

The RT5S, 1550 nm Return Transmitter - Standard series, is a high-density module with two lasers. It is designed to plug into PBN's latest Advanced Intelligent Multi-services Access platform - the AIMA3000.

PBN's RT5S is currently available in either a dual transmitter configuration. It features a full-spectrum advanced return path transmitter designed 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 it can work with PBN's Erbium Doped Fiber Amplifier Module (EDFA). It provides the utmost flexibility for MSOs during the transition to all-digital.

The RT5S employs an advanced RF circuit design and two high quality independent low-chirp lasers. In addition, it has a cutting-edge optoelectronic design for the delivery of high-quality transmissions, over passive fiber optic networks.

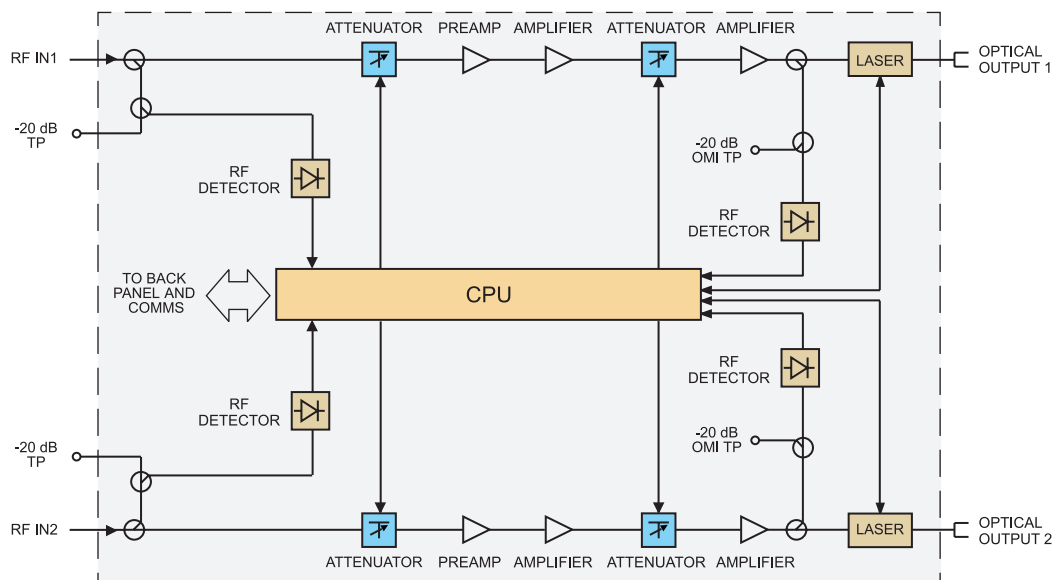
All RT5S models can also be conveniently monitored and controlled through a computer connected to one of the Ethernet ports via the ASMM module. All module settings are retained in non-volatile memory to ensure trouble-free operation. Bulk updating, automatic uploading and downloading of configuration files can be done when using PBN's NMSE web-based management system.



Key Features and Functions

- Plug-and-play with the AIMA3000 platform
- High-quality 1550 nm isolated low-chirp analog DFB lasers
- RF amplifier gain blocks with advanced GaAs technology for better performance
- Conforms to ITU DWDM standards
- Frequency response of 5 MHz to 204 MHz
- Local laser shutdown via web interface
- Totally independent and controllable circuits in one module slot
- Alarm monitoring via ASMM web interface and PBN NMSE
- Automatic thermo-cooler control (ATC) for a consistent laser temperature
- Automatic power control (APC) for maintaining a consistent amount of power amplification for each wavelength
- Remote firmware upgrade and auto upload/download of configuration files through ASMM web interface or using PBN's NMSE
- Bulk firmware updates through PBN's NMSE
- Fully FCC, CE, and RCM compliant

Block Diagram



Specifications

Optical Performance

Optical wavelength	ITU standard wavelength
Optical outputs	2
Output power	10 dBm
Optical connector	SC/APC, FC/APC, LC/APC, E2000/APC
Laser RIN	< -155 dB/Hz

RF Performance

RF bandwidth	5 MHz to 204 MHz
RF flatness	± 0.5 dB
RF input return loss	> 16 dB
RF input level ⁽¹⁾	15 ~ 25 dBmV per channel
RF impedance	75 Ω
Laser input RF level after amplifier	-20 dB ± 1 dB
Isolation between transmitters	> 60 dB
RF connectors	2 x GSK-type female
RF test points	4 x Mini-SMB ⁽²⁾
Alarms and laser status	Front-panel LEDs, SNMP Traps

Link Performance ⁽³⁾

CNR	> 51 dB
IMD2	> 54.5 dB

General

Power supply	Powered via AIMA3000 backplane
Power consumption	< 15.0 W
Operating temperature	-5 °C to +55 °C
Storage temperature	-25°C to +70 °C
Dimensions (WxDxH)	24.6 x 410 x 152.5 mm
Weight	0.88 kg
Supported network management options	PBN's NMSE or through ASMM's Web Interface

Note:

(1) dBuV= 60 + dBmV

(2) Four mini-SMB connectors on front panel: 2 RF inputs test ports and 2 to measure RF input before the laser.

(3) Measured in a typical system with 4 channels signal source (11.5 MHz, 26.5 MHz, 45.5 MHz and 58.5 MHz), -2 dBm, 6 % OMI, 10 km fiber. IMD2 is measured at 15 MHz and 38 MHz.

Order Details

A-RT5S-[V]-[W]-[X1X2]-[Y]-[Z] 1550 nm Return Transmitter - Standard

Options:

V	Number of Optical Output Ports	Y	Optical Connector Type
D	Dual (2)	S	SC/APC
W	Optical Output Power	E	E2000/APC
04	4 dBm (2.5 mW)	F	FC/APC
08	8 dBm (6.3 mW)	L	LC/APC
09	9 dBm (8 mW)	Z	Bandwidth
10	10 dBm (10 mW)	20	5 ~ 204 MHz
X1X2 ^{(1) (2)}	First Channel Last Channel		
21	192.1 THz (1560.61 nm)		
22	192.2 THz (1559.79 nm)		
23	192.3 THz (1558.98 nm)		
24	192.4 THz (1558.17 nm)		
25	192.5 THz (1557.36 nm)		
27	192.7 THz (1555.75 nm)		
29	192.9 THz (1554.13 nm)		
31	193.1 THz (1552.52 nm)		
33	193.3 THz (1550.92 nm)		
35	193.5 THz (1549.32 nm)		
⋮	⋮		
58	195.8 THz (1531.12 nm)		
59	159.9 THz (1530.33 nm)		

Note:

(1) Default spacing is 100 GHz. For other wavelength configurations not listed, please contact PBN.

(2) X1 is first channel and X2 is second channel

Examples:

Dual	X1X2	2527, 2525
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Contact PBN Representatives for detailed optical channel information.

