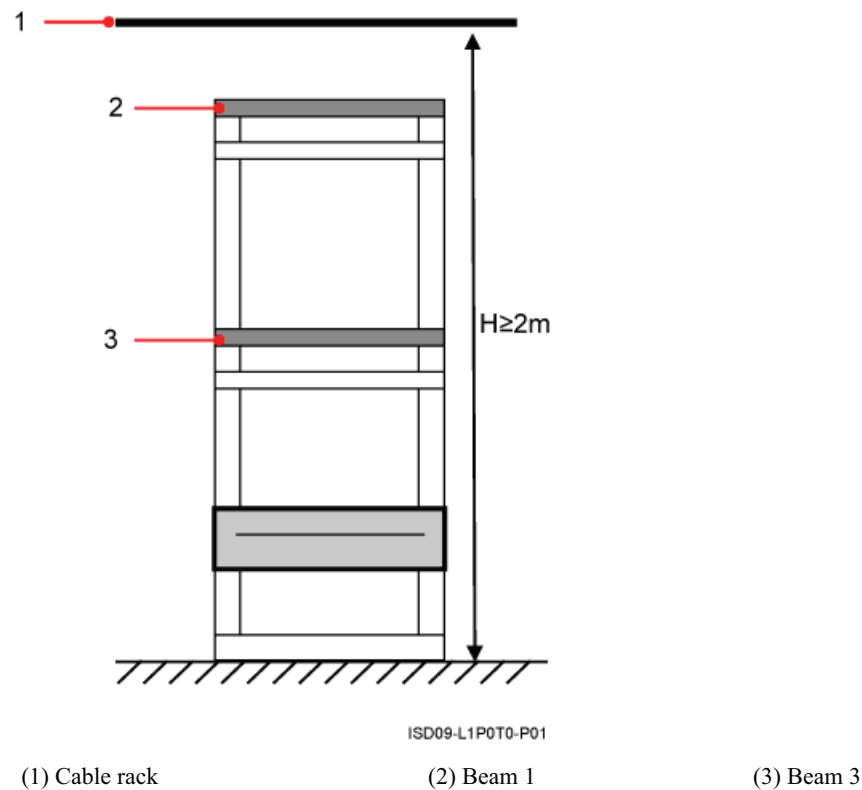
Figure 3-17 Installation of the DC RRUs on the IFS06



3.2.2 Height-Unrestricted Scenario

This section describes the installation of the DBS3900 on the ICR in the height-unrestricted scenario.

In the scenario where a cable rack is more than 2 m above the floor (hereinafter referred to as the height-unrestricted scenario), the RRUs are installed on beam 1 and beam 3 by default, as shown in [Figure 3-18](#).

Figure 3-18 Height-unrestricted scenario

Height-Unrestricted Scenario (-48 V)

This section describes the -48 V height-unrestricted scenario. In this scenario, RRUs can be installed on the IFS06 with the IMB03 or on the IFS06 independently.

RRU and IMB03 combination installation scenario (IFS06+IMB03+RRU)

In this scenario, three RRUs, six RRUs, or 12 RRUs are installed.

- IFS06+IMB03+RRU (Three DC RRUs)

Figure 3-19 Height-unrestricted scenario (-48 V DC)

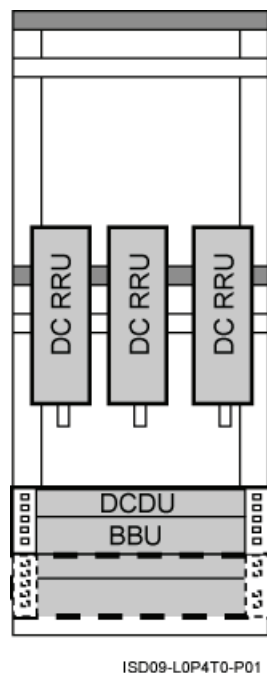


Table 3-16 Installation of three RRUs (on the lower part of the IFS06 by default)

Position	GSM Mode	UMTS Mode	LTE Mode	GSM+UMTS/ GSM+LTE
Lower part	Three RRU3008s, or three RRU3004s	Three RRU3804s, three RRU3801Es, three RRU3806s, three RRU3808s, or three RRU3805s	Three RRU3201s, three RRU3211s, three RRU3203s, three RRU3233s, three RRU3222s, or three RRU3232s	Three RRU3908s, or three RRU3920s

NOTE

The RRU3008, and RRU3004 support the GSM mode. The following description is based on the RRU3008.
The RRU3804, RRU3801E, RRU3806, RRU3808, and RRU3805 support the UMTS mode. The following description is based on the RRU3804.
The RRU3201, RRU3211, RRU3203, RRU3233, RRU3222, and RRU3232 support the LTE mode. The following description is based on the RRU3201.
The RRU3908 and RRU3920 support the multi-mode. The following description is based on the RRU3908.

- IFS06+IMB03+RRU (Six DC RRUs)

Figure 3-20 Height-unrestricted scenario (-48 V DC)

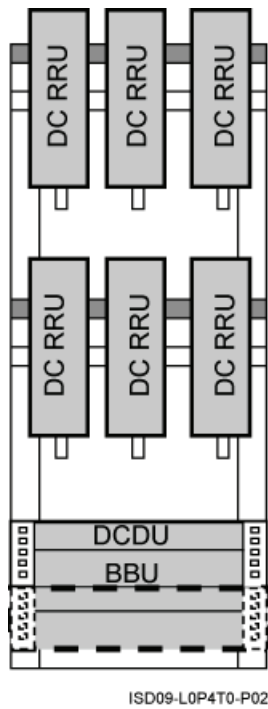


Table 3-17 Installation of 6 RRUs (in GSM+UMTS mode)

Position	GSM Mode	UMTS Mode	GSM +UMTS Mode	GSM +UMTS Hybrid Co-Cabinet	GSM +UMTS Co-Cabinet
Upper part	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3908s	Three RRU3008s
Lower part	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3804s	Three RRU3804s

Table 3-18 Installation of 6 RRUs (in GSM+LTE mode)

Position	GSM Mode	LTE Mode	GSM+LTE Hybrid Co-Cabinet	GSM+LTE Co-Cabinet
Upper part	Three RRU3008s	Three RRU3201s	Three RRU3908s	Three RRU3008s
Lower part	Three RRU3008s	Three RRU3201s	Three RRU3201s	Three RRU3201s

Table 3-19 Installation of 6 RRUs (in UMTS+LTE mode)

Position	UMTS Mode	LTE Mode	UMTS+LTE Co-Cabinet
Upper part	Three RRU3804s	Three RRU3201s	Three RRU3804s
Lower part	Three RRU3804s	Three RRU3201s	Three RRU3201s

 **NOTE**

When 6 RRUs are configured, one DCDU and one BBU are added in the triple mode scenario, as shown in [Figure 3-21](#).

Figure 3-21 Height-unrestricted triple-mode scenario (-48 V DC)

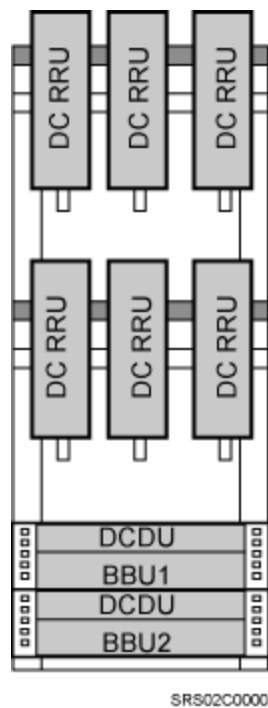
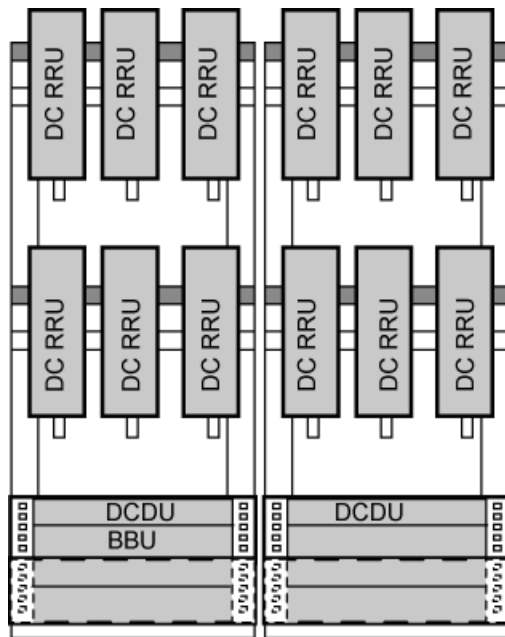


Table 3-20 Installation of six RRUs (in GSM+UMTS+LTE mode)

Position	GU+LTE	GL+UMTS
Upper part	Three RRU3908s	Three RRU3908s
Lower part	Three RRU3201s	Three RRU3804s

- IFS06+IMB03+RRU (12 DC RRUs)

Figure 3-22 Height-unrestricted scenario (-48 V DC)



8209-LIF470-P11

Table 3-21 Installation of 12 RRUs (in GSM+UMTS mode)

Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR1	Six RRU3908s	Six RRU3008s
ICR2	Six RRU3804s	Six RRU3804s

Table 3-22 Installation of 12 RRUs (in GSM+LTE mode)

Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR1	Six RRU3908s	Six RRU3008s
ICR2	Six RRU3201s	Six RRU3201s

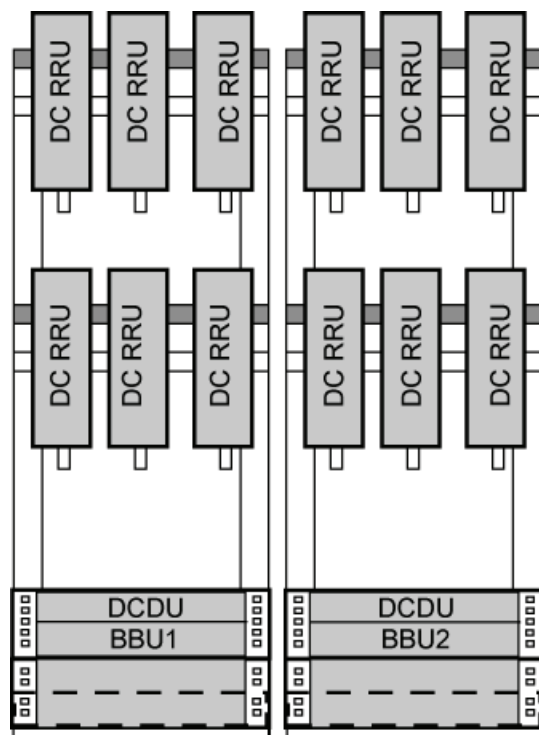
Table 3-23 Installation of 12 RRUs (in UMTS+LTE mode)

Position	UMTS+LTE Co-Cabinet
ICR1	Six RRU3804s
ICR2	Six RRU3201s

 **NOTE**

When 12 RRUs are configured, one BBU is added in the triple mode scenario, as shown in [Figure 3-23](#).

Figure 3-23 Height-unrestricted triple-mode scenario (-48 V DC)



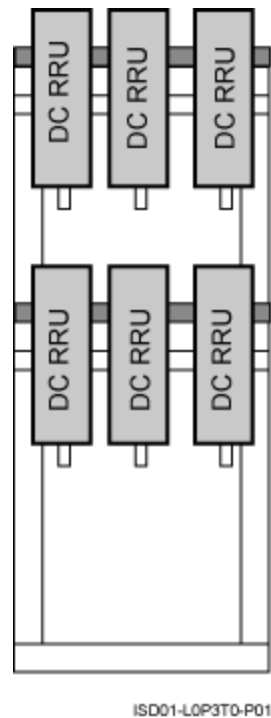
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Table 3-24 Installation of six RRUs (in GSM+UMTS+LTE mode)

Position	GU+LTE	GL+UMTS
ICR1	Six RRU3908s	Six RRU3908s
ICR2	Six RRU3201s	Six RRU3804s

Independent RRU installation scenario (IFS06+RRU)

In this scenario, three RRUs or six RRUs are installed. The configurations and installations of the RRUs in the IFS06+RRU scenario and in the IFS06+IMB03+RRU scenario are the same. For details, see [RRU and IMB03 combination installation scenario \(IFS06+IMB03+RRU\)](#). [Figure 3-24](#) takes the installation of six RRUs as an example.

Figure 3-24 Installation of the DC RRUs on the IFS06

Height-Unrestricted Scenario (220 V)

This section describes the 220 V height-unrestricted scenario. In this scenario, RRUs can be installed on the IFS06 with the IMB03 or on the IFS06 independently.

RRU and IMB03 combination installation scenario (IFS06+IMB03+RRU)

In this scenario, three RRUs, six RRUs, or 12 RRUs are installed.

- IFS06+IMB03+RRU (Three DC RRUs)

Figure 3-25 Height-unrestricted scenario (220 V AC)

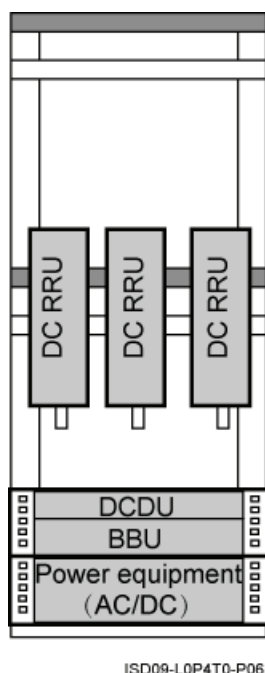


Table 3-25 Installation of three RRUs (on the lower part of the IFS06 by default)

Position	GSM Mode	UMTS Mode	LTE Mode	GSM+UMTS/ GSM+LTE
Lower part	Three RRU3008s, or three RRU3004s	Three RRU3804s, three RRU3801Es, three RRU3806s, three RRU3808s, or three RRU3805s	Three RRU3201s, three RRU3211s, three RRU3203s, three RRU3233s, three RRU3222s, or three RRU3232s	Three RRU3908s, or three RRU3920s

NOTE

The RRU3008, and RRU3004 support the GSM mode. The following description is based on the RRU3008.
The RRU3804, RRU3801E, RRU3806, RRU3808, and RRU3805 support the UMTS mode. The following description is based on the RRU3804.
The RRU3201, RRU3211, RRU3203, RRU3233, RRU3222, and RRU3232 support the LTE mode. The following description is based on the RRU3201.
The RRU3908 and RRU3920 support the multi-mode. The following description is based on the RRU3908.

- IFS06+IMB03+RRU (Three DC RRUs)

Figure 3-26 Height-unrestricted scenario (220 V AC)

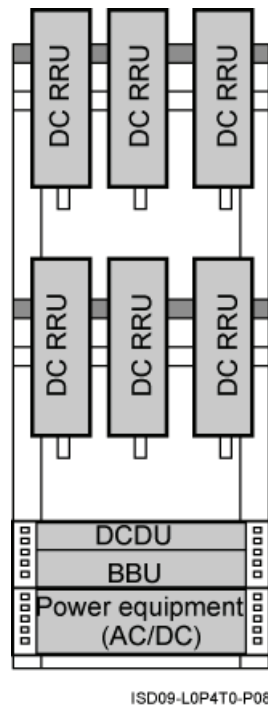


Table 3-26 Installation of 6 RRUs (in GSM+UMTS mode)

Position	GSM Mode	UMTS Mode	GSM +UMTS Mode	GSM +UMTS Hybrid Co-Cabinet	GSM +UMTS Co-Cabinet
Upper part	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3908s	Three RRU3008s
Lower part	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3804s	Three RRU3804s

Table 3-27 Installation of 6 RRUs (in GSM+LTE mode)

Position	GSM Mode	LTE Mode	GSM+LTE Hybrid Co-Cabinet	GSM+LTE Co-Cabinet
Upper part	Three RRU3008s	Three RRU3201s	Three RRU3908s	Three RRU3008s
Lower part	Three RRU3008s	Three RRU3201s	Three RRU3201s	Three RRU3201s

Table 3-28 Installation of 6 RRUs (in UMTS+LTE mode)

Position	UMTS Mode	LTE Mode	UMTS+LTE Co-Cabinet
Upper part	Three RRU3804s	Three RRU3201s	Three RRU3804s
Lower part	Three RRU3804s	Three RRU3201s	Three RRU3201s

- IFS06+IMB03+RRU (12 DC RRUs)

Figure 3-27 Height-unrestricted scenario (220 V AC)

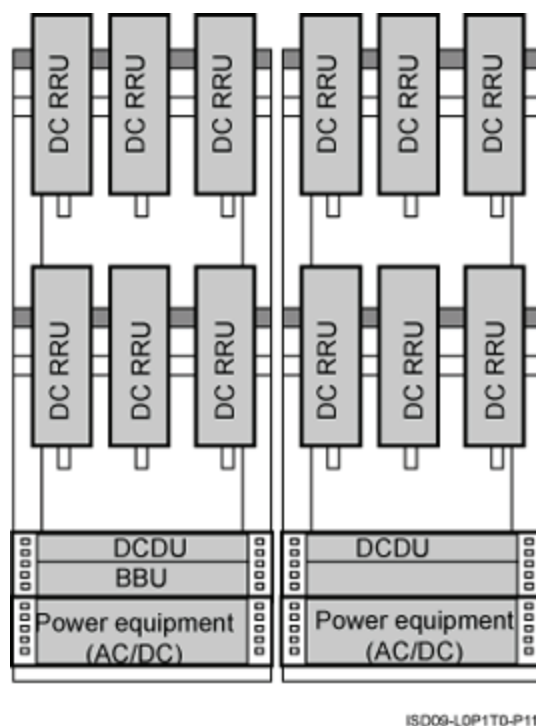


Table 3-29 Installation of 12 RRUs (in GSM+UMTS mode)

Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR1	Six RRU3908s	Six RRU3008s
ICR2	Six RRU3804s	Six RRU3804s

Table 3-30 Installation of 12 RRUs (in GSM+LTE mode)

Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR1	Six RRU3908s	Six RRU3008s

Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR2	Six RRU3201s	Six RRU3201s

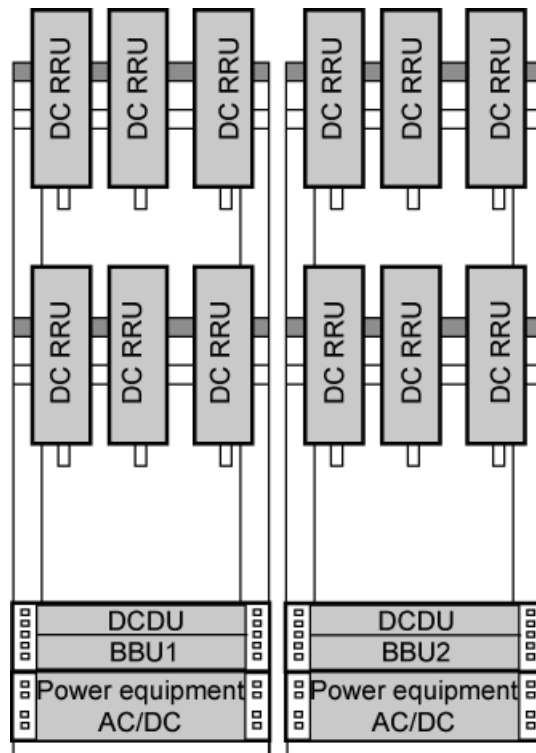
Table 3-31 Installation of 12 RRUs (in UMTS+LTE mode)

Position	UMTS+LTE Co-Cabinet
ICR1	Six RRU3804s
ICR2	Six RRU3201s

 **NOTE**

When 12 RRUs are configured, one BBU is added in the triple mode scenario, as shown in [Figure 3-28](#).

Figure 3-28 Height-unrestricted triple-mode scenario (220 V AC)



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Table 3-32 Installation of six RRUs (in GSM+UMTS+LTE mode)

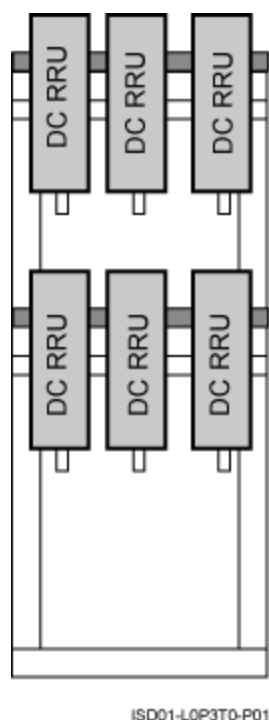
Position	GU+LTE	GL+UMTS
ICR1	Six RRU3908s	Six RRU3908s
ICR2	Six RRU3201s	Six RRU3804s

Independent RRU installation scenario (IFS06+RRU)

- IFS06+RRU (DC RRU)

In this scenario, three RRUs or six RRUs are installed. The configurations and installations of the RRUs in the IFS06+RRU scenario and in the IFS06+IMB03+RRU scenario are the same. For details, see [RRU and IMB03 combination installation scenario \(IFS06+IMB03+RRU\)](#). [Figure 3-29](#) takes the installation of six RRUs as an example.

Figure 3-29 Installation of the DC RRUs on the IFS06

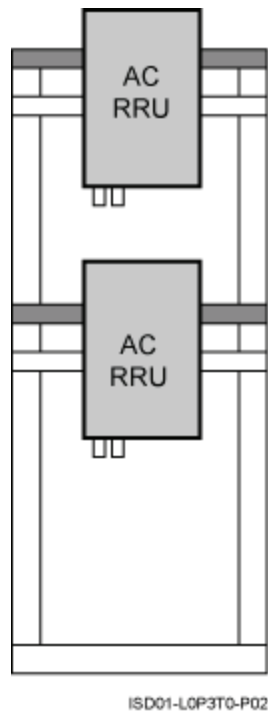


- IFS06+RRU (AC RRU)

[Figure 3-30](#) shows the installation of AC RRUs on the IFS06.

 **NOTE**

The description of the AC RRU in this document is based on the AC RRU3908.

Figure 3-30 Installation of AC RRUs on the IFS06

Height-Unrestricted Scenario (+24 V)

This section describes the +24 V height-unrestricted scenario. In this scenario, RRUs can be installed on the IFS06 with the IMB03 or on the IFS06 independently.

RRU and IMB03 combination installation scenario (IFS06+IMB03+RRU)

In this scenario, three RRUs, six RRUs, or 12 RRUs are installed.

- IFS06+IMB03+RRU (Three DC RRUs)

Figure 3-31 Height-unrestricted scenario (+24 V DC)

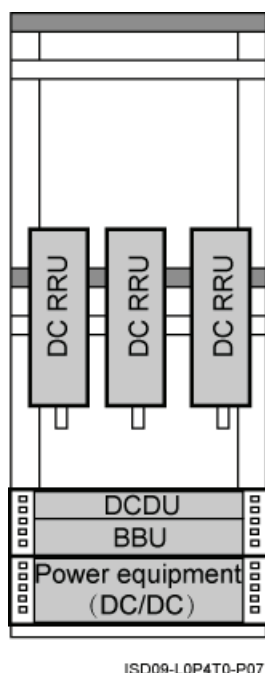


Table 3-33 Installation of three RRUs (on the lower part of the IFS06 by default)

Position	GSM Mode	UMTS Mode	LTE Mode	GSM+UMTS/ GSM+LTE
Lower part	Three RRU3008s, or three RRU3004s	Three RRU3804s, three RRU3801Es, three RRU3806s, three RRU3808s, or three RRU3805s	Three RRU3201s, three RRU3211s, three RRU3203s, three RRU3233s, three RRU3222s, or three RRU3232s	Three RRU3908s, or three RRU3920s

NOTE

The RRU3008, and RRU3004 support the GSM mode. The following description is based on the RRU3008.
The RRU3804, RRU3801E, RRU3806, RRU3808, and RRU3805 support the UMTS mode. The following description is based on the RRU3804.
The RRU3201, RRU3211, RRU3203, RRU3233, RRU3222, and RRU3232 support the LTE mode. The following description is based on the RRU3201.
The RRU3908 and RRU3920 support the multi-mode. The following description is based on the RRU3908.

- IFS06+IMB03+RRU (Six DC RRUs)

Figure 3-32 Height-unrestricted scenario (+24 V DC)

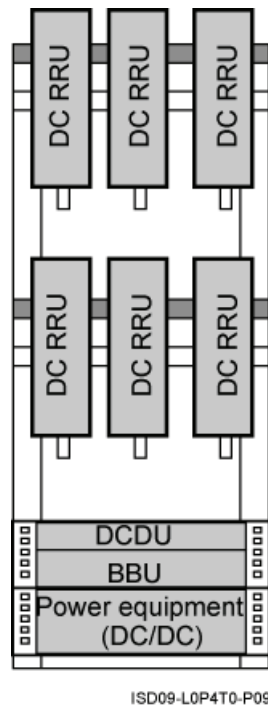


Table 3-34 Installation of 6 RRUs (in GSM+UMTS mode)

Position	GSM Mode	UMTS Mode	GSM +UMTS Mode	GSM +UMTS Hybrid Co-Cabinet	GSM +UMTS Co-Cabinet
Upper part	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3908s	Three RRU3008s
Lower part	Three RRU3008s	Three RRU3804s	Three RRU3908s	Three RRU3804s	Three RRU3804s

Table 3-35 Installation of 6 RRUs (in GSM+LTE mode)

Position	GSM Mode	LTE Mode	GSM+LTE Hybrid Co-Cabinet	GSM+LTE Co-Cabinet
Upper part	Three RRU3008s	Three RRU3201s	Three RRU3908s	Three RRU3008s
Lower part	Three RRU3008s	Three RRU3201s	Three RRU3201s	Three RRU3201s

Table 3-36 Installation of 6 RRUs (in UMTS+LTE mode)

Position	UMTS Mode	LTE Mode	UMTS+LTE Co-Cabinet
Upper part	Three RRU3804s	Three RRU3201s	Three RRU3804s
Lower part	Three RRU3804s	Three RRU3201s	Three RRU3201s

- IFS06+IMB03+RRU (12 DC RRUs)

Figure 3-33 Height-unrestricted scenario (+24 V DC)

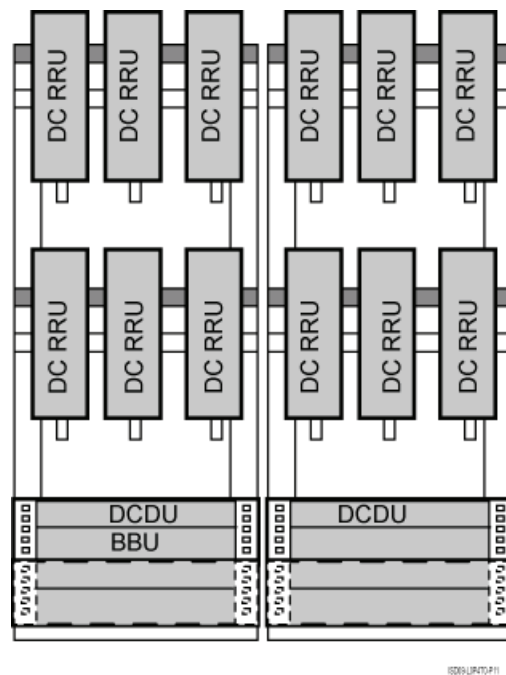


Table 3-37 Installation of 12 RRUs (in GSM+UMTS mode)

Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR1	Six RRU3908s	Six RRU3008s
ICR2	Six RRU3804s	Six RRU3804s

Table 3-38 Installation of 12 RRUs (in GSM+LTE mode)

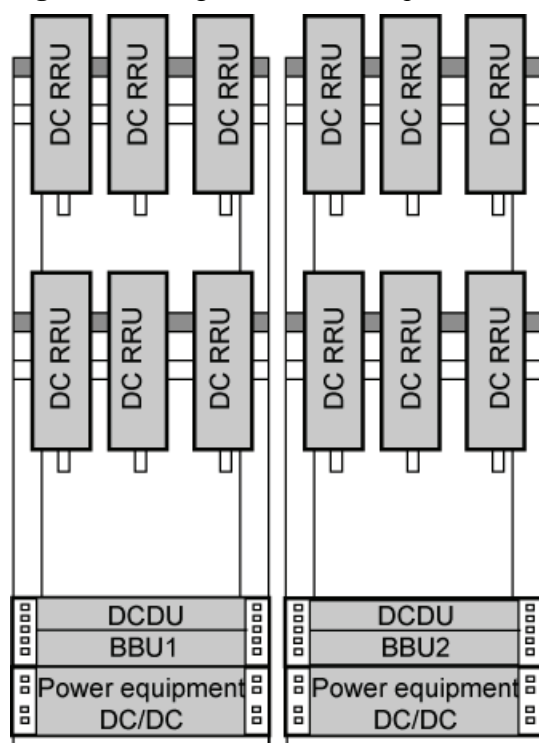
Position	GSM+UMTS Hybrid Co-Cabinet	GSM+UMTS Co-Cabinet
ICR1	Six RRU3908s	Six RRU3008s
ICR2	Six RRU3201s	Six RRU3201s

Table 3-39 Installation of 12 RRUs (in UMTS+LTE mode)

Position	UMTS+LTE Co-Cabinet
ICR1	Six RRU3804s
ICR2	Six RRU3201s

 **NOTE**

When 12 RRUs are configured, one BBU is added in the triple mode scenario, as shown in [Figure 3-34](#).

Figure 3-34 Height-unrestricted triple-mode scenario (+24 V DC)

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Table 3-40 Installation of 12 RRUs (in GSM+UMTS+LTE mode)

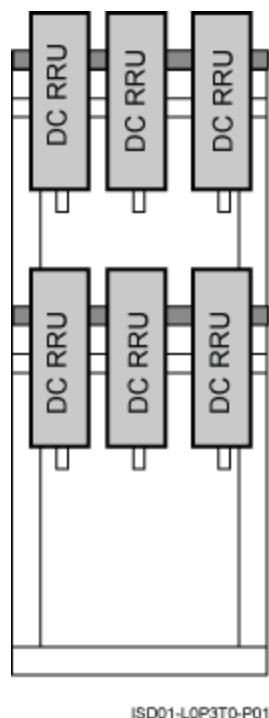
Position	GU+LTE	GL+UMTS
ICR1	Six RRU3908s	Six RRU3908s
ICR2	Six RRU3201s	Six RRU3804s

Independent RRU installation scenario (IFS06+RRU)

In this scenario, three RRUs or six RRUs are installed. The configurations and installations of the RRUs in the IFS06+RRU scenario and in the IFS06+IMB03+RRU scenario are the same.

For details, see **RRU and IMB03 combination installation scenario (IFS06+IMB03+RRU)**. **Figure 3-35** takes the installation of six RRUs as an example.

Figure 3-35 Installation of the DC RRUs on the IFS06



3.3 Dimensions and Installation Clearance Requirements

This section describes the dimensions and installation clearance requirements for the relevant devices.

Dimensions

Figure 3-36 shows the dimensions of the IFS06.

Figure 3-36 Dimensions of the IFS06

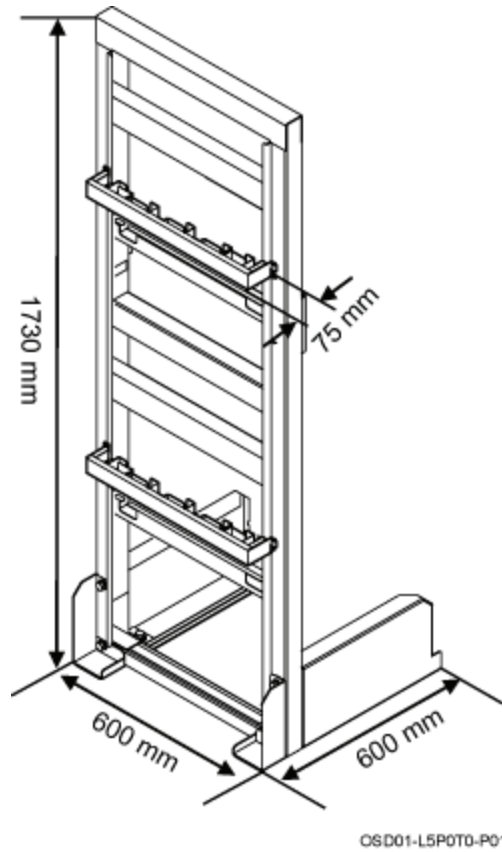
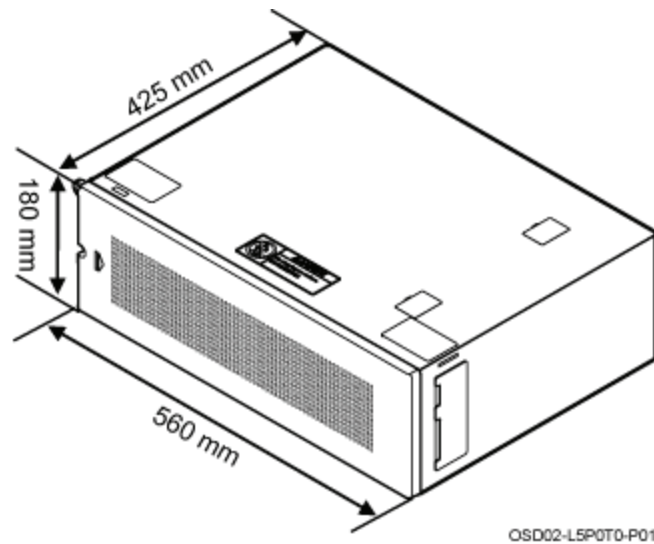


Figure 3-37 shows the dimensions of the IMB03.

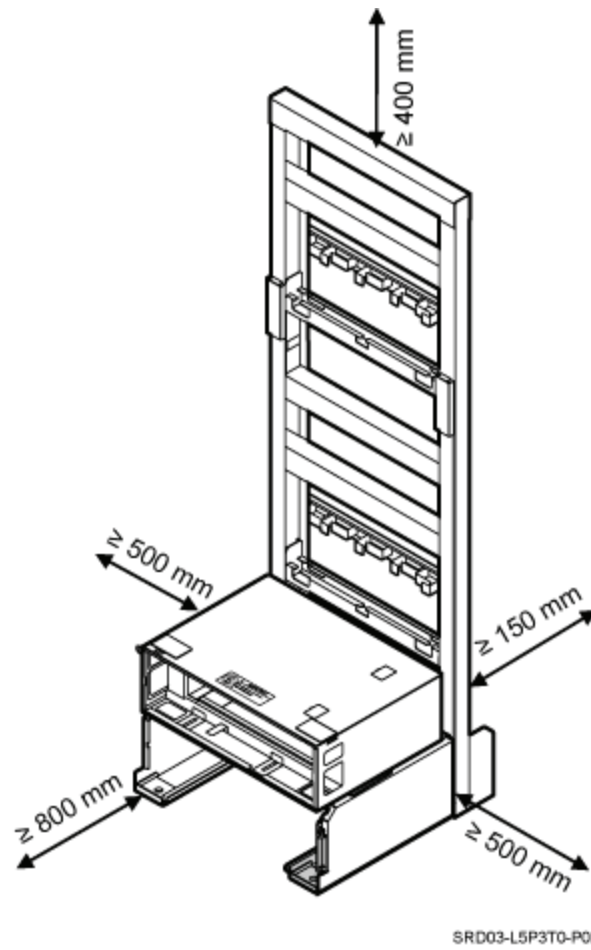
Figure 3-37 Dimensions of the IMB03



Recommended Clearance for the ICR (DC-RRU-Based)

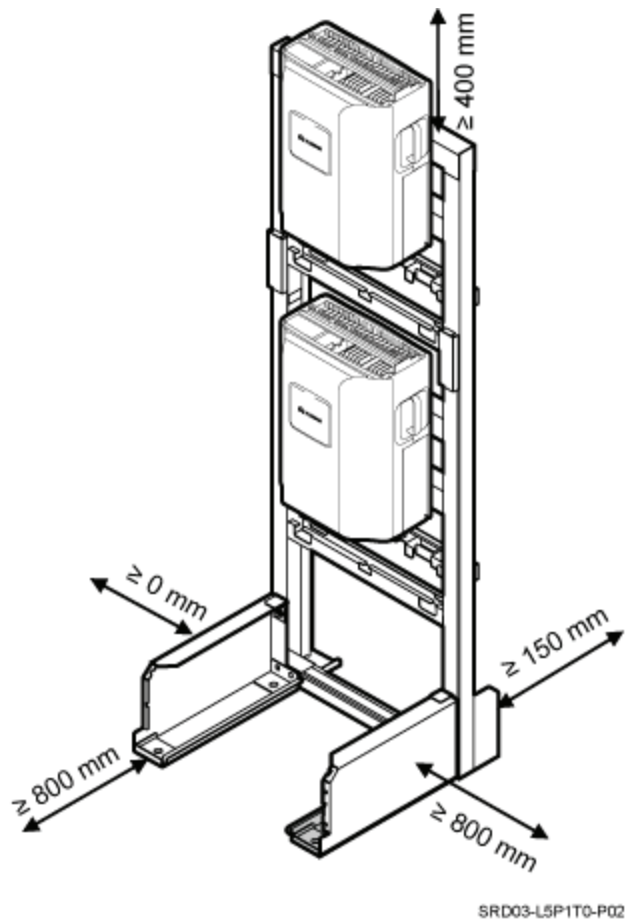
Figure 3-38 shows the recommended clearance for installing the ICR where the DC RRU is installed.

Figure 3-38 Recommended clearance for the ICR (DC-RRU-based)



Recommended Clearance for the ICR (AC-RRU-Based)

Figure 3-39 shows the recommended clearance for installing the ICR where the AC RRU is installed.

Figure 3-39 Recommended clearance for the ICR (AC-RRU-based)**NOTE**

When the recommended clearance is provided, the IFS06 where the AC RRU is installed can be installed with its left side against the wall.

Minimum Clearance for the ICR (DC-RRU-Based)

Figure 3-40 and **Figure 3-41** show the minimum clearance for installing the ICR where the DC RRU is installed.

Figure 3-40 Minimum clearance for the ICR in the height-unrestricted scenario

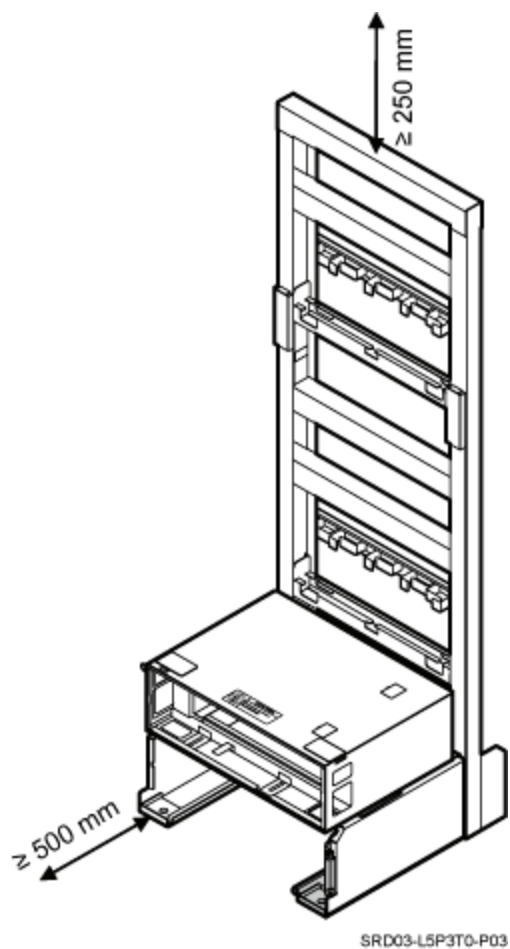
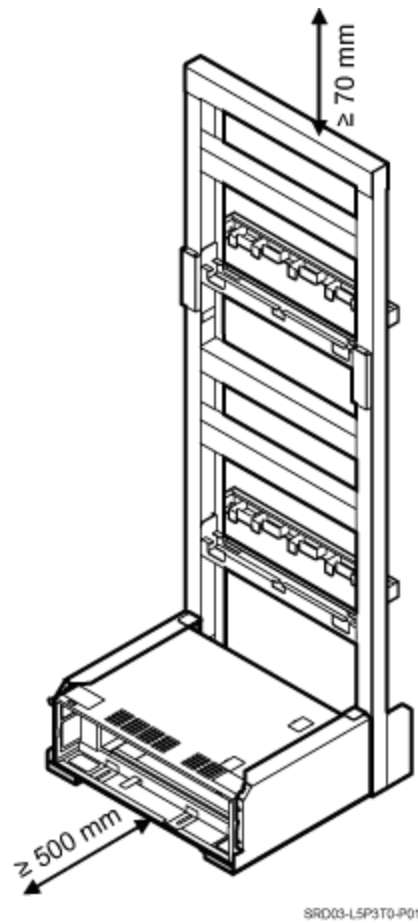


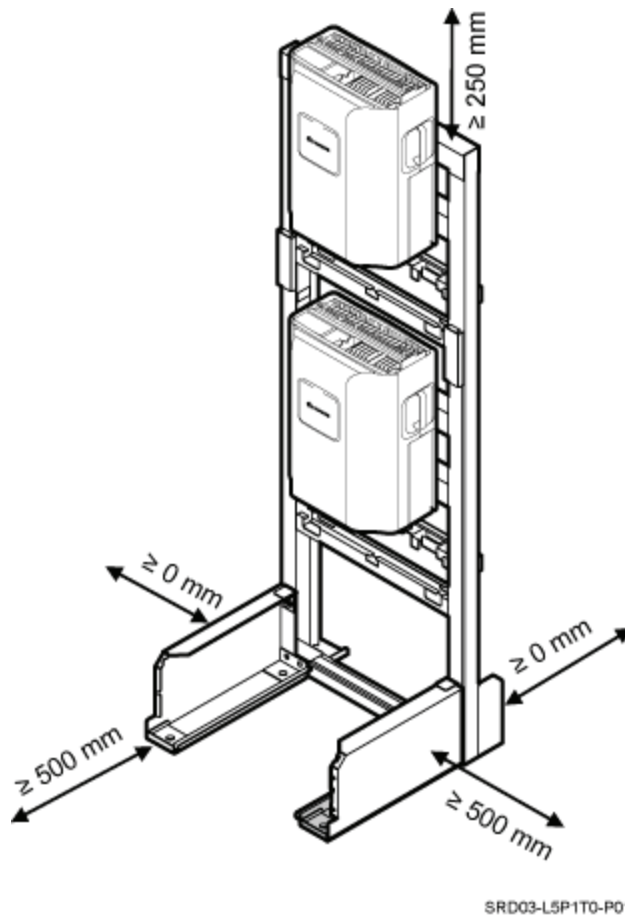
Figure 3-41 Minimum clearance for the ICR in the height-restricted scenario**NOTE**

When the minimum clearance is provided, the IFS06 where the DC RRU is installed can be installed with its back and both sides against the wall.

Minimum Clearance for the ICR (AC-RRU-Based)

Figure 3-42 shows the minimum clearance for the installing the ICR where the AC RRU is installed.

Figure 3-42 Minimum clearance for the ICR (AC-RRU-based)



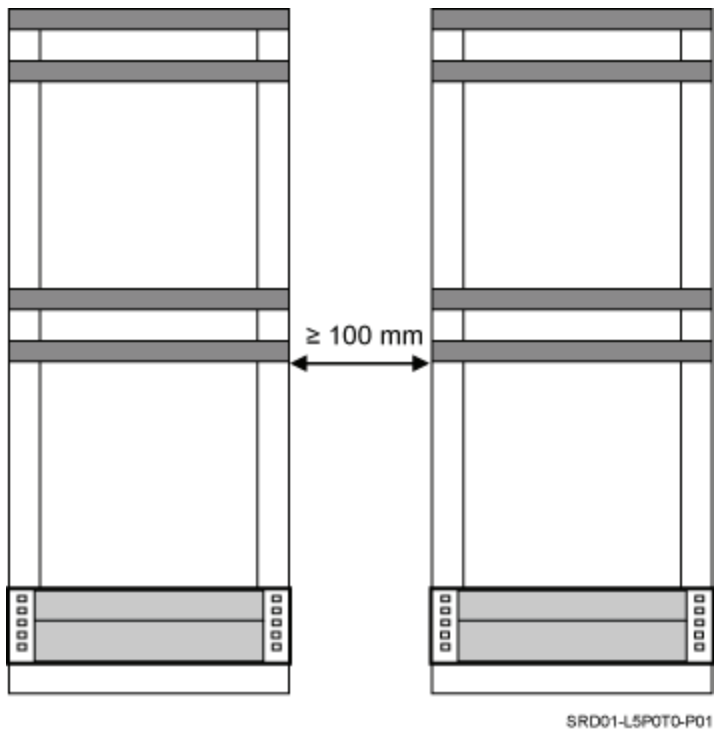
NOTE

When the minimum clearance is provided, the IFS06 where the AC RRU is installed can be installed with its back and left side against the wall.

Clearance Requirements for Combined Cabinets

Figure 3-43 shows the clearance requirements for combined cabinets.

Figure 3-43 Clearance requirements for combined cabinets



4 Unpacking the Equipment

Unpack and check the delivered equipment to ensure that all the materials are included and intact.

Context

 **NOTE**

When transporting, moving, or installing the equipment, components, or parts, you must:

- Prevent them from colliding with doors, walls, shelves, or other objects.
- Wear clean gloves, and avoid touching the equipment, components, or parts with bare hands, sweat-soaked gloves, or dirty gloves.

Procedure

Step 1 Check the total number of articles in each case according to the packing list.

If ...	Then ...
The total number tallies with the packing list	Go to Step 2 .
The total number does not tally with the packing list	Find out the cause and report any missing articles to the local Huawei office.

Step 2 Check the exterior of the packing case.

If ...	Then ...
The outer packing is intact	Go to Step 3 .
The outer packing is severely damaged or soaked	Find out the cause and report it to the local Huawei office.

Step 3 Check the type and quantity of the equipment in the cases according to the packing list.

If ...	Then ...
Types and quantity of the article tally with those on the packing list	Sign the <i>Packing List</i> with the customer.
There is any shipment shortage or wrong shipment	Fill in and submit the <i>Cargo Shortage and Mishandling Report</i> .
Articles are damaged.	Fill in and submit the <i>Article Replacement Report</i> .

**WARNING**

To protect the equipment and prevent damage to the equipment, you are advised to keep the unpacked equipment and packing materials indoors, take photos of the stocking environment, packing case or carton, packing materials, and any rusted or eroded equipment, and then file the photos.

---End