

# 5G Front-haul Active Device

## 5G Front-haul System



### Specification

With the fierce development of 5G communication technology, 5G base stations are being deployed on a large scale, and the deep coverage of base stations requires that the deployment location be closer to users. However, the traditional front-haul solution using fiber optic direct drive between DU and AAU has a series of problems such as tight pipeline resources, high cable cost, long construction period, and difficulty in capacity expansion.

The semi-active device for the front axle of the 5G series is designed to solve the problems of the lack of cable resources, long construction period, and high cost due to the direct drive of the optical cable between DU-AAU in the 5G front-haul under the C-RAN architecture.

The device adopts active WDM device on the DU side and a passive wavelength division multiplexer plus colored transceiver module on the AAU side to form a unified management and control front-haul network. It provides PC-side Web and client-side APP network management and high reliability 1+1 protective function. Realize the low-cost, high-reliability and fast deployment of 5G front-haul network construction for operators.

### Functions and features

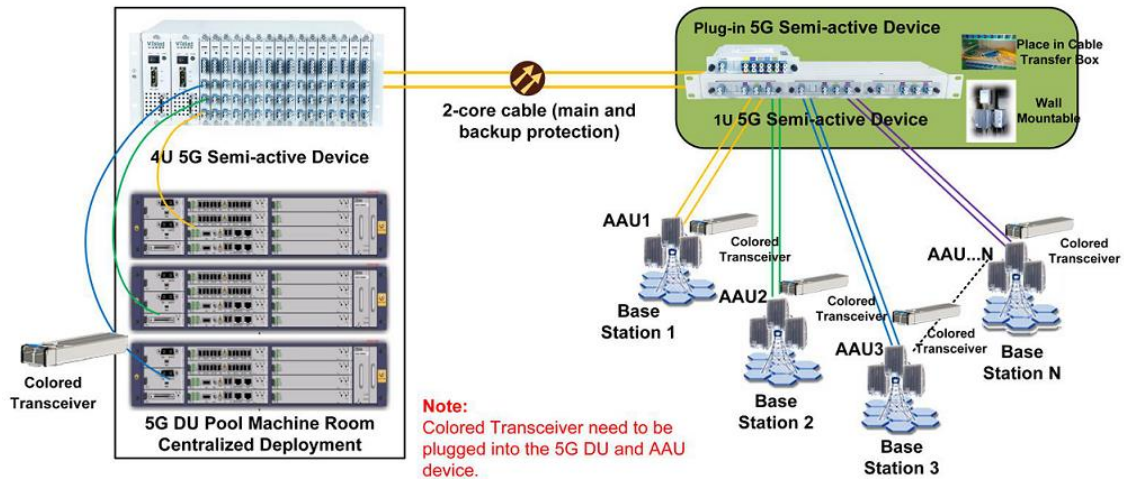
- Support CWDM 6 channels, 12 channels or wavelength customization.
- Support 1 + 1 optical line protection and real-time monitoring of optical power.
- Support the state of the optical line to remain unchanged when power down, without affecting the normal work of the business.
- Support automatic and manual working mode and automatic switchback function, the switching time is less than 30ms.
- Support Web, APP network management method.
- Support local and remote control functions.

## Parameters

System Parameter	Technical Index	
Wavelength range	CWDM: 1271nm ~ 1610nm can be customized	
Fiber type	G.652 G.653 G.655	
Service access type	Ethernet, CPRI, eCPRI, etc.	
Line side protection method	1 + 1 protection	
Switching time	<50ms	
Operating mode	Automatic and manual	
Introduction loss	<7dB	
Network management	Web, APP	
Clock feature	177 (W) × 20 (H) × 225 (D) (mm)	
Protection feature	440 (W) × 88 (H) × 285 (D) (mm)	
Network management feature	440 (W) × 176 (H) × 250 (D) (mm)	
Plug-in box size	129 (W) × 25 (H) × 113 (D) (mm)	
1U chassis size	483 (W) × 45 (H) × 112 (D) (mm)	
3U chassis size	129 (W) × 132 (H) × 112 (D) (mm)	
Operation environment	Operating temperature	-10°C~+70°C.
	Storage temperature	-40 °C ~ 80 °C
	Relative humidity	5% ~ 95% non-condensing
Security and EMC	Comply with FCC, UL, CE, TUV, CSA standards	
Power consumption	<200W	

## Networking Applications

Based on the DU-AAU scenario in the 5G front-haul, 5G semi-active device is deployed on the DU side and the AAU side. A 2-core fiber is required between the 5G semi-active device to provide 1 + 1 protection for one main and one backup line. The eCPRI optical interface of DU and AAU need to be replaced by our company's 25G colored transceiver module.



**Figure 1. 5G DU and AAU Application Solution**