



## ACION 8000 Series

### A8KFT3UD-13 1310nm (1.2GHz) Dual Forward Optical Transmitter

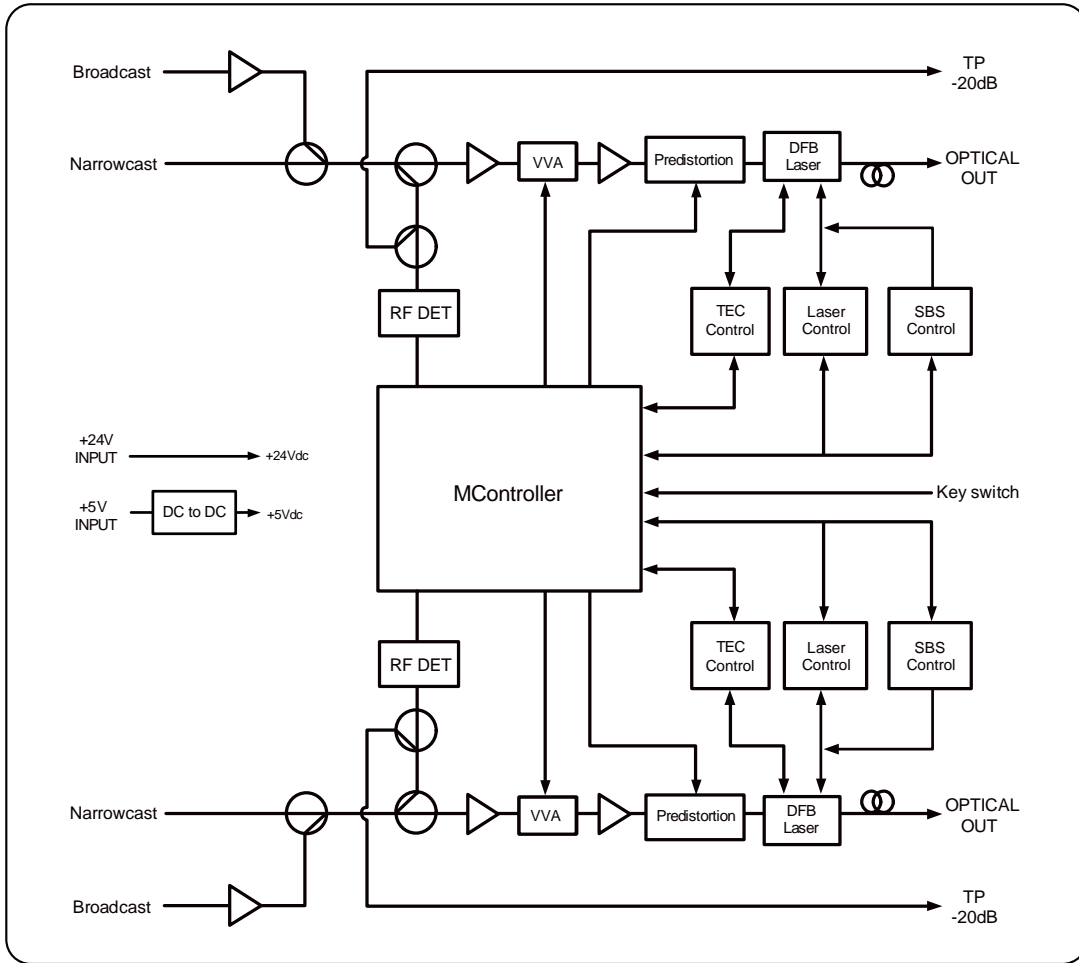
The ACION 8000 A8KFT3UD-13 is a head-end 1310nm 1.2GHz dual forward optical transmitter (Tx) for HFC or FTTH applications. This compact and cost-effective Tx module is 3RU in height and up to 12 Tx modules (24 transmitters) can be integrated in the 19-inch 3RU high-density chassis (A8KMF3).

The transmitter's adjustable OMI level and user define AGC setting features make it very convenient in field application with a wide range of RF input loading. The transmitter's RF path employs several stages of RF amplification that includes single ended low noise high linearity amplifiers and low noise push-pull amplifiers from G7/EU brand name vendors.

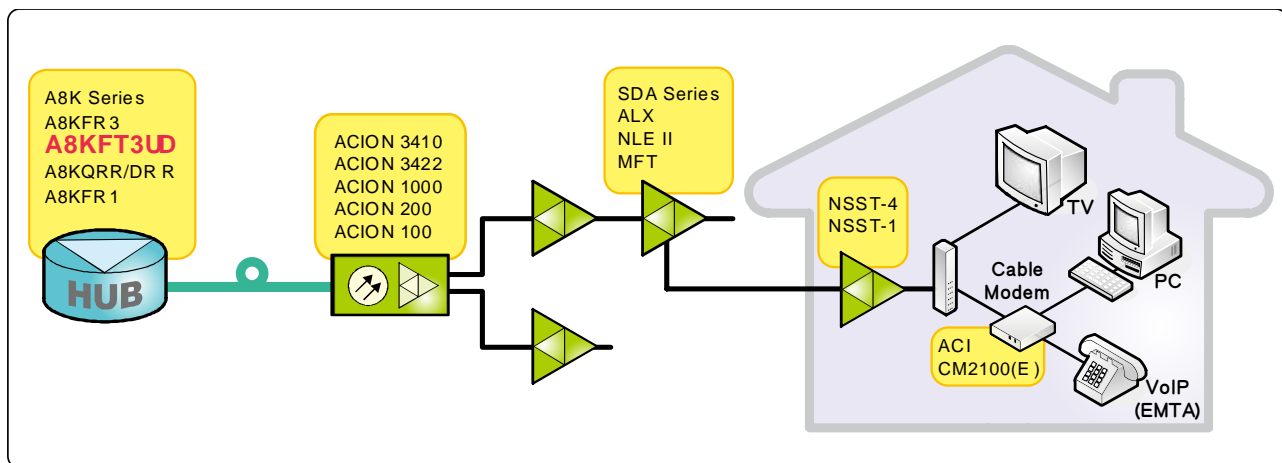
### Features

- ◆ Dual transmitters in one module.
- ◆ Transmission bandwidth up to 1.2GHz.
- ◆ Cooled DFB laser diode with isolator.
- ◆ 1310 nm optical wavelength.
- ◆ AGC/MGC selection
- ◆ Video/CW Mode selection
- ◆ OMI level adjustments
- ◆ User defined AGC setting
- ◆ Hot - swappable
- ◆ Remote control and monitor functions via HMS or SNMP
- ◆ -20 dB RF front-panel test point

# Block Diagram



# Application:



# Specifications

ACI		ACION 8000 Series A8KFT3UD-13 1310nm (1.2GHz) Dual 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	Standard: 3, 6, 10, 13 Optional: 4, 5, 7, 8, 9, 11, 12, 14, 15	15dBm need to refer to ordering information
<b>RF Parameters</b>				
Operating Bandwidth		MHz	50 to 1218	
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 1218MHz	dB	± 0.6	
Test Point	50 to 1218MHz	dB	-20 ± 0.5	(2)
Port-to-Port Isolation (Narrowcast to Broadcast)		dB	50	
<b>Distortion Performance (up to 1 GHz)</b>				
79ch analog + 75ch 256 QAM (digital channels are -6dB analog level)				
Composite Second Order (CSO)	Max.	dBc	-65	(3)
Composite Triple Beat (CTB)	Max.	dBc	-70	
Cross-Modulation		dBc	-65	(3)
Modulation Error Rate (MER)		dB	≥ 38	
Bit Error Rate (BER)	Pre-FEC		≤ 10 <sup>-9</sup>	
<b>Distortion Performance (up to 1.2 GHz)</b>				
30ch analog + 160ch 256 QAM (including 2x192MHz OFDM)				
Composite Second Order (CSO)	Max.	dBc	-63	(4)
Composite Triple Beat (CTB)	Max.	dBc	-65	
Cross-Modulation		dBc	-63	(4)
Modulation Error Rate (MER)		dB	≥ 38	
Bit Error Rate (BER)	Pre-FEC		≤ 10 <sup>-9</sup>	

PARAMETERS	CONDITIONS	UNITS	SPECIFICATION	NOTES
125ch 256 QAM all digital loading				
Modulation Error Rate (MER)		dB	≥ 38	(5)
Bit Error Rate (BER)	Pre-FEC		≤ 10 <sup>-9</sup>	
Electrical/Environmental/Mechanical				
RF Connector Type	Rear Panel		F type female	
Module Width		slot	1	
Dimensions	DxHxW	in. (mm)	16.1 x 5.0 x 1.0 (410.0 x 127.0 x 25.9)	
Weight		lbs. (kg)	1.65 (0.75)	
Number of parts Optical input Broadcast RF input Narrow cast RF input		Port	2 2 2	
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	7.5	

Notes:

- (1) Digital channel is -6 dB from analog after combined with Broadcast Input
- (2) Relative from the Broadcast Input
- (3) 79ch analog+75ch 256QAM, 3.2% OMI, digital channels are -6 dB from analog, received optical power = 0 dBm
- (4) 30ch analog+160ch 256QAM (including 2x192MHz OFDM), 3.2% OMI, digital channels are -6 dB from analog, received optical power = 0 dBm
- (5) 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

### 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
A8KFT3U-1310-03-xx	3-4 dBm	53.5	52.5	51.5	50.5	49.5												
A8KFT3U-1310-04-xx	4-5 dBm		53.5	52.5	51.5	50.5	49.5											
A8KFT3U-1310-05-xx	5-6 dBm			53.5	52.5	51.5	50.5	49.5										
A8KFT3U-1310-06-xx	6-7 dBm				53.5	52.5	51.5	50.5	49.5									
A8KFT3U-1310-07-xx	7-8 dBm					53.5	52.5	51.5	50.5	49.5								
A8KFT3U-1310-08-xx	8-9 dBm						53.5	52.5	51.5	50.5	49.5							
A8KFT3U-1310-09-xx	9-10 dBm							53.5	52.5	51.5	50.5	49.5						
A8KFT3U-1310-10-xx	10-11 dBm								53.0	52.0	51.0	50.0	49.0					
A8KFT3U-1310-11-xx	11-12 dBm									53.0	52.0	51.0	50.0	49.0				
A8KFT3U-1310-12-xx	12-13 dBm										53.0	52.0	51.0	50.0	49.0			
A8KFT3U-1310-13-xx	13-14 dBm											53.0	52.0	51.0	50.0	49.0		
A8KFT3U-1310-14-xx	14-15 dBm												53.0	52.0	51.0	50.0	49.0	
A8KFT3U-1310-15-xx	15-16 dBm													52.0	51.0	50.0	49.0	48.0

Note: CNR numbers are based on test conditions in notes 3 and 4 above.

# Ordering Matrix

## A8KFT3UD-13 1310nm Dual Forward Optical Transmitter Configuration Sheet

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

Created By: \_\_\_\_\_

### ORDERING MATRIX

2019/3/25

Position		1	2	3	4	5
<b>PART NUMBER</b>	<b>A8KFT3UD-13</b>	—		—		

#### 1-2. Output Power

0	3	= 3 dBm (Standard)
0	4	= 4 dBm
0	5	= 5 dBm
0	6	= 6 dBm (Standard)
0	7	= 7 dBm
0	8	= 8 dBm
0	9	= 9 dBm
1	0	= 10 dBm (Standard)
1	1	= 11 dBm
1	2	= 12 dBm
1	3	= 13 dBm (Standard)
1	4	= 14 dBm
1	5	= 15 dBm (Actual output please choose in position #5)

#### 3-4. Connector

S	A	= SC/APC with shutter (Standard)
F	A	= FC/APC
E	A	= E2000/APC
L	A	= LC/APC

#### 5. Special / Customer

Blank = None Special request

A = 5.4% OMI/CH

B = Actual output 14.8 dBm minimum (For 15 dBm model only)

C = Actual output 15.0 dBm minimum (For 15 dBm model only)

### NOTES:



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