



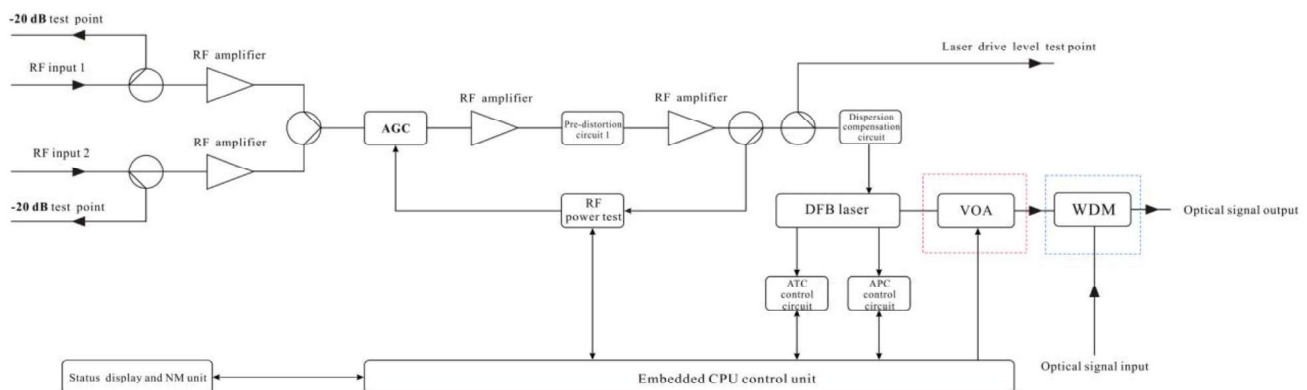
1. Product overview

According to the Next Generation Broadcasting (NGB) planning and PON standards, 1550nm is defined as the transmission wavelength for HFC downstream. The high cost of 1550nm external modulated transmitter and dispersion effects of 1550nm directly modulated make network transformation difficult. Thus we create the 1550nm directly modulated optical transmitter with electronically controlled dispersion compensation. It supports up to 1.2GHz band and DOCSIS 3.1 system. With two RF inputs and high isolation, it enables the signal transmission of QAM and IPQAM smoothly. Support a transmission distance of 50KM with electronically controlled dispersion compensation. Built-in CWDM is optional for multi-wavelength networking.

2. Performance Characteristics

- 1.2GHz band, support DOCSIS 3.1 system.
- The AGC and MGC gain control modes are optional.
- Two inputs with 50dB isolation for high quality RF insertion.
- Dual power supply; hot backup; a variety of power supply options are available, optional AC220V and DC48V.
- Laser output power, bias current and cooling current are detected in real time.
- Optional CWDM for optical signal insertion.
- Electronically controlled dispersion compensation can support a transmission distance of 50KM.
- Low-cost solution is comparable to the performance of external modulated transmitter.
- ITU standard wavelength is optional.

3. Block Diagram



Note: The optical attenuator in the red dashed box and the wavelength division multiplexer in the blue

4. Technique Parameters

Item	Unit	Parameter	
Optical part			
Optical wavelength	nm	ITU wavelength	
Laser type		Butterfly-typed DFB laser	
Optical modulation mode		Direct optical intensity modulation	
Optical connector type		FC/APC or SC/APC	
Output optical power	mW	10	The insertion loss of the VOA and CWDM is excluded.
External optical signal input	dBm	-5~10	
RF part			
Frequency range	MHz	47 ~ 870/1003/1218	
RF input level	dBuV	77± 5	
Flatness in band	dB	± 0.75	
Input return loss	dB	≥ 16	
RF AGC control range	dB	±5	
RF MGC adjustable range	dB	0 ~ 20	
RF input isolation	dB	≥ 50	Isolation between two RF inputs
RF input test port	dB	-20±1	
Laser drive level test port	dB	-20±1	
Electronically controlled optical attenuator tolerance	dB	≤1: ATT 0-15dB	
		≤3: ATT 16-20dB	
CNR	dB	≥ 48	550MHZ 59CH analog signal 77dBuV/CH
C/CSO	dB	≥ 58	550-870MHZ 40CH digital signal 67dBuV/CH
C/CTB	dB	≥ 63	25 Km, -1dBm input
CNR	dB	≥ 46	550MHZ 59CH analog signal 77dBuV/CH
C/CSO	dB	≥ 55	550-870MHZ 40CH digital signal 67dBuV/CH
C/CTB	dB	≥ 63	50Km, -1dBm input
MER	dB	≥ 40	25 Km, -1dBm input, 96CH digital 77dBuV/CH
		≥ 39	50 Km, -1dBm input, 96CH digital 77dBuV/CH
Others			
Maximum power consumption	W	≤10	
Operating temperature	°C	-5 ~ + 55	
Storage temperature	°C	-30 ~ + 70	
Weight	Kg	5.5	