



## ACION 8000

### DT8130 (1.2 GHz) 1310 nm Forward Optical Transmitter

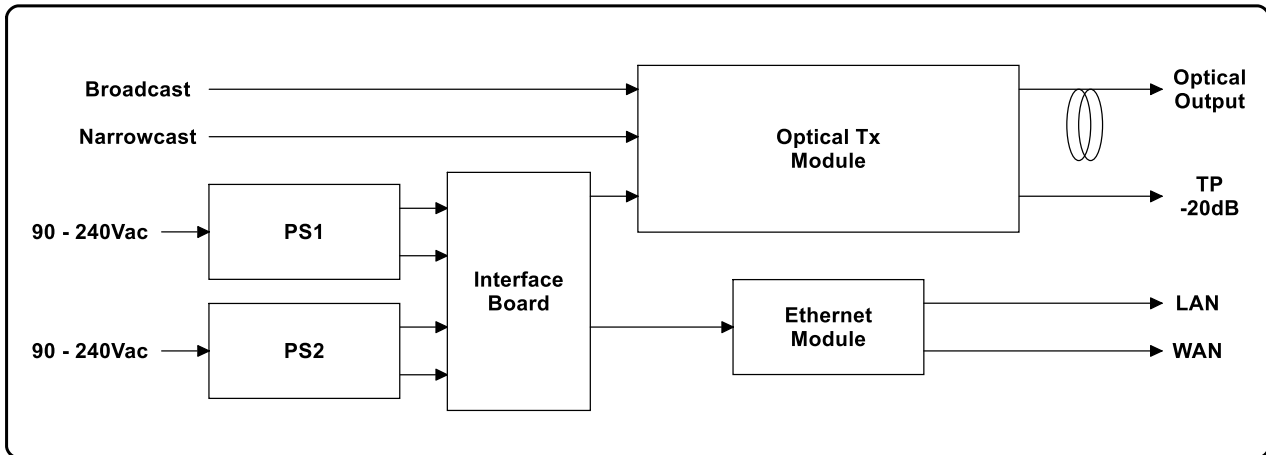
The ACION 8000 DT8130 series are high performance headend 1.2 GHz forward optical direct modulation transmitter (Tx) for HFC or FTTH applications. The DT8130 series Tx is a 1RU 19" standard chassis and is available in several configurations to meet various network requirements. The DT8130 series Tx is available with optical power options from 3 dBm to 15 dBm

The transmitter's adjustable OMI level and user defined AGC setting features make it very versatile in field application with a wide range of RF input loading.

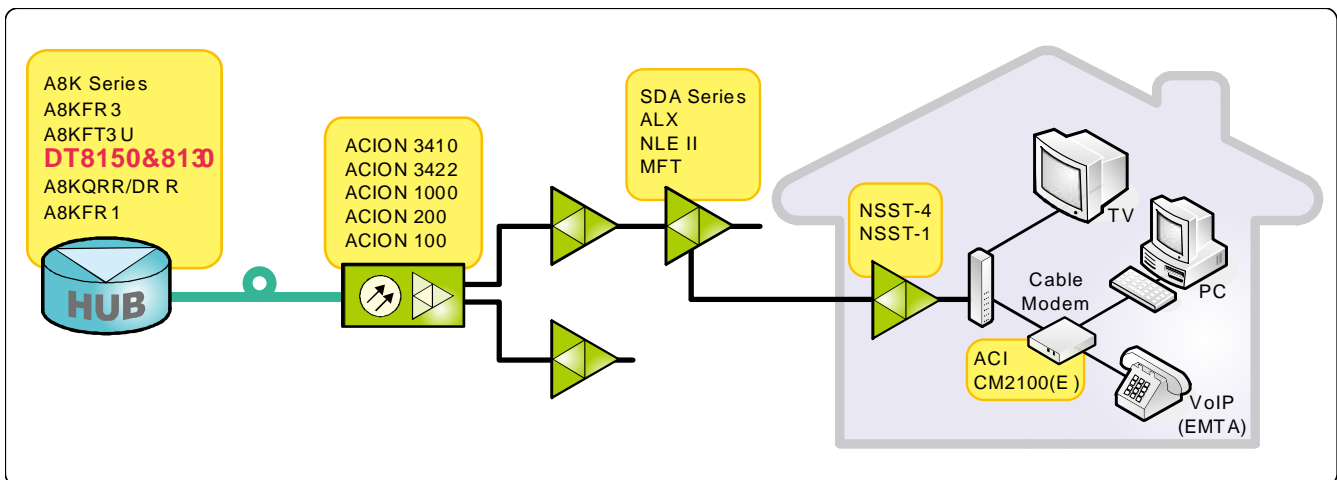
#### Features

- 19" standard 1RU rack design
- Transmission bandwidth up to 1.2 GHz
- Cooled DFB laser diode with integrated optical isolator
- 1310 nm optical wavelength
- AGC/MGC selection
- Video/CW selection
- OMI level adjustments
- User define AGC setting
- Dual Hot-swappable Power Supply
- Remote control and monitor functions via HMS or SNMP
- -20 dB RF front-panel test point
- Optical power options 3 dBm to 15 dBm

## Block Diagrams



## Application



# Specifications

ACI		DT8130 1310nm 1.2GHz Forward Optical DM Transmitter		
PARAMETERS	CONDITIONS	UNITS	SPECIFICATION	NOTES
<b>Optical Specification</b>				
Laser Type			Cooled DFB LD with isolator	
Optical Wavelength		nm	1310 ± 10	
Optical Power		dBm	<b>Standard: 3, 6, 10, 13</b> Optional: 4, 5, 7, 8, 9, 11, 12, 14, 15	
Optical Power Tolerance		dB	+1/-0	
Optical Connector Type			SC/APC (standard) FC/APC, E2000/APC (optional)	
<b>RF Parameters</b>				
Operating Bandwidth		MHz	50 - 1218	
Channel Loading	Analog + Digital	Channel	NTSC 79ch Analog+47ch 256QAM+2x192MHz OFDM	
	All Digital		125ch 256 QAM + 2x192MHz OFDM	
Broadcast RF Input Level	Analog	dBmV/ch	15	
	Digital		9	
Narrowcast RF Input Level	Digital only	dBmV/ch	15	(1)
RF Return Loss (All Ports)	75 ohm, Worst Case	dB	-16	
Broadcast & Narrowcast Flatness (Peak to- Valley)	50 to 1218MHz	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 1218MHz	dB	-20 ± 0.5	(2)
Port-to-Port Isolation (Narrowcast to Broadcast)		dB	50	
<b>Distortion Performance (see Note 4)</b>				
79ch analog + 47ch 256 QAM + 2x192MHz OFDM (digital channels are -6dB from analog)				
Composite Second Order (CSO)	Max.	dBc	-62	(3)
Composite Triple Beat (CTB)	Max.	dBc	-67	
Cross-Modulation (XMOD)		dBc	-62	
Modulation Error Rate (MER)		dB	≥ 38	
Bit Error Rate (BER)	Pre-FEC		≤ 10 <sup>-9</sup>	
All digital loading (125ch 256 QAM + 2x192MHz OFDM)				
Modulation Error Rate (MER)		dB	≥ 38	(4)
Bit Error Rate (BER)	Pre-FEC		≤ 10 <sup>-9</sup>	

PARAMETERS	CONDITIONS	UNITS	SPECIFICATION	NOTES
<b>Electrical/Environmental/Mechanical</b>				
RF Connector Type RF Input RF Test Point	Rear Panel Front Panel		F- Type female	
Dimensions	DxHxW	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 to 95	
Power Consumption	Max.	W	18	
Dual Power Supply (Rear Panel)	Hot Swap		100 to 240 VAC, 50/60Hz	AC Power model
LED Indicator			Power, Status, AGC	
Front Panel Control & Monitor Interface			LAN/WAN (RJ45)	
Network Management			Webpage Remote SNMP	

**Notes:**

- (1) Digital channel is -6 dB from analog after combined with Broadcast Input
- (2) Relative from the Broadcast Input
- (3) 79ch analog + 45ch 256 QAM + 2x192 MHz OFDM, 3.2% OMI, digital channels are -6 dB from analog, Rx optical power = 0dBm
- (4) Tx models 3, 4 are tested with 5km SMF, Tx models 5-7 are tested with 10km SMF, Tx models 8-15 are tested with 20km SMF

## Performance Specifications

Model #	Output Power (dBm)	Total Optical Link Loss (dB)																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
DT8130XX03	3-3.9	53.5	52.5	51.5	50.5	49.5												
DT8130XX04	4-4.9		53.5	52.5	51.5	50.5	49.5											
DT8130XX05	5-5.9			53.5	52.5	51.5	50.5	49.5										
DT8130XX06	6-6.9				53.5	52.5	51.5	50.5	49.5									
DT8130XX07	7-7.9					53.5	52.5	51.5	50.5	49.5								
DT8130XX08	8-8.9						53.5	52.5	51.5	50.5	49.5							
DT8130XX09	9-9.9							53.5	52.5	51.5	50.5	49.5						
DT8130XX10	10-10.9								53.0	52.0	51.0	50.0	49.0					
DT8130XX11	11-11.9									53.0	52.0	51.0	50.0	49.0				
DT8130XX12	12-12.9										53.0	52.0	51.0	50.0	49.0			
DT8130XX13	13-13.9											53.0	52.0	51.0	50.0	49.0		
DT8130XX14	14-14.9												53.0	52.0	51.0	50.0	49.0	
DT8130XX15	15-16													52.0	51.0	50.0	49.0	48.0

Note: CNR numbers are based on 79ch analog + 45ch 256 QAM + 2x192MHz OFDM, 3.2% OMI/ch for analog channels, digital channels are -6dB from analog, Rx optical power = 0dBm

# Part Number Ordering Matrix

## DT8130 1310nm 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
<b>PART NUMBER</b>	<b>D</b>	<b>T</b>	<b>8</b>	<b>1</b>	<b>3</b>	<b>0</b>								

7-8

#### OPTICAL CONNECTOR

SC: SC/APC with shutter  
FC : FC/APC

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#### CONTROL INTERFACE

SN: SNMP(LAN)

9-10

#### OPTICAL OUTPUT LEVEL

03 : 3 dBm (Standard)  
04 : 4 dBm  
05 : 5 dBm  
06 : 6 dBm  
07 : 7 dBm  
08 : 8 dBm  
09 : 9 dBm  
10 : 10 dBm (Standard)  
11 : 11 dBm  
12 : 12 dBm  
13 : 13 dBm (Standard)  
14 : 14 dBm  
15 : 15 dBm

13-14

#### POWER SUPPLY / POWER CORD

SA: Single AC(100~240 VAC) / North American power cord  
DA: Dual AC(100~240 VAC) / North American power cord  
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

### NOTES:



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