

Fx-ES10XL

OPTICAL TRANSMITTER 1550 NM

Application



- ▶ Externally modulated 1550 nm DFB laser transmitter for electrical to optical conversion of multichannel CATV signals like AM-VSB, FM and QAM signals
- ▶ Enables the usage of optical amplifiers (EDFAs) as boosters or repeaters in order to realize large scale HFC networks
- ▶ Excellent performance in order to realize links exceeding 100 km

Features

- ▶ Low noise, narrow linewidth CW-DFB laser
- ▶ ITU-Grid wavelength
- ▶ Wavelength adjustable +/- 100 GHz
- ▶ Electrooptical modulator with 2 optical outputs
- ▶ Automatic load control (ALC) for CATV signal input
- ▶ Adjustable RF slope
- ▶ > 2 x 10 dBm output power (Fx-ES10XL-100)
- ▶ Adjustable SBS threshold up to 19 dBm to increase transmission distance
- ▶ Front panel RF test point -20 dB
- ▶ Dual, hot-plug-in power supply modules for 100...240 VAC, ±36...±72 VDC or 23.5...24.5 VDC
- ▶ Web and SNMP Interface (a-version)
- ▶ RS485/232 interface (b-version)
- ▶ LC display and LED status indication
- ▶ General purpose I/O interface for remote functions
- ▶ Very thin, only 1 U design for mounting into 19", ETSI or JIS racks

Electrical Properties

RF frequency range	[MHz]	47 ... 1000
Flatness	[dB]	< ±0.75 (47 MHz...860 MHz) < ±1.5 (860 MHz...1 GHz)
Nom. Input level per TV channel	[dBμV]	80
Input level range (per carrier)	[dBμV]	78 ... 96 (for OMI = 5% per CATV carrier)
True RMS input level range	[dBm]	-16 ... +2 (for ALC correctly working)
Slope range	[dB]	-2 (cable equivalent) ... +8 (cable equalization)
RF impedance	[Ω]	75
Return loss	[dB]	> 20 (@ 47 MHz) – 1.5 dB/octave, minimum > 15
RF monitor output level	[dB]	-20 (+0.2 ... -0.8 dB @ 862 MHz, -1.3 dB @ 1 GHz)

Performance Characteristics

Transmitter version		C42	D84	N77
Channel allocation plan for test		CENELEC 42	PAL-D 84	NTSC 77
number of channels TV / FM (-4dB) / QAM64 (-10dB)		42 / 0 / 0	84 / 0 / 0	77 / 0 / 0
Noise bandwidth	[MHz]	5	5	4
CNR Tx/Rx	[dB]	55.5	52.5	53.5
CNR Link 1	[dB]	55.0	52.0	53.0
CNR Link 2	[dB]	53.0	50.5	52.0
CNR Link 3	[dB]	50.5	49.0	50.0
CSO Tx/Rx and Link 1	[dBc]	65	65	65
CSO Link 2	[dBc]	63	65	65
CSO Link 3 at output #1	[dB]	62	63	65
CTB	[dBc]	65	65	65

Test Conditions

	Booster EDFA	1 st Fibre Length	In-Line EDFA	2 nd Fibre Length	RX
Tx/Rx	no	no	no	no	0 dBm
Link 1	no	35 km	no	no	0 dBm
Link 2	16 dBm	65 km	no	no	0 dBm
Link 3	13 dBm	52 km	13 dBm	52 km	0 dBm

RX with 7 pA/√Hz input noise current density
 EDFAs with 5dB noise figure
 RF input level at 80 dBuV / TV channel

