

1550 nm ext. modulated optical transmitter

(47 – 1.006 MHz)

10420328
OTXE-1550-2x8-1G



- Narrowband and very low noise DFB laser for a very good linearity and excellent system parameters
- Designed for the operation with optical amplifiers (normal-power EDFAs and high-power EDFAs)
- Suitable for the realization of optical transmission links of over 100 km
- Setting of an automatic gain control (AGC) or a manual gain control (MGC)
- Perfect SBS suppression circuit, adjustable SBS threshold
- Optical modulator with 2 optical outputs
- 2 fans with intelligent fan control for a very long lifespan and reduction of power consumption
- Advanced 32 bit processor, LCD display
- System parameter setting by front panel keypad, user-friendly web interface or serial interface (RS 232)
- SNMP network management functionality via RJ 45 interface
- 2 redundant and hot-pluggable power supplies each with 50 % load sharing, in case one power supply fails the second takes over 100 %
- Dimensions: 19"/1RU (483 x 455 x 44 mm (W x D x H))
- Weight: approx. 5,5 kg
- Connector types: SC/APC (optical) and F-females (RF and test point) – E2000/APC alternative available

Parameter	OTXE-1550-2x8-1G	OTXE-1550-2x10-1G
Operating wavelength [nm]	1545 ... 1560	1545 ... 1560
Wavelength adjustment range [GHz]	± 50	± 50
Output power per port [dBm]	8	10
Amount of output ports	2	2
Equivalent noise intensity (RIN) [dBc/Hz]	< -160	< -160
Side Mode Suppression Ratio (SMSR) [dB]	> 30	> 30
SBS threshold value [dBm]	+13 ... +19 (continuously adjustable)	+13 ... +19 (continuously adjustable)
Laser linewidth [MHz]	0,3	0,3
RF frequency range [MHz]	47 – 1.006	47 – 1.006
RF input level range [dBμV]	78 ... 96 (AGC mode)	78 ... 96 (AGC mode)
Frequency response [dB]	± 0,75	± 0,75
System parameters		
Composite Second Order (CSO)/ Composite Triple Beat (CTB) [dBc]	≥ 64/≥ 65	≥ 64/≥ 65
Carry-to-Noise (C/N) [dBc]	≥ 55,5	≥ 55,5
Return loss [dB]	≥ 16	≥ 16
AGC control range [dB]	± 3	± 3
MGC control range [dB]	0 – 15	0 – 15
Operating temperature range [°C]	-5 ... +45	-5 ... +45
Storage temperature range [°C]	-30 ... +70	-30 ... +70
Max. relative humidity (operation and storage)	max. 95 %, no condensation	max. 95 %, no condensation
Supply voltage		
Optical connectors	SC/APC	SC/APC
Power consumption [W]	< 60	< 60
Order No.	10420328	10420330

A practical example as well as a block diagram of the 1550 nm externally modulated optical transmitters can be found on the following page.

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Practical example of CSO, CTB, and C/N as a function of SBS

Testing conditions: RF Mode = AGC, RF input level = 80 dB μ V, Rx input power = 0 dBm, EDFA with 5 dB noise figure

Test name	SBS	1st stage EDFA	1st fiber cable length	2nd stage EDFA	2nd fiber cable length	optical receiver input power
Tx/Rx	13,5 dBm	none	none	none	none	0 dBm
Link 1	13,5 dBm	none	35 km	none	none	0 dBm
Link 2	16 dBm	16 dBm	65 km	none	none	0 dBm
Link 3	13 dBm	13 dBm	50 km	13 km	50 km	0 dBm

Test model	C42	D59	D84	D30
Channel plan	CENELEC 42	PAL D59	PAL D84	PAL D
Channel number TV/FM/QAM64	42/0/0	59/0/0	84/0/0	30/0/48
Bandwidth noise [dBc]	5	5	5	5
C/N Tx/Rx [dBc]	55,5	54	52,5	54,5
C/N Link 1 [dBc]	55	53,5	52	54
C/N Link 2 [dBc]	53	52,5	50,5	52,5
C/N Link 3 [dBc]	50,5	50,5	49	51
CSO Tx/Rx and Link 1 [dBc]	64	65	65	70
CSO Link 2 [dBc]	63	65	65	70
CSO Link 3 [dBc]	62	64	63	65
CTB [dBc]	65	65	65	68

