5G Fronthaul Transmission Semi-Active WDM System

The 5G fronthaul transmission semi-active WDM system launched by Guangzhou Sintai Communication Co., Ltd. is mainly used to solve the problem of lack of optical cable resources for optical fiber remote transmission between DU-AAU in C-RAN architecture. The scheme features active WDM on DU side and passive WDM on AAU side. Through the intervention of active equipment, the management and protection functions of fronthaul transmission carrying network are realized. At the same time, the simple and low-cost characteristics of remote passive are taken into account. The network reliability is improved, and the manageability and maintainability of the fronthaul transmission network are also improved.

Product Feature

- Support CPRI 1~10 and eCPRI (10G/25G), compatible with STM-1/4/16/64, GE/10GE/25GE and other multi service unified bearing, transparent transmission, and maximize the value of fronthaul transmission network
- Modular configuration, 1:6/12/18 optional, can achieve multi-directional multi-level convergence, and large-scale optical fiber saving
- It can provide a variety of color optical modules, support CWDM 18 waves, MWDM 12 waves, meet the requirements of various line power budget
- Support optical layer 1:1 protection with protection switching time less than 50ms, improve network reliability
- Support graphical interface network management, reconstruct wireless and transmission management domain, and realize full monitoring of optical module and line status
- The central office end active WDM equipment supports AC 220 V and DC-48 V power supply options, and 1 + 1 power input protection. Power failure of the equipment will not affect the service transmission
- Remote passive WDM has outdoor deployment capability and flexible deployment location

Product Picture

Product specification

Item of Mux-Demux	CWDM			MWDM	
Channel Number	6	12	18	6	12
Central wavelength (nm)	1271~1371	1271~1491、 1271~1371 &1471~1571	1271~1611	1267.5~1314.5	1267.5~1374.5

Item of Mux-Demux	CWDM			MWDM	
Pair channel insertion loss (dB) (Without protection) A	≤3.0	≤4.0	≤4.4	≤3.0	≤4.0
Center wavelength deviation (nm)	±1.5			±1.0	
1dB channel bandwidth (nm)	≥13			≥5	
Flatness of passband (dB)	≤0.5				
Isolation of adjacent channels (dB)	≥30				
Isolation of non-adjacent channels (dB)	≥40				
Wavelength thermal stability (nm)	≤0.005				
Insertion loss thermal stability (dB)	≤0.007				
Polarization dependent loss (dB)	≤0.15				
Return loss (dB)	≥40				
Protection switching time	<50ms				
Working temperature (°C)	0~+70				
Storage temperature (°C)	-40 ~+85				

A: Additional insertion loss will be introduced when the protection function is added, which is 4.5dB.

Item of Optical Module	CWDM		MWDM
Transmission rate	10G	25G	25G
Working wavelength (nm)	1271 ~ 1611	1271 ~ 1371&1471 ~ 1571	1267.5 ~ 1374.5
Target distance (km)	10	10	10
Transmitting optical power range (dBm)	1 ~ 7	1.5 ~ 7	2 ~ 7
Receiving optical power range (dBm)	-13.5 ~ 2(PIN) -18.5 ~ -4(APD)	-13 ~ 2(PIN) -18 ~ -4(APD)	-13 ~ 2(PIN) -18 ~ -4(APD)

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