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AT3552

Features

- 46–1002 MHz RF bandwidth
- 79-channel NTSC channel loading
- Multiple wavelength options
  - as an externally modulated 1563 nm broadcast transmitter
  - or as a full spectrum transmitter on the DWDM ITU grid
- Second port for narrowcast input
- Level control: Manual or AGC
- Occupies only one full-depth slot
- Front access –20 dB input test point
- LED status indicators
- Front panel Laser On/Off interlock switch and indicators
- Hot plug-in/out
- Local and remote status monitoring and management features

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Analog Externally Modulated Full Spectrum Transmitter (with Dual BC/NC RF Input Ports) 1002 MHz

Advance Notice

Pictured above: Model AT3552A-21-02-AS

The Aurora AT3552 series 1550 nm externally modulated analog transmitters are available in several optional configurations to meet various network requirements. Two series of models are available with differing minimum optical output power levels.

Several wavelength options are available, including a broadcast center wavelengths at 1563.0 nm, or channel selection on the DWDM ITU grid (ITU-T G.694.1).

Dual RF input ports allow combining of separate broadcast and narrowcast inputs within the transmitter, which is designed to provide 50 dB isolation between the narrowcast and broadcast inputs to protect against NC crosstalk on adjacent transmitters via the RF drive network. AGC circuitry compensates for variations in the RF input level to the transmitter to maintain constant transmitter output RF drive level to the laser.

The characteristics of the transmitter's source laser allow high carrier-to-noise ratio (CNR) while the proprietary predistortion circuit that drives the optical modulator provides excellent CSO and CTB performance, with 450 MHz of digital channel loading 6 dB below the analog channels. AT3552 series transmitters are digital ready, and can be fully loaded with 100% digital 256-QAM signals.

The compact design minimizes rack space requirements and permits plugging the one-slot-wide, full-depth transmitter module in either the front or rear of the CH3000 3RU chassis to optimize equipment installation and operating conditions. This family of transmitters is part of the full complement of products developed by Aurora Networks to support and enhance the deployment of traditional HFC, passive HFC and fiber-to-the-home (FTTH) networks.

AT3552 Product Specifications

Physical:

- Dimensions: 13.0" D x 4.3" H x 1.0" W (33 cm x 11 cm x 2.5 cm)
- Weight: 1.8 lbs (0.82 kg)

Environmental:

- Operating temperature range: 0º to +50ºC (32º to 122ºF)
- Storage temperature range: –40º to +85ºC (–40º to 185ºF)
- Humidity: 5% to 95% non-condensing

RF and Optical Interface:

- Wavelength:
  1563.0 nm ±0.9 nm (Broadcast, "BA" models), or
  one 1 of 16 channels on DWDM ITU Grid
- Optical connector: SC/APC on back plate
- RF input F-type (female connectors at back plate)
- Input RF test point: G-type (male connector at front panel –20 dB)

Power Requirements:

- Input voltage: 12 V_{DC}
- Power consumption: 12 W

General:

- Channel plans: 79-channel NTSC
- Link length: Up to 65 km
- Optical output power, minimum:
  Models AT3552A-xx-02-AS: 8 dBm
  Models AT3552D-xx-02-AS: 12 dBm
- Operating modes: Video and CW (both with AGC), and Manual (without AGC)

Electrical:

- Pass band: 46–1002 MHz
  79 NTSC analog channel loading: 46-550 MHz
  450 MHz QAM channel loading: 550-1002 MHz
  (6 dB below analog channels)
- Frequency response flatness (including slope):
  ±0.5 dB (46 to 550 MHz), ±0.75 dB (46 to 1002 MHz)
- AGC range: ±3 dB
- Manual gain control range: 0 to –6.0 dB
- Manual gain control step size: 0.5 dB
- Input return loss, minimum: 18 dB
- Level stability: ±0.6 dB
- Nominal RF Input levels (dBmV/ch):

	Mode	
	AGC	Manual
NTSC 50-550 MHz:	18	15
QAM 550-1002 MHz:	18	15

(Level of QAM signals through Aux NC RF input becomes 6 dB less after internal combiner. With AGC enabled, capture range is ±3 dB.)

- 256 QAM BER (ITU-C pre-FEC, with CW analog carriers):
  $1.0x10^{-5}$

Fiber-only Link Performance (over operating temperature range)		Output Power Level	
		8 dBm (AT3552A **-*-**)	12 dBm (AT3552D **-*-**)
SBS Suppression	dBm	13	13
Carrier-to-noise Ratio (CNR)[1] In band (45–552 MHz)	dB	51	51
Composite Second Order (CSO)[2] In band (45–552 MHz)	dB	62	62
Composite Triple Beat (CTB) In band (45–552 MHz)	dB	62	62
Cross Modulation (XMOD)	dB	60	60

[1]Full channel loading of 79 NTSC analog channels (4 MHz NBW) over 54–552 MHz, and 75 256-QAM channels over 552-1002 MHz. CNR degradation ≤1.5 dB with the 450 MHz of QAM signal loading, 6 dB below analog channels.
[2]All values are specified with unmodulated carriers of equal power at the input of the transmitter.

Status Indicators, Alarms and Monitoring:

- Front panel LEDs (Laser On/Off and Alarms)
- Local and remote status monitoring via Aurora Opti-Trace applications
- Firmware download capability by local serial port

For more information about full spectrum multi-wavelength applications with up to 16 DWDM wavelengths, please contact your Aurora representative.

Ordering Information

A T 3 5 5 2 * – * * – 0 2 – A S

- **Analog Externally Modulated Full Spectrum Transmitter**
- **Optical Output Power Level**
  A = minimum 8 dBm
  D = minimum 12 dBm
- **Wavelength Option (BA = broadcast at 1563 nm, or ** = ITU Channel Number *(20 thru 59; reference Aurora Networks DWDM ITU Grid Channel Plan Data Sheet)***
- ***Reserved Fields***
- **AS = SC/APC Connector**

Module Back Plates

AT3552 series transmitters may be connected to one of two different styles of chassis back plates, which must be ordered separately depending on the application. One style provides connections for a single transmitter. This single-width back plate may be ordered as:

B P – A 6

The second style provides connections for a group of four transmitters installed in adjacent chassis slots. These 4-channel mux back plates (for which outputs can be cascaded from one back plate to another) may be ordered for various channel groups. Please refer to the data sheet for these back plates for further information.

B P – 3 5 M 4 – C F * – 1 – 0 2 – A S

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