

RIVO MULTITRADE OPTICAL SYSTEMS

RRU Cascaded Optical Modules



Overview

The RRUs can be connected in a cascade configuration and a star configuration with optical cable links.

Key Takeaways

RRU cascaded optical modules are used to connect multiple RRUs in series, enabling efficient signal transmission and bypass protection in wireless networks. Understanding RRU Cascading

RRU cascading involves connecting multiple RRUs using CPRI optical cables so that they share the same SFP port on the baseband processing unit (BBU) or UBRI board . This allows several RRUs to operate in a single sector while minimizing the number of required ports. Cascading is commonly used in chain, tree, or ring topologies depending on network design requirements .

Optical Module Connections

Each RRU typically has two optical modules: a first and a second module. In normal mode, the first optical module transmits and receives signals to and from the internal processing module, while the second module handles the next RRU in the cascade . The optical modules are connected via CPRI fiber cables, ensuring proper alignment of transmitting (TX) and receiving (RX) ports .

Steps for Cascading

- Identify the SFP ports on the BBU or UBRI board that will serve the cascaded RRUs.
- Connect the first RRU to the SFP port using a CPRI optical cable.

- Link subsequent RRUs in series by connecting the second optical module of the upstream RRU to the first optical module of the downstream RRU.
- Verify TX/RX alignment to ensure proper signal flow.

Bypass Protection

Cascaded RRUs can be vulnerable if one unit fails. To enhance reliability, a bypass protection unit can be used. In bypass mode, the transmitting port of the first optical module is connected to the receiving port of the second optical module, effectively bypassing the faulty RRU. This is typically implemented using a CML cross-point switch or FPGA-based switch to maintain signal continuity.

Practical Considerations

- Ensure proper cabling and avoid excessive bending of optical fibers to prevent signal loss.
- Check LED indicators on the RRU panels to confirm operational status.
- Use RRU interconnection for RF signals if multiple RRUs share the same antenna system, connecting RX_in/out ports with RF jumpers.
- Follow manufacturer guidelines for hardware installation, maintenance, and safety, especially when handling high-voltage or tower-mounted equipment. By following these steps, you can deploy cascaded RRUs efficiently, maintain network reliability, and implement bypass protection to minimize downtime in case of RRU failure.

Article Content

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The maximum number of cascades supported by an RRU is mainly determined by the following four factors: optical port rate, fiber

RRU5515t Hardware Description (Draft A) (PDF)

For details about the RRU capability, structure, functions, installation, and maintenance of a Power Module, see the

Exhibit 8 Manuals

The RRUs can be connected in a cascade configuration and a star configuration with optical cable links. The RRU is only intended

RRU5935E Hardware Description

Table 1-4 Optical module mapping Optical Module Type Mapping Between the BBU and RRU SFP duplex (two-fiber bidirectional,

Huawei 227463419 RRU Cascading and RRU Interconnection | PDF

The cascading cable will be connected to SFP port. 2.2 Scenario: More than one RRU will be use the same SFP port of UBRI or BBP

ZTE ZXSDR R8882 PRODUCT DESCRIPTION Pdf Download

Page 27: Interfaces Item Specifications ZXSDR R8882 S9000 (C) Provides three optical ports: OPT1: the interface through which the

RRU5909 Hardware Description: Ports, Cables, Functions

For details about the structure, functions, installation, and maintenance of a Power Module, see the OPM15M (Ver.B) User Guide or

Why Optical Modules For CPRI Applications Need To Support

In 4G wireless networks, the two core units of the CPRI architecture are the BBU (Building Baseband Unit, indoor

RRU3252/RRU3256 Hardware Description

A CPRI fiber optic cable must be connected to optical modules in the CPRI ports. A multi-mode fiber optic cable and single-mode

RRU3168 Hardware Description (04) (PDF)

This document provides an overview of the RRU3168 remote radio unit hardware. It describes the exterior, ports, indicators, optical

How BTS Process, Transmit and Receive Radio Waves?

RRU communicate with BBU via physical communication link (optical fiber) and communicate with the UE via radio

Ericsson RRU Power Cable Overview | PDF | Technology

Ericsson RRU Power Cable Overview This document provides an overview of remote installation products, specifically focusing on

ZXSDR R8998G S2600: Hardware Description

4.4 Optical Fiber Cable Function In the ZXSDR R8998G S2600 system, the optical fiber can be used to: Connect the RRU to the

BBU Optical Module Transmit/Receive Fault

The customer has 2 alarms on BTS3900 (GSM-R network). 1. BBU Optical Module Transmit/Receive Fault 2. RF Unit Maintenance

CDB Wireless Project TI Training Guide | PDF

Optical Module Type Mapping Between the BBU and RRU/AAU SFP duplex (two-fiber bidirectional, duplex for short) optical SFP

Typical Connection Solutions and Fiber Optical Module Applications of ...

In other words, the 5G access network has evolved from the two-tier architecture of the BBU and RRU to the three-tier

RRU & BBU Fiber Cable Installation Guide | PDF | Optical Fiber | Cable

This document provides guidelines for distributing and connecting optical fiber cables between remote radio units (RRUs) and

Remote radio unit (rru) and base band unit (bbu)

A remote radio unit (RRU) in a radio base station system can include a cyclic prefix (CP) module having a CP adder for downlink

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

