

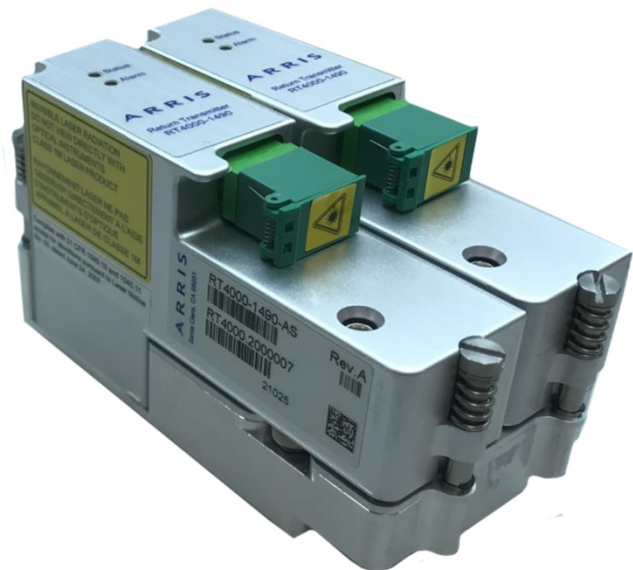
FEATURES

- Compatible with legacy ARRIS headend analog receivers
- Supports 204 MHz upstream performance
- Supports high-loss, high optical output multiwavelength passive architectures
- Available in eight CWDM 1471–1611 nm wavelengths, spaced in 20 nm increments and 1310 nm
- Compatible with NC4000 and NC2000 series nodes
- Host module supports up to 2 pluggable transmitters

CommScope's RT4000 CWDM Analog Return Transmitters are fully compatible with NC4000® and NC2000 series nodes. The transmitters are an excellent choice for facilitating multiwavelength planning over a single fiber, which allows end users to maximize fiber capacity.

CWDM Analog Transmitters are available in 9 different wavelengths and support a variety of HFC and Fiber Deep wavelength plans and network configurations.

The RT4000 host module installs within a single slot in the NC4000 and NC2000 series nodes and accepts any combination of two pluggable transmitters.



SPECIFICATIONS

Characteristics	Specification
Optical	
Optical Output Power ¹	3.0 ± 0.4 dBm
Transmitted Wavelength	1311nm, 1471 nm to 1611 nm ± 6.5 (8 CWDM channels, 20 nm spacing)
Output Power Stability Over Temperature	± 1.0 dB (max)
Optical Connector	SC/APC
Optical LED Indicators	
Fault	Optical Output Power: Red = high alarm (2.2 mW limit); low alarm (1.8 mW limit); Off = normal operating limits Laser Bias Current: Red = high alarm (110 mA limit); Off = normal operating limits
Status	Green = transmitter is on; Off = transmitter is disabled
RF	
RF Bandwidth	5–204 MHz
Input Level (Total Power) ²	17 dBmV (nominal); 47 dBmV (max)
Return Loss ³	-19 dB, 5–120 MHz; -17 dB, 120–204 MHz
Test Point Insertion Loss ⁴	20 ± 0.5 dB
Frequency Response Flatness ⁵	± 0.5 dB (max)
Response Deviation ⁶	0.35 dB _{pk-pk} (max)
Average RF Gain	-14 ± 0.4 dB
Gain Variation Over Temperature ⁷	± 2.0 dB (max)
Peak Optical Modulation Index (OMI), % per channel ⁸	25 ± 1.2%
Powering	
Supply Current @ +24V	125 mA (max)
Supply Current @ +5V	500 mA (max)
Link Performance⁹	
Dynamic Range for NPR >= 40 dB ¹⁰	
• 80 MHz Loading (5–85 MHz)	12 dB (min)
• 199 MHz Loading (5–204 MHz)	9 dB (min)
Peak NPR	
• 80 MHz Loading (5–85 MHz)	45 dB (min)
• 199 MHz Loading (5–204 MHz)	43 dB (min)
Dynamic Range for BER <= 1.00E-06 ¹¹	
• 80 MHz Loading (5–85 MHz)	24 dB (min)
• 199 MHz Loading (5–204 MHz)	19 dB (min)
Intermodulation Spurious Outputs	-55 dBc (max)
Broadband Spurious Outputs	-60 dBc (max)
Environmental and Physical	
Dimensions (H x L x W)	10.7 cm x 5.6 cm x 2.8 cm (4.2 in x 2.2 in x 1.1 in)
Weight	≤ 1.1 lb (≤ 0.5 kg)
Operating Temperature (Node)	-40° to 60°C (-40° to 140°F)
Operating Humidity	95% non-condensing

NOTES:

- Measured at Ta = 25 ± 5°C.
- The maximum RF input level must be tolerated for at least one hour with no damage.
- Measured in a 75 Ω system.
- The RF test point insertion loss is measured relative to the module input with a 0 dB JXP PAD installed. The entire RF test point response must be contained within the indicated limits over the 5–204 MHz RF bandwidth. The RF test point return loss is measured in a 75 Ω system.
- Measured over the 5–204 MHz RF bandwidth. The specified plus/minus value may be interpreted as a peak-to-peak value of twice the indicated value (e.g., ± 0.5 dB may be interpreted as 1.0 dBpk-pk) to simplify the measurement.
- The RF response deviation applies to any 6 MHz band within the 5–204 MHz RF bandwidth.
- The RF gain variation over temperature is the change in the average RF gain as the DUT is operated over temperature. The receiver temperature is held at Ta = 25 ± 1°C, and the optical power at the receiver input is held constant to within ± 0.1 dB. The gain will vary in an approximately linear manner as the base plate temperature deviates from Tbp = 25 ± 5°C.
- The peak optical modulation index (OMI) is specified at Ta = 25 ± 5°C and is derived from the specified average RF gain value and 17 dBmV nominal RF input level.
- Test link consisted of 40 km of SMF-28 fiber plus passive loss sufficient to obtain an optical input power of -6 dBm at the test receiver. The test receiver was a CHP-2RRX, CHP-4RRX, GX2-RX200BX2, or GX2-RX200BX4 return path receiver set to medium gain. The passive loss must be located between the fiber and the test receiver.
- Tested with a 41 MHz notch (5–85 MHz loading) and a 100 MHz notch (5–204 MHz loading).
- The BER dynamic range is tested with a 13 channel (5–85 MHz loading) and a 33 channel (5–204 MHz loading) QAM-64 load at a total nominal input power equal to 17 dBmV. The BER is measured without any forward error correction (Pre-FEC).

ORDERING INFORMATION

Model Name	Description
CWDM Transmitters	
RT4000-1310-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1311 nm
RT4000-1470-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1471 nm
RT4000-1490-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1491 nm
RT4000-1510-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1511 nm
RT4000-1530-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1531 nm
RT4000-1550-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1551 nm
RT4000-1570-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1571 nm
RT4000-1590-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1591 nm
RT4000-1610-AS	RT4000 NC2000/NC4000 Analog Return CWDM Transmitter, SC/APC, 1611 nm
Host Module	
RT4000-HOST-00	RT4000 NC2000/NC4000 Host Module

RELATED PRODUCTS

NC2000/NC4000 Nodes	Headend Optics and Passives
Power Supplies	Optical Passives
Optical Patch Cords	Installation Services

Contact Customer Care for product information and sales:

- United States: 888-944-4357
- International: +1-215-323-2345



Note: Specifications are subject to change without notice.

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Z1514216_RevC_RT4000_AnalogReturnTransmitter