

# LB2050 - Fibre optic link for DVB-T/S

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## Fibre optic link for terrestrial and satellite digital video broadcasting

The LB series fibre optic link provides a simple, easy to install and cost effective alternative to coaxial cable connection to the Low Noise Converter (LNC) input of your satellite receiver. The unit can also be used as an L-band uplink in VSAT terminals.

Optical fibre used for the link is single mode, which provides electrical and EMI isolation. The units offer virtually identical performance for fibre optic links from 20 metres up to 20 kilometres.

The link modules are physically small allowing for easy mounting in any indoor or suitably sheltered location. DC power to the units is fed direct via input leads. The transmitter module has power feed capability to supply DC voltage to the LNC in the satellite dish. The LNB/LNC supply voltage can be disabled by removing an internal jumper.

The LBTX2050 transmitter comes standard with RF input AGC operation to maintain a constant optical modulation level, irrespective of satellite receive levels.

Models are available for L-band only, or for extended bandwidth to also accommodate terrestrial DVB-T transmissions.

## Features

- Affordable and reliable replacement for coaxial cable.
- 950~2050 MHz bandwidth for DVB-S or 45~2600 MHz bandwidth for DVB-T and DVB-S.
- Electrical and EMI isolation.
- Small size for ease of installation.
- TVRO, MATV, SMATV, GPS, Broadcast.
- VSAT - Meets Intelsat requirements.
- Ideal for campus distribution applications where up to 6 remote LBRX2050 optical receivers can be driven from one LBTX2050 optical transmitter, employing an external optical splitter. The LBTX2600 can drive up to 16 remote LBRX2600 receivers without need for optical amplifiers.
- CWDM models available for multiple satellite polarity distribution over one fibre core.

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## Specifications

### Transmitter

Laser type, Optical Power & Wavelength	
LBTX2050-SC-AGC	FP 1 mW (0 dBm) - 1310 nm
LBTX2600-SC-AGC-3101	DFB 1 mW (0 dBm) - 1310 nm
LBTX2600-SC-AGC-3105	DFB 3 mW (5 dBm) - 1310 nm
LBTX2600-SC-AGC-5105	DFB 3 mW (5 dBm) - 1510 nm
LBTX2600-SC-AGC-5305	DFB 3 mW (5 dBm) - 1530 nm
LBTX2600-SC-AGC-5505	DFB 3 mW (5 dBm) - 1550 nm
LBTX2600-SC-AGC-5705	DFB 3 mW (5 dBm) - 1570 nm
LBTX2600-SC-AGC-5905	DFB 3 mW (5 dBm) - 1590 nm
LBTX2600-SC-AGC-6105	DFB 3 mW (5 dBm) - 1610 nm
Optical connector	SC/APC (Options for FC/APC or E2000/APC)
Optical return loss	>55 dB
RF input level	-10 dBm (sum of power)
RF input return loss	>12 dB
RF input impedance	75 Ω
RF input connector	F-type with stabilized 12 Vdc supply to LNC

### Receiver

Optical wavelength	1200 nm ~ 1600 nm
Optical input level	-10 dBm to 0 dBm
Optical connector	SC/APC (Options for FC/APC or E2000/APC)
Optical return loss	>55 dB
RF output level	-10 dBm sum of RF @ -12 dBm optical input
RF output impedance	75 Ω
RF output connector	F-type, DC isolated

### Link Performance

RF bandwidth & Optical link budget	
LBxX2050	950~2050 MHz - Optical budget 0~10 dB
LBxX2600	45~2600 MHz - Optical budget 5~15 dB
RF flatness	±1.5 dB
RF gain	4 dB ±2 dB at maximum optical link budget
CNR	>38 dB @ 27 MHz RNB with one carrier into transmitter and max optical budget link loss.

### Environmental

Operating temperature	0 °C to +50 °C
Storage temperature	-20 °C to +60 °C
Relative Humidity	0 to 96% Non-condensing

### Quality

MTBF	>150,000 hours @ 35 °C
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### Power

Cable stub	9~18 Vdc
Consumption	
Transmitter	Typical 5.4 Watt without LNB
Receiver	Typical 4.1 Watt

### Indicators

Green LED	Power on indicator
Red LED	Alarm indicator
Transmitter	RF input < 8 dBm
Receiver	Optical input < -12 dBm

### Physical

Dimensions	146 x 76 x 28 mm
Weight	320±15 g
Ship size (per link)	340 x 240 x 60 mm (5 dm <sup>3</sup> )
Ship weight (per link)	1.2 kg

## Model Codes

Model	Description	MOQ
<i>Optical receiver</i>		
<b>LBRX2050-SC</b>	Optical receiver 950~2050 MHz, SC/APC	1
<b>LBRX2600-SC</b>	Optical receiver 45~2600 MHz, SC/APC	1
<i>Optical transmitter</i>		
<b>LBTX2050-SC-AGC</b>	Optical transmitter 950~2050 MHz, FP 1 mW (0dBm), 1310 nm, SC/APC	1
<b>LBTX2050-SC-AGC-3101</b>	Optical transmitter 45~2600 MHz, DFB 1 mW (0dBm), 1310 nm, SC/APC	1
<b>LBTX2600-SC-AGC-3105</b>	Optical transmitter 45~2600 MHz, DFB 3 mW (5dBm), 1310 nm, SC/APC	1
<b>LBTX2600-SC-AGC-5105</b>	Optical transmitter 45~2600 MHz, DFB 3 mW (5dBm), 1510 nm, SC/APC	1
<b>LBTX2600-SC-AGC-5305</b>	Optical transmitter 45~2600 MHz, DFB 3 mW (5dBm), 1530 nm, SC/APC	1
<b>LBTX2600-SC-AGC-5505</b>	Optical transmitter 45~2600 MHz, DFB 3 mW (5dBm), 1550 nm, SC/APC	1
<b>LBTX2600-SC-AGC-5705</b>	Optical transmitter 45~2600 MHz, DFB 3 mW (5dBm), 1570 nm, SC/APC	1
<b>LBTX2600-SC-AGC-5905</b>	Optical transmitter 45~2600 MHz, DFB 3 mW (5dBm), 1590 nm, SC/APC	1
<b>LBTX2600-SC-AGC-6105</b>	Optical transmitter 45~2600 MHz, DFB 3 mW (5dBm), 1610 nm, SC/APC	1

Other models and options available on special manufacturing order with larger minimum order quantities (MOQ = 10) and with extended lead times.

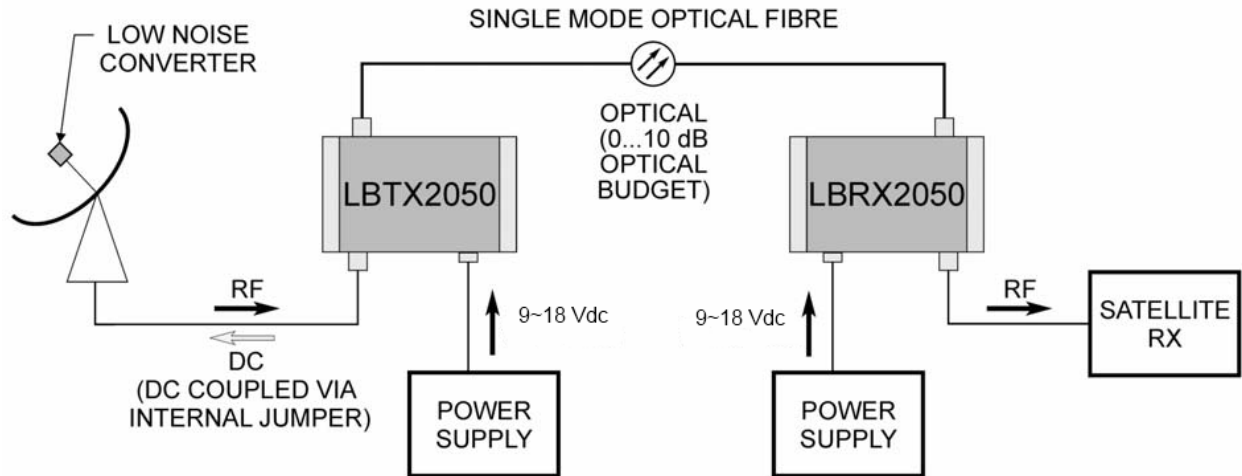


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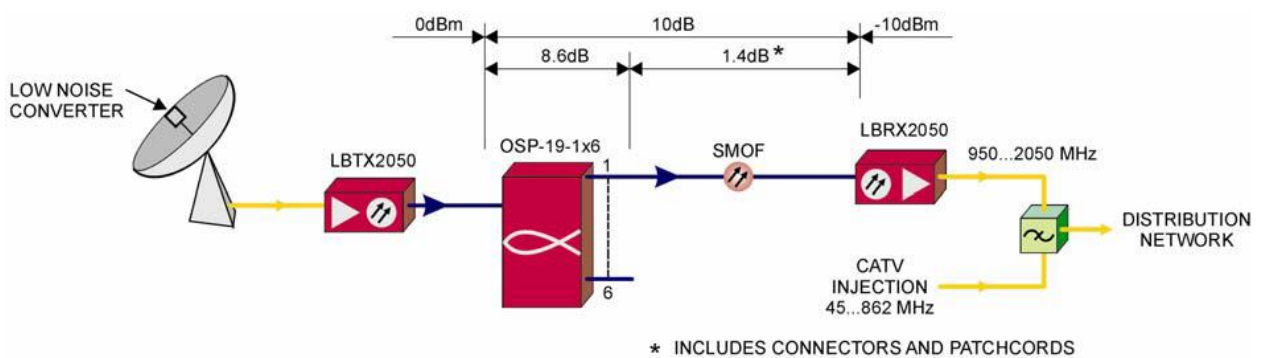
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## Application Example – Remote Satellite Dish



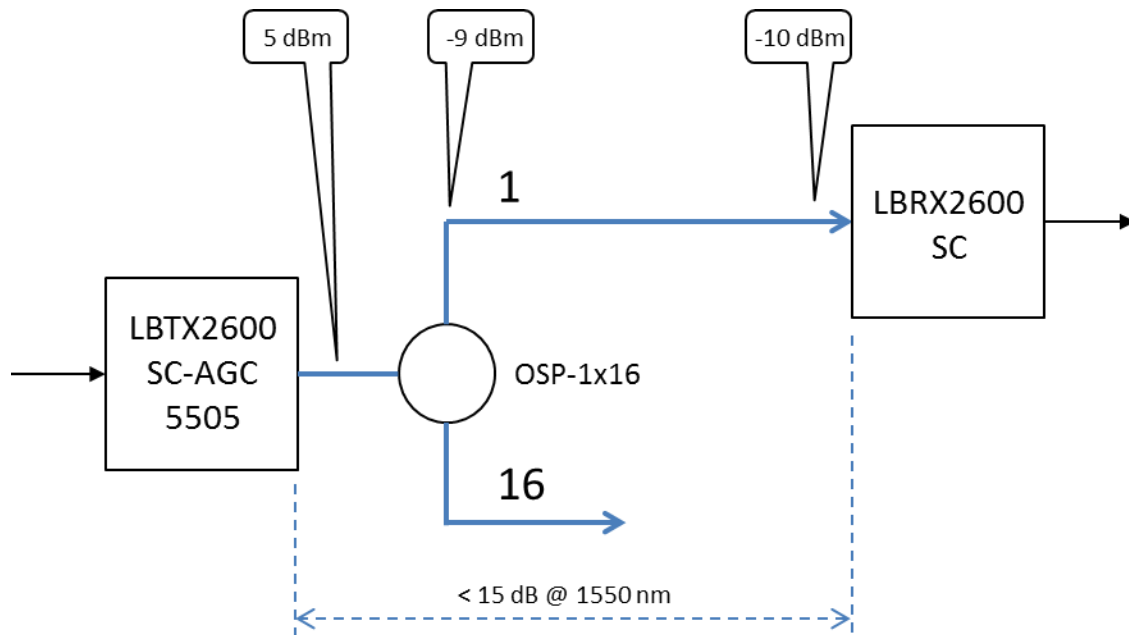
## Application Example – Campus Distribution System



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## Application Example – Larger Campus Distribution System



## Application Example – Quad Polarity Distribution System

