

Optical module on BBU



AI Overview

BBUs typically use SFP, SFP+, and higher-speed optical modules to connect to RRUs, with speeds ranging from 1.25G in 4G networks to 25G in 5G networks.

Optical Modules in 4G Networks

In 4G networks, BBUs commonly use 1.25G SFP optical modules (gigabit modules) and 10G SFP+ optical modules. The 1.25G SFP modules operate at a wavelength of 850nm, transmit over multimode fiber, and support distances up to 550 meters with power consumption under 1W. The 10G SFP+ modules also use 850nm wavelength, transmit over multimode fiber, and support distances up to 300 meters with similar power efficiency. Other 4G options include 2.5G and 6G optical modules depending on network requirements and distance between BBU and RRU.

Optical Modules in 5G Networks

For 5G networks, BBUs generally use 25G optical modules to handle higher data rates and increased network demands. These modules are designed to support the high-speed fronthaul connections required for 5G, often using enhanced CPRI (eCPRI) protocols for low-latency, high-throughput communication.

Connection and Deployment

BBUs connect to RRUs via optical fibers using these modules. The optical modules are inserted into SFP/SFP+ slots on the BBU, and the fiber is connected to the RRU. In some deployments, CWDM (Coarse Wavelength Division Multiplexing) optical modu...

Article Content

Oct 14, 2025

How To Clear RF Unit Optical Module Fault | Huawei BBU

This video content about, how to clear RF unit Optical Module Fault in Huawei

Jan 16, 2026

BBU-Base Band Unit in Telecom: Function|Details

BBU also known as base band unit, whose working details and function is to process, modulate, transfer and exchange

Sep 24, 2025

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

BBU Quick Installation Guide (V100R005C10_04) (PDF)-EN This document describes how to quickly install the BBU.

Mar 04, 2026

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

Dec 06, 2025

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.

Jul 26, 2025

Baseband Unit | Glossary | EXFO

A baseband unit (BBU) is a unit that processes baseband in telecomm systems. A typical wireless telecom station consists of the

Apr 04, 2026

Difference Between AAU, RRU, and BBU

AAU (Active Antenna Unit): Integrates multiple beams to receive signals from the RRU,

Feb 23, 2026

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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HISILICON Optical Modules in the field of communication base stations

In 5G networks, interfaces between bbu and rru, such as cpri (Common Public Radio Interface) or ecpri (Enhanced

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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

May 06, 2026

TE Connectivity

Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

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The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics

Oct 01, 2025

Baseband Unit (BBU): What Does BBU Mean?

What does BBU mean? Learn everything about baseband unit (BBU) and its importance in telecommunications from

Jun 16, 2026

Difference Between AAU, RRU, and BBU

BBU (Baseband Unit) The central processing unit in a base station. Handles baseband

Feb 19, 2026

On the Placement of BBU Hotels in an Optical Access ...

We discuss the placement of BBU-Hotels over optical access/aggregation networks for 5G backhaul, comparing OTN

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BBU Optical Module Transmit/Receive Fault

After combining the RRU log analysis and the alarm of the optical module, the radio frequency maintenance link is triggered by the

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BBU (Baseband unit)

Introduction A Baseband Unit (BBU) is a key component in wireless communication systems such as cellular networks.

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BBU Subrack Installation Guide | PDF | Optical Fiber

BBU Quick Installation Guide (V100R005C10_04) (PDF)-EN - Free download as PDF File (.pdf), Text File (.txt) or read online for

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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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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

Nov 04, 2025

Open Rack V3 BBU Module SPEC 1

The BBU is intended for use in a BBU shelf that is part of the rack for supplying DC power to system loads during AC power outages.

Mar 11, 2026

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

RRU & BBU Fiber Cable Installation Guide This document provides guidelines for distributing and connecting optical fiber cables

Jun 21, 2026

Cisco 400G QSFP-DD High-Power (Bright) Optical Module Data Sheet

Learn how Cisco 400G QSFP-DD High-Power (Bright) Optical module's small size and low power make it an optimal

Nov 16, 2025

Optical module design resources | TI

View the TI Optical module block diagram, product recommendations, reference designs and start designing.

Oct 11, 2025

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

RRU-BBU Optical Fiber Cable Distribution Guide (GCUW) - Free download as PDF File (.pdf), Text File (.txt) or view presentation

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Everything You Need to Know About Optical Modules

Optical modules are electronic devices used in communication systems to transmit optical signals. These modules

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

Both the radio front end (RFE) and BBU are connected using fiber optic cables. 5G Remote Radio Head Modules The REC part of

Aug 14, 2025

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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BBU Optical Module Transmit/Receive Fault

1. BBU Optical Module Transmit/Receive Fault 2. RF Unit Maintenance Link Failure The results of this alarms was restarting of the

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Understanding Baseband Units in Telecom | PDF | Radio | Modulation

BBU (Baseband Unit) processes original signals in the base frequency band before modulation. It has a digital signal

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What is RRU and BBU

Via optical fiber The RRU connects to the BBU, forming a new “distributed At the base of

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What Is a Baseband Unit?

The BBU and the RF processing unit (or RRU) are both components of a typical telecom station. Positioned within the

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

BBU Quick Installation Guide V100R005C10 04 Installing a BBU a Installing a BBU Subrack NOTE • Wear ESD wrist

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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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Design BBU Baseband Unit and telecommunication | PDF

The document details the components and functions of a Baseband Unit (BBU) in telecommunications, emphasizing its crucial role in

Sep 24, 2025

BBU Subrack Installation Guide | PDF | Optical Fiber

1) The document provides instructions for installing a BBU subrack, boards and modules, GPS SPD,

Jul 15, 2026

What Is an Optical Module and Its FAQs (V200)

Describes what an optical module is and FAQs, including the fundamentals, appearance and structure, key performance counters,

Nov 18, 2025

Optical module

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

Contact Us

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