



**DBS3900 LampSite**

# **Site Maintenance Guide**

**Issue**      07

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# About This Document

## Overview

This document describes routine maintenance items for a BBU, DCU3900, RHUB3908, pRRU3901, pRRU3902, pRRU3907 and pRRU3911, such as equipment maintenance, and power-on and power-off operations. It also explains how to replace the components and modules.

### NOTE

- Unless otherwise specified, BBU in this document refers to BBU3900 and BBU3910. For details of the BBU site maintenance guide, see *DBS3900 Site Maintenance Guide*.
- DCU3900 referred to as DCU in this document. For details about the hardware maintenance guide of the DCU, see *DCU3900 Hardware Maintenance Guide*.
- RHUB3908 referred to as RHUB in this document.
- Unless otherwise specified, pRRU in this document refers to pRRU3901, pRRU3902, pRRU3907 and pRRU3911.

## Product Version

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

Product Name	Solution Version	Product Version
DBS3900 LampSite	<ul style="list-style-type: none"><li>● SRAN10.1 and later versions</li><li>● RAN17.1 and later versions</li><li>● eRAN8.1 and later versions</li><li>● eRAN TDD 8.1 and later versions</li></ul>	V100R010C10 and later versions

## Intended Audience

This document is intended for:

- System engineers

- Site maintenance engineers

## Organization

### 1 Changes in DBS3900 LampSite Site Maintenance Guide

This chapter provides information about the changes in different document versions of *DBS3900 LampSite Site Maintenance Guide*.

### 2 Device Maintenance Items

This chapter describes the device maintenance items.

### 3 Powering On and Powering Off the RHUB

After the RHUB is powered on, check the indicator status. Power off the RHUB in normal or emergency mode as required.

### 4 Powering On and Powering Off the pRRU3901

After the pRRU3901 is powered on, check the power supply voltage and indicator status. Power off the pRRU3901 based on the power supply mode.





### 5 Replacing the Devices


This chapter describes the procedures and cautions when replacing the devices.

## Conventions

### Symbol Conventions

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

Symbol	Description
 <b>DANGER</b>	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
 <b>WARNING</b>	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 <b>CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
 <b>NOTICE</b>	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.

Symbol	Description
 <b>NOTE</b>	<p>Calls attention to important information, best practices and tips.</p> <p>NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.</p>

### 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.
<b>Boldface</b>	Names of files, directories, folders, and users are in <b>boldface</b> . For example, log in as user <b>root</b> .
<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
<b>Boldface</b>	The keywords of a command line are in <b>boldface</b> .
<i>Italic</i>	Command arguments are in <i>italics</i> .
[ ]	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
<b>Boldface</b>	Buttons, menus, parameters, tabs, window, and dialog titles are in <b>boldface</b> . For example, click <b>OK</b> .
>	Multi-level menus are in <b>boldface</b> and separated by the ">" signs. For example, choose <b>File &gt; Create &gt; Folder</b> .

### Keyboard Operations

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

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

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# Contents

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<b>About This Document.....</b>	<b>ii</b>
<b>1 Changes in DBS3900 LampSite Site Maintenance Guide.....</b>	<b>1</b>
<b>2 Device Maintenance Items.....</b>	<b>4</b>
2.1 RHUB Maintenance Items.....	5
2.2 pRRU Maintenance Items.....	8
<b>3 Powering On and Powering Off the RHUB.....</b>	<b>10</b>
3.1 Powering On the RHUB.....	11
3.2 Powering Off the RHUB.....	12
<b>4 Powering On and Powering Off the pRRU3901.....</b>	<b>13</b>
4.1 Powering On the pRRU.....	14
4.2 Powering Off the pRRU.....	16
<b>5 Replacing the Devices.....</b>	<b>17</b>
5.1 Replacing the RHUB.....	18
5.2 Replacing an Optical Module.....	21
5.3 Replacing the pRRU.....	23

# 1 Changes in DBS3900 LampSite Site Maintenance Guide

This chapter provides information about the changes in different document versions of *DBS3900 LampSite Site Maintenance Guide*.

## 07 (2016-05-30)

This is the seventh commercial release.

Compared with 05 (2015-10-30), no information is added.

Compared with 05 (2015-10-30), this issue incorporates the following changes:

Content	Change Description
<a href="#">2.2 pRRU Maintenance Items</a>	Added the informations of pRRU3902, pRRU3907, pRRU3911.
<a href="#">5.3 Replacing the pRRU</a>	

Compared with 05 (2015-10-30), this issue deletes the following new topics:

- pRRU3902 Maintenance Items
- pRRU3907 Maintenance Items
- pRRU3911 Maintenance Items
- Replacing the pRRU3902
- Replacing the pRRU3907
- Replacing the pRRU3911

## 06 (2015-12-30)

This is the sixth commercial release.

Compared with 05 (2015-10-30), this issue includes the following new topics:

- pRRU3911 Maintenance Items
- Replacing the pRRU3911



Compared with 05 (2015-10-30), no information is changed.

Compared with 05 (2015-10-30), no information is deleted.

## 05 (2015-10-30)

This is the fifth commercial release.

Compared with 04 (2015-07-30), this issue includes the following new topics:

- pRRU3907 Maintenance Items
- Replacing the pRRU3907

Compared with 04 (2015-07-30), no information is changed.

Compared with 04 (2015-07-30), no information is deleted.

## 04 (2015-07-30)

This is the fourth commercial release.

Compared with 03 (2015-06-30), no information is added.

Compared with 03 (2015-06-30), this issue incorporates the following change:

Content	Change Description
Entire document	Added the RHUB that has no electrical transmission port.

Compared with 03 (2015-06-30), no information is deleted.

## 03 (2015-06-30)

This is the third commercial release.

Compared with 02 (2015-05-08), no information is added.

Compared with 02 (2015-05-08), this issue incorporates the following change:

Content	Change Description
Entire document	Added the descriptions about the DCU.

Compared with 02 (2015-05-08), no information is deleted.

## 02 (2015-05-08)

This is the second commercial release.

Compared with 01 (2015-03-23), no information is added.

Compared with 01 (2015-03-23), this issue incorporates the following change:

Content	Change Description
<a href="#">2.2 pRRU Maintenance Items</a>	Deleted the descriptions about voltage measuring of the pRRU.

Compared with 01 (2015-03-23), no information is deleted.

## 01 (2015-03-23)

This is the first commercial release.

Compared with draft A (2015-01-15), no information is added.

Compared with draft A (2015-01-15), this issue incorporates the following change:

Content	Change Description
Entire document	Added the descriptions about the pRRU3902.

Compared with draft A (2015-01-15), no information is deleted.

## Draft A (2015-01-15)

This is a draft release.

Compared with Issue 05 (2014-12-30) of V100R009C00, no information is added.

Compared with Issue 05 (2014-12-30) of V100R009C00, this issue incorporates the following change:

Content	Change Description
Entire document	The base station in the LampSite solution is renamed DBS3900 LampSite.

Compared with Issue 05 (2014-12-30) of V100R009C00, no information is deleted.

# 2 Device Maintenance Items

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## About This Chapter

This chapter describes the device maintenance items.

### [2.1 RHUB Maintenance Items](#)

This chapter describes the RHUB maintenance items, involving the equipment room, equipment, power system, and grounding system.

### [2.2 pRRU Maintenance Items](#)

This chapter describes the pRRU maintenance items, involving equipment and power system.

## 2.1 RHUB Maintenance Items

This chapter describes the RHUB maintenance items, involving the equipment room, equipment, power system, and grounding system.

### Equipment Room Maintenance Items

**Table 2-1** lists the equipment room maintenance items.

**Table 2-1** Equipment room maintenance items

Item	Check Frequency	Operation	Reference Standard
Environment alarms in the equipment room	Daily	Check whether any power alarm, fire alarm, or smoke alarm is reported.	No power alarm, fire alarm, or smoke alarm is reported.
Temperature in the equipment room	Each time maintenance is performed	Record temperatures in the equipment room measured by a thermometer.	-5°C to +50°C
Humidity in the equipment room	Each time maintenance is performed	Record humidity in the equipment room measured by a hygrometer.	5%RH to 95%RH
Lighting system in the equipment room	Every other month	Check whether the routine lighting system and emergency lighting system are running properly.	-
Air conditioner	Every other month	Check whether the air conditioner is running properly.	-

Item	Check Frequency	Operation	Reference Standard
Disaster protection devices	Every one month	Check whether the disaster protection, equipment protection, and firefighting devices are normal.	<ul style="list-style-type: none"> <li>● The equipment room is equipped with portable foam-type extinguishers, and the pressure and expiration date must be checked.</li> <li>● The equipment room has no mice, ants, flying insects, or other risks.</li> </ul>
Cleanness	Every one month	Check whether the cabinet, equipment housing, equipment interior, desktop, floor, door, and window are clean and tidy.	All these items are clean and tidy.

## Equipment Maintenance Items

**Table 2-2** lists the equipment maintenance items.

**Table 2-2** Equipment maintenance items

Item	Check Frequency	Operation	Reference Standard
Fan in the PSU	Monthly or quarterly	Check whether the fan is working properly.	The fan works properly without any abnormal smell or sound.
Equipment surface	Monthly or quarterly	Check whether the equipment surface is intact.	The equipment surface is intact and the label of the cabinet is legible.
Equipment cleanness	Monthly or quarterly	Check whether the equipment is clean.	The equipment surface is clean.

Item	Check Frequency	Operation	Reference Standard
Indicators	Monthly or quarterly	Check whether the indicators on the equipment are working properly.	For details about the indicator status, see RHUB Ports and Indicators in <i>DBS3900 LampSite Hardware Description</i> .
Electrostatic discharge (ESD) wrist strap	Quarterly	Check the ESD wrist strap in either of the following ways: <ul style="list-style-type: none"> <li>● Use an ESD wrist strap tester to check the ESD wrist strap.</li> <li>● Use a multimeter to test the ground resistance of the ESD wrist strap.</li> </ul>	If you use an ESD wrist strap tester, the GOOD indicator is on. If you use a multimeter, the ground resistance of the ESD wrist strap ranges from 0.75 ohms to 10 ohms.

## Maintenance Items for the Power System and Grounding System

**Table 2-3** lists the maintenance items for the power system and grounding system.

**Table 2-3** Maintenance items for the power system and grounding system

Item	Check Frequency	Operation	Reference Standard
Power cables	Monthly or quarterly	Check the power cable connections.	The power cables are securely connected and not deteriorating. The joints are not corroded.
Voltage	Monthly or quarterly	Use a multimeter to measure the voltage of the power supply.	The voltage is in the permissible range.
PGND cables	Monthly or quarterly	Checks whether the PGND cables and ground bar are securely connected.	The joints are secure and not corroded. The PGND cables and ground bar are not deteriorated and are protected from corrosion.

Item	Check Frequency	Operation	Reference Standard
Ground resistance	Monthly or quarterly	Use a ground resistance tester to measure the ground resistance and record the measurement result.	The ground resistance is equal to or less than 10 ohms.

## 2.2 pRRU Maintenance Items

This chapter describes the pRRU maintenance items, involving equipment and power system.

### Equipment Maintenance Items

[Table 2-4](#) lists the equipment maintenance items for the pRRU.

**Table 2-4** Equipment maintenance items

Item	Check Frequency	Operation	Reference Standard
Equipment surface	Monthly or quarterly	Check whether the equipment surface is intact.	The equipment surface is intact and the label of the cabinet is legible.
Equipment cleanness	Monthly or quarterly	Check whether the equipment is clean.	The equipment surface is clean.
Indicators	Monthly or quarterly	Check whether the indicators on the equipment are working properly.	For details about the indicator status, see the chapter of <i>Ports and Indicators</i> in <i>DBS3900 LampSite Hardware Description</i> .

#### NOTE

For details about the ports and indicators of different pRRU models, see:

- pRRU: pRRU3901 Ports and Indicators
- pRRU (TDD): pRRU3901 Ports and Indicators
- pRRU3902: pRRU3902 Ports and Indicators
- pRRU3907: pRRU3907 Ports and Indicators
- pRRU3911: pRRU3911 Ports and Indicators
- pRRU3911: pRRU3916 Ports and Indicators

## Power System Maintenance Items

**Table 2-5** lists the power system maintenance items for the pRRU.

**Table 2-5** Power system maintenance items

Item	Check Frequency	Operation	Reference Standard
Power cables	Monthly or quarterly	Check the power cable connections.	The power cables are securely connected and not deteriorating. The joints are not corroded.



# 3 Powering On and Powering Off the RHUB

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## About This Chapter

After the RHUB is powered on, check the indicator status. Power off the RHUB in normal or emergency mode as required.

### [3.1 Powering On the RHUB](#)

The RHUB is powered by AC input.

### [3.2 Powering Off the RHUB](#)

An RHUB can be powered off in two ways: normal power-off and emergency power-off. You need to perform a normal power-off in scenarios such as an equipment swap or foreseeable regional blackout, and you need to perform an emergency power-off in emergencies such as a fire, smoke, or water damage in indoor scenarios.

## 3.1 Powering On the RHUB

The RHUB is powered by AC input.

### Prerequisites

The power cable of the RHUB is not connected to power, that is, the power plug is removed.

### Context



### NOTICE

The RHUB must be powered on within 7 days after it is unpacked, and the period of its power-off state cannot exceed 7 days during maintenance.

### Procedure

**Step 1** Insert the power plug to power on the RHUB.

**Step 2** Wait 3 to 5 minutes. Then check the status of the RUN indicator.

If the RUN Indicator Is...	It Indicates that...	Then...
Steady on	There is power input, but the board is faulty.	Disable the power supply, rectify the board fault, and then power on the RHUB again.
Steady off	There is no power input, or an alarm about the board is reported.	Disable the power supply and check the power input again. If the power input is normal, rectify the board fault, and then power on the RHUB again.
1s on and 1s off	The RHUB is running properly.	End the power-on check task.
0.125s on and 0.125s off	The board software is being loaded.	If the loading is not complete after 5 minutes, disable the power supply and check whether the data in the configuration file is correct. Rectify the fault and then power on the RHUB again.

----End

## 3.2 Powering Off the RHUB

An RHUB can be powered off in two ways: normal power-off and emergency power-off. You need to perform a normal power-off in scenarios such as an equipment swap or foreseeable regional blackout, and you need to perform an emergency power-off in emergencies such as a fire, smoke, or water damage in indoor scenarios.

### Procedure

- Normal power-off



### NOTICE

Powering off the RHUB interrupts services, and therefore perform associated operations before a power-off.

---

- a. Remove the power plug to disconnect the RHUB with the external power input.
  - b. If the RHUB is equipped with an external power device, turn off the switch of the external power device.
- Emergency power-off
    - a. Turn off the switch of the external power device.

----End

# 4 Powering On and Powering Off the pRRU3901

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## About This Chapter

After the pRRU3901 is powered on, check the power supply voltage and indicator status. Power off the pRRU3901 based on the power supply mode.

### [4.1 Powering On the pRRU](#)

After the pRRU is powered on, check its running status by observing the indicator status.

### [4.2 Powering Off the pRRU](#)

A pRRU can be powered off in two ways: normal power-off and emergency power-off. You need to perform a normal power-off in scenarios such as an equipment swap or foreseeable regional blackout, and you need to perform an emergency power-off in emergencies such as a fire, smoke, or water damage in indoor scenarios.

## 4.1 Powering On the pRRU

After the pRRU is powered on, check its running status by observing the indicator status.

### Prerequisites

The pRRU and the cables are correctly installed.

### Context

#### NOTE

The pRRU must be powered on within 7 days after it is unpacked, and the period of its power-off state cannot exceed 7 days during maintenance.

### Procedure

#### Step 1 Power on the pRRU.

The pRRU can be powered in PoE mode. The RHUB adopts the PoE power supply to provide power for the pRRU over the CPRI\_E0 port.

#### Step 2 Wait 3 to 5 minutes. Then Check the status of the RUN indicator on the pRRU3901 or 3GPP indicator on the pRRU3902, pRRU3907 and pRRU3911.

Module	If the RUN Indicator Is...	It Indicates that...	Then...
pRRU3901	Steady on	There is power input, but the board is faulty.	Disable the power supply, rectify the board fault, and then power on the pRRU3901 again.
	Steady off	There is no power input.	Disable the power supply and check the power input again.
	On for 1s and off for 1s	The pRRU3901 is running properly.	End the power-on check task.
	On for 0.125s and off for 0.125s	The board software is being loaded.	If the loading is not complete after 5 minutes, disable the power supply. Check whether the data in the configuration file is correct. Rectify the fault and then power on the pRRU3901 again.

Module	If the RUN Indicator Is...	It Indicates that...	Then...
pRRU3902/ pRRU3907/ pRRU3911/ pRRU3916	Blinks white at 4 Hz	The pRRU is loading software, configuring data, or it is not running.	Wait until the software is loaded. If the loading is not completed in five minutes, power off the pRRU and check whether the data configuration file is correct. After the fault is rectified, power on the pRRU again.
	Blinks white at 0.5 Hz (on for 1s and off for 1s)	The pRRU is working properly and does not transmit power.	Check whether the services have been configured and power amplification have been enabled on the pRRU.
	Is steady white	The cell is set up and transmits power properly.	No further action is required.
	Is steady orange.	There is power input, but the hardware is faulty.	Power off the pRRU, rectify the hardware fault, and then power it on again.
	Blinks orange at 0.5 Hz (on for 1s and off for 1s)	A minor alarm (indicating an HDLC link disconnection, for example) is generated.	Troubleshoot based on the alarm information.
	Is off	The board is not powered on.	Turn off the power supply switch and check whether the power input is normal. If the power input is normal, check for and rectify board faults, and turn on the power supply switch again.

----End

## 4.2 Powering Off the pRRU

A pRRU can be powered off in two ways: normal power-off and emergency power-off. You need to perform a normal power-off in scenarios such as an equipment swap or foreseeable regional blackout, and you need to perform an emergency power-off in emergencies such as a fire, smoke, or water damage in indoor scenarios.

### Procedure

- Normal power-off



### NOTICE

Powering off the pRRU interrupts services, and therefore perform associated operations before a power-off.

---

- a. Remove the Ethernet cable.
- Emergency power-off
    - a. Turn off the switch of the external power device.

---End

# 5 Replacing the Devices

---

## About This Chapter

This chapter describes the procedures and cautions when replacing the devices.

### [5.1 Replacing the RHUB](#)

The RHUB is an indoor convergence unit. It converges multiple pRRUs to the BBU. Replacing the RHUB interrupts services carried on the serving cell. RHUBs are classified into those with electrical transmission ports and those with no electrical transmission ports. Unless otherwise specified, this document uses the RHUBs with no electrical transmission ports as an example.

### [5.2 Replacing an Optical Module](#)

An optical module provides a port for opto-electronic conversion. This enables the transmission between the RHUB and BBU3900 through the optical fiber. Replacing the optical module requires removing the optical fibers. This interrupts all the services.

### [5.3 Replacing the pRRU](#)

pRRU is an indoor remote radio unit. It processes RF signals. Replacing the pRRU interrupts all the services carried on it.



## 5.1 Replacing the RHUB

The RHUB is an indoor convergence unit. It converges multiple pRRUs to the BBU. Replacing the RHUB interrupts services carried on the serving cell. RHUBs are classified into those with electrical transmission ports and those with no electrical transmission ports. Unless otherwise specified, this document uses the RHUBs with no electrical transmission ports as an example.

### Prerequisites

- A new RHUB is available.
- The labels and connections of the cables connected to the RHUB are recorded.
- The following tools are available: a Phillips screwdriver, an ESD wrist strap, and a rubber mallet.

### Context

It takes about 10 minutes to replace the RHUB.

### Procedure

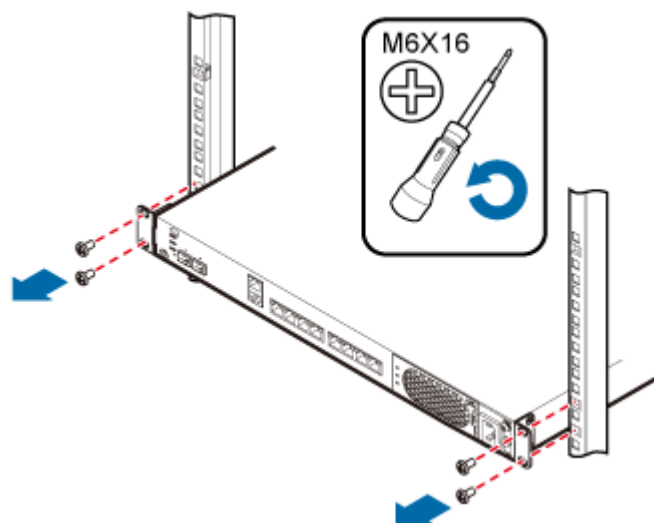
- Replace the RHUB installed on a 19-inch rack, in a 19-inch cabinet or in a 19-Inch Shelf.

#### NOTE

The procedures for replacing the RHUB installed on a 19-inch rack are the same for replacing the RHUB installed in a 19-inch cabinet or in a 19-Inch Shelf. The following uses the RHUB installed on a 19-inch rack as an example.

- a. Power off the RHUB by referring to [3.2 Powering Off the RHUB](#).
- b. Record the cable connections.
- c. Take insulation measures, and then remove all cables from the RHUB.
- d. Use a torque screwdriver or Phillips screwdriver to remove the four screws on the mounting ear of the RHUB, as shown in [Figure 5-1](#).

**Figure 5-1** Removing the mounting ear



- e. Remove the RHUB from the rack.
- f. Install the new RHUB. For details, see *DBS3900 LampSite Installation Guide*.



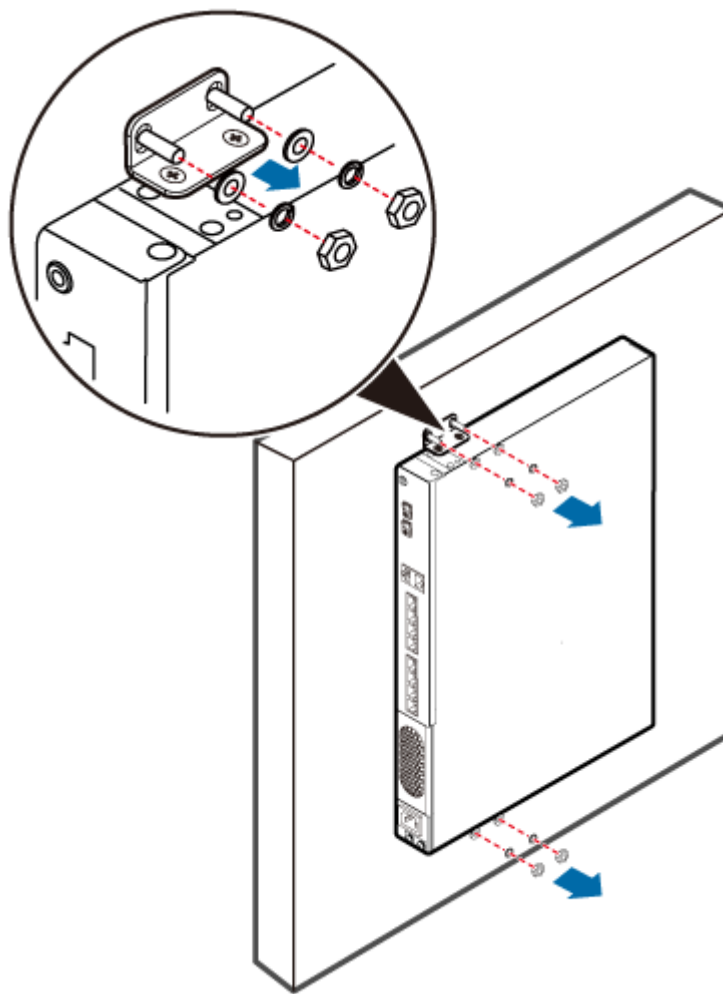
## NOTICE

Take proper ESD protection measures, such as wearing an ESD wrist strap or ESD gloves to prevent electrostatic damage to the boards, modules, or electronic components.

---

- g. Connect all the cables to the new RHUB according to the recorded installations.
- h. Power on the RHUB by referring to **3.1 Powering On the RHUB**.
- i. Determine whether the new RHUB is working properly according to the indicator status on the RHUB. For details about the indicator status, see RHUB Ports and Indicators in *DBS3900 LampSite Hardware Description*.
- Replace the RHUB installed on a wall.
  - a. Power off the RHUB by referring to **3.2 Powering Off the RHUB**.
  - b. Record the cable connections.
  - c. Take insulation measures, and then remove all cables from the RHUB.
  - d. Use a torque wrench or socket wrench to remove the four expansion bolts on the mounting ear, and then remove the RHUB, as shown in **Figure 5-2**.

**Figure 5-2** Removing the mounting ear



- e. Install the new RHUB on a wall. For details, see *DBS3900 LampSite Installation Guide*.



## NOTICE

Take proper ESD protection measures, such as wearing an ESD wrist strap or ESD gloves to prevent electrostatic damage to the boards, modules, or electronic components.

- f. Connect all the cables to the new RHUB according to the recorded installations.
- g. Power on the RHUB by referring to [3.1 Powering On the RHUB](#).
- h. Determine whether the new RHUB is working properly according to the indicator status on the RHUB. For details about the indicator status, see RHUB Ports and Indicators in *DBS3900 LampSite Hardware Description*.

----End

## Follow-up Procedure

- Place the replaced RHUB into an ESD box or bag. Then, place the ESD box or bag into a foam-padded carton or the packing box of the new optical module.
- Record the information about the faulty component in the fault card.
- Contact the local Huawei office to deal with the faulty component.

## 5.2 Replacing an Optical Module

An optical module provides a port for opto-electronic conversion. This enables the transmission between the RHUB and BBU3900 through the optical fiber. Replacing the optical module requires removing the optical fibers. This interrupts all the services.

### Prerequisites

- The number and type of faulty optical modules are confirmed, and new optical modules are available. The new optical modules to be installed must match CPRI rates.
- The position for installing an optical module and the cable connection are recorded.
- The following tools and materials are available: an ESD wrist strap or ESD gloves, and an ESD box or bag.

### Context

- The optical modules are connected to the CPRI0 and CPRI1 ports on the RHUB panel.
- An optical module or CPRI fiber optic cable cannot be inserted into or removed from this CPRI port when the power supply is connected.
- Replacing an optical module involves removing an optical fiber and the faulty optical module, installing a new optical module, connecting the optical fiber to the optical module, and recovering the links. The operation takes about 10 minutes.

#### NOTE

Take proper ESD protection measures, such as wearing an ESD wrist strap or ESD gloves to prevent electrostatic damage to the boards, modules, or electronic components.

### Procedure

**Step 1** Wear ESD gloves.

**Step 2** Record the optical module and fiber connections.

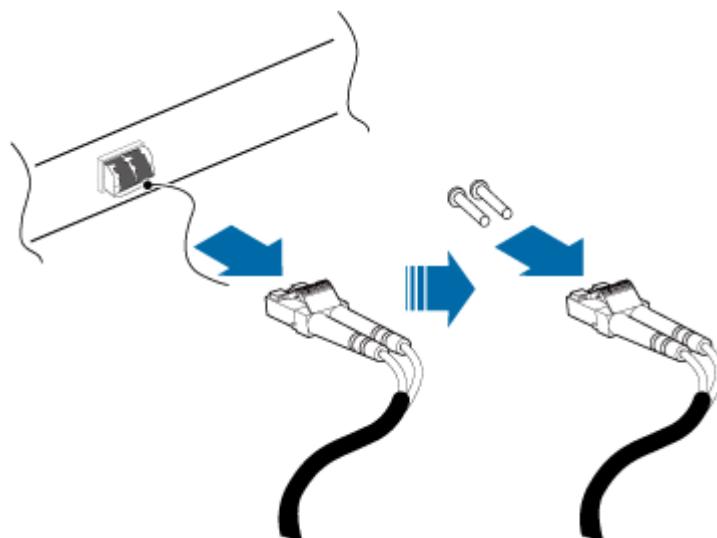
**Step 3** Power off the RHUB according to the instructions in [3.2 Powering Off the RHUB](#).

#### NOTE

After removing the optical fiber from the optical module, do not look directly at the optical modules without eye protection.

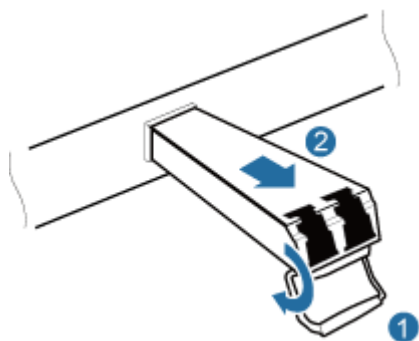
**Step 4** Press the latch on the connector of the optical fiber connector, and remove the connector from the faulty optical module, use the dust-proof cap to protect the optical fiber, as shown in [Figure 5-3](#).

**Figure 5-3** Removing the optical fiber



**Step 5** Turn the ring-pull on the faulty optical module outwards. Hold the ring-pull and take the faulty optical module out of the slot to remove it from the CPRI0 or CPRI1 port, as shown in [Figure 5-4](#).

**Figure 5-4** Removing the optical module



**Step 6** Install the new optical module onto the corresponding CPRI port, as shown in [Figure 5-5](#).

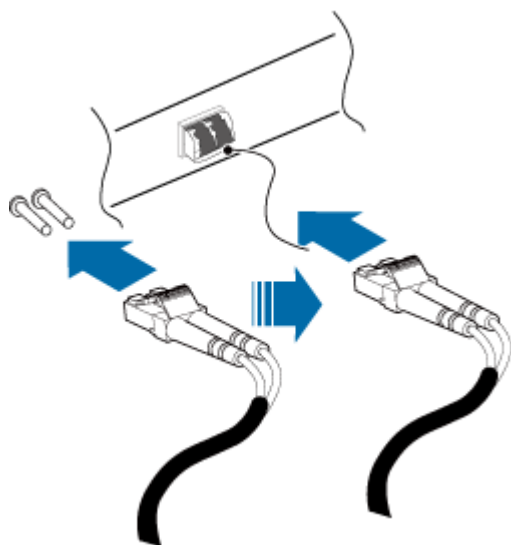
**Figure 5-5** Installing the new optical module



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**Step 7** Remove the dust-proof caps from the optical module and optical fiber, and connect the optical fiber connector to the new optical module, as shown in [Figure 5-6](#).

**Figure 5-6** Installing the optical fiber



**Step 8** Power on the RRU according to the instructions in [3.1 Powering On the RHUB](#).

**Step 9** Check whether CPRI signal transmission recovers by observing the CPRI indicator on the RHUB panel.

If...	Then...
The CPRI indicator is green	CPRI signal transmission recovers and the optical fiber replacement is successful.
The CPRI indicator is red or in another color	CPRI signal transmission is abnormal. Check whether the optical fiber and optical module are securely installed.

**Step 10** Take off the ESD gloves and pack up all the tools.

----End

## Follow-up Procedure

- Place the replaced optical module into an ESD box or bag. Then, place the ESD box or bag into a foam-padded carton or the packing box of the new optical module.
- Record the information about the faulty component in the fault card.
- Contact the local Huawei office to deal with the faulty component.

## 5.3 Replacing the pRRU

pRRU is an indoor remote radio unit. It processes RF signals. Replacing the pRRU interrupts all the services carried on it.

### Prerequisites

- Replacing the pRRU when:

- The functional modules inside a pRRU or the housing of pRRU is damaged.
- Adding the RF daughter board or Wi-Fi daughter board.
- The hardware type is confirmed and a new pRRU is available.
- The labels and connections of the cables connected to the pRRU are recorded.
- The following tools are available: an electrostatic discharge (ESD) wrist strap and ESD gloves.

## Context

It takes about 5 minutes to replace the pRRU.

### NOTE

The pRRU can be installed on a metal pole, wall, or ceiling, and the procedures for replacing the pRRU are almost the same. The following uses a ceiling-mounted pRRU as an example.

## Procedure

**Step 1** Instruct the network operator to block the pRRU.

### NOTE

The DBS3900 LampSite solution supports immediate block, idle block, and delayed block. Application of idle block and delayed block produces the same effect as application of immediate block.

- pRRU3901:
  - On the UMTS side, log in to the LMT and run the **BLK BRD** command to block the RF daughter board of the pRRU.
  - On the LTE side, log in to the LMT and run the **BLK BRD** command to block the RF daughter board of the pRRU.
- pRRU3902/pRRU3907/pRRU3911/pRRU3916:
  - On the UMTS side, log in to the LMT and run the BLK BRD command to block the pRRU.
  - On the LTE side, log in to the LMT and run the BLK BRD command to block the pRRU.

**Step 2** Wear ESD gloves.

### NOTE

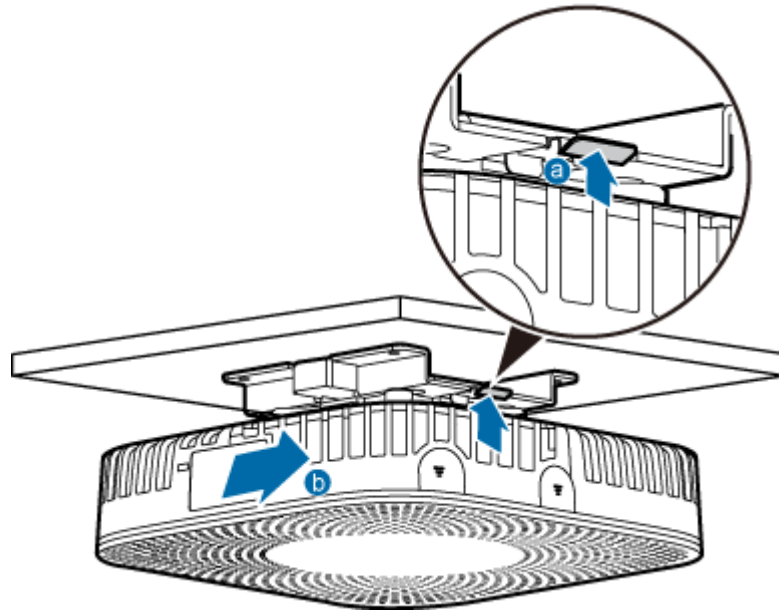
- Take proper ESD protection measures, such as wearing ESD gloves to prevent electrostatic damage to the boards, modules, or electronic components.
- A pRRU that has just been powered off has afterheat. Take scald-proof measures when removing the pRRU.

**Step 3** Power off the pRRU. For details, see [4.2 Powering Off the pRRU](#).

**Step 4** Removing the pRRU to be replaced.

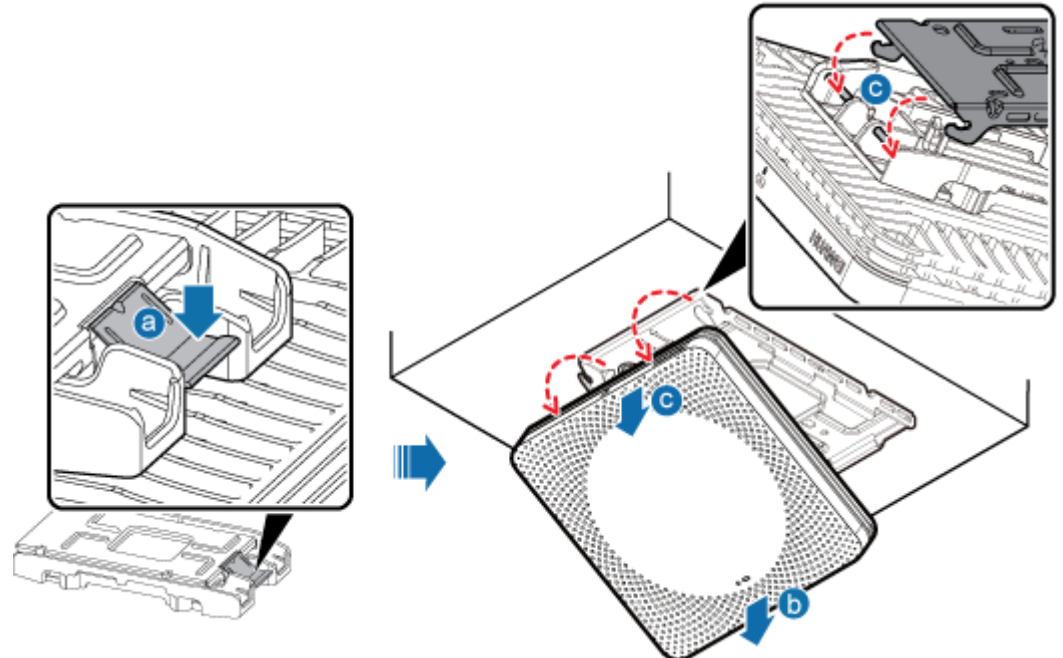
1. Record the cable connections.
2. Take insulation measures, and then remove all cables from the pRRU.
3. Removing the pRRU.
  - Removing the pRRU3901. Hold the pRRU3901 case in one hand and pull the hoist clamp on the mounting bracket with the other hand, as shown in step a in [Figure 5-7](#). Then, remove the mounting bracket from the pRRU3901, as shown in step b in [Figure 5-7](#).

**Figure 5-7** Removing the pRRU3901



- Removing the pRRU3902 or pRRU3911. Hold the pRRU case in one hand and apply force to the hoist clamp on the mounting bracket with the other hand, as shown in step a in **Figure 5-7**. Then, remove the mounting bracket from the pRRU, as shown in step b in **Figure 5-8**.

**Figure 5-8** Removing the pRRU



- Removing the pRRU3907 or pRRU3916. Remove the two dowels on the top of the attachment plate from the mounting kit, and push the pRRU upwards, as shown by illustrations b and c in **Figure 5-9**.



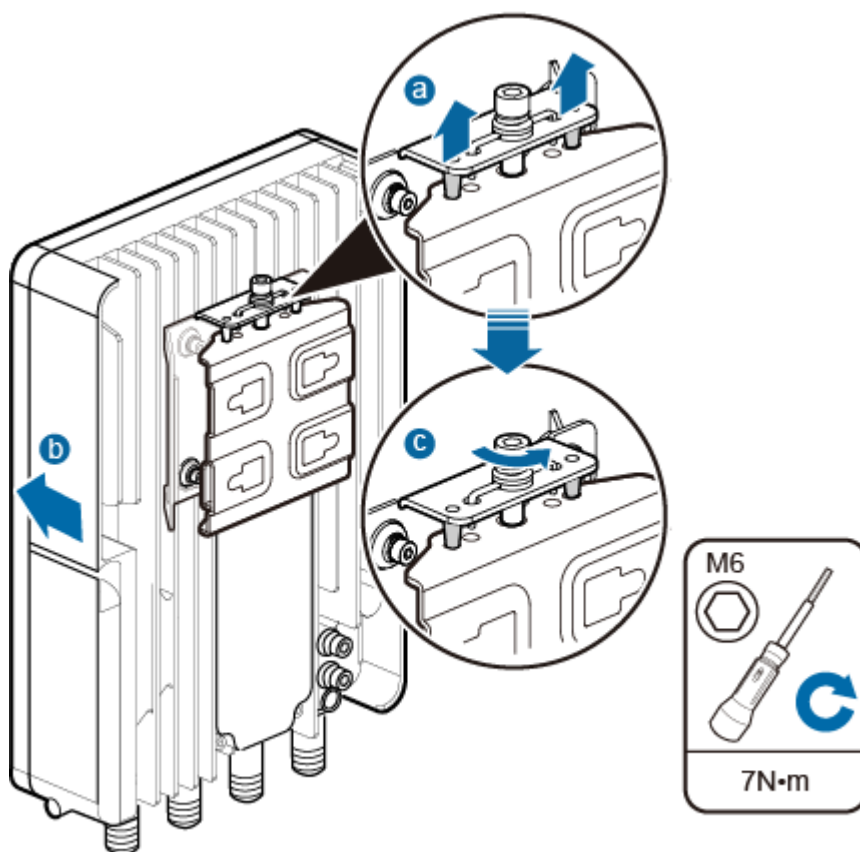
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 **NOTICE**

When removing the pRRU, hold the pRRU handle with one hand and support the bottom of the pRRU with the other hand. This prevents personnel injury caused by any falling pRRU.

---

**Figure 5-9** Removing the pRRU



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**Step 5** Install the new pRRU.

1. Install the new pRRU. The installation must be based on different scenarios. For details, see *DBS3900 LampSite Installation Guide*.
2. Connect the cables to the pRRU according to the recorded positions.

---

 **NOTICE**

Take proper ESD protection measures, such as wearing an ESD wrist strap or ESD gloves to prevent electrostatic damage to the boards, modules, or electronic components.

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**Step 6 Optional:** Instruct the network operator to run **MOD AP**, change the faulty pRRU WIFI MAC to the new pRRU WIFI MAC in AC Window, when pRRU with three transmission ports is configured with Wi-Fi daughter board.

**Step 7** Power on the pRRU by referring to [4.1 Powering On the pRRU](#).

**Step 8** Check whether the new pRRU is working properly according to the indicator status on the pRRU. For details about the indicator status, see the chapter of *Ports and Indicators* in *DBS3900 LampSite Hardware Description*.

 **NOTE**

For details about the ports and indicators of different pRRU models, see:

- pRRU: pRRU3901 Ports and Indicators
- pRRU (TDD): pRRU3901 Ports and Indicators
- pRRU3902: pRRU3902 Ports and Indicators
- pRRU3907: pRRU3907 Ports and Indicators
- pRRU3911: pRRU3911 Ports and Indicators
- pRRU3911: pRRU3916 Ports and Indicators

**Step 9** Instruct the network operator to unblock the pRRU.

- pRRU3901:
  - On the UMTS side, log in to the NodeB LMT and run the **UBL BRD** command to unblock the RF daughter board of the pRRU.
  - On the LTE side, log in to the eNodeB LMT and run the **UBL BRD** command to unblock the RF daughter board of the pRRU.
- pRRU3902/pRRU3907/pRRU3911/pRRU3916:
  - On the UMTS side, log in to the NodeB LMT and run the **UBL BRD** command to unblock the pRRU.
  - On the LTE side, log in to the eNodeB LMT and run the **UBL BRD** command to unblock the pRRU.

**Step 10** Take off the ESD gloves and pack up all the tools.

----**End**