

# RRU3965&RRU3965d Description

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# 1 Overview

The RRU3965/RRU3965d is an outdoor remote radio unit which is powered by a power cabinet. It is the RF module of the distributed base station and is installed close to the antenna. The RRU3965/RRU3965d performs modulation, demodulation, data processing, and combination and division of baseband signals and RF signals. By using the software-defined radio (SDR) technology, the RRU3965/RRU3965d can work in GU, GL, UL, or GUL multiple modes through software configurations.

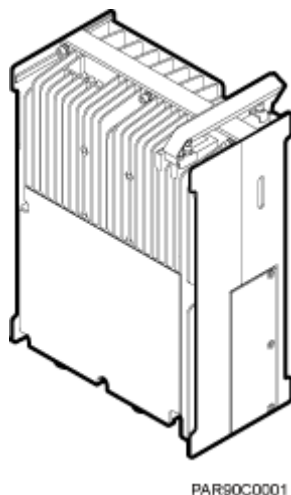
Adopting an innovative design, the RRU3965 can work in 2-TX and 2-RX mode, and the RRU3965d can work in 4-TX and 4-RX mode, which further improve the output power and the carrier capacity.

The software version of the RRU3965/RRU3965d is SRAN11.0, which is compatible with the N-1 and N-2 versions of MBTS, MBSC, and OSS NEs. Therefore, the RRU3965/RRU3965d can be used with products of SRAN9.0, SRAN10.0 and SRAN11.0 versions. All these three versions include the RRU3965/RRU3965d software components. The RRU3965/RRU3965d used in SRAN9.0, SRAN10.0 and SRAN11.0 has no impact on the KPI of products.

## 1.1 Appearance

Figure 1-1 shows the appearance of the RRU3965/RRU3965d.

**Figure 1-1** Appearance of the RRU3965/RRU3965d

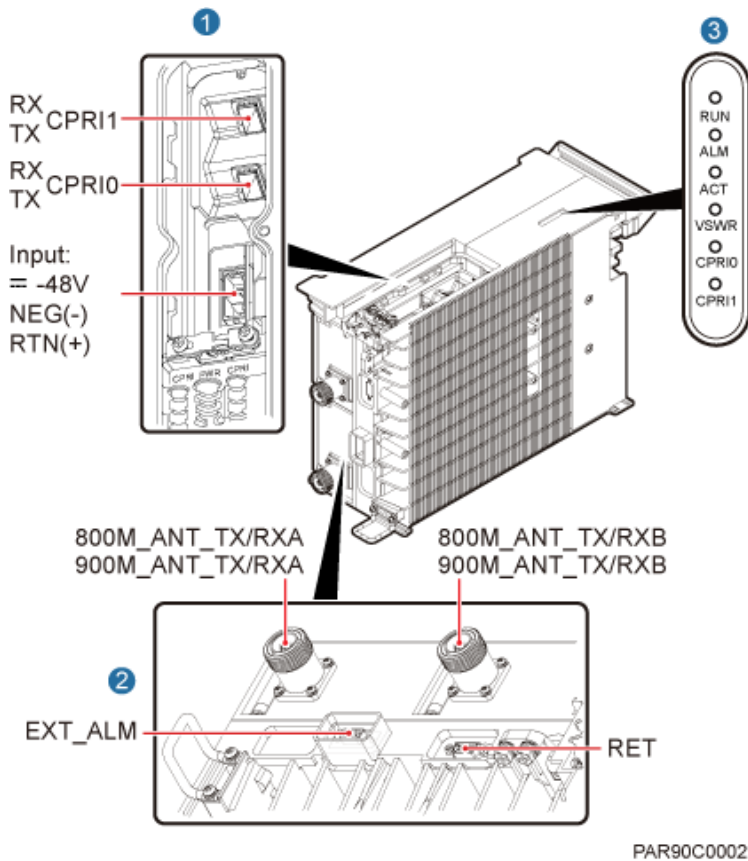


## 1.2 Physical Ports

The RRU has a modular design. Its external ports are located at the bottom of the module and in the cabling cavity.

Figure 1-2 shows the physical ports on the RRU3965 and Table 1-1 describes these ports.

**Figure 1-2** Physical ports on the RRU3965



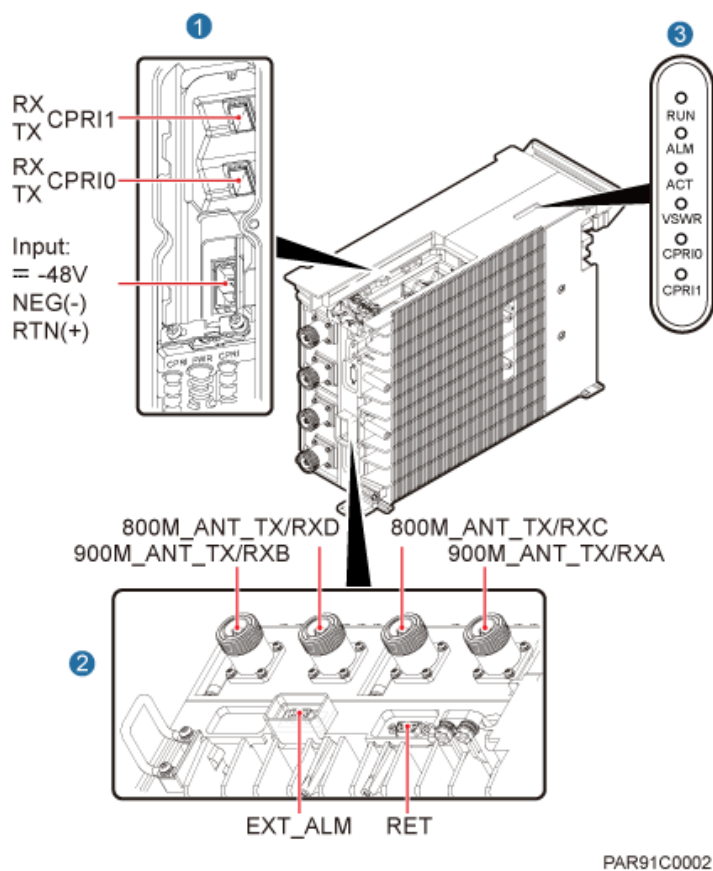
**Table 1-1** Physical ports on the RRU3965

Port Type	Connector	Quantity	Description
RF port	DIN	2	Connects to the antenna system.
CPRI port	DLC	2	Connects to the baseband unit (BBU).
Power supply socket	Tool-less female connector (pressfit type)	1	Supplies -48 V DC power.

Port Type	Connector	Quantity	Description
RET port	DB9	1	Connects to the remote control unit (RCU).
Alarm port	DB15	1	Receives alarm signals from external devices.

Figure 1-3 shows the physical ports on the RRU3965d and Table 1-2 describes these ports.

**Figure 1-3** Physical ports on the RRU3965d



**Table 1-2** Physical ports on the RRU3965d

Port Type	Connector	Quantity	Description
RF port	DIN	4	Connects to the antenna system.
CPRI port	DLC	2	Connects to the baseband unit (BBU).

Port Type	Connector	Quantity	Description
Power supply socket	Tool-less female connector (pressfit type)	1	Supplies -48 V DC power.
RET port	DB9	1	Connects to the remote control unit (RCU).
Alarm port	DB15	1	Receives alarm signals from external devices.

# 2 Technical Specifications

## 2.1 Frequency Band

**Table 2-1** Frequency band of the RRU3965/RRU3965d

Type	Frequency Band (MHz)	RX Frequency Band (MHz)	TX Frequency Band (MHz)	IBW (MHz)
RRU3965/RRU3965d	800	832–862	791–821	20
	900	880–915	925–960	35

## 2.2 Capacity

**Table 2-2** Single-mode capacity

Mode	Capacity
UMTS	(supported only by the 900 MHz frequency band) Each RRU3965/RRU3965d supports: <ul style="list-style-type: none"> <li>• 6 carriers without MIMO</li> <li>• 4 carriers with MIMO</li> </ul>
LTE	Each RRU3965/RRU3965d supports two carriers. The LTE bandwidth is 5, 10, 15, or 20 MHz.

**Table 2-3** Multi-mode capacity

Mode	Capacity
GSM+UMTS	(supported only by the 900 MHz frequency band) For details, see Table 2-8.
GSM+LTE	For details, see Table 2-9 and Table 2-10.
UMTS+LTE	For details, see Table 2-11, Table 2-12, and Table 2-13.



GSM+UMTS +LTE	For details, see Table 2-14 and Table 2-15.
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## 2.3 Receiver Sensitivity

**Table 2-4** Receiver sensitivity of the RRU3965/RRU3965d

Mode	Frequency Band (MHz)	1-Way Receiver Sensitivity (dBm)	2-Way Receiver Sensitivity (dBm)	4-Way Receiver Sensitivity (dBm)
GSM	900	-113.4	-116.2	-118.9 (theoretical value)
UMTS	900	-125.5	-128.3	-131.0
LTE	800	-105.8	-108.6	-111.3
	900	-106.0	-109.1	-111.8

### NOTE

- The receiver sensitivity of GSM, as recommended in 3GPP TS 51.021, is measured at the antenna connector on condition that the channel rate reaches 13 kbit/s and the bit error rate (BER) does not exceed 0.02.
- The receiver sensitivity of UMTS, as recommended in 3GPP TS 25.104, is measured in the entire operating band at the antenna connector on condition that the channel rate reaches 12.2 kbit/s and the BER does not exceed 0.001.
- The receiver sensitivity of LTE, as recommended in 3GPP TS 36.104, is measured under a 5 MHz channel bandwidth based on the FRC A1-3 in Annex A.1 (QPSK, R = 1/3, 25 RBs) standard.

## 2.4 Typical Output Power

### NOTE

- An RRU3965/RRU3965d that works in the 900 MHz frequency band does not support GSM Only mode.
- An RRU3965/RRU3965d working in UMTS, LTE, or MSR mode and in the 900 MHz frequency band complies with the ETSI EN 301 908 V5.2.1 and 3GPP TS 37.104 standards.
- An RRU3965/RRU3965d working in LTE mode and in the 800 MHz frequency band complies with the 3GPP TS 36.141 standard.
- If an RRU3965/RRU3965d is located at an altitude of 3500 to 4500 meters, its output power reduces by 1 dB. If an RRU3965/RRU3965d is located at an altitude of 4500 to 6000 meters, its output power reduces by 2 dB.
- The output power per carrier in the output power tables indicates the maximum output power supported to ensure network performance.
- When two LTE carriers are configured, it is recommended that the power spectrum density (PSD) of the two carriers be set to the same value. Power spectrum density = Carrier output power/Carrier bandwidth (1.4 MHz and 3 MHz bandwidths are considered as 5 MHz bandwidth in this formula.)

**Table 2-5** Typical output power of the RRU3965/RRU3965d (900 MHz , UMTS single-mode)

Number of UMTS Carriers	Output Power per UMTS Carrier (W)
1	60
2	60
3	40
4	40
5	20
6	20
1 (MIMO)	2x40
2 (MIMO)	2x40
3 (MIMO)	2x20
4 (MIMO)	2x20

**Table 2-6** Typical output power of the RRU3965/RRU3965d (800 MHz/900 MHz , LTE single-mode)

Number of LTE Carriers	Output Power per LTE Carrier (W)	Bandwidth of an LTE Carrier (MHz)
1 (MIMO)	2x60	5, 10, 15, 20
2 (MIMO)	2x40	5, 10, 15, 20

**Table 2-7** Typical output power of the RRU3965/RRU3965d (LTE 800 MHz + LTE 900 MHz)

800 MHz			900 MHz		
Number of LTE Carriers	Output Power per LTE Carrier (W)	Bandwidth of an LTE Carrier (MHz)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Bandwidth of an LTE Carrier (MHz)
1 (MIMO)	2x40	5, 10, 15, 20	1 (MIMO)	2x40	5, 10, 15, 20
2 (MIMO)	2x20	5, 10, 15, 20	1 (MIMO)	2x40	5, 10, 15, 20
1 (MIMO)	2x40	5, 10, 15, 20	2 (MIMO)	2x20	5, 10, 15, 20
2 (MIMO)	2x20	5, 10, 15, 20	2 (MIMO)	2x20	5, 10, 15, 20

**Table 2-8** Typical output power of the RRU3965/RRU3965d (900 MHz, GU MSR)

Number of GSM Carriers	Number of UMTS Carriers	Output Power per GSM Carrier (W)	Output Power per UMTS Carrier (W)
1	1	40	40
2	1	40	40
3	1	20	40
4	1	20	40
5	1	20	40
6	1	20	20
1	2	40	40
2	2	40	40
3	2	20	40
4	2	20	40
5	2	20	20
6	2	20	20
1	3	40	20
2	3	40	20
3	3	20	20
4	3	20	20
5	3	20	20
1	4	40	20

Number of GSM Carriers	Number of UMTS Carriers	Output Power per GSM Carrier (W)	Output Power per UMTS Carrier (W)
2	4	40	20
3	4	20	20
4	4	20	20
1	5	40	20
2	5	20	20
3	5	20	20
1	6	20	20
2	6	20	20

**Table 2-9** Typical output power of the RRU3965/RRU3965d (900 MHz, GL MSR)

Number of GSM Carriers	Number of LTE Carriers	Output Power per GSM Carrier (W)	Output Power per LTE Carrier (W)	Bandwidth of an LTE Carrier (MHz)
1	1 (MIMO)	40	2x40	5, 10, 15, 20
2	1 (MIMO)	20	2x40	5, 10, 15, 20
3	1 (MIMO)	20	2x40	5, 10, 15, 20
4	1 (MIMO)	20	2x40	5, 10, 15, 20
5	1 (MIMO)	20	2x20	5, 10, 15, 20
6	1 (MIMO)	20	2x20	5, 10, 15, 20

**Table 2-10** Typical output power of the RRU3965/RRU3965d (900 MHz GL MSR + 800 MHz LTE)

900 MHz				800 MHz		Bandwidth of an LTE Carrier (MHz)
Number of GSM Carriers	Output Power per GSM Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	
1	20	1 (MIMO)	2x20	1 (MIMO)	2x40	5, 10, 15, 20
2	20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20

900 MHz				800 MHz		Bandwidth of an LTE Carrier (MHz)
Number of GSM Carriers	Output Power per GSM Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	
3	20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20
4	20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20
1	20	1 (MIMO)	2x20	2 (MIMO)	2x20	5, 10, 15, 20
2	20	1 (MIMO)	2x20	2 (MIMO)	2x20	5, 10, 15, 20

**Table 2-11** Typical output power of the RRU3965/RRU3965d (900 MHz, UL MSR)

Number of UMTS Carriers	Number of LTE Carriers	Output Power per UMTS Carrier (W)	Output Power per LTE Carrier (W)	Bandwidth of an LTE Carrier (MHz)
1	1 (MIMO)	40	2x40	5, 10, 15, 20
2	1 (MIMO)	40	2x40	5, 10, 15, 20
3	1 (MIMO)	20	2x40	5, 10, 15, 20
1 (MIMO)	1 (MIMO)	2x40	2x40	5, 10, 15, 20
2 (MIMO)	1 (MIMO)	2x20	2x40	5, 10, 15, 20
3 (MIMO)	1 (MIMO)	2x20	2x20	5, 10, 15, 20

**Table 2-12** Typical output power of the RRU3965/RRU3965d (UMTS 900 MHz + LTE 800 MHz)

900 MHz		800 MHz		
Number of UMTS Carriers	Output Power per UMTS Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Bandwidth of an LTE Carrier (MHz)
1	40	1 (MIMO)	2x40	5, 10, 15, 20
2	40	1 (MIMO)	2x40	5, 10, 15, 20
3	20	1 (MIMO)	2x40	5, 10, 15, 20
4	20	1 (MIMO)	2x40	5, 10, 15, 20

900 MHz		800 MHz		
Number of UMTS Carriers	Output Power per UMTS Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Bandwidth of an LTE Carrier (MHz)
5	15	1 (MIMO)	2x30	5, 10, 15, 20
6	15	1 (MIMO)	2x30	5, 10, 15, 20
1 (MIMO)	2x40	1 (MIMO)	2x40	5, 10, 15, 20
2 (MIMO)	2x20	1 (MIMO)	2x40	5, 10, 15, 20
3 (MIMO)	2x15	1 (MIMO)	2x30	5, 10, 15, 20
4 (MIMO)	2x15	1 (MIMO)	2x20	5, 10, 15, 20
1	40	2 (MIMO)	2x20	5, 10, 15, 20
2	40	2 (MIMO)	2x20	5, 10, 15, 20
3	40	2 (MIMO)	2x20	5, 10, 15, 20
4	20	2 (MIMO)	2x20	5, 10, 15, 20
5	15	2 (MIMO)	2x15	5, 10, 15, 20
6	15	2 (MIMO)	2x15	5, 10, 15, 20
1 (MIMO)	2x40	2 (MIMO)	2x20	5, 10, 15, 20
2 (MIMO)	2x20	2 (MIMO)	2x20	5, 10, 15, 20
3 (MIMO)	2x15	2 (MIMO)	2x15	5, 10, 15, 20
4 (MIMO)	2x15	2 (MIMO)	2x10	5, 10, 15, 20

**Table 2-13** Typical output power of the RRU3965/RRU3965d (900 MHz UL MSR + 800 MHz LTE)

900 MHz				800 MHz		Bandwidth of an LTE Carrier (MHz)
Number of UMTS Carriers	Output Power per UMTS Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	
1	20	1 (MIMO)	2x20	1 (MIMO)	2x40	5, 10, 15, 20
2	20	1 (MIMO)	2x20	1 (MIMO)	2x40	5, 10, 15, 20
3	20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20

900 MHz				800 MHz		Bandwidth of an LTE Carrier (MHz)
Number of UMTS Carriers	Output Power per UMTS Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	
4	20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20
1 (MIMO)	2x20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20
2 (MIMO)	2x20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20
1	20	1 (MIMO)	2x20	2 (MIMO)	2x20	5, 10, 15, 20
2	20	1 (MIMO)	2x20	2 (MIMO)	2x20	5, 10, 15, 20

**Table 2-14** Typical output power of the RRU3965/RRU3965d (900 MHz GU MSR + 800 MHz LTE)

900 MHz				800 MHz		
Number of GSM Carriers	Output Power per GSM Carrier (W)	Number of UMTS Carriers	Output Power per UMTS Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Bandwidth of an LTE Carrier (MHz)
1	20	1	20	1 (MIMO)	2x40	5, 10, 15, 20
2	20	1	20	1 (MIMO)	2x40	5, 10, 15, 20
3	10	1	20	1 (MIMO)	2x40	5, 10, 15, 20
4	20	1	20	1 (MIMO)	2x20	5, 10, 15, 20
1	20	2	20	1 (MIMO)	2x40	5, 10, 15, 20
2	20	2	20	1 (MIMO)	2x40	5, 10, 15, 20
3	10	2	20	1 (MIMO)	2x40	5, 10, 15, 20

4	20	2	20	1 (MIMO)	2x20	5, 10, 15, 20
1	20	1	20	2 (MIMO)	2x20	5, 10, 15, 20
2	20	1	20	2 (MIMO)	2x20	5, 10, 15, 20
1	20	2	20	2 (MIMO)	2x20	5, 10, 15, 20
2	20	2	20	2 (MIMO)	2x20	5, 10, 15, 20

**Table 2-15** Typical output power of the RRU3965/RRU3965d (900 MHz GUL MSR + 800 MHz LTE)

900 MHz						800 MHz		Bandwidth of an LTE Carrier (MHz)
Number of GSM Carriers	Output Power per GSM Carrier (W)	Number of UMTS Carriers	Output Power per UMTS Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	Number of LTE Carriers	Output Power per LTE Carrier (W)	
1	20	1	20	1 (MIMO)	2x20	1 (MIMO)	2x40	5, 10, 15, 20
2	20	1	20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20
3	10	1	20	1 (MIMO)	2x20	1 (MIMO)	2x20	5, 10, 15, 20
1	20	2	20	1 (MIMO)	2x20	1 (MIMO)	2x40	5, 10, 15, 20
2	20	2	20	1 (MIMO)	2x20	1 (MIMO)	2x40	5, 10, 15, 20



## 2.5 Power Consumption

### NOTE

- The typical power consumption and the maximum power consumption are measured when the ambient temperature is 25°C.
- The typical power consumption for GSM is measured when the load is 30%. The maximum power consumption for GSM is measured when the load is 100%.
- The typical power consumption for UMTS is measured when the load is 40%. The maximum power consumption for UMTS is measured when the load is 100%.
- The typical power consumption for LTE is measured when the load is 50%. The maximum power consumption for LTE is measured when the load is 100%.
- This section describes the power consumption of an entire base station. Board configurations in a BBU are as follows:
  - GSM: one GTMU
  - UMTS: one UMPTb1 and one WBBP3 in 3x1 and 3x2 scenarios; one UMPTb1 and two WBBP3s in 3x3 and 3x4 scenarios.
  - LTE FDD: one UMPTb1 and one LBBPd1 when one carrier is configured; one UMPTb1 and one LBBPd3 when two carriers are configured.

**Table 2-16** Power consumption of the DBS3900 (Ver.D) (–48 V) (configured with the RRU3965/RRU3965d, 900 MHz)

Mode	Configuration	Output Power per Carrier (W)	Typical Power Consumption (W)	Maximum Power Consumption (W)
UMTS	3x1	20	715	745
	3x2	20	885	1000
	3x3	20	1080	1255
	3x4	20	1195	1435
LTE	3x20MHz, 1 carrier	2x20	895	1000
	3x20MHz, 2 carriers	2x20	1135	1360
GSM+LTE	GSM: S2/2/2 + LTE: 3x20MHz, 1 carrier	GSM: 20 LTE: 2x20	1215	1390
	GSM: S3/3/3 + LTE: 3x20MHz, 1 carrier	GSM: 20 LTE: 2x20	1300	1560
	GSM: S4/4/4 + LTE: 3x20MHz, 1 carrier	GSM: 20 LTE: 2x20	1360	1735
UMTS+LTE	UMTS: 3x2 + LTE: 3x20MHz, 1 carrier	UMTS: 20 LTE: 2x20	970	1075
	UMTS: 3x3 + LTE: 3x20MHz, 1 carrier	UMTS: 20 LTE: 2x20	1315	1615

Mode	Configuration	Output Power per Carrier (W)	Typical Power Consumption (W)	Maximum Power Consumption (W)
	UMTS: 3x4 + LTE: 3x20MHz, 1 carrier	UMTS: 20 LTE: 2x20	1435	1780

**Table 2-17** Power consumption of the DBS3900 (Ver.D) (-48 V) (configured with the RRU3965/RRU3965d, 800 MHz)

Mode	Configuration	Output Power per Carrier (W)	Typical Power Consumption (W)	Maximum Power Consumption (W)
LTE	3x20MHz, 1 carrier	2x20	925	1045
	3x20MHz, 2 carriers	2x20	1190	1435


**Table 2-18** Power consumption of the DBS3900 (Ver.D) (-48 V) (configured with the RRU3965/RRU3965d, 800 MHz + 900 MHz)

Mode	Configuration	Output Power per Carrier (W)	Typical Power Consumption (W)	Maximum Power Consumption (W)
800MHz: LTE 900MHz: GSM + UMTS	800MHz: LTE: 3x20MHz, 1 carrier 900MHz: GSM: S2/2/2 + UMTS: 3x1	GSM: 20 UMTS: 20 LTE: 2x20	1405	1675
800MHz: LTE 900MHz: GSM + LTE	800MHz: LTE: 3x20MHz, 1 carrier 900MHz: GSM: S3/3/3+ LTE: 3x20MHz, 1 carrier	GSM: 20 LTE: 2x20	1495	1900
	800MHz: LTE: 3x20MHz, 1 carrier 900MHz: GSM: S4/4/4+ LTE: 3x20MHz, 1 carrier	GSM: 20 LTE: 2x20	1570	2035
800MHz: LTE 900MHz: UMTS + LTE	800MHz: LTE: 3x20MHz, 1 carrier 900MHz: UMTS: 3x1 + LTE: 3x20MHz, 1 carrier	UMTS: 20 LTE: 2x20	1375	1645

Mode	Configuration	Output Power per Carrier (W)	Typical Power Consumption (W)	Maximum Power Consumption (W)
	800MHz: LTE: 3x20MHz, 1 carrier 900MHz: UMTS: 3x2 + LTE: 3x20MHz, 1 carrier	UMTS: 20 LTE: 2x20	1465	1825
	800MHz: LTE: 3x20MHz, 1 carrier 900MHz: UMTS: 3x3 + LTE: 3x20MHz, 1 carrier	UMTS: 20 LTE: 2x20	1540	1945
	800MHz: LTE: 3x20MHz, 1 carrier 900MHz: UMTS: 3x4+ LTE: 3x20MHz, 1 carrier	UMTS: 20 LTE: 2x20	1615	2080

## 2.6 Input Power

**Table 2-19** Input power of the RRU3965/RRU3965d

Item	Specifications
Input power	-48 V DC; voltage range: -36 V DC to -57 V DC  <b>NOTE</b> The RRU3965/RRU3965d 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 2-20** Equipment specifications of the RRU3965/RRU3965d

Item	Specifications
Dimensions (H x W x D)	400 mm x 300 mm x 150 mm (without the housing)
Weight	20 kg (without the housing)

## 2.8 CPRI Port Specifications

**Table 2-21** CPRI port specifications of the RRU3965/RRU3965d

Item	Specifications
Number of CPRI ports	2
CPRI data rate	1.25 Gbit/s, 2.5 Gbit/s, 4.9 Gbit/s, or 9.8 Gbit/s
Topology	Star, chain, and dual-star
Cascading levels	CPRI MUX: <ul style="list-style-type: none"> <li>• GU: six levels</li> <li>• GL: four levels</li> <li>• UL: four levels</li> <li>• GUL: four levels</li> </ul>
Maximum distance from the BBU	<ul style="list-style-type: none"> <li>• GU: 40 km</li> <li>• GL/UL/GUL: The maximum distances of the RRUs from the BBU vary with the types of BBP in LTE mode as follows:               <ul style="list-style-type: none"> <li>▪ LBBPd1/UBBPd3: 20 km</li> <li>▪ LBBPd2/UBBPd4: 40 km</li> <li>▪ LBBPd3/UBBPd5/UBBPd6:                   <ul style="list-style-type: none"> <li>-Number of LTE cells ≤ 3: 40 km</li> <li>-Number of LTE cells &gt; 3: 20 km</li> </ul> </li> </ul> </li> </ul>

## 2.9 Environment Specifications

**Table 2-22** Environment specifications of the RRU3965/RRU3965d

Item	Specifications
Operating temperature	-40°C to +50°C (with solar radiation) -40°C to +55°C (without solar radiation)
Relative humidity	5% RH to 100% RH
Absolute humidity	1 g/m <sup>3</sup> to 30 g/m <sup>3</sup>
Atmospheric pressure	70 kPa to 106 kPa

Operating environment	The RRU complies with the following standards: <ul style="list-style-type: none"><li>● 3GPP TS 45.005</li><li>● 3GPP TS 25.141</li><li>● 3GPP TS 36.141</li><li>● 3GPP TS 37.141</li><li>● ETSI EN 300019-1-4 V2.1.2 (2003-04) Class 4.1: "Non-weather protected locations."</li></ul>
Shockproof protection	NEBS GR63 zone4
Protection class	IP65

# 3 Acronyms and Abbreviations

**Table 3-1** Acronyms and abbreviations

Acronym and Abbreviation	Full Name
3GPP	3rd Generation Partnership Project
BBU	baseband unit
BER	bit error rate
CPRI	common public radio interface
DTX	discontinuous transmission
GTMU	GSM transmission and timing and management unit
LBBP	LTE baseband process unit
LTE	Long Term Evolution
MIMO	multi-input and multi-output
MSR	multi-standard radio
RAN	radio access network
RRU	remote radio unit
SDR	Software-defined radio
UBRI	universal baseband radio interference unit
UMPT	universal main processing and transmission unit
UMTS	Universal Mobile Telecommunications System
WBBP	WCDMA baseband processing unit