FTTH CATV optical transmitter
CTO-51

CTO-51 is RFTV broadcast transmitter for FTTx optical fiber networks.

Features

- Transmit NTSC, PAL, digital or compressed digital signal for CATV and/or telephony applications
- Built-in high linearity, optically isolated, DFB thermoelectric cooled laser, direct modulation
- Microprocessors controlled diagnostic and front panel readout display
- RF input bandwidth 47-860MHz (band space for transmitting 77 NTSC channels or 59 PAL-D channels)
- Built-in RF amplifier, low input RF signal accepted
- RF testing point on front panel

Main applications: FTTx

- analog and digital mixed transmit <15 km
- pure digital load <40 km
- DWDM narrow band multiplex >70 km.

Series of AM laser transmitters deliver high performance signal transmission of NTSC, PAL, digital or compressed digital information for CATV and/or for telephony and audio applications. It is based on custom high-linearity optically isolated DFB (Distributed Feedback) laser, specially designed for multi-channel AM video applications. Built-in driver amplifier and control circuits are providing exceptionally low noise and good inter-modulation characteristics.

CTO51 is direct modulation fiber optic transmitter and his usage has limited usage distance. This is principal thing which is limiting usage of direct modulated transmitter for long distances applications. Device is recommended for transmitting analog and digital multiplex signal. Analog signals are recommended for usage up to 15km, digital load signal for distance up to 40km. Devices can be also used in DWDM narrow band multiplex as well as IP/QAM systems.

Specification:

Optical features:

• Wavelength	1550±10 nm (standard ITU wavelength)
• Line width FWHM(△λ)	≤1 MHz
• Side mode suppression ratio SMSR	≥45dB
• Extinction ratio	≥20dB
• Equivalent noise intensity	≤-160 dB/Hz @RF input 20~1000MHz
• Output power	depends on model 3-10dBm
• Return loss	≥55dB
• Optical fiber connector	SC/APC

RF feature

• Work bandwidth	45-862MHz

- Input level 20±2 dBmV
- Flatness ≤±0.75 dB @ 45~862MHz
- Return loss >16 dB
- Input impedance 75 Ω (port RF INPUT)
- RF test port 0 ±1 dB

Link feature

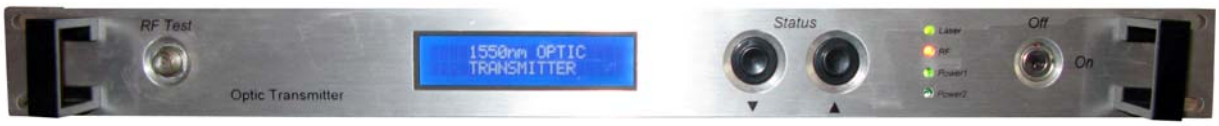
- Transmit channel PAL-D 59 channels, NTSC 77 channels
- CNR ≥50 dB @ -1dBm receive side
- CTB ≤-63 dB
- CSO ≤-57 dB
- SBS restrain ≥17 dBm

General feature 90~265V

- Power consumption ≤50 W
- Work temp. -5~65 ℃
- Storage temp. -40~85 ℃
- Operating relative humidity 5~95%
- Dimension 19" 1U rackmount, 482x254x45mm

Front panel:

RF Test: British F female, RF signal testing port
LCD display: Shows devices status
STATUS buttons: select diagnostic mode
LED: working status indicators
Lock: Power lock



Back panel:
RF input AM: input for RF signal, F female, AM modulated
RF Input digital: digital RF signal
Optic: SC/APC connector, output fiber optic signal. Use only SC/APC connector!

Operating description:

1.) When power supply is connected digital panel will display "READY: KEY OFF", there is Red light.
2.) There is time delay in order to protect the laser. After turning key the laser will start to work after 10 sends. Indication turns into Green from Red.
3.) User can read related parameters by pressing STATUS buttons, shows following items:
   A] Model: shows device model
   B] Power: Display optical output power
   C] Temp: Displays temperature of the laser
   D] RF: Displays RF signal level
   E] Cooling/Heating: Displays amount of the current that thermoelectric cooler requires
   F] Reads status of +5V power source
   G] Reads status of +24V power source
   H] Reads status of -5V power source

4.) if any fault listed above occurred then there is alarm – Red sparkling LED, microprocessor will cut down laser automatically and digital panel show the cause of fault
5.) if RF input signal too high there will be alarm and red sparking

Notice:

a) In order to make sure reflect loss is more then 45dB is necessary to use APC polished connectors. Keep connector clean when installing!
b) Do not turn device separately or without eye protecting cover.
c) The machine needs good grounding. According international standards adopts three wire plug, where middle cable is grounding. Please care to be grounding operational and in good condition in your installations.

Operating ranges:

Following table is valid for receiver with -1dBm sensitivity, transmitting of analog signal.

Model	Output power dBm	Range km
CTO51-0305	3	5
CTO51-0605	6	
CTO51-1005	10	
CTO51-1310	3	10
CTO51-1610	6	
CTO51-1010	10	
CTO51-1315	3	15
CTO51-1615	6	
CTO51-1015	10	