

How many optical modules does one RRU use



Article Overview

A typical RRU uses 2 to 6 optical modules to connect with the BBU, depending on network type and data rate requirements.

Optical Modules in 4G RRUs

In 4G networks, RRUs are connected to BBUs using optical modules that support data rates from 1.25G to 10G. Each RRU generally requires 2 to 6 optical fibers to handle uplink and downlink traffic, depending on the number of antennas and MIMO configuration. These optical modules can include SFP or SFP+ types, and in some cases, CWDM (Coarse Wavelength Division Multiplexing) modules are used to reduce fiber usage while supporting multiple channels.

Optical Modules in 5G RRUs

For 5G networks, the optical modules typically support 25G rates to accommodate higher bandwidth and low-latency requirements. The interface between the BBU and RRU often uses CPRI or eCPRI protocols, and multiple optical modules may be deployed to support massive MIMO and multi-band operation. The exact number of modules depends on the RRU design, number of transmit/receive chains, and deployment scenario.

Factors Affecting the Number of Optical Modules...

Article Content

Apr 12, 2026

Explanation of RRU and Antenna Configurations??

Some sites may also use a small cell form factor where the RRU, BBU (baseband unit, the brain of the radio), and antenna are all

Jan 12, 2026

Remote Radio Units – HWD-IC

Applications of RRUs At HWD-IC, our Remote Radio Units serve multiple industries and applications: Mobile Network Operators –

Nov 08, 2025

ECON_cmyk

Remote Radio Unit (RRU) is often used as a generic expression for a remotely installed Radio Unit (RU). It is also the name of

Oct 05, 2025

What is RRU in Telecom?

RXF and SMP-MAX connectors can also be used in RRU applications. RXF is an optical, ruggedized connector that provides secure

Apr 11, 2026

What is RRU, BBU and Antenna?

Other components may include timing and synchronization modules, power supplies, and cooling systems to

Mar 21, 2026

BBU, RRU, AAU: Telecom Network Components Explained

Connects to RRU or AAU via fiber optics (CPRI/eCPRI). Used in both 4G and 5G networks for centralized processing. □□ RRU

Dec 19, 2025

What is RRU, BBU and Antenna?

Refreshing some basic concepts. BBU (Baseband Unit): manages the whole base station, including operating

Jan 04, 2026

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

Dec 01, 2025

The Most Comprehensive Guide Of Optical Modules

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

Dec 19, 2025

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

It also lists vendors or manufacturers of 5G RRH units. The Remote Radio Head (RRH) architecture consists of a baseband unit

Nov 07, 2025

Comba Telecom

Comba Telecom is a global leader in wireless infrastructure, delivering base station antennas, DAS system, small cells, Open RAN,

Feb 27, 2026

Understanding RRU in Telecommunications

A Remote Radio Unit (RRU), also known as a Remote Radio Head (RRH) is a transceiver deployed on base stations.

Mar 13, 2026

What is the function of the Remote Radio Unit (RRU) in Ericsson 5G ...

The RRU is connected to the BBU via a high-capacity front-haul link. This link carries digitized and processed data

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Comba Telecom

Engineered with Multi-TRX radio technology, the RRU allows 4G/5G capacity upgrade to 2T4R, 4T4R or 8T8R for both indoor and

Jun 21, 2026

Explanation of Cell Site RRU and Antenna Configurations??

Above 2700 Active Antennas are used which combines the RU into the back of an antenna (also commonly massive MIMO at these

Feb 02, 2026

RRU Installation and Hardware Guide

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

Oct 08, 2025

Difference Between AAU, RRU, and BBU

Integrates the RRU and antenna into a single unit. Used mainly in 5G networks to support

Apr 20, 2026

Understanding BBU, RRU, and AAU in telecom networks

Connectivity: • Linked to RRU or AAU using fiber optic cables via CPRI or eCPRI interfaces. Key Features: • Supports centralized

Mar 31, 2026

System Scheme of Base Station Passive Wavelength Division

Each RRU occupies 2 cores. The 3 RRUs occupy 6 cores. After the passive WDM scheme is adopted, the CPRI

Oct 22, 2025

Understanding RRU in Telecommunications | PDF

RRU functions include transmitting and receiving signals, providing connectivity between user equipment, and interfacing between

Feb 24, 2026

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,

Dec 17, 2025

The Role of Optical Modules in RRU Equipment

Optical modules used in Remote Radio Units (RRUs) for CPRI applications are required to support industrial temperature ranges,

Nov 26, 2025

Cellular Network Infrastructure: From Antenna to BBU

Connectivity to BBU: The RRU connects to the BBU through a bi-directional fiber optic link, usually using the Common

Jul 25, 2025

Ericsson RBS 3418 Product Description

The RRU 22 contains a minimum of hardware, interfaces and no moving parts such as fans, enabling a high MTBF and avoiding the

Aug 11, 2025

Understand AAU, RRU, BBU in one article

All in all, compared with RRU, AAU has more functions of antenna and some functions of BBU. Compared with RRU,

Jun 13, 2026

RRU Installation and Cable Guidelines

The RRU installation process involves installing three RRUs, connecting antenna jumper cables, power cables, optical cables and

Jan 18, 2026

RRU5935E Hardware Description

Hardware description for RRU5935E remote radio unit. Details exterior, functions, ports, specs, cables, and RF connections. For

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