

Adaptive Return Transmitter Plug-in Modules for Nodes:

Applications:

- ▶ Node segmentation
- ▶ N + x fiber deep
- ▶ High load upstream
- ▶ 256 QAM loading

Features:

- ▶ Return transmitter modules available for all nodes
- ▶ +3 dBm CWDM transmitter (contact ATX for other return laser options)
- ▶ Utilizes ATX's adaptive clipping mitigation technology
- ▶ Operates with legacy analog return receivers
- ▶ Provides a wider input dynamic range

The new adaptive return transmitter (ART), utilizing ATX's patented clipping mitigation technology first used in ATX's acclaimed Chromadigm full band forward transmitter, is designed to significantly improve the dynamic RF input range by 3-8 dB over currently available return transmitters.

Return bandwidth is causing a significant strain on today's return transmitters. While current return transmitters operate over a narrow RF input level for a fixed amount of return bandwidth (5-42 MHz), field environment temperature swings, variation in levels & network ingress cause clipping & undermodulation, resulting in packet loss & degradation in BER performance.

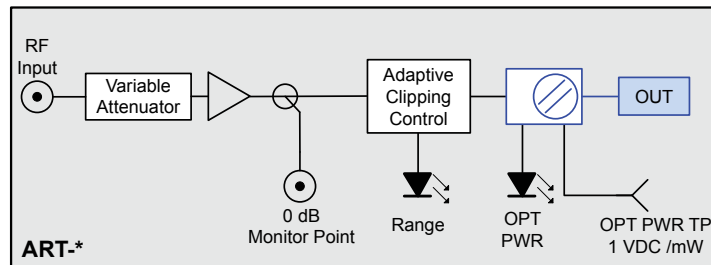
ATX's ART reduces these problems without the cost & complexity of digital return solutions, while allowing the bandwidth to expand to 204 MHz to outperform digital return as well. Node modules of most vendors are available.

Key Benefits:

- ▶ Improves dynamic range by 3-8 dB over current return transmitters
- ▶ Enables significant reduction of transmitter clipping
- ▶ Up to 204 MHz return bandwidth
- ▶ Provides extended bandwidth capability over proprietary digital return solutions
- ▶ 40 dB NPR over 20 dB RF range, better than most digital return solutions



Functional Schematic



Adaptive Return Transmitter Plug-in Modules for Nodes:

Adaptive Return Transmitter Specifications

SPECIFICATIONS		ART-C1*	ART-H1*	ART-H2*	ART-A1*	ART-M1*
OPTICAL OUTPUT						
ITU CHs 23-53		n/a		7.3 ± 0.3 dBm		n/a
CWDM (1470-1610nm)				3.0 ± 0.3 dBm		
WAVELENGTH STABILITY				± 3nm		
RF						
INPUT				5-204 MHz		
FLATNESS				± 1 dB		
NPR PERFORMANCE SUMMARY⁽¹⁾						
5-42 MHz	PEAK	49		Pending Test Results		
	NPR/DR	41/10				
5-85 MHz	PEAK	47		Pending Test Results		
	NPR/DR	39/10				
5-204 MHz	PEAK	46		Pending Test Results		
	NPR/DR	38/10				
POWER						
POWER CONSUMPTION				7W		
DC VOLTAGE SUPPLY RANGE				24 ± 0.5 VDC		
ENVIRONMENTAL						
OPERATING TEMPERATURE ⁽²⁾				-40°C to +85°C (-40°F to +185°F)		
STORAGE TEMPERATURE				-40°C to +85°C (-40°F to +185°F)		
HUMIDITY				5-85% Non-condensing		
PHYSICAL						
DIMENSIONS				5.5"H x 2.0"W x 1.93"D (14.0H x 5.1W x 4.9D cm)		
WEIGHT				0.6 lbs (0.3 kg)		
OPTICAL CONNECTORS				SC/APC		
USER INTERFACE						
RF INPUT TEST POINT ⁽³⁾				0 ± 0.5 dB		
OPTICAL OUTPUT REFERENCE				1V/mW		
LASER STATUS LED				Green (ok), Red (Alarm)		
RANGE LED				Green (ok), Amber (Adaptive Clipping Active), Red (Out of Range)		
NOTES:						
(1) 1λ, 25 km, -6 dBm into TranScend QRRX Receiver with < 4pA/Hz EIN, over full operating temperature.						
(2) Ambient temperature as measured inside the node.						
(3) Relative to RF input of ART module.						

Ordering Information

Part Number Format: ART- <u> </u> - <u> </u> - <u> </u> - <u> </u> - <u> </u> - <u> </u>				
a b cdef g h				
ART-a	b	cdef	g	h
a = Node Type	b = Laser Type	cdef = Wavelength	g = Output Power	h = Connector Type
H = Harmonic	1 = CWDM, Uncooled DFB	If CWDM, indicate WL (Four characters, example 1470)	8 = 8 dBm (DWDM only)	C = SC/APC
A = Augat/6940	2 = DWDM, Cooled DFB ⁽¹⁾		3 = 3 dBm (CWDM only)	
M = Motorola SG4		If DWDM, indicate ITU (Two characters, example 23)		
C = C-Cor OM4100				
Example: ART-C2-27-8-C Adaptive Return Analog Transmitter Module for C-Cor/Arris OM 4100 Node, Isolated & Cooled DFB at +8 dBm Optical Output Power at ITU Channel 27 using SC/APC Connector.				
NOTE: (1) DWDM only available in 'H' node type. Contact ATX for any other form factor.				

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Specifications subject to change without notice.

