

A3422 XMTDR

Digital Return Optical Transmitter Module

The A34XMTDR is the digital return optical transmitter (Tx) of ACI's digital return platform. The Tx allows RF reverse path signals to be sent back to the headend via a single fiber. The digital return optical Tx has two separate CATV RF inputs that drive an optical SFP module with ADC/multiplexing circuitry. The RF drive level to the Tx-SFP inputs to the A34XMTDR can be adjusted to be optimized for best performance with the input PAD or an RS-232 port via a laptop to use a provided GUI.

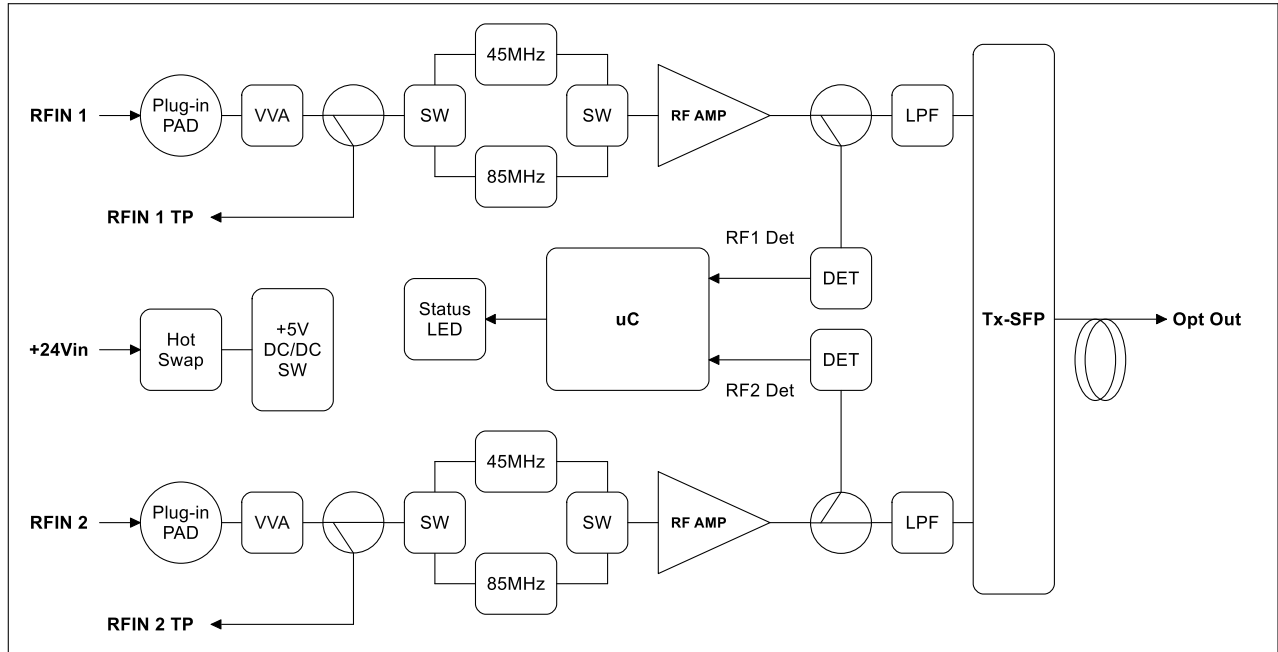
ACI's A34XMTDR with advanced design allows the Tx to be field hot-swapped for Tx-SFPs with different bandwidth (BW) to automatically switch BW from 5-45 MHz to 5-85 MHz operation or vice versa. This allows the operator the flexibly convert the digital return Tx module to any desired BW without the need to replace the entire Tx module.

Used in combination with the A8KQDR Digital Return Receiver in the A8K mainframe chassis, the A34XMTDR can be configured for single channel, dual channel/dual segment mode with variety of optical wavelength options: 1310nm, 1550nm or CWDM. This maximizes the fiber efficiency on a singer fiber conserving the cable operator's investment in the fiber network.

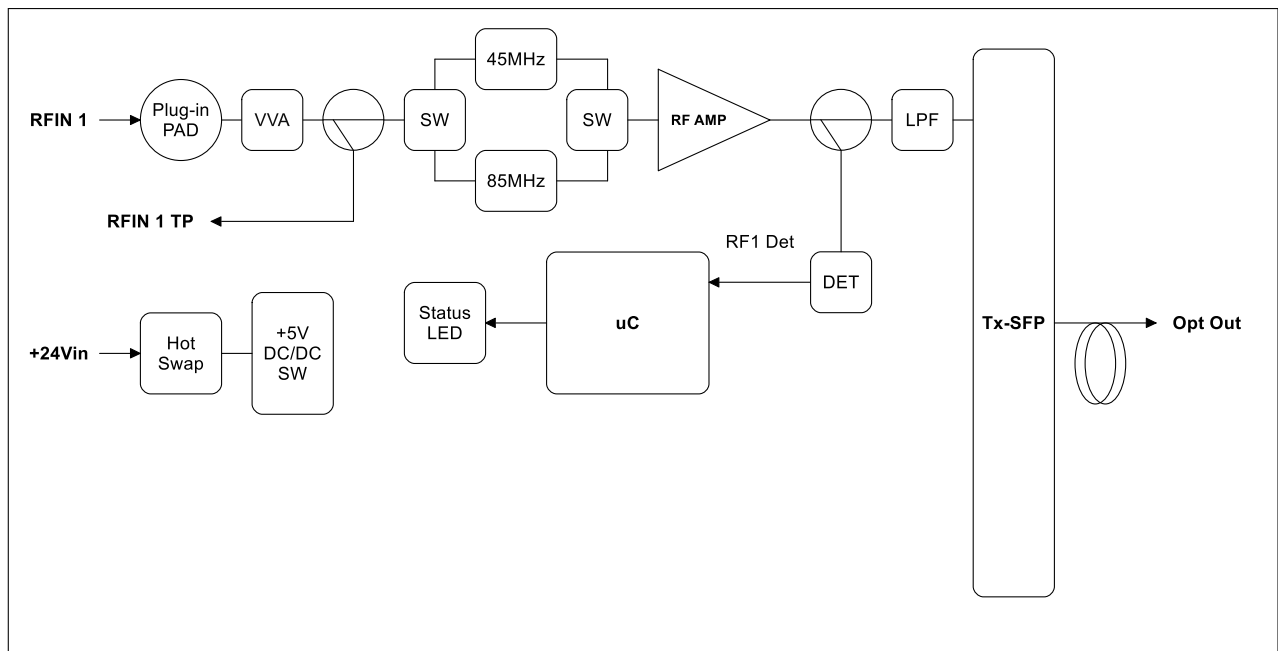
Features

- DFB laser technology
- ITU-T CWDM grid wavelengths
- Wide Dynamic Range
- Module Hot-swappable
- -20 dB test point for RFIN 1 and RFIN 2
- Control and monitor functions via GUI
- 45MHz/85MHz bandwidth selectable with field exchangeable Tx-SFP sub module

Block Diagrams

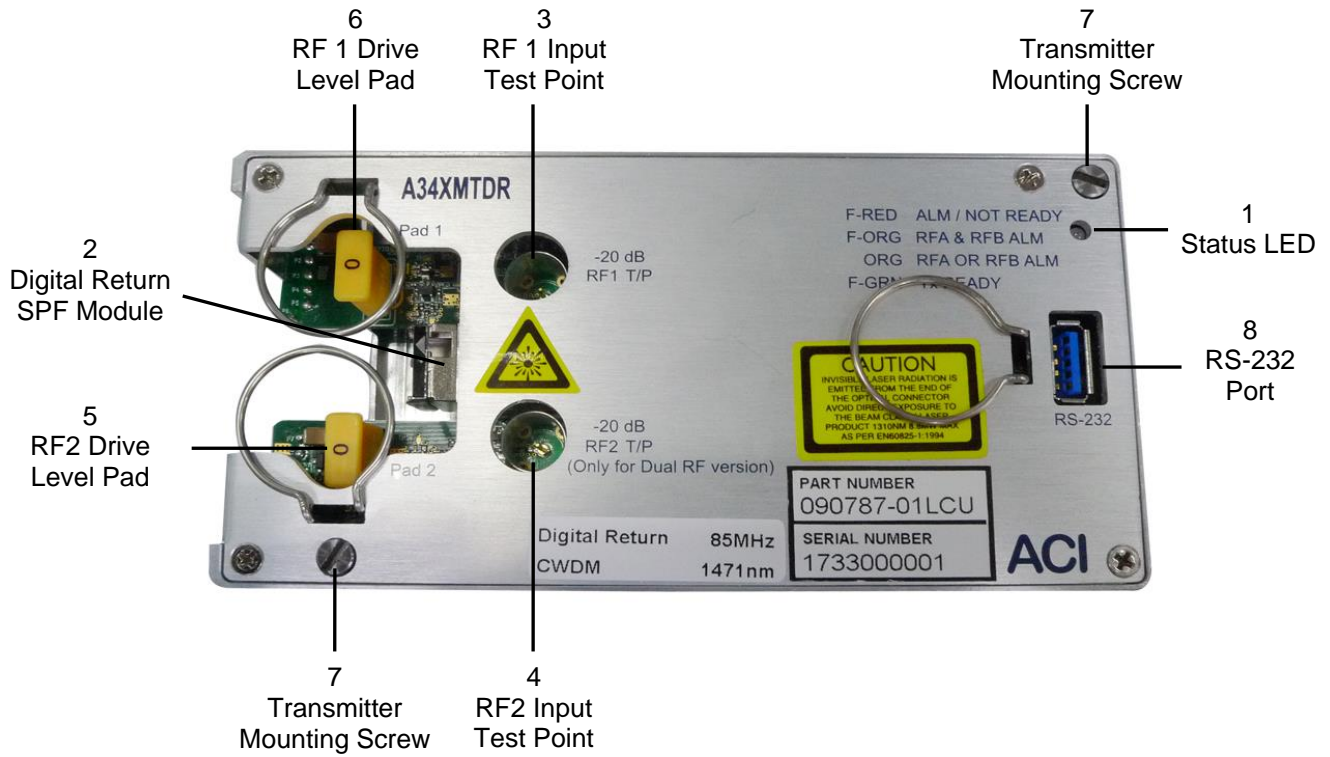


Digital Return 2-Fer Path (Single Fiber)



Digital Return Dual Channel Path (Two Fibers)

Transmitter Module Layout



A34XMTDR Optical Transmitter Module		
	COMPONENT NAME	FUNCTION
1	Status LED	Digital Return SFP Module, RF input, Power
2	Digital Return SFP Module	Digitize and transmit 2-fer, single ch, or dual channels
3,4	RF Input Test Point	-20 dB test point for measuring RF drive level to laser
5,6	RF Drive Level Pad	Used to set the RF drive level to laser
7	Transmitter Mounting Screw	Mounts the optical transmitter to the housing
8	RS-232 Port	GUI monitoring control

Specifications

ACI		A3422 XMTDR Digital Return Optical Transmitter Module		
STATION PARAMETERS				
PARAMETERS	CONDITIONS	UNITS	SPECIFICATION	NOTES
Optical Specifications				
Laser type			FP, DFB or CWDM	
Optical return loss	Min.	dB	45	
Optical output power	Min.	dBm	-5 to 0 0 to 3	
Wavelength	DFB/FP laser CWDM laser		1310 ± 20 nm ITU-T CWDM 1271 – 1611 nm	
Spectral Line Width (RMS)	FP DFB CWDM	nm	1.5 (typical) 0.4 (typical) 0.4 (typical)	
RF Specifications				
Operating Bandwidth	45 MHz 85 MHz		MHz	5 to 45 5 to 85
Impedance			Ω	75
RFIN 1 and RFIN 2 Level			dBmV/ch	16
RFIN 1 and RFIN 2 Input Return Loss	Max		-dB	16
RF Input Level Adjustment Range	0.1 dB step		dB	0 to 20
RFIN 1 and RFIN 2 Flatness	Link		dBpk-pk	±1
RF Input Test Point Level			-dB	20 ± 0.5
RF Input Test Point Return Loss	Max		-dB	16
Link Performance				
Link Gain			dB	20
Peak NPR	45 MHz 85 MHz		dB	53 52
Dynamic range	@ 40dB CNR		dB	18
MER			dB	38
BER				<1x10 ⁻⁹
Environmental				
Power Consumption	Maximum		Watt	7.5
Operating Temperature	Optical Node Ambient		°C °F	-25 to +85 -32 to +185
Relative humidity	Non-condensing		%	0 to 95
Optical Connector				LC/APC
Dimensions	D × H × W		Inch. (mm)	5.81 x 1.16 x 2.95 (147.6 x 29.5 x 74.9)

Ordering Matrix

A34XMTDR Digital Return Optical Transmitter Module Configuration Sheet

Customer: _____

Created By: _____

Order Date: _____

ORDERING MATRIX

May 30, 2018

Position	1	2	3	4	5	6	7	8	9	10	11	12	13
PART NUMBER	3	K	D	R	O	T	-						

8-12 **DIGITAL RETURN TRANSMITTER MODULE**

00000 = Without SFP

411-1 = 45MHz, Single RF, Single FP-Type Laser, 10km

421-1 = 45MHz, Dual RF, Single FP-Type Laser, 10km (2-fer)

413-2 = 45MHz, Single RF, Single 1310nm DFB-Type Laser, 40km

423-2 = 45MHz, Dual RF, Single 1310nm DFB-Type Laser, 40km (2-fer)

811-1 = 85MHz, Single RF, Single FP-Type Laser, 10km

813-2 = 85MHz, Single RF, Single 1310nm DFB-Type Laser, 40km

823-2 = 85MHz, Dual RF, Single 1310nm DFB-Type Laser, 40km (2-fer)

41 -3 = 45MHz, Single RF, Single CWDM-Type Laser, 80km

81 -3 = 85MHz, Single RF, Single CWDM-Type Laser, 80km

Single CWDM-Type Laser

A = 1471nm CWDM-Type Laser

C = 1491nm CWDM-Type Laser

D = 1511nm CWDM-Type Laser

E = 1531nm CWDM-Type Laser

F = 1551nm CWDM-Type Laser

G = 1571nm CWDM-Type Laser

H = 1591nm CWDM-Type Laser

J = 1611nm CWDM-Type Laser

42 3 = 45MHz, Dual RF, Single CWDM-Type Laser, 80km (2-fer)

82 3 = 85MHz, Dual RF, Single CWDM-Type Laser, 80km (2-fer)

Single CWDM-Type Laser

A = 1471nm CWDM-Type Laser

C = 1491nm CWDM-Type Laser

D = 1511nm CWDM-Type Laser

E = 1531nm CWDM-Type Laser

F = 1551nm CWDM-Type Laser

G = 1571nm CWDM-Type Laser

H = 1591nm CWDM-Type Laser

J = 1611nm CWDM-Type Laser

13 **OPTICAL CONNECTOR TYPE**

0 = Without SFP

1 = SC/APC (Standard)

2 = SC/UPC

3 = FC/APC

4 = FC/UPC



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