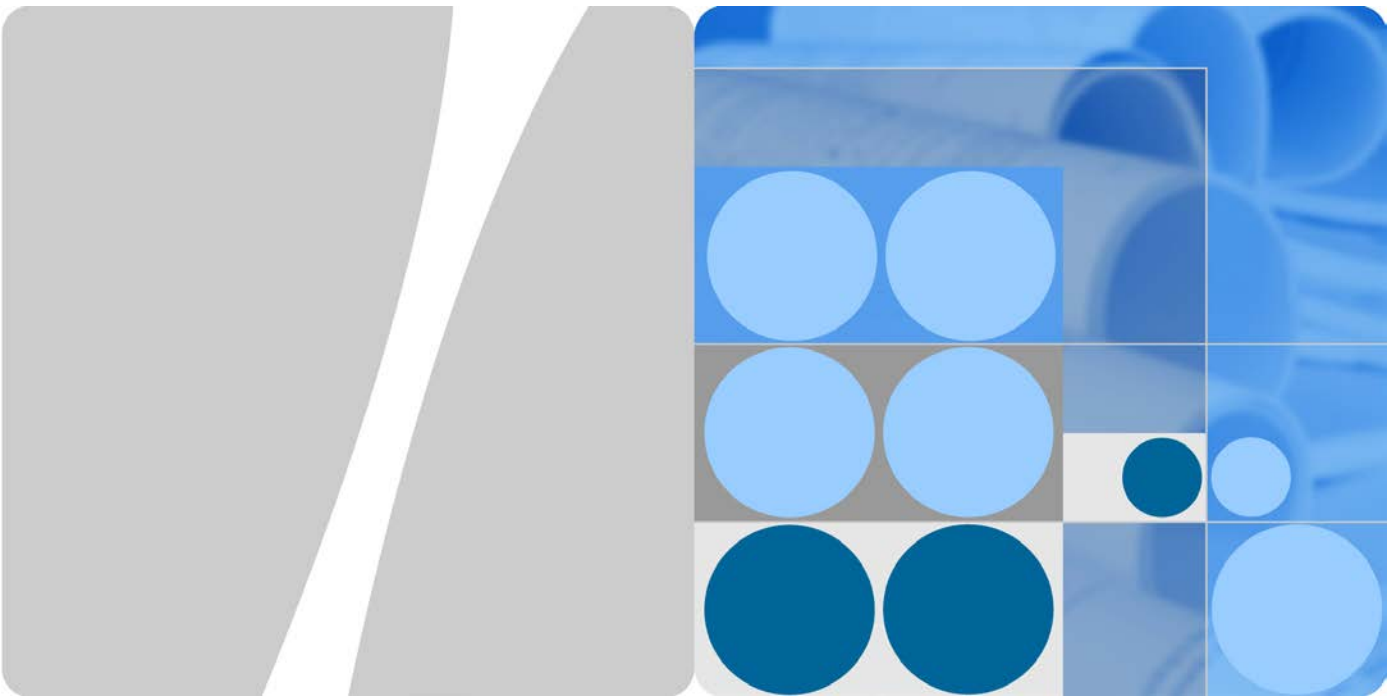

LTE TDD

RRU3256 Description

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Contents

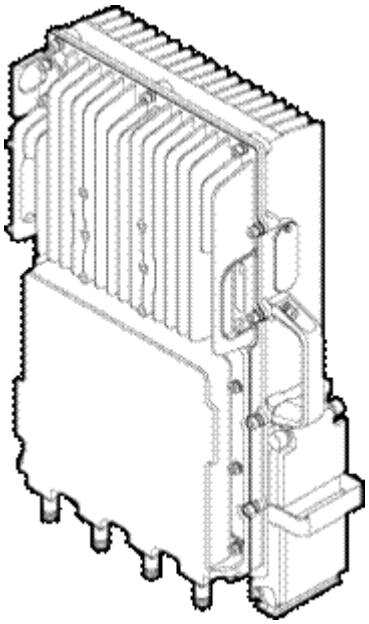
1 Overview

The RRU3256 is a remote radio unit. One or more RRU3256 modules constitute the radio frequency (RF) part of a distributed E-UTRAN NodeB (eNodeB). The RRU3256 can be mounted onto a pole, stand, or concrete wall. It also can be installed close to antennas to shorten the feeder length, reduce feeder loss, and improve system coverage. Remote radio units (RRUs) modulate and demodulate baseband and RF signals, process data, amplify power, and detect standing waves.

1.1 Exterior

Figure 1-1 shows the exterior of the RRU3256.

Figure 1-1 RRU3256



1.2 Ports on the RRU3256

Each RRU has a modular structure. Its external ports are located at the bottom of the module or in the cabling cavity. Table 1-1 describes the ports on the RRU3256.

Table 1-1 Ports on the RRU3256

Port	Connector	Quantity	Description
Common public radio interface (CPRI) port	DLC	2	Connects to the baseband unit (BBU) or to another RRU for cascading of RRUs. The RRU3256 supports CPRI compression.
RF port	Type N female connector	4	Connects to an antenna.
Remote Global Positioning System (RGPS) port	DB15	1	Connects to an RGPS antenna.
Ground port	OT	2	Connects to the protection ground.
Power supply socket	Tool-less male connector (pressfit type)	1	Provides –48 V DC power input.
RET/EXT_ALM	DB9	1	Connects to the remote control units (RCUs) of remote electrical tilt (RET) antennas or to external alarm devices.

2 Technical Specifications

2.1 Frequency Band

Table 2-1 Frequency band supported by the RRU3256

Frequency Band	Frequency Range(MHz)	Carrier Bandwidth(MHz)	IBW(MHz)	OBW(MHz)
Band 38 (2.6 GHz)	2575 to 2615	5, 10, 15, 20	40	40
Band 41 (2.5 GHz)	2496 to 2690	5, 10, 15, 20	115	80
Band 40 (2.3 GHz)	2300 to 2400	5, 10, 15, 20	100	80
Band 42, Band43 (3.5GHz)	3400 to 3700	5, 10, 15, 20	80	80

NOTE
The 3650–3675 MHz frequency resources in the 3.5 GHz frequency band have been approved by Federal Communications Commission (FCC).

2.2 Capacity

When functioning as a 4T4R RRU, the RRU3256 supports four carriers at most.

When the RRU3256 functions as two 2T2R RRUs, each 2T2R RRU supports four carriers at most.

2.3 Output Power

Table 2-2 lists the maximum output power of the RRU3256.

Table 2-2 Maximum output power of RRU3256

Frequency Band	Transmit Power of Each RF Channel	Total Transmit Power of the Four RF Channels
Band 38 (2.6 GHz)	30 W	120
Band 41 (2.5 GHz)	30 W	120
Band 40 (2.3 GHz)	30 W	120
Band 42, Band43 (3.5GHz)	15 W	60

NOTE

- The output power of an RRU3256 working at 3.5 GHz varies with the factors such as uplink-downlink subframe configuration, filter insertion loss, and carrier configuration (contiguous or non-contiguous carriers). When the frequency spacing between carriers is greater than 80 MHz, the rated output power of RF channels must be decreased.
- As stipulated by FCC, the equivalent isotropically radiated power (EIRP) for the 3650–3675 MHz frequencies must be less than 1 W/MHz.

2.4 Power Consumption

Table 2-3 Power consumption

Frequency Band (GHz)	Output Power	Typical Power Consumption (W) (2:2)	Maximum Power Consumption (W) (2:2)	Typical Power Consumption (W) (3:1)	Maximum Power Consumption (W) (3:1)
2.6/2.5/2.3	4*10W or 2*20W	173	192	216	256
2.6/2.5/2.3	2*30W	189	210	236	280
2.6/2.5/2.3	4*20W	227	252	284	336
2.6/2.5/2.3	4*30W	243	270	304	360
3.5G	2*10W	120	138	135	160

Frequency Band (GHz)	Output Power	Typical Power Consumption (W) (2:2)	Maximum Power Consumption (W) (2:2)	Typical Power Consumption (W) (3:1)	Maximum Power Consumption (W) (3:1)
3.5G	2*15W	142	175	165	205
3.5G	4*10W	190	230	210	260
3.5G	4*15W	230	300	270	380

2.5 Input Power

Table 2-4 Input power

Item	Specifications
Input power	-48 V DC (voltage range: -32 V DC to -60 V DC)

2.6 Cascading Capability and Distance

Table 2-5 Cascading capability and distance

Cascading Capability	Maximum Distance from the BBU (km)
4	If only one level of RRUs is configured, the maximum distance between an RRU and a BBU is 10 km. If multiple levels of RRUs are configured, the maximum distance between an RRU in the lowest level and a BBU is 20 km.

2.7 Physical Specifications

Table 2-6 Physical specifications

Item	Specifications
Dimensions (H x W x D)	480 mm x 270 mm x 140 mm (18.90 in. x 10.63 in. x 5.51 in.) (18 L without the cover)
Weight	≤ 19.5 kg (43.00 lb) (without the cover)

2.8 Environmental Specifications

Table 2-7 Environmental specifications

Item	Specifications
Operating temperature	–40°C to +50°C (–40°F to +113°F) (with solar radiation of 1120 W/m^2) –40°C to +55°C (–40°F to +122°F) (without solar radiation)
Relative humidity	5% RH to 100% RH
Atmospheric pressure	70 kPa to 106 kPa
Operating environment	The operating environment of the RRU3256 must comply with the following standards: • 3GPP TS36.141 • ETSI EN 300019-1-4 V2.1.2 (2003-04) Class 4.1: "Non-weather protected locations"
Anti-seismic performance	NEBS GR63 zone4
Protection rating	IP65

3 Acronyms and Abbreviations

Numerics

3GPP	3rd Generation Partnership Project

B

BBU	baseband unit

C

CPRI	common public radio interface

D

DC	direct current

E

E-UTRAN	evolved universal terrestrial radio access network
eNodeB	E-UTRAN NodeB
ETSI	European Telecommunications Standards Institute

N

NEBS	Network Equipment Building System

I

IBW	instantaneous bandwidth

O

OBW	occupied bandwidth
R	
RET	remote electrical tilt
RF	radio frequency
RGPS	Remote Global Positioning System
RRU	remote radio unit