RRU3256 Description

Issue 01
Date 2013-06-30
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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.
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**

<table>
<thead>
<tr>
<th>Port</th>
<th>Connector</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common public radio interface (CPRI) port</td>
<td>DLC</td>
<td>2</td>
<td>Connects to the baseband unit (BBU) or to another RRU for cascading of RRU. The RRU3256 supports four-level cascading, and the maximum distance between an RRU3256 module and the BBU is 20 km. The RRU3256 supports CPRI compression.</td>
</tr>
<tr>
<td>RF port</td>
<td>Type N female connector</td>
<td>4</td>
<td>Connects to an antenna.</td>
</tr>
<tr>
<td>Remote Global Positioning System (RGPS) port</td>
<td>DB15</td>
<td>1</td>
<td>Connects to an RGPS antenna.</td>
</tr>
<tr>
<td>Ground port</td>
<td>OT</td>
<td>2</td>
<td>Connects to the protection ground.</td>
</tr>
<tr>
<td>Power supply socket</td>
<td>Tool-less male connector (pressfit type)</td>
<td>1</td>
<td>Provides –48 V DC power input.</td>
</tr>
<tr>
<td>RET/EXT_ALM</td>
<td>DB9</td>
<td>1</td>
<td>Connects to the remote control units (RCUs) of remote electrical tilt (RET) antennas or to external alarm devices.</td>
</tr>
</tbody>
</table>
2 Technical Specifications

2.1 Frequency Band

<table>
<thead>
<tr>
<th>Frequency Band</th>
<th>Frequency Range</th>
<th>Carrier Bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band 38 (2.5 GHz)</td>
<td>2570 MHz to 2620 MHz</td>
<td>5 MHz, 10 MHz, or 20 MHz</td>
</tr>
<tr>
<td>Band 41 (2.5 GHz)</td>
<td>2496 MHz to 2690 MHz</td>
<td>5 MHz, 10 MHz, or 20 MHz</td>
</tr>
<tr>
<td>Band 40 (2.3 GHz)</td>
<td>2300 MHz to 2400 MHz</td>
<td>5 MHz, 10 MHz, or 20 MHz</td>
</tr>
</tbody>
</table>

**NOTE**
- The instantaneous bandwidth (IBW) of the 2.3 GHz RRU3256 is 100 MHz, and the occupied bandwidth (OBW) of it is 60 MHz.
- The instantaneous bandwidth (IBW) of the 2.5 GHz RRU3256 is 115 MHz, and the occupied bandwidth (OBW) of it is 60 MHz.

2.2 Capacity

When functioning as a 4T4R RRU, the RRU3256 supports four carriers at most and two carriers in eRAN6.0.

When the RRU3256 functions as two 2T2R RRUs, each 2T2R RRU supports four carriers at most and two carriers in eRAN6.0.

2.3 Output Power

The maximum transmit power of an RF channel of the RRU3256 is 30 W, and the total transmit power of the RRU3256 is 120 W at most.
2.4 Power Input

Table 2-2 Power input

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power input</td>
<td>-48 V DC (voltage range: -32 V DC to -60 V DC)</td>
</tr>
</tbody>
</table>

2.5 Physical Specifications

Table 2-3 Physical specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (H x W x D)</td>
<td>480 mm x 270 mm x 140 mm (18.90 in. x 10.63 in. x 5.51 in.) (18 L without the cover)</td>
</tr>
<tr>
<td>Weight</td>
<td>≤ 19.5 kg (43.00 lb) (without the cover)</td>
</tr>
</tbody>
</table>

2.6 Environmental Specifications

Table 2-4 Environmental specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>-40°C to +45°C (–40°F to +113°F) (without wind or solar radiation, natural heat dissipation)</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>5% RH to 100% RH</td>
</tr>
<tr>
<td>Atmospheric pressure</td>
<td>70 kPa to 106 kPa</td>
</tr>
<tr>
<td>Operating environment</td>
<td>The operating environment of the RRU3256 must comply with the following standards:</td>
</tr>
<tr>
<td></td>
<td>• 3GPP TS25.141 V3.0.0</td>
</tr>
<tr>
<td></td>
<td>• ETSI EN 300019-1-4 V2.1.2 (2003-04) Class 4.1: &quot;Non-weather protected locations&quot;</td>
</tr>
<tr>
<td>Anti-seismic performance</td>
<td>NEBS GR63 zone4</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP65</td>
</tr>
</tbody>
</table>
# Acronyms and Abbreviations

## 3GPP
3rd Generation Partnership Project

## CPRI
common public radio interface

## ETSI
European Telecommunications Standards Institute

## E-UTRAN
evolved universal terrestrial radio access network

## NEBS
Network Equipment Building System

## RF
radio frequency

## RGPS
Remote Global Positioning System

## RRU
remote radio unit
Acronyms and Abbreviations

B
BBU       baseband unit

D
DC        direct current

E
eNodeB    E-UTRAN NodeB

R
RET       remote electrical tilt

I
IBW       instantaneous bandwidth

O
OBW       occupied bandwidth

R
RCUs      remote control unit