



DT8150

1550 nm Forward Optical DM Transmitter 1.2 GHz

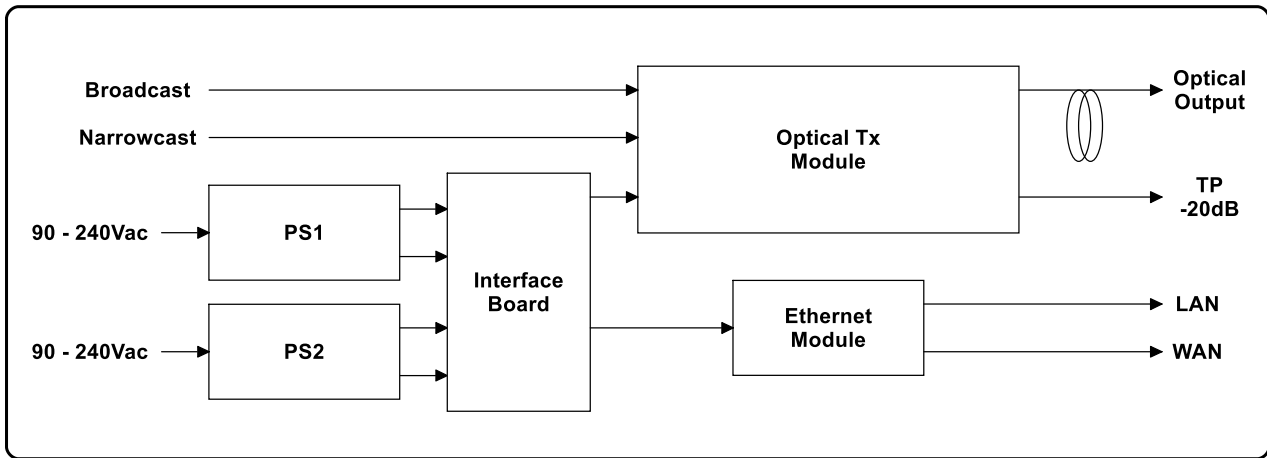
The DT8150 series are high performance head-end 1.2 GHz forward optical direct modulation transmitter (Tx) for HFC or FTTH applications. The DT8150 series Tx is a 1RU 19" standard chassis and is available in several wavelength options and configurations to meet various network requirements. The DT8150 series Tx provides a minimum optical power output of 10 dBm and can transmit RF signals over a fiber length up to 30 km with user fiber length setting in 1 km increment.

The Transmitter's adjustable OMI level and user defined AGC setting features makes it very versatile in field application with a wide range of RF input loading from analog only, analog and digital or full digital.

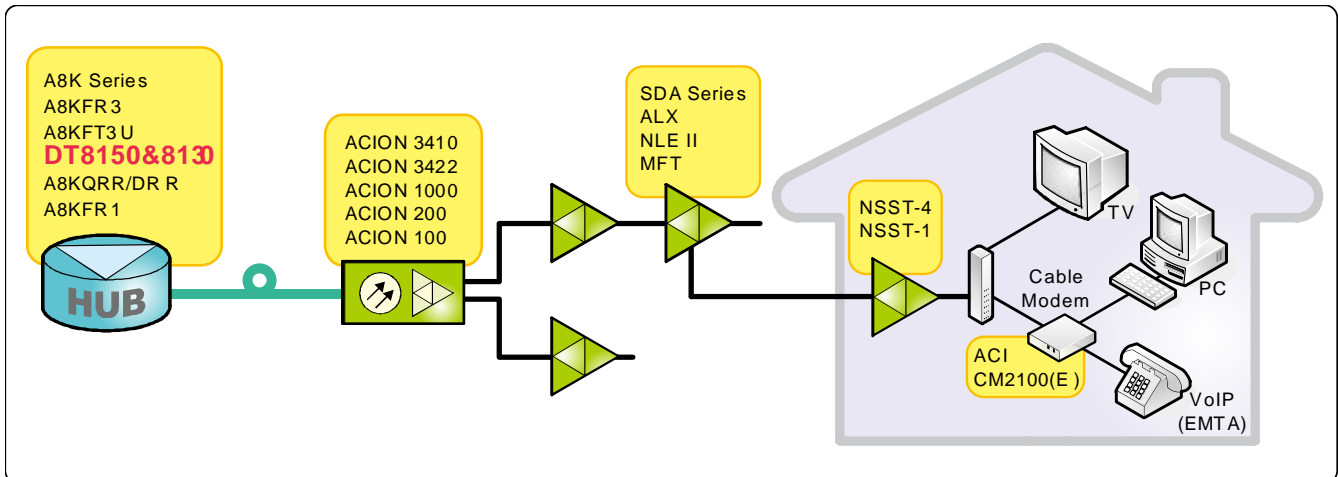
Features

- 19" standard 1RU rack design
- Transmission bandwidth up to 1.2 GHz
- Fiber distance up to 30 km with user fiber length setting in 1 km increment
- Cooled DFB laser diode with integrated optical isolator
- AGC/MGC mode selection
- 1550 nm, standard DWDM ITU Ch15 to Ch72, 100 GHz spacing
- Video/CW Mode selection
- OMI level adjustments
- User defined AGC setting
- SBS: 18 dBm
- Dual Hot-Swappable power supply
- -20 dB RF front panel test point
- Remote control and monitor functions via HMS or SNMP

Block Diagram



Application



Specifications

ACI		DT8150 1550nm 1.2 GHz Forward Optical DM Transmitter		
PARAMETERS	CONDITIONS	UNITS	SPCIFICATION	NOTES
Optical Specification				
Laser Type			Cooled DFB LD with Isolator	
Optical Wavelength		nm	1520 - 1565	(1)
Optical Power		dBm	10	
Optical Power Tolerance		dB	+1/-0	
Optical Connector Type			SC/APC (standard) FC/APC, E2000/APC (optional)	
SBS Control Level		dBm	18	
RF Parameter				
Operating Bandwidth		MHz	50 - 1218	
Channel Loading	Analog + Digital	Channel	NTSC 79ch Analog + 47ch 256QAM + 2x192 MHz OFDM	
	All Digital	Channel	125ch 256 QAM + 2x192 MHz OFDM	
Broadcast RF Input Level	Analog	dBmV/ch	15	
	Digital		9	
Narrowcast RF Input Level	Digital only	dBmV/ch	15	(2)
RF Return Loss (All Ports)	75 ohm, Max	dB	-16	
Broadcast & Narrowcast Flatness	50 to 1218 MHz	dB	± 0.6	
RF Input AGC Range	AGC Mode	dBmv	+5/-10	
MGC Gain Control Setting	MGC Mode	dB	0 to 15	
Front Panel Test Point Level	50 to 1218 MHz	dB	-20 ± 0.5	(3)
Test Point Flatness	50 to 1218 MHz	dB	± 0.6	
Port-to-Port Isolation	Narrowcast to Broadcast		45	
	Broadcast to Narrowcast	dB	15	
Distortion Performance (see Note 4)				
79ch analog + 47ch 256 QAM + 2x192 MHz OFDM (digital channels are -6 dB from analog)				
Fiber Length Setting	Selectable 1 km increment	km	0 to 30	(4)
Carrier to Noise Ratio (CNR)	79ch NTSC Analog Only		52	(5)
	79ch NTSC + 47ch 256 QAM + 2x192MHz OFDM	Min.	51	
Composite Second Order (CSO)	Max.	dBc	-62	
Composite Triple Beat (CTB)	Max.	dBc	-65	
Cross-Modulation	Max.	dBc	-62	
Pre-FEC Bit Error Rate (BER)	Max.		≤ 10 ⁻⁹	
Modulation Error Rate (MER)	Min.	dB	38	
All digital loading (125ch 256 QAM + 2x192 MHz OFDM)				
Modulation Error Rate (MER)			≥ 38	(6)
Bit Error Rate (BER)	Pre-FEC		≤ 10 ⁻⁹	
Environmental / Mechanical				
RF Connector Type	RF Input RF Test Point	Rear Panel Front Panel	F-Type Female F-Type Female	
Dimensions		D x H x W	mm	482.6 x 43.7 x 357
Operating Temperature			°F (°C)	32 to 122 (0 to 50)
Storage Temperature			°F (°C)	-40 to 149 (-40 to 65)
Relative Humidity	Non-condensing		%	0 - 95
Power Consumption	0 to 50°C, Max.		W	18
Dual Power Supply (Rear Panel)	Hot Swap			90 to 240 VAC, 50/60Hz
LED Indicator				Power, Status, AGC
Front Panel Control & Monitor Interface				LAN & WAN (RJ45)
Network Management				Webpage Remote NMS

Notes:

- (1) DWDM ITU Standard ch15 to ch72, 100GHz spacing
- (2) Digital channels are -6dB from analog after combined with Broadcast Input
- (3) Relative to the Broadcast Input
- (4) Fiber Length Setting via Webpage Remote NMS and Front Panel LAN/WAN
- (5) 3.2% OMI/ch, digital channels are -6 dB from analog, Rx optical power = 0 dBm, CNR degraded by 1 dB at 30 km of fiber, fiber length setting from 0 to 30 km with 1 km increment
- (6) Rx optical power = 0 dBm, Fiber length = 0 to 30 km. Fiber length setting from 0 to 30 km with 1 km increment

Part Number Ordering Matrix

DT8150 1550nm Configuration Sheet																
Customer: _____																
Created By: _____ Order Date: _____																
ORDERING MATRIX														December 28, 2020		
Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PART NUMBER	D	T	8	1	5	0										
7~8	<input type="text"/>	<input type="text"/>	OPTICAL CONNECTOR				13~14				<input type="text"/>	<input type="text"/>	CONTROL INTERFACE			
			SC: SC/APC with shutter FC: FC/APC										SN: SNMP(LAN)			
9~10	<input type="text"/>	<input type="text"/>	OPTICAL WAVELENGTH				15~16				<input type="text"/>	<input type="text"/>	POWER SUPPLY / POWER CORD			
			15: : 100 GHz ITU-T channel 72: 00: 1550 nm Standard (Non-ITU)										SA: Single AC(100~240 VAC) / North American power cord DA: Dual AC(100~240 VAC) / North American SD: Single DC 48V DD: Dual DC 48V EA: Single AC(100~240 VAC) / European power cord UA: Dual AC(100~240 VAC) / European power cord SM: Single Mains PS AC(100~240 VAC) (UL) / North American power cord DM: Dual Mains PS AC(100~240 VAC) (UL) / North American power cord EM: Single Mains PS AC(100~240 VAC) (UL) / European power cord UM: Dual Mains PS AC(100~240 VAC) (UL) / European power cord			
11~12	<input type="text"/>	<input type="text"/>	OPTICAL OUTPUT LEVEL													
			07 : ≥ 7 dBm (7~8 dBm) 09 : ≥ 9 dBm (9~10 dBm) 10 : ≥ 10 dBm (10~11 dBm)													
NOTES:																



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