

Fiber-to-the-Home

LightHouse Series - FIBT-10-1550, Fiber Optic 1550nm VSB/AM Transmitter



○ Features & Benefits

- 48-870 MHz Bandwidth
- 1550 nm, Single Mode With SC/APC Connector
- 10 dBm Optical Output Power
- LED's for Quick Assessment of RF Input, Laser and Cooler Status
- Status/Alarm Jack on Rear Panel for Monitoring 5 Key Parameters

The Blonder Tongue FIBT-10-1550 transmitter used in conjunction with other LightHouse Series FTTH products provides a robust system for transporting broadband CATV signals in a PON (passive optical network) system architecture. The transmitter has a frequency bandwidth of 48- 870 MHz that accommodates a variety of different modulation formats such as AM/VSB, 8VSB, QAM, QPSK, etc. The FIBT transmitter utilizes a direct modulated high-power, low noise 1550nm distributed feedback (DFB) laser diode. An optical isolator protects the laser from optical reflections in the transmission path. This ensures high CNR, excellent linearity and consistent link performance. The FIBT-10-1550 transmitter is EIA 19" rack mountable and has a height of 1.75" (1RU).

○ Specifications

Optical:

Operating Wavelength: 1550 nm
Optical Output Power: +10 dBm
Side Mode Suppression Ratio (SMSR): 30 dB
Back Reflection: -50 min. dB

RF:

Bandwidth: 48 to 870 MHz
Input Return Loss: ≥ 16 dB @ 75 Ohm
RF Input Level (110 Ch. Load): + 18 dBmV/Ch
CNR (-6 dBm Rx Input, 77 Ch. Load + QAM 550-870 MHz @ -6dB Ref. Analog): ≥ 50 dB
CTB: ≥ 68 dB
CSO: ≥ -65 dB

Environment:

Operating Temperature Range: 0 to +45 °C

Electrical:

Power Input: 110/220 VAC, 50/60 Hz
Power Consumption: 25 W

Mechanical:

Dimensions:
19 W x 1.75 H x 8.25 D in
482.6 x 44.5 x 209.55 mm
Weight: 6 lbs, 2.72 kg
Connectors: RF Input: "F"
Optical Output: SC/APC

○ Ordering Information

Model	Stock No.	Description
FIBT-10-1550	7465	Fiber Transmitter 1550nm, +10 dBm , 48-870 MHz

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LightHouse Series - BTEA-CO-Bxx-n16



○ Features & Benefits

- 1, 2 and 4 Output Models with +16dBm/40mW per port
- Specifically for Distribution of 1550nm Video/Data in PON/AON or FTTH Systems
- Direct Input From a 1550nm Transmitter
- Low Optical Input Level Requirements with Excellent Low Noise Performance
- Double-Pump for Reliability

○ Specifications

Optical Parameters

- Wavelength: 1530 nm to 1560 nm
- Gain Flatness for CWDM/DWDM: $< \pm 0.5$ dB
- Noise Figure 5.0 dB (typical):
5.5 dB (typical) @ 6dBm Input
- Isolation > 30 dB
- Optical Input Range: 0 dBm to +6 dBm
- Per Port Optical Output Power:
40 mW / 16 dBm
(1, 2 or 4 ports, as applicable)

EDFA Interfaces

- Optical Connectors: SC/APC standard
- LED Indicators (Green/Red) Alarms:
Pump Temperature; Pump Bias Current
Input Power; Output Power
- Pump Enable/Disable Key Switch
(key not removable in "on" position)

Mechanical

- Dimensions: 1.75" H x 19.0" W x 9.0" D
- Weight: 12.1 lb., (5.5 kg)

Environmental

- Operating Temperature Range:
0 to +50 ° C, +32 to +122 ° F
(Air temperature measured at air inlet of Model BTEA-x EDFA)
- Humidity Range:
To 90% non-condensing.
(Recommended for use only in non-condensing environments)

Electrical

- AC Input Range: 100-240 VAC (@ 47-63 Hz)

The BTEA-CO-Bxx-n16 comes in 1, 2, or 4 output 1550nm Erbium Doped Fiber Amplifier and is a 1RU rack mount EDFA package containing up to four (4) identical 16dBm optical outputs. It is engineered to meet the requirements for a high-density solution for the large-scale distribution of broadband CATV video and data signals to video overlay receivers in a FTTH/FTTP PON system.

This rugged, low-profile, high-efficiency EDFA design utilizes powerful and reliable pump amplifiers in a two-stage design with interstage isolators. The unit's wide optical input range accepts a single optical input (0dBm to +6dBm) and provides a total composite/saturated output power of up to 200mW/23dBm (4 output model). As a matter of convenience and safety, this high output is further limited by dividing the unit's power into individual optical output ports via an internal low loss coupler, which ultimately provides 1, 2, or 4 optical output ports of +16dBm/40mW each.

The BTEA-CO-Bxx-n16 in 1, 2, or 4 output Erbium Doped Fiber Amplifier is part of Blonder Tongue's LightHouse Series of FTTH products.

○ Ordering Information

Model	Stock No.	Description
BTEA-CO-B16-116	7466-1	EDFA; (1x) 16dBm/40mW; 100-240VAC
BTEA-CO-B19-216	7466-2	EDFA; (2x) 16dBm/40mW; 100-240VAC
BTEA-CO-B23-416	7466-4	EDFA; (4x) 16dBm/40mW; 100-240VAC

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LightHouse Series - BTEN-231W-H-SA



○ Features & Benefits

- Bidirectional Transmission Of 10/100 BaseT Ethernet Utilizing Only 1310nm Over SMF Fiber
- Fully Compliant IEEE 802.3, IEEE 802.3x & IEEE 802.3u
- RJ-45 Port Supports MDI/MDIX Auto-negotiation Of Half/full Duplex 10 Base T/100 Base T
- Six Diagnostic LEDs For Power, TX Link/Act, FX Link/Act, Transfer Speed, Duplex Mode & Collision
- 16 Modules Mount In 3RU 19" EIA BTEN-CH-16A Chassis With 1 -or- 2 BTEN-PS Power Supplies
- Integrated WDM for FTTH 1550nm CATV Over-lay

The Blonder Tongue BTEN-231W is a cost-effective copper-to-singlemode optical fiber unmanaged headend media converter for fiber to the home (FTTH) applications. Designed around the very latest ethernet transceiver technology, it reliably transports full duplex 10/100 BaseT Ethernet to 10+ km on a single strand of fiber utilizing a 1310nm wavelength.

Fast Ethernet is the best choice for building FTTH systems because of its high performance-to-cost ratio. The unit is ideally suited for direct fiber transmission of IP voice, video and data Ethernet-based signals. It is easy to install and does not require software configuration or management.

The BTEN-231W 3RU module is used with its companion standalone remote BTEN-431W to provide plug-and-play point-to-point access. The LightHouse Series cost-effectively blends traditional video over fiber transport platforms with 10/100 Base-TX to deliver full broadband access of Analog Video, IP Video, IP Data, and IP Telephony.

○ Specifications

Ethernet

- TP Port:
 IEEE 802.3 10BaseT;
 IEEE 802.3u 100BaseTX
 Shielded RJ-45 jack with Auto MDI/MDI-X detection
 Auto negotiation for speed and duplex auto detection
 Forced mode with speed and duplex settings
 Speed for 10Mbps or 100Mbps
 Full duplex or half-duplex support

- FX Port:
 802.3u 100BaseFX compliant
 Forced 100Mbps, Full duplex
 (factory default)

- Xpress Port:
 CATV source via SMF
 (i.e. Optical Transmitter and/or EDFA)

- LED Indicators:
 Power, TX link/act, FX link/act, transfer speed, duplex mode and collision

Environmental

- Operating Temperature: -5° C to +50° C
 Storage Temperature: -20° C to +65° C
 Relative Humidity: 5% to 95%
 (non-condensing)

Electrical

- Wavelength: 1310nm
 TX Power: -8/-3 dBm (min./max.)
 Power Input: + 5 VDC (via BTEN-PS-AC)
 Power Consumption: < 4 W

Mechanical

- Dimensions: 3.7" x 6.5" x 1.0"
 (95mm x 165mm x 25mm) (W x L x H)
 Weight: 0.5 lb (225g)
 Cables (BTEN-231W-H-SA): (1) Cat. 5 UTP
 (2) SMF 9/125 μm
 Connectors (BTEN-231W-H-SA): (1) RJ-45
 (2) SC/APC

○ Ordering Information

Model	Stock No.	Description
BTEN-231W-H-SA	7467	10/100 BaseT Media converter SM/SC-APC 1310 nm
BTEN-200-CH-16A	7468	16-slot BTEN-231W chassis; Single/Dual Power Supply capable
BTEN-200-PS-AC	7469	AC 90-240 VAC to +5VDC BTEN-CH-16A power supply module with high speed fan

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LightHouse Series - BTEN-431W-H-SA



○ Features & Benefits

- 10/100 Ethernet + CATV Transport Over One Fiber; Compact (6.7" x 5.2" x 1.4") Stand Alone Housing
- Low Power Consumption @ < 6 Watts
- Fully Compliant IEEE 802.3, IEEE 802.3x & IEEE 802.3u
- Full CATV Bandwidth Of 48 to 870 MHz
- +18dBmV RF Output And CNR >50dB @ -6dBm Optical Input)
- Calibrated Power Meter (1V/mW) And Tri-color Status LED For Optical Input Indication

○ Specifications

Ethernet

TP Port:
IEEE 802.3 10BaseT; IEEE 803.3u
100BaseTX Shielded RJ-45 jack with Auto MDI/MDI-X detection. Auto negotiation for speed and duplex auto detection. Forced mode with speed and duplex settings. Speed for 10Mbps or 100Mbps Full duplex or half-duplex support

FX Port:
802.3u 100BaseFX compliant. Forced 100Mbps, Full duplex (factory default)

LED Indicators:
Power, TX link/act, FX link/act, transfer speed, duplex mode and collision

Optical

Input Range:
+ 2 to -8dBm @ 1550nm (CATV)
-3 to -15dBm @ 1310nm (Ethernet-receive)

Output Range:
-8/-3 dBm (min./max.)
@ 1310nm (Ethernet transmit)

Return Loss: > 50dB with APC connector (8°)

Test Point:
1V/mV +/- 0.1V
LED: Tri-color for optimal optical input level

CATV

RF Port: 48-870 MHz (+/- 1.0dB); +18dBmV output @ - 6dBm optical input
Return Loss:
16dB typical CNR/CSO/CTB
(@ -6dBm input): >50dB/>65dBc/>68dBc

Environmental

Operating Temperature: -5 + 50° C
Storage Temperature: -20 + 65° C
Relative Humidity: 5% to 95% (non-condensing)

Electrical

Power Input: + 5 VDC (via BTEN-PS-AC)
Power Consumption: < 6 W

Mechanical

Dimensions (L x W x H):
6.7 x 5.2 x 1.4 in.
95 x 165 x 25 mm
Weight: 0.5 lb (225g)
Cables:
(1) Cat. 5 UTP (1) SMF 9/125 μm
(1) RG6 (or RG59) Coax
Connectors: (1) RJ-45 (1) SC/APC (1) F-Type

The Blonder Tongue BTEN-431 is a compact, cost-effective, stand alone copper to single mode optical fiber unmanaged media converter integrated with a high performance 870 MHz CATV receiver. It reliably transports full duplex 10/100 BaseT Ethernet and up to 110 analog NTSC (and/or QAM digital) channels on a single strand of SMF to 10+ km. Fast Ethernet is the best choice for building FTTH systems because of its high performance-to-cost ratio. The unit is ideally suited for direct fiber transmission of IP voice, video and data Ethernet-based signals along with a CATV overlay for a complete FTTH solution. It is easy to install and does not require software configuration or management.

The Model OTEN-431 is utilized in a VPON network topology to provide plug-and-play point-to-point access when mated with its companion BTEN-231W headend media converter and its integrated WDM for CATV overlay combining. The OTEN-431W can also be mounted into a Blonder Tongue BT-NID-1 weatherproof enclosure and teamed with a UPS battery backup and PoE (Power over Ethernet), powering options for a robust premise gateway.

○ Ordering Information

Model	Stock No.	Description
BTEN-431W-H-SA	7470	10/100 BaseT Media Converter/CATV Rx
BTEN-PS-5V	7474	120VAC to +5VDC power supply for BTEN-431W