

# RRU3668 Description

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# 1 Introduction

The RRU3668 is the outdoor remote radio unit which is powered by a power cabinet. It is the radio frequency (RF) module of the distributed eNodeB and is installed close to the antenna. The RRU3668 provides the following functions:

- Modulates and demodulates baseband signals and RF signals
- Processes data
- Amplifies power
- Detects standing waves

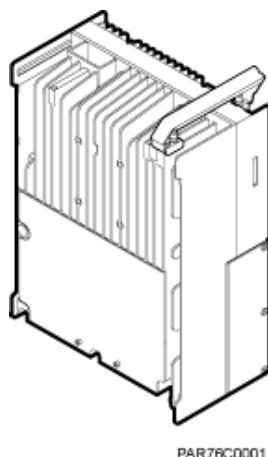
RRU3668 is newly designed to support the 2T2R mode, improving output power and carrier capacity.

The RRU3668 is configured with the bias tee (BT). The internal BT couples RF signals and OOK signals and transmits them through the TX/RX port A. The internal BT also supplies power to the tower mounted amplifier (TMA).

## 1.1 Appearance

Figure 1-1 shows the appearance of the RRU3668.

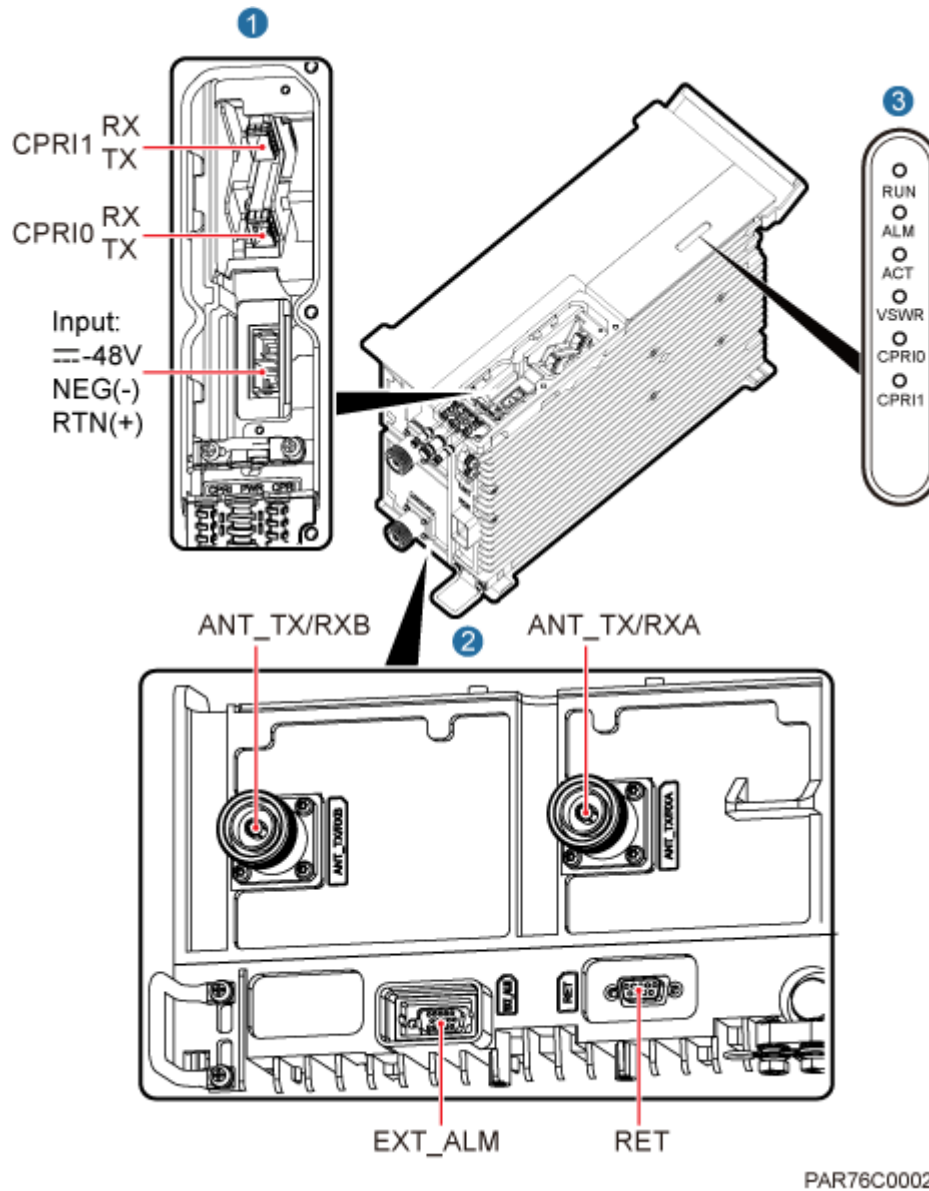
**Figure 1-1** Appearance of the RRU3668



## 1.2 Physical Ports

RRUs have a modular design. Its external ports are located in the cabling cavity or at the bottom of the module.

**Figure 1-2** Ports on the RRU3668 panels



**Table 1-1** Physical ports on the RRU3668

Port	Connector	Quantity	Function
Power supply socket	Tool-less male connector (pressfit type)	1	Receives -48 V DC power

Port	Connector	Quantity	Function
Common public radio interface (CPRI) port	DLC	2	CPRI0 is connected to the BBU and the CPRI1 is reserved
RF port	DIN, female	2	Connects to an antenna to transmit and receive RF signals
Interconnection port for receiving RF signals	DB2W2	1	Connects to another RF module
RET port	DB9	1	Connects to a remote control unit (RCU)
Alarm port	DB15	1	Receives external alarm signals

A BBU3900 and RRU3668 are connected through a CPRI port using an optical cable to transmit CPRI signals.

# 2 Technical Description

## 2.1 Frequency Band

Table 2-1 Frequency band

Frequency Band(MHz)	RX Frequency Band (MHz)	TX Frequency Band (MHz)	IBW (MHz)
450	452.5 to 457.5	462.5 to 467.5	5

## 2.2 Capacity

Table 2-2 Capacity

Frequency Band(MHz)	Capacity
450	Each RRU3668 supports one carriers.

## 2.3 Receiver Sensitivity

Table 2-3 Receiver sensitivity

Frequency Band (MHz)	1-Way Receiver Sensitivity (dBm)	2-Way Receiver Sensitivity (dBm)
450	-101.5	-104.3

 **NOTE**

As recommended in 3GPP TS 36.104, RX sensitivity is measured under a 5 MHz channel bandwidth based on FRC A1-3 in the Annex A.1 standard, where the modulation scheme is QPSK (R = 1/3) and the system bandwidth is 25 resource blocks (RBs)

## 2.4 Typical Output Power

 **NOTE**

The output power per carrier in the output power table provides the maximum output power possible while ensuring the network performance.

**Table 2-4** Typical output power(RRU3668, 450 MHz)

Number of LTE Carriers	Output Power per LTE Carrier (W)	Bandwidth (MHz)
1(MIMO)	2 x 40	1.4, 3, 5

## 2.5 Power Consumption

 **NOTE**


When one carrier is configured, one UMPTb1 and one LBBPd1 are configured.

**Table 2-5** Power consumption of the DBS3900(Ver.D)(-48V) (configured with RRU3668, 450 MHz)

Configuration	Output Power (W)	Typical Power Consumption (W)	Maximum Power Consumption (W)
3 x 5 MHz, 1 carrier	2 x 40	822	1145

## 2.6 Input Power

**Table 2-6** Input power

Item	Specification
Input power	-48 V DC; voltage range:-36 V DC to -57 V DC  <b>NOTE</b> The RRU3926 supports AC power supply when connected to an external AC/DC power module or an OPM15M. For details, see <i>AC/DC Power Module User Guide</i> and <i>OPM15M User Guide</i> .



## 2.7 Equipment Specifications

**Table 2-7** Equipment specifications

Item	Specification
Dimensions (H x W x D)	400 mm x 300 mm x 150 mm
Weight	20 kg (without cover)

## 2.8 CPRI Port Specifications

**Table 2-8** CPRI port specifications

Item	Specification
Number of CPRI ports	2
CPRI data rate	1.25 Gbit/s, 2.5 Gbit/s, or 4.9 Gbit/s
Topology	Star, chain, or ring
Cascading Levels	4 levels
Maximum Distance from the BBU	When the LBBPd1 is configured: 40 km

## 2.9 Environment Specifications

**Table 2-9** Environment specifications

Item	Specification
Operating temperature	–40°C to +50°C (with solar radiation of 1120 W/m <sup>2</sup> ) –40°C to +55°C (without solar radiation)
Relative humidity	5% RH to 100% RH
Absolute humidity	1 g/m <sup>3</sup> –30 g/m <sup>3</sup>
Atmospheric pressure	70 kPa to 106 kPa
Operating environment	Compliance standards: <ul style="list-style-type: none"> <li>• 3GPP TS 36.141</li> <li>• ETSI EN 300019-1-4 V2.1.2 (2003-04) Class 4.1: "Non-weather protected locations"</li> </ul>

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Item	Specification
Shockproof protection	NEBS GR63 zone4
Ingress Protection (IP) rating	IP65

# 3 Acronyms and Abbreviations

Abbreviation	Full Name
APM	Advanced Power Module
BBU	BaseBand control Unit
BT	Bias Tee
CPRI	Common Public Radio Interface
DC	Direct Current
RCU	Remote Control Unit
RF	Radio Frequency
RET	Remote Electrical Tilt
RRU	Remote Radio Unit
TMC	Transmission Cabinet