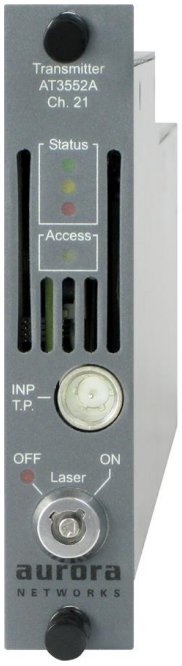
Headend Optics Platform (CH3000)

AT3552

Analog Externally Modulated Full Spectrum Transmitter

FEATURES

- 46–1002 MHz RF bandwidth
- 79-channel NTSC channel loading plus 75 QAM channels
- 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



PRODUCT OVERVIEW

The ARRIS AT3552 series 1550 nm externally modulated analog transmitters are available in several optional configurations to meet various network requirements. Three model series are available with differing optical output power levels and SBS suppression capabilities enhanced for HFC, RFoG, PON, and FTTH applications.

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 pre distortion 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 ARRIS to support and enhance the deployment of traditional HFC, passive HFC and fiber-to-the-home (FTTH) networks.

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).

RELATED PRODUCTS	
CH3000 Chassis	Optical Patch Cords
Optical Transmitters	Optical Passives
BP Back plates	Installation Services

SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	13.0" D x 4.3" H x 1.0" W (3RU) (33 cm x 11 cm x 2.5 cm)
Weight	1.8 lbs (0.82 kg)
Environmental	
Operating temperature range	0° to +50°C (32° to 122°F)
Storage temperature range	-40°C to +85°C (-40°F to +185°F)
Humidity	5% to 95% non-condensing
RF and Optical Interface	
Wavelength	1563.0 nm ±0.9 nm (Broadcast, "BA" models), or one of 16 channels on DWDM ITU Grid
Optical connector	SC/APC on back plate
RF input	F-type (female connectors at back plate)
RF test point	G-type (male connector at front panel –20 dB)
Power Requirements	
Input voltage	12 V_{DC}
Power consumption	• AT3552A and AT3552D: 15 W • AT3552R: 18 W
General	
Channel plans	79-channel NTSC plus 75 QAM channels
Link length	Up to 65 km
Optical output power, minimum	• AT3552A and AT3552R: 8 dBm • AT3552D: 12 dBm
Operating modes	Video and CW (both with AGC), and Manual (without AGC)
Electrical	
Passband	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 (including slope)	±0.75 dB
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	±0.75 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)	8 dBm (AT3552R)
	SBS Suppression	dBm	12.5	12.5	20
	Carrier-to-noise Ratio (CNR)[1] In band (45–552 MHz)	dB	51	51	50/48[3]
	Composite Second Order (CSO)[2] In band (45–552 MHz)	dB	62	62	58/62[4]
	Composite Triple Beat (CTB) In band (45–552 MHz)	dB	62	62	58
	Cross Modulation (XMOD)	dB	60	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. 40 km receive optical power +0.25 dBm.
[2] All values are specified with un-modulated carriers of equal power at the input of the transmitter.
[3] Receive optical power at -5.0 dBm.
[4] 62 dB at 20 km, 58 dB at 40 km.

Status Indicators, Alarms and Monitoring	
	Front panel LEDs (Laser On/Off and Alarms)
	Local and remote status monitoring via ARRIS 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 ARRIS 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; +12.5 dBm SBS suppression**
  - **D = minimum 12 dBm; +12.5 dBm SBS suppression**
  - **R = minimum 8 dBm; +20 dBm SBS suppression**
- **Wavelength Option (BA = broadcast at 1563 nm, or =**ITU Channel Number *(20 thru 59; reference ARRIS 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

Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

Note: Specifications are subject to change without notice.

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