

The optical transmitter model LT1550 employs a high performance thermally stabilised, DFB, low-chirp, isolated laser to transmit CATV signals. Operating on a specific optical wavelength in the ITU-DWDM grid, the unit suits single mode optical fibre networks with or without dense wavelength division multiplexing (DWDM).

The unit can optionally be equipped with an integrated erbium doped fibre amplifier (EDFA) for fibre to the home (FTTH) applications.

Designed for high channel loading and superior performance, this transmitter can achieve distances of up to 10 km on standard fibres and up to 30 km on 1550 nm dispersion shifted fibres.

LT1550 optical transmitters incorporate a comprehensive alarm and status monitoring system of all laser operating parameters such as DC Laser Bias Current, Cooler Current and Optical Output Power.

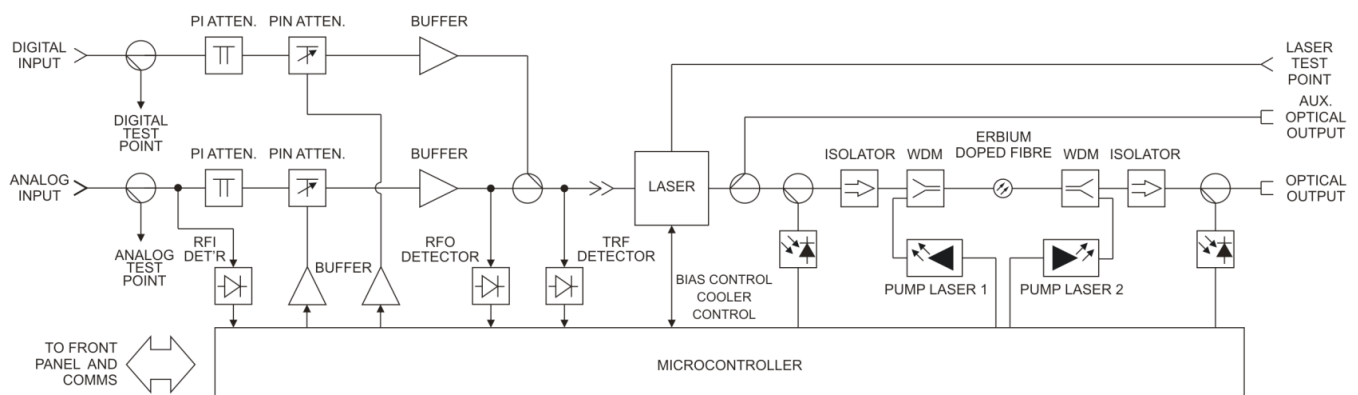
The data is available simultaneously on a front panel LCD display, on a USB connector, and optionally via a HTTP/SNMP network module.



## Key Features and Functions

- Analogue InGaAsP DFB low-chirp laser with optical isolator and thermoelectric cooler
- Handles legacy analogue cable television as well as digital DVB-T or DVB-C formats
- 45 MHz to 1000 MHz forward path RF amplifier with automatic gain control (AGC) for a constant optical modulation index (OMI)
- Automatic Peltier thermo-cooler control and automatic laser power control for constant laser temperature and optical output
- Option for integrated Erbium Doped Fibre Amplifier (EDFA) to achieve the very high optical power levels as required for FTTH systems
- Self-contained 19" sub rack 1 RU with integrated universal mains power supply
- Backlit LCD display provides status monitoring and control
- Front panel mounted USB craft port with optional Ethernet port on the rear panel for SNMP/HTTP network management

## Block Diagram



**LT1550 (High Power)**

## Specifications

### Optical Performance

Optical wavelength	One ITU grid channel in the 1550 nm range
Optical output power options	6, 8, 10, 20, 40, 80, 100, 120, 160, 200, 250, 320, 400 mW
Optical return loss	> 60 dB
Optical connector	SC/APC, E2000/APC, FC/APC
RIN	< -155 dB/Hz

### RF Performance

RF bandwidth	45 MHz to 1000 MHz
RF flatness	± 0.75 dB
RF gain control	-15 dB to +5 dB
RF impedance	75 Ω
RF test point relative to RF input port	-20 dB ± 1 dB
RF input connectors	SCTE F-type
RF test points	Mini-SMB
Alarms and laser status	Front-panel LEDs, SNMP Traps

### Link Performance<sup>(1)</sup> (for 6, 8 or 10 mW)

	64 PAL B/G, D Channels	42 CENELEC Channels (as per EN50083-3)	79 NTSC CW channels + Digital
CNR	> 53 dB	> 53 dB	> 54 dB
CSO	> 56 dB	> 55 dB	> 56 dB
CTB	> 62 dB	> 61 dB	> 61 dB

### Link Performance<sup>(1)</sup> (for 20, 40, 80, 100, 120, 160, 200, 250, 320, 400 mW)

	64 PAL B/G, D Channels	42 CENELEC Channels (as per EN50083-3)	79 NTSC CW channels + Digital
CNR	> 52 dB	> 52 dB	> 53 dB
CSO	> 56 dB	> 55 dB	> 56 dB
CTB	> 62 dB	> 61 dB	> 61 dB

### General

Power	90 Vac to 264 Vac, 50 Hz to 60 Hz
Operating temperature	0°C to +45°C
Dimensions (H x W x D)	44 x 483 x 360 mm
Ship size (H x W x D)	120 x 510 x 490 mm
Weight	5 kg
Ship weight	5.5 kg
RF connectors	SCTE F-type
Craft port	USB on front panel
Network port (option SNMP)	10BaseT with HTTP and SNMP
Local system management	Via front panel display and keyboard via integrated web server (HTTP)
Remote management (option SNMP)	via NMS3-NetCraft field tool (SNMP) (free inclusion with SNMP option) via NMS3-Enterprise-II network operating software (SNMP)

Note:

(1) This link performance is measured at 0 dBm optical input, 1550nm 10 km SMF and 4% OMI for 45-870 MHz.

## Order Details

**LT1550-[U-V]-[W]-[X]-[Y]-[Z]** ..... Laser Transmitter with Erbium Doped Fibre Amplifier

### Options:

**U-V** Optical output power (mW) and number of optical outputs<sup>(1)</sup>

<b>006-1</b>	6 mW, one optical output (1 x 8 dBm)
<b>006-2</b>	6 mW, two optical outputs (2 x 4 dBm)
<b>008-1</b>	8 mW, one optical output (1 x 9 dBm)
<b>010-1</b>	10 mW, one optical output (1 x 10 dBm)
<b>020-1</b>	20 mW, one optical output (1 x 13 dBm)
<b>040-1</b>	40 mW, one optical output (1 x 16 dBm)
<b>040-2</b>	40 mW, two optical outputs (2 x 13 dBm)
<b>080-2</b>	80 mW, two optical outputs (2 x 16 dBm)
<b>100-2</b>	100 mW, two optical outputs (2 x 17 dBm)
<b>160-4</b>	160 mW, four optical outputs (4 x 16 dBm)
<b>200-4</b>	200 mW, four optical outputs (4 x 17 dBm)
<b>200-5</b>	200 mW, five optical outputs (5 x 16 dBm)
<b>250-6</b>	250 mW, six optical outputs (6 x 16 dBm)
<b>250-8</b>	250 mW, eight optical outputs (8 x 15 dBm)
<b>320-8</b>	320 mW, eight optical outputs (8 x 16 dBm)
<b>400-8</b>	400 mW, eight optical outputs (8 x 17 dBm)

**W** ITU grid channel (Optical wavelength)<sup>(2)</sup>

<b>21</b>	192.1 THz (1560.61 nm)
<b>23</b>	192.3 THz (1558.98 nm)
<b>:</b>	<b>:</b>
<b>31</b>	193.1 THz (1552.52 nm)
<b>33</b>	193.3 THz (1550.92 nm) <sup>(3)</sup>
<b>34</b>	193.4 THz (1550.12 nm)
<b>35</b>	193.5 THz (1549.32 nm)

**X** Optical Connectors

<b>S</b>	SC/APC optical connector
<b>E</b>	E2000/APC optical connector
<b>F</b>	FC/APC optical connector (narrow key)

**Y** Monitoring and Management

<b>U</b>	USB port only <sup>(4)</sup>
<b>M</b>	USB port and Ethernet port for SNMP/HTTP network monitoring

**Z** Power Cable<sup>(5)</sup>

<b>EU</b>	Power Cable for Europe (not for use in UK)
<b>CN</b>	Power Cable for China
<b>CH</b>	Power Cable for Switzerland
<b>US</b>	Power Cable for USA
<b>UK</b>	Power Cable for UK
<b>AU</b>	Power Cable for Australia

Note:

(1) In cable television applications no more than 50 mW (17 dBm) launch level per fibre line should be planned to avoid excessive Stimulated Brillouin Scattering (SBS) in the connected fibres. Back-scatter can significantly reduce CNR and CSO performance. Hence the models with 80, 100, 120, 160, 200, 250, 320 and 400 mW power output should be ordered with an appropriate integrated optical splitter, keeping the power per port at a more manageable and safe level.

(2) Not all wavelengths may be available at time of order. Order the default channel 33 (1550.92 nm) for fastest delivery and easy availability of spares. Contact PBN for details if a specific wavelength is required.

(3) Default channel if nothing else specified.

(4) Units without SNMP option only available to special production orders. Minimum order volumes apply.

(5) PC-EU (Power Cable for Europe) is the default power cable. If you need a power cable for different regions, please add it in your order.