

Board and RRU optical module



Article Overview

Optical modules connect the BBU and RRU in mobile base stations, enabling high-speed data transmission over fiber with support for industrial environments.

Overview of BBU and RRU

In mobile communication networks, a base station is typically divided into two main parts: the BBU (Baseband Unit), responsible for signal processing, and the RRU (Remote Radio Unit), responsible for transmitting and receiving radio signals. The BBU is usually located indoors in a climate-controlled environment, while the RRU is mounted outdoors on telecom towers, exposed to extreme temperatures and weather conditions.

Role of Optical Modules

Optical modules serve as the transmission medium between the BBU and RRU, converting electrical signals into optical signals for fiber transmission and vice versa. They are essential for maintaining high-speed, long-distance communication between the indoor and outdoor units. In 4G networks, optical modules typically support data rates from 1.25G to 10G, while in 5G networks, higher rates such as 25G are common.

Types and Specifications

- 4G Networks: Optical modules range from 1.25G SFP to 10G SFP+, with wavelengths around 850nm, operating temperatures of 0-75°C, and transmission di...

Article Content

Feb 04, 2026

5G Remote Radio Head (RRH) Explained: Manufacturers & Modules

Learn about 5G Remote Radio Heads (RRH), their modules, specs, and leading manufacturers. Perfect for wireless network

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WHAT IS RRU AND BBU?

3G networks use a large number of distributed base station architectures, and optical fiber is required to connect the

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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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Understanding Optical Modules: Working Principles, Structures, and ...

Explore the working principles, structures, and performance metrics of optical modules, essential components of

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What is RRU and BBU

RRU and BBU are crucial components in base station construction, enabling a distributed architecture that improves

May 12, 2026

ZTE & Huawei BTS: GSM Architecture & Configuration

Learn about ZTE & Huawei BTS, GSM architecture, BBU, RRU, and configuration steps. Includes traffic monitoring, RET/Tilt

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RRU5515t Hardware Description (Draft A) (PDF)

RMU A RMU3900A (Outdoor Distribution Module) is a radio multiplex unit, which converges and deconverges CPRI

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RRU Installation and Hardware Guide

The document provides instructions for installing RRU, DBS, BTS and TMA equipment and their associated cables. It describes the

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Understanding BBU, RRU, and AAU in telecom networks

Below is a breakdown of the BBU (Baseband Unit), RRU (Remote Radio Unit), and AAU (Active Antenna Unit)—their roles,

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Ericsson RBS 3418 Product Description

Main Unit RRU Dark fiber network Optical fiber Optical fiber Figure 11. The RBS 3418 connected to a dark fiber network 221 01-FGC

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Do you know how optical modules are used in base stations?-ETU

The transmission carriers connecting BBU and RRU devices are optical modules and optical fibers. In 2/3/4G networks, 10Gbps

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ZTE UniRan ZXSDR B8200 Hardware Description

Reads hardware management information, including rack number, back-end type, slot number, board type, board version, and board

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DBS5900 Distributed Base Stations — Huawei Enterprise

The DBS5900 adopts a modular structure, with the baseband unit BBU and remote radio unit RRU deployed separately. The

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Remote Radio Unit

Remote Radio Unit (RRU) - an enclosed radio transceiver with the baseband and control interfaces exposed to allow for remote

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The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right

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Which Optical Modules Are Commonly Used In 4G Base Stations?

The base station can be divided into two modules: the RRU for transmitting signals and the BBU for processing signals. The BBU is

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RRU5935E Hardware Description

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

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eRRU Quick Installation Guide (V100R005C10_04) (PDF)-EN

between the RRU and DLC connector The 2A and 2B ends are connected to the optical port on the BBU baseband

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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

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HISILICON Optical Modules in the field of communication base stations

In 4G network, the optical modules used to connect bbu and rru are mainly Gigabit to 10 Gigabit optical modules; in

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RRU3168 Hardware Description (04) (PDF)

It describes the exterior, ports, indicators, optical modules, cables, and auxiliary devices of the RRU. Changes across issues are also

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The Role of Optical Modules in RRU Equipment

As the name implies, mobile fronthaul optical modules are optical transceiver modules used in mobile base stations, mostly industrial

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HUAWEI RRU3971 INSTALLATION MANUAL Pdf Download

View and Download Huawei RRU3971 installation manual online. RRU3971 network hardware pdf manual download.

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Which Optical Modules Are Commonly Used In 4G Base Stations?

In this blog, ETU-LINK will talk about 4G base stations and common types of optical modules. The base station can be divided into

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Fundamentals of an Optical Module

Fundamentals of an Optical Module As an important part of fiber-optic communication, an optical module is a photoelectric converter

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Understanding RRU in Telecommunications

1. RRU stands for Radio Remote Unit and is the distributed frequency unit that connects to an operator's network and user

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Why Optical Modules For CPRI Applications Need To Support

Based on the above analysis, optical modules working in RRUs must support an industrial temperature range of -40°C

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Cellular Network Infrastructure: From Antenna to BBU

The cellular network infrastructure consists of various components that work together to provide wireless

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RRU PCB Manufacturing: Core Solution for 5G Networks

Explore the crucial role of RRU in 4G and 5G networks. Discover Highleap's high-precision RRU PCB solutions that drive efficiency

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BBU, RRU, AAU: Telecom Network Components Explained

Understanding BBU, RRU, and AAU in a Telecom Network □□ BBU (Baseband Unit) Acts as the core processing unit of a base station.

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Huawei 2100MHz RRU

Huawei 3G, 4G/LTE, 5G Wireless DBS BBU+RRU, Huawei Core Network, OptiX OSN8800, OSN9800 Reseller. Large inventories of

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RRU PCB Manufacturing: Core Solution for 5G Networks

This article delves into the intricate workings of the RRU, explores its integration with systems like RRUS, and highlights the crucial

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Optical module

An optical module is a typically hot-pluggable optical transceiver used in high-bandwidth data communications applications. Optical

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RRU3252/RRU3256 Hardware Maintenance Guide

An optical module provides optical-electrical conversion ports, enabling optical transmission between an RRU and other devices.

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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

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.greatpremiersolutions.co.za>

Email: sales@greatpremiersolutions.co.za

Phone: +27 82 914 3675

Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

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