

BK Optical System

optical transmitters SSO 510XA

Features

- DFB laser with optical isolator
- thermoelectric cooler
- enhanced performance
- high reliability design
- incl. pre-amplifier with automatic load control
- SBS suppression and pre-chirping technology
- DWDM ITU-Grid wavelength with adjustable wavelength: +/- 100 GHz
- second input for insertion of additional RF-channels
- RS 485 interface for electronically adjustment of slope, gain, output power, OMI and fiber length
- mini-DIN A/B alarm interface
- BK modular technique, 3 multi-color LED display

Introduction

The optical transmitter SSO 510XA (successor of SSO 510+SVK 684) is a directly modulated 1550 nm DFB laser transmitter for DWDM applications. This extreme linear analogue transmitter is equipped with a cooled DFB laser with an output level of 10 dBm.

This transmitter is developed to fulfill the requirements of modern Hybrid Fiber Coax networks distributing not only broadband CATV, but also cable phone and cable data signals using narrowcast DWDM applications. The SSO 510XA is calibrated for standard frequency plans such as Cenelec-42, NTSC-77, PAL-D 84 and BK-862.

The transmitter is equipped with state of the art electronic circuitry supporting fully electronically (no mechanical) adjustments. The transmitter has two RF inputs, allowing easily combining of RF-signals. One input test-point (TP1) allowing measuring and supervising of the RF input signals.

Additionally a laser driver test-point (TP2) is available, enabling measuring:

- the DC output power of the transmitter;
- the total optical RMS modulation index (OMI_{totrms}).

Future proof operation is accomplished due to the possibility of downloading updates of the transmitter firmware using the RS-485 element management system interface.

For compatibility with the former SSO 510 version, an additional interface is available providing standard A/B alarms for third party management systems.

There are several options of optical connectors such as SC/APC, FC/APC and E2000 available.

The optical transmitter comes in a modular BK-type housing to be mounted either on BK-sub-rack of type BBT00x or SMG 099.



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Optical Transmitter for 1550 nm

Application

- Electrical to optical conversion of CATV signals on standard single mode fibers (CCITT rec. G652)
- DWDM narrowcast insertion of additional services in HFC networks

Features

- Tunable DFB laser with optical isolator
- thermoelectric cooler
- enhanced performance
- high reliability design
- incl. pre-amplifier with automatic load control
- RS 485 interface for electronically adjustment of slope, gain, output power, OMI and fiber-length
- A/B alarm interface
- BK modular technique, 3 multi-color LED display

Model Number		SSO510XA	SSO510+SVK684
Typical performance data			
Optical Output Power	[dBm]	10	10
Optical power tolerance	[dB]	±0.5	±0.5
Optical power adjustment range	[dB]	0..-3	0
Optical Wavelength	[nm]	1310 ±20	1310 ±20
Optical Connector		any HRL type	any HRL type
Optical Return Loss	[dB]	>50	>50
Side Mode Suppression	[dB]	>30	>30
Laser output level test-point	[V/mW]	0.1 ±0.02	N/A
Optical Modulation Index	[%]	2..10	2..10
RIN	[dBc/Hz]	-157	-157
RF bandwidth	[MHz]	7..1000	47.. 862
Flatness 7..862 / 5-1000 MHz	[dB]	±0.75/±1,5	±0.5
RF Input level/channel (OMI=4%)	[dBμV]	80	80
RF high level input (OMI=4%)	[dBμV]	94	N/A
RF level adjustment range	[dB]	0...24	N/A
RF slope adjustment range	[dB]	-2...+16	N/A
CSO (CENELEC 42)	[dBc]	66	65
CTB (CENELEC 42)	[dBc]	66	65
CXM (CENELEC 42)	[dBc]	70	70
Measurement test-point	[dB]	-20, ±1	N/A
RF Input impedance	[ohm]	75	75
RF Return loss (-1.5 dB/oct.)	[dB]	20 at 47 MHz	20 at 47 MHz
Supply Voltage	[VDC]	24	24
Power consumption /stand-by	[W]	<12 / <4	<18 / <4
Operating Temperature Range	[°C]	-10 ... +55	-10 ... +55
Operational lifetime	[Year]	19,5	19,5
MTBF	[FIT]	5900	5900
Size	[BK]	1	1

Also available:	Output level	Remarks
SSO 508XA	8 dBm	E2000 or SC/APC 8°