



## ACION 8000

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

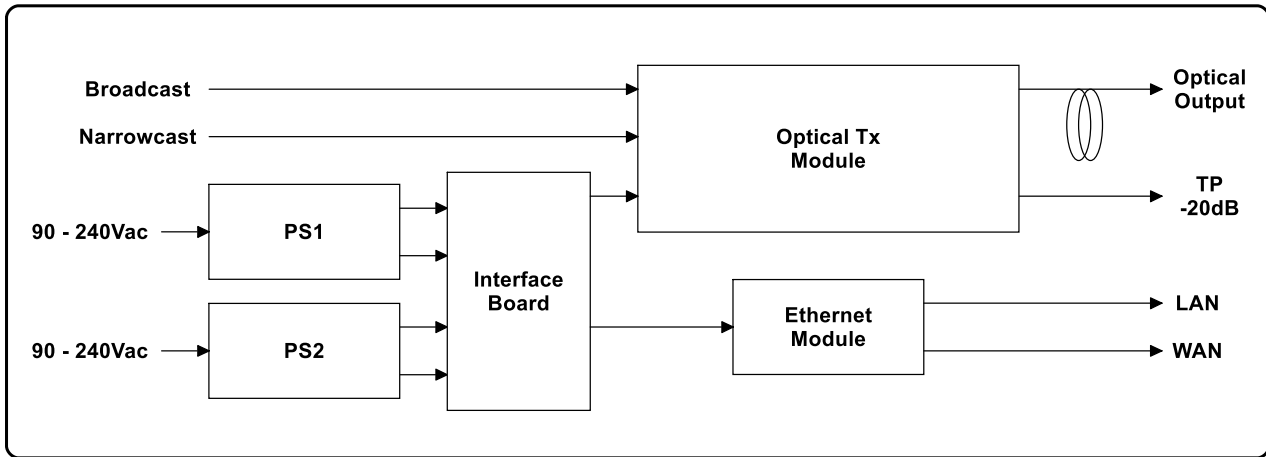
The ACION 8000 DT8130 series are high performance headend 1.2 GHz forward optical direct modulation transmitter (Tx) for HFC or FTTH applications. The DT8130 series Tx is a 1RU 19" standard chassis and is available in several configurations to meet various network requirements. The DT8130 series Tx is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

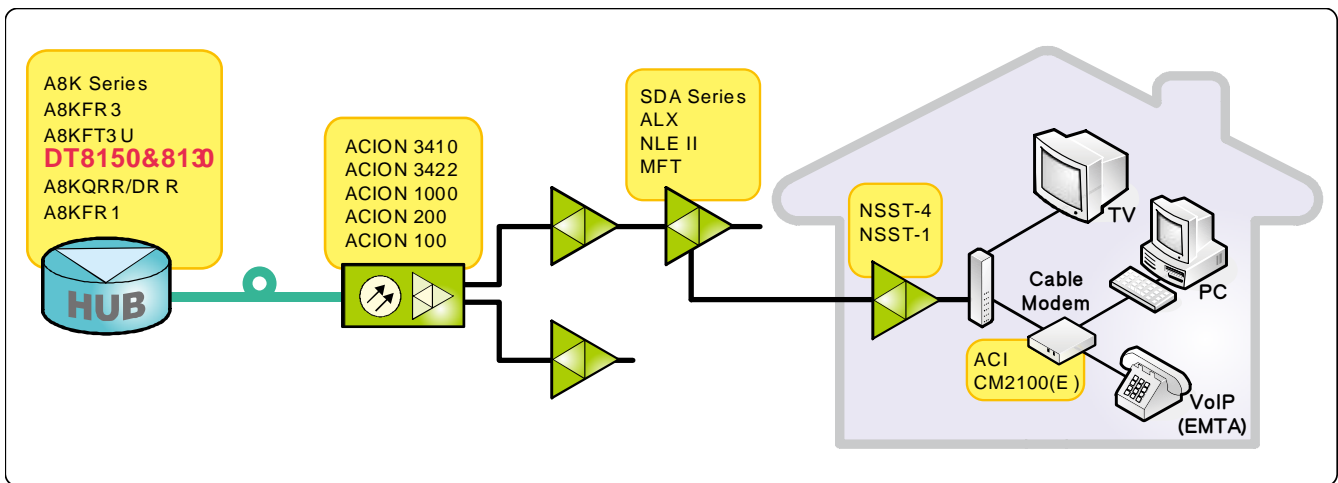
#### Features

- 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		ACION 8000 Series DT8130 1310nm Forward Optical Transmitter		
PARAMETERS	CONDITIONS	UNITS	SPECIFICATION	NOTES
<b>Optical Specification</b>				
Laser Type			Cooled DFB LD with isolator	
Optical Wavelength		nm	1310 ± 10	
Connector Type			SC/APC (standard) FC/APC, E2000/APC (optional)	
Optical Power		dBm	<b>Standard: 3, 6, 10, 13</b> Optional: 4, 5, 7, 8, 9, 11, 12, 14, 15	
<b>RF Parameters</b>				
Operating Bandwidth		MHz	50 to 1218	
Channel Loading	NTSC+Digital	channel	79ch Analog+47ch 256QAM+2x192MHz OFDM	
	All Digital		125ch 256 QAM + 2x192MHz OFDM	
RF Input Return Loss	75 ohm, Worst Case	dB	-16	
Broadcast RF Input Level	Analog	dBmV/ch	15	
	Digital		9	
Narrowcast RF Input Level	Digital only	dBmV/ch	15	(1)
AGC Range	AGC Mode	dB	15	
MGC Gain Control Range	MGC Mode	dB	0 to 15	
Flatness (Peak-to-Valley)	50 to 1218 MHz	dB	± 0.6	
Test Point	50 to 1218 MHz	dB	-20 ± 0.5	(2)
Port-to-Port Isolation (Narrowcast to Broadcast)		dB	50	
<b>Distortion Performance (see Note 4)</b>				
<b>79ch analog + 47ch 256 QAM + 2x192 MHz OFDM (digital channels are -6 dB from analog)</b>				
Composite Second Order (CSO)	Max.	dBc	-62	(3)
Composite Triple Beat (CTB)	Max.	dBc	-67	
Cross-Modulation		dBc	-62	
Modulation Error Rate (MER)		dB	≥ 38	
Bit Error Rate (BER)	Pre-FEC		≤ 10 <sup>-8</sup>	
<b>All digital loading (125ch 256 QAM + 2x192MHz OFDM)</b>				
Modulation Error Rate (MER)		dB	≥ 36	(4)
Bit Error Rate (BER)	Pre-FEC		≤ 10 <sup>-8</sup>	

PARAMETERS	CONDITIONS	UNITS	SPECIFICATION	NOTES
<b>Electrical/Environmental/Mechanical</b>				
<b>RF Connector Type</b>	Rear Panel		F Type Female	
<b>Module Width</b>		slot	1	
<b>Dimensions</b>	DxHxW	in. (mm)	16.1 x 5.0 x 1.0 ( 410.0 x 127.0 x 25.9 )	
<b>Weight</b>		lbs. (kg)	1.65 (0.75)	
<b>Operating Temperature</b>		°F (°C)	32 to 122 (0 to 50)	
<b>Storage Temperature</b>		°F (°C)	-40 to 149 (-40 to 65 )	
<b>Relative Humidity</b>	Non-condensing	%	0 to 95	
<b>Power Consumption</b>	Max.	W	7.5	

Note:

- (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

### Carrier-to-Noise

Model #	Output Power	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 dBm	53.5	52.5	51.5	50.5	49.5												
DT8130XX04	4-4.9 dBm		53.5	52.5	51.5	50.5	49.5											
DT8130XX05	5-5.9 dBm			53.5	52.5	51.5	50.5	49.5										
DT8130XX06	6-6.9 dBm				53.5	52.5	51.5	50.5	49.5									
DT8130XX07	7-7.9 dBm					53.5	52.5	51.5	50.5	49.5								
DT8130XX08	8-9.9 dBm						53.5	52.5	51.5	50.5	49.5							
DT8130XX09	9-9.9 dBm							53.5	52.5	51.5	50.5	49.5						
DT8130XX10	10-10.9 dBm								53.0	52.0	51.0	50.0	49.0					
DT8130XX11	11-11.9 dBm									53.0	52.0	51.0	50.0	49.0				
DT8130XX12	12-12.9 dBm										53.0	52.0	51.0	50.0	49.0			
DT8130XX13	13-13.9 dBm											53.0	52.0	51.0	50.0	49.0		
DT8130XX14	14-14.9 dBm												53.0	52.0	51.0	50.0	49.0	
DT8130XX15	15-16 dBm													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, digital channels are -6dB

# Part Number Ordering Matrix

## DT8130 1310nm Configuration Sheet

Customer: \_\_\_\_\_

Created By: \_\_\_\_\_ Order Date: \_\_\_\_\_

### ORDERING MATRIX

2018/10/9

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

11~12

**CONTROL INTERFACE**  
 RS: RS-232  
 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(110~240 VAC) / North American power cord  
 DA: Dual AC(110~240 VAC) / North American power cord  
 SD: Single DC 48V  
 DD: Dual DC 48V  
 EA: Single AC(110~240 VAC) / European power cord  
 UA: Dual AC(110~240 VAC) / European power cord

### NOTES:



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