

Proteus™ Node Return Digital Transmitter with Ethernet

Description

The Proteus Node™ Return Digital Transmitter with Ethernet is a digital, return path transmitter that has the capability of adding an Ethernet module that can provide point-to-point 10 Mbps and 100 Mbps Ethernet drops. This product must be used in conjunction with the Laser Link® Return Digital Receiver with Ethernet.

The base node transmitter module (left half of photo shown) digitizes two separate signals in a frequency band between 5-42 MHz. It multiplexes the digital signals together into a serial digital bit stream then converts the digitized signal to an optical signal and transmits the optical signal to the receiver. The Ethernet node receiver module attaches to the base node transmitter module and provides up to five full duplex 10Base-FL and one 100Base-FX Ethernet drops.



Features

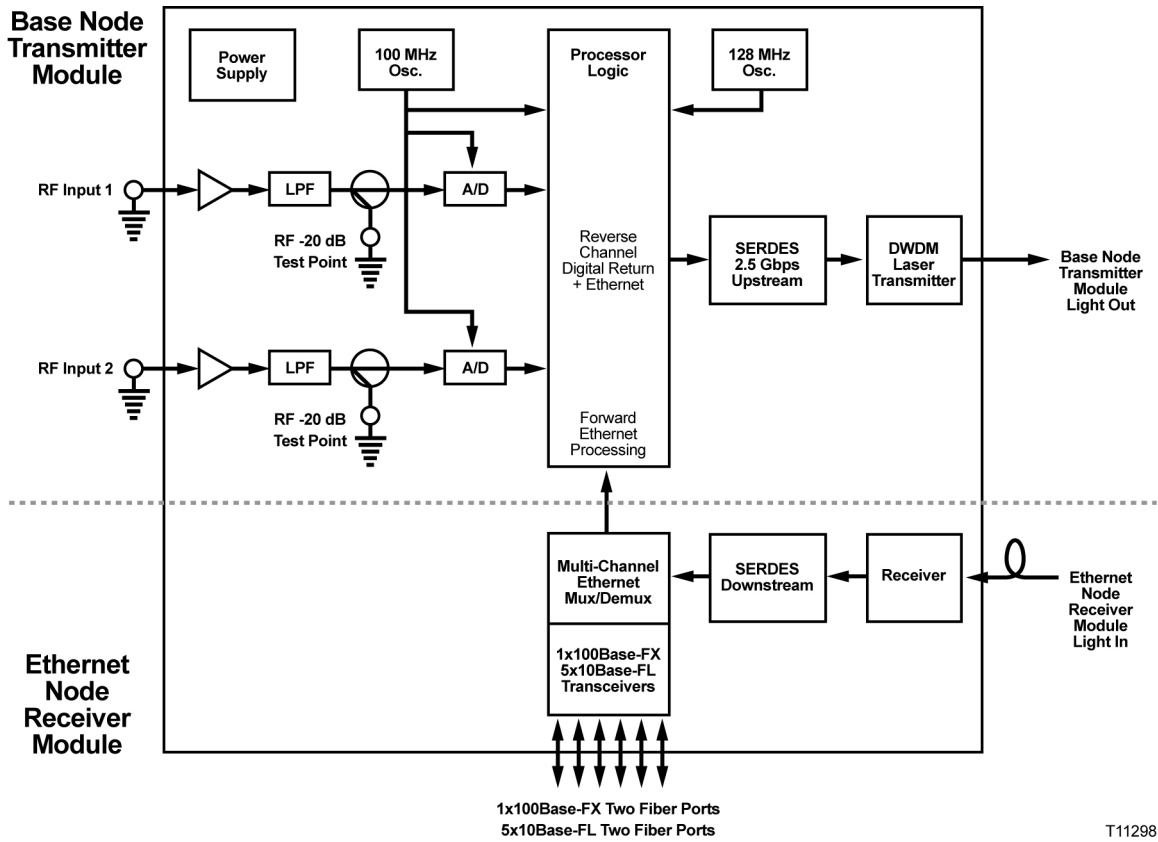
- Multiple point-to-point Ethernet drop capability
- More efficient use of fiber
- Minimal actives in the network
- Cost-effective; two return RF signals per transmitter
- Enhanced security through digital transmission
- Combines traditional return path traffic with upstream Ethernet traffic
- Up to 20 optical wavelengths over a single fiber
- Up to five 10 Mbps and one 100 Mbps Ethernet drop per Ethernet node receiver module
- Ethernet drops are single-mode full duplex and can be used up to 40 km
- Up to 40 return path RF signals over a single fiber
- Network management (status monitoring) ready
- -20 dB RF input test points



Proteus Node Return Digital Transmitter with Ethernet



Block Diagram



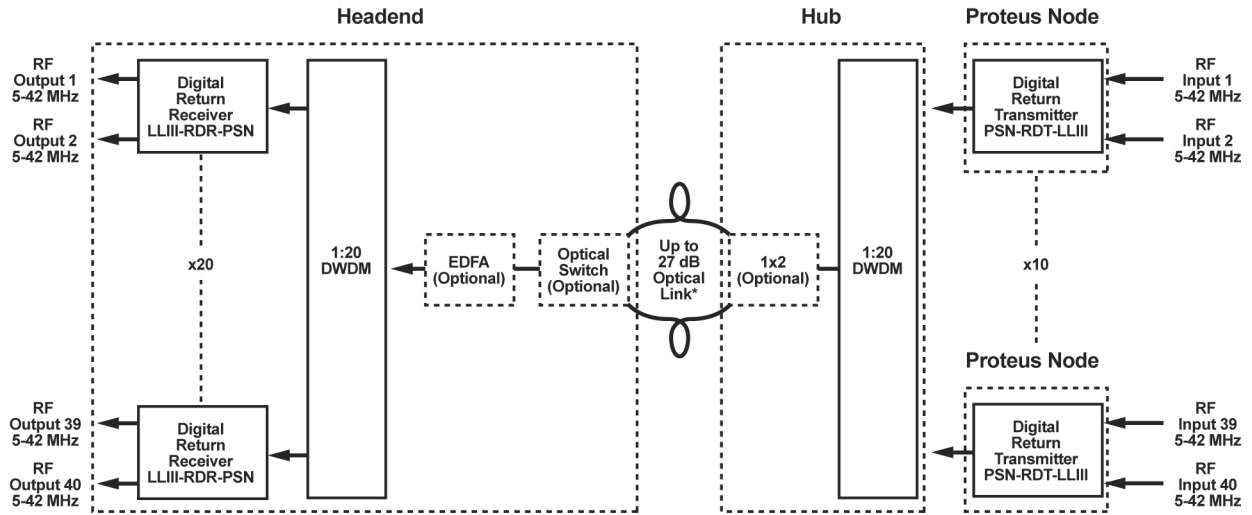
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Proteus Node Return Digital Transmitter with Ethernet



Network Diagrams

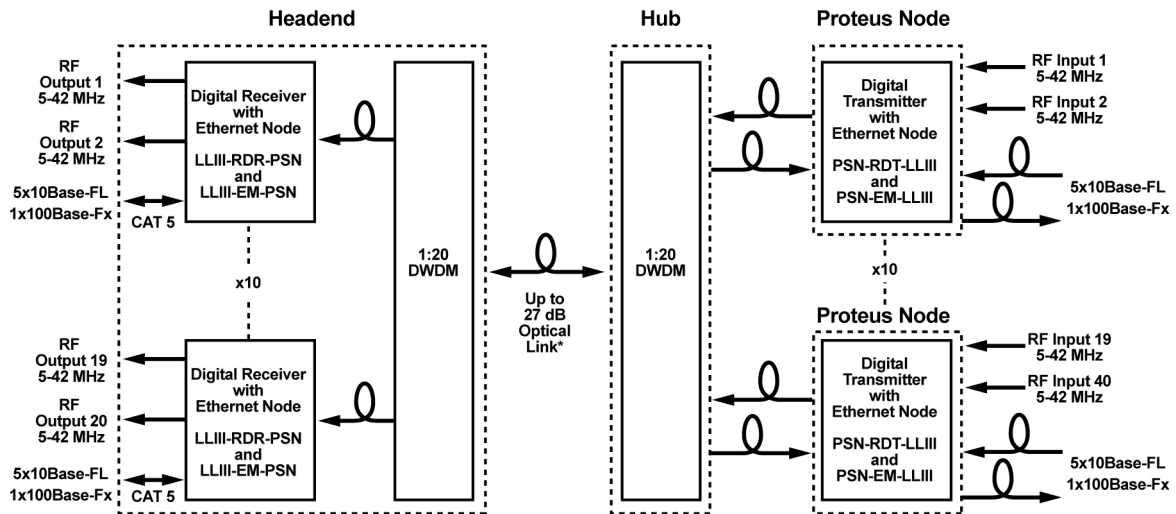
Ethernet Capable Digital Return without Ethernet Modules Deployed, Optional 1:1 Fiber Link Protection



*Note: 27 dB Includes DWDM, Optical Switch and Fiber Link Losses
It Does Not Include Any Additional Amplification From the EDFA

T11300

Ethernet Capable Digital Return with Ethernet Modules Deployed, Point-to-Point over Single Fiber Configuration



*Note: 27 dB Includes DWDM and Fiber Link Losses
It Does Not Include Any Additional Amplification From the EDFA

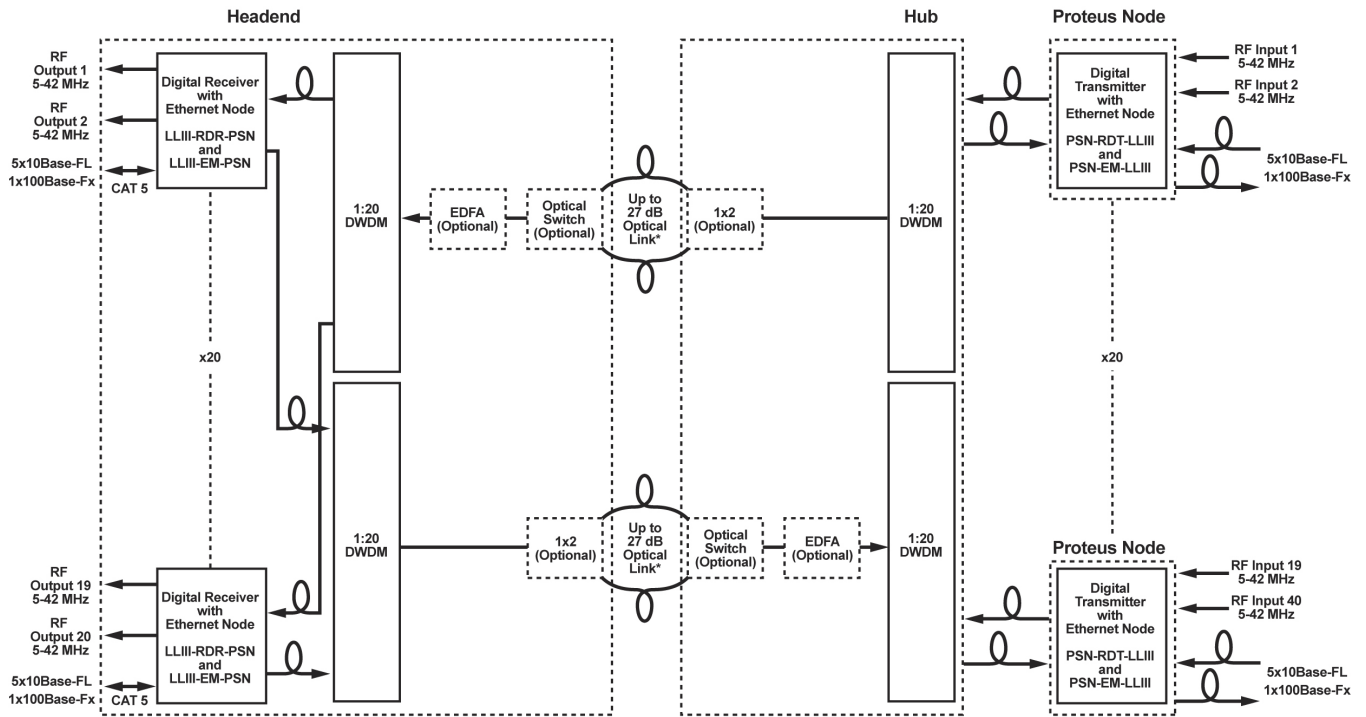
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Proteus Node Return Digital Transmitter with Ethernet



Network Diagrams, continued

Ethernet Capable Digital Return with Ethernet Modules Deployed, Optional 1:1 Fiber Link Protection



*Note: 27 dB Includes DWDM and Fiber Link Losses
It Does Not Include Any Additional Amplification From the EDFA

T11302

Proteus Node Return Digital Transmitter with Ethernet



Specifications

Electrical Specifications	Units	Value	Notes
RF Passband	MHz	5-42	
RF Input Level (@ RF Input Port to Node)	dBmV/Hz	-49 nominal -56 minimum	1
RF Input Level (@ RF Input Port to Node)	dBmV	17 nominal 10 minimum	1
RF Input Return Loss	dB	18	
Base Node Transmitter Module Optical Output	dBm	7 to ± 0.5	
Ethernet Node Receiver Module Optical Input	dBm	-3 to -20	
Base Node Transmitter Module Current Draw	mA	500 maximum 354 typical	
Ethernet Node Receiver Module Current Draw	mA	500 maximum 375 typical	
Ethernet Throughput	minimum	99.95%	
Ethernet Drop Optical Input Power	dBm	-7.5 Max. -32 Min.	3
Ethernet Optical Transmit Power	dBm	-8 Max. -15 Min.	3

Physical Specifications	Units	Value	Notes
Operating Temperature	$^{\circ}$ F $^{\circ}$ C	-40 to 140 -40 to 60	2
Base Node Transmitter Module Dimensions (H x W x D)	in. cm	3.88 x 2.56 x 4.88 9.86 x 6.50 x 12.40	
Ethernet Node Receiver Module Dimensions (H x W x D)	in. cm	3.88 x 2.56 x 4.88 9.86 x 6.50 x 12.40	
Base Node Transmitter Module Weight	lbs. kg	2 0.91	
Ethernet Node Receiver Module Weight	lbs. kg	2 0.91	
Base Node Transmitter Module Optical Connector		SC/APC	
Ethernet Node Receiver Module Optical Connector		SC/APC	
Ethernet Drops x 6 (Single-mode, Two Fiber)		LC/UFC	

Notes:

1. Minimum RF input -56 dBmV/Hz (10 dBmV) for a 40 dB NPR
2. External Node temperature
3. Distance from node to customer premise is dependent upon customer premise equipment used. When used with a Scientific-Atlanta MediaConverter 10/100 LIM 80km Module, distance from node to customer premise can be up to 40 km.

Proteus Node Return Digital Transmitter with Ethernet



Ordering Information

Model Number	Description	Part Number
PSN-RDT-LLIII-1560.61-SCA	Base Proteus Node Transmitter Module, 1560.61 nm, Ch. 21, SC/APC	263601
PSN-RDT-LLIII-1558.98-SCA	Base Proteus Node Transmitter Module, 1558.98 nm, Ch. 23, SC/APC	263603
PSN-RDT-LLIII-1557.36-SCA	Base Proteus Node Transmitter Module, 1557.36 nm, Ch. 25, SC/APC	263605
PSN-RDT-LLIII-1555.75-SCA	Base Proteus Node Transmitter Module, 1555.75 nm, Ch. 27, SC/APC	263607
PSN-RDT-LLIII-1554.13-SCA	Base Proteus Node Transmitter Module, 1554.13 nm, Ch. 29, SC/APC	263609
PSN-RDT-LLIII-1552.52-SCA	Base Proteus Node Transmitter Module, 1552.52 nm, Ch. 31, SC/APC	263611
PSN-RDT-LLIII-1550.92-SCA	Base Proteus Node Transmitter Module, 1550.92 nm, Ch. 33, SC/APC	263613
PSN-RDT-LLIII-1549.32-SCA	Base Proteus Node Transmitter Module, 1549.32 nm, Ch. 35, SC/APC	263615
PSN-RDT-LLIII-1547.72-SCA	Base Proteus Node Transmitter Module, 1547.72 nm, Ch. 37, SC/APC	263617
PSN-RDT-LLIII-1546.12-SCA	Base Proteus Node Transmitter Module, 1546.12 nm, Ch. 39, SC/APC	263619
PSN-RDT-LLIII-1544.53-SCA	Base Proteus Node Transmitter Module, 1544.53 nm, Ch. 41, SC/APC	263621
PSN-RDT-LLIII-1542.94-SCA	Base Proteus Node Transmitter Module, 1542.94 nm, Ch. 43, SC/APC	263623
PSN-RDT-LLIII-1541.35-SCA	Base Proteus Node Transmitter Module, 1541.35 nm, Ch. 45, SC/APC	263625
PSN-RDT-LLIII-1539.77-SCA	Base Proteus Node Transmitter Module, 1539.77 nm, Ch. 47, SC/APC	263627
PSN-RDT-LLIII-1538.19-SCA	Base Proteus Node Transmitter Module, 1538.19 nm, Ch. 49, SC/APC	263629
PSN-RDT-LLIII-1536.61-SCA	Base Proteus Node Transmitter Module, 1536.61 nm, Ch. 51, SC/APC	263631
PSN-RDT-LLIII-1535.04-SCA	Base Proteus Node Transmitter Module, 1535.04 nm, Ch. 53, SC/APC	263633
PSN-RDT-LLIII-1533.47-SCA	Base Proteus Node Transmitter Module, 1533.47 nm, Ch. 55, SC/APC	263635
PSN-RDT-LLIII-1531.90-SCA	Base Proteus Node Transmitter Module, 1531.90 nm, Ch. 57, SC/APC	263637
PSN-RDT-LLIII-1530.33-SCA	Base Proteus Node Transmitter Module, 1530.33 nm, Ch. 59, SC/APC	263639
PSN-EM-LLIII-SCA	Proteus Node Ethernet Rx Module	263641

Model Number	Description	Part Number
PSN-RDTwEM-LLIII-1560.61-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1560.61 nm, Ch. 21, SC/APC	254901
PSN-RDTwEM-LLIII-1558.98-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1558.98 nm, Ch. 23, SC/APC	254903
PSN-RDTwEM-LLIII-1557.36-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1557.36 nm, Ch. 25, SC/APC	254905
PSN-RDTwEM-LLIII-1555.75-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1555.75 nm, Ch. 27, SC/APC	254907
PSN-RDTwEM-LLIII-1554.13-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1554.13 nm, Ch. 29, SC/APC	254909
PSN-RDTwEM-LLIII-1552.52-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1552.52 nm, Ch. 31, SC/APC	254911
PSN-RDTwEM-LLIII-1550.92-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1550.92 nm, Ch. 33, SC/APC	254913
PSN-RDTwEM-LLIII-1549.32-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1549.32 nm, Ch. 35, SC/APC	254915
PSN-RDTwEM-LLIII-1547.72-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1547.72 nm, Ch. 37, SC/APC	254917
PSN-RDTwEM-LLIII-1546.12-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1546.12 nm, Ch. 39, SC/APC	254919
PSN-RDTwEM-LLIII-1544.53-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1544.53 nm, Ch. 41, SC/APC	254921
PSN-RDTwEM-LLIII-1542.94-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1542.94 nm, Ch. 43, SC/APC	254923
PSN-RDTwEM-LLIII-1541.35-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1541.35 nm, Ch. 45, SC/APC	254925
PSN-RDTwEM-LLIII-1539.77-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1539.77 nm, Ch. 47, SC/APC	254927
PSN-RDTwEM-LLIII-1538.19-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1538.19 nm, Ch. 49, SC/APC	254929
PSN-RDTwEM-LLIII-1536.61-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1536.61 nm, Ch. 51, SC/APC	254931
PSN-RDTwEM-LLIII-1535.04-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1535.04 nm, Ch. 53, SC/APC	254933
PSN-RDTwEM-LLIII-1533.47-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1533.47 nm, Ch. 55, SC/APC	254935
PSN-RDTwEM-LLIII-1531.90-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1531.90 nm, Ch. 57, SC/APC	254937
PSN-RDTwEM-LLIII-1530.33-SCA	Proteus Node Digital Return Tx with Ethernet Rx Module, 1530.33 nm, Ch. 59, SC/APC	254939



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