AIMA-FT5E

1550 nm Forward Transmitter - Enhanced

The 1550 nm Forward Transmitter - Enhanced (FT5E) is designed to plug into PBN's latest Advanced Intelligent Multi-services Access platform - the AIMA3000.

PBN's AIMA3000 FT5E series features full-spectrum enhanced forward transmitters engineered for multi-services operators (MSOs) to increase network capacity to satisfy an ever-growing subscriber demand for bandwidth. The module's operating wavelength conforms to ITU standards and works with PBN's Erbium Doped Fiber Amplifier Module (EDFA). It allows for full-spectrum analog/ digital broadcast and narrowcast channels, providing the utmost flexibility for MSOs during the transition to all-digital.

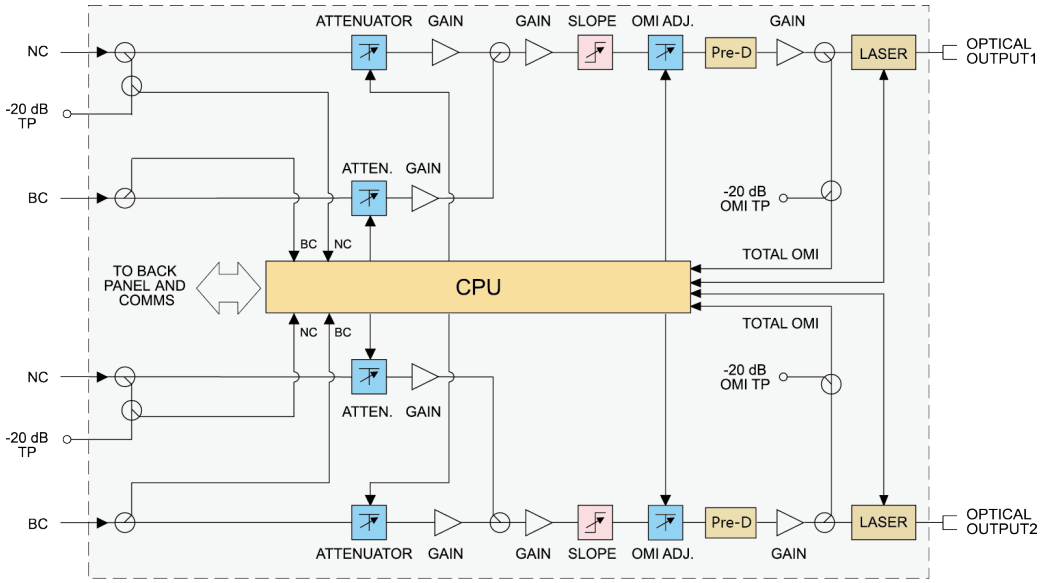
The FT5E employs an advanced RF circuit design and a high quality / low-chirp laser. The module offers a superior frequency response, as well as low distortion and noise characteristics. In addition, it has a cutting-edge optoelectronic design for the delivery of high-quality transmissions, in both analog and digital formats, over passive fiber optic networks.

All FT5E models can also be conveniently monitored and controlled through a computer connected to one of the Ethernet ports via the ASMM module. All module settings are retained in non-volatile memory to ensure trouble-free operation. Bulk updating, automatic uploading and downloading of configuration files can be done when using PBN's NMSE web-based management system.

Key Features and Functions

- DOCSIS 3.1 Compatible with operating bandwidth up to 1218 MHz
- Plug-and-play AIMA3000 platform, forward-path optical transmitter module
- High quality 1550 nm low-chirp analog DFB laser
- RF amplifier gain blocks with advanced GaAs technology for better performance
- Conforms to ITU wavelength DWDM standards
- Frequency response of 45 MHz to 1218 MHz for both broadcast and narrowcast applications
- Alarm monitoring via ASMM web interface and PBN's NMSE
- Automatic gain control (AGC) for a consistent optical modulation index (OMI)
- Automatic thermo-cooler control (ATC) for a consistent laser temperature
- Automatic power control (APC) for a consistent optical output power
- Remote firmware upgrade and auto upload/download of configuration files through ASMM web interface or using PBN's NMSE
- Fully FCC, CE, and RCM compliant

Block Diagram



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Specifications

Optical Performance

Optical wavelength	ITU channel 21 to 51
Optical outputs	1, 2
Output power	8, 9, 10 dBm
Optical connector	SC/APC(1), FC/APC, LC/APC, E2000/APC
Laser RIN	<-155 dB/Hz

RF Performance

RF bandwidth	45 MHz to 1218 MHz
RF flatness	± 0.75 dB
RF input return loss	> 16 dB
RF input level, BC nominal (2)	15 dBmV per channel (148 channels QAM256)
RF input level, NC nominal (2)	25 dBmV per channel (148 channels QAM256)
AGC range	±3 dB
RF impedance	75 Ω
RF test point relative to RF input port	-20 dB ± 1 dB
Isolation between BC and NC inputs	> 45 dB
RF input connectors	4 x GSK-type female
RF test points	4 x Mini-SMB (3)
Alarms and laser status	Front-panel LEDs, SNMP Traps

Link Performance

	MER	BER
QAM (20 km) (4)	> 39 dB	< 1E-9

General

Power supply	Powered via AIMA3000 backplane
Power consumption	< 19.0 W
Operating temperature	-5°C to +55°C
Storage temperature	-25°C to +70°C
Operating humidity	90% (non-condensing)
Storage humidity	90% (non-condensing)
Dimensions (WxDxH)	24.6 x 410 x 152.5 mm
Weight	1.0 kg
Supported network management options	PBN's NMSE or through ASMM's Web Interface

Note:

(1) Standard option. Contact a PBN Sales Representative for availability of other options.

(2) dBuV=60+dBmV

(3) Two ports for NC inputs and two for laser RF level.

(4) MER and BER are tested with 148 channels QAM256 (ITU-T,J.83 Annex-B), flatness. EDFA launch power 16 dBm to 20 km fiber. MER and BER are measured using a PBN reference receiver, and 0 dBm optical receive level, 0 dB tilt.

Order Details

A-FT5E-[U]-[V]-[W]-[X1X2]-[Y]-[Z] ····· 1550 nm Forward Transmitter - Enhanced

Options:

U Optical Ports

- **S** Single (1)
- **D** Dual (2)

V Optical Output Power Per Port

- **08** 8 dBm (6.3 mW) optical power
- **09** 9 dBm (8 mW) optical power
- **10** 10 dBm (10 mW) optical power

W SBS Tunable Function

- **T1** SBS is adjustable within 10-16 dBm
- **T2** SBS is adjustable within 10-18 dBm (1)

X1X2 Wavelength (2)(3)

- **21** 192.1 THz (1560.61 nm)
- **22** 192.2 THz (1559.79 nm)
- **23** 192.3 THz (1558.98 nm)
- ⋮ ⋮
- **49** 194.9 THz (1538.19 nm)
- **50** 195.0 THz (1537.40 nm)
- **51** 195.1 THz (1536.61 nm)

Y Optical Connector Type

- **S** SC/APC
- **F** FC/APC
- **L** LC/APC
- **E** E2000/APC

Z Bandwidth

- **12** 45 ~ 1218 MHz

Note:

(1) Please contact your PBN representative for the detail leadtime of T2 series product.
(2) Default spacing is 100 GHz. For other wavelength configurations not listed, please contact PBN.
(3) X1 is first channel and X2 is second channel, for example, X1X2 :2123.

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