

Headend Optics Platform (CH3000)

AT3552

Analog Externally Modulated Transmitter (65/85)

FEATURES

- Multiple wavelength options
 - as an externally modulated 1563 nm broadcast transmitter
 - or as a full spectrum transmitter on the DWDM ITU grid
- 64 analog PAL B/G channels plus 50 QAM channels
- Dual inputs for separate BC/NC feeds
- 1GHz RF bandwidth on both inputs
- 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 predistortion circuit that drives the optical modulator provides excellent CSO and CTB performance, with full CW and QAM channel loading (QAM channel loading 6 dB below the analog channels).

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).

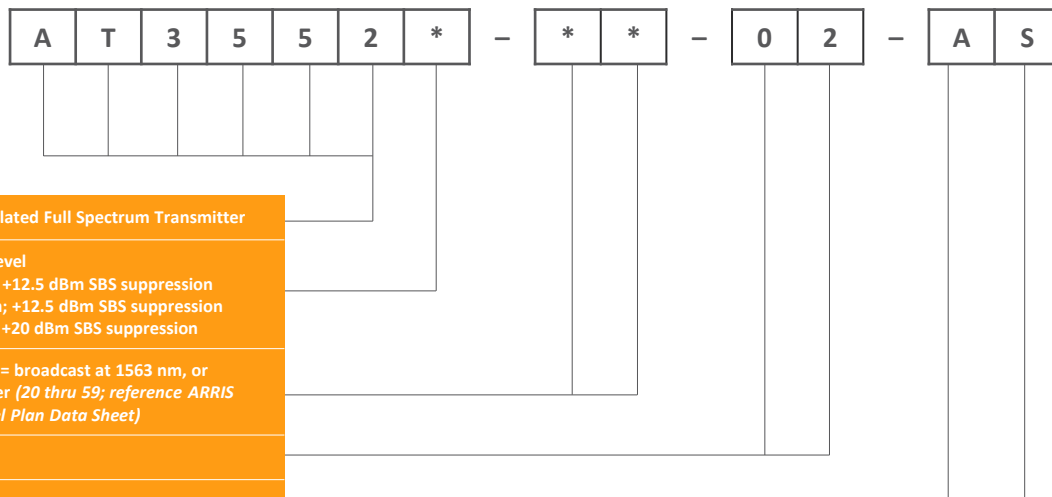
RELATED PRODUCTS

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 1 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 64 PAL B/G channel loading: 85–598 MHz • 50 QAM channel loading: 598–1002 MHz (6 dB below analog channels) 																																	
Frequency response (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)	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"></th> <th colspan="2" style="text-align: center;">Mode</th> </tr> <tr> <th colspan="2"></th> <th style="text-align: center;">AGC</th> <th style="text-align: center;">Manual</th> </tr> </thead> <tbody> <tr> <td>• PAL B/G 85–598 MHz:</td> <td></td> <td style="text-align: center;">19</td> <td style="text-align: center;">16</td> </tr> <tr> <td>• QAM 598–1002 MHz:</td> <td></td> <td style="text-align: center;">19</td> <td style="text-align: center;">16</td> </tr> </tbody> </table> <p>(Level of QAM signals through Aux NC RF input becomes 6 dB less after internal combiner. With AGC enabled, capture range is ±3 dB.)</p>			Mode				AGC	Manual	• PAL B/G 85–598 MHz:		19	16	• QAM 598–1002 MHz:		19	16																	
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256-QAM BER (ITU-C pre-FEC, with CW analog carriers)	1.0x10 ⁻⁵																																	
	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th rowspan="2" style="text-align: center;">Fiber-only Link Performance (over operating temperature range)</th> <th colspan="3" style="text-align: center;">Output Power Level</th> </tr> <tr> <th style="text-align: center;">8 dBm (AT3552A)</th> <th style="text-align: center;">12 dBm (AT3552D)</th> <th style="text-align: center;">8 dBm (AT3552R)</th> </tr> </thead> <tbody> <tr> <td>SBS Suppression</td> <td style="text-align: center;">dBm</td> <td style="text-align: center;">12.5</td> <td style="text-align: center;">12.5</td> <td style="text-align: center;">20</td> </tr> <tr> <td>Carrier-to-noise Ratio (CNR)¹ In band (85–598 MHz)</td> <td style="text-align: center;">dB</td> <td style="text-align: center;">51</td> <td style="text-align: center;">51</td> <td style="text-align: center;">51/48³</td> </tr> <tr> <td>Composite Second Order (CSO)² In band (85–598 MHz)</td> <td style="text-align: center;">dB</td> <td style="text-align: center;">62</td> <td style="text-align: center;">62</td> <td style="text-align: center;">62/58⁴</td> </tr> <tr> <td>Composite Triple Beat (CTB) In band (85–598 MHz)</td> <td style="text-align: center;">dB</td> <td style="text-align: center;">62</td> <td style="text-align: center;">62</td> <td style="text-align: center;">62</td> </tr> <tr> <td>Cross Modulation (XMOD)</td> <td style="text-align: center;">dB</td> <td style="text-align: center;">60</td> <td style="text-align: center;">60</td> <td style="text-align: center;">60</td> </tr> </tbody> </table>		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 (85–598 MHz)	dB	51	51	51/48 ³	Composite Second Order (CSO) ² In band (85–598 MHz)	dB	62	62	62/58 ⁴	Composite Triple Beat (CTB) In band (85–598 MHz)	dB	62	62	62	Cross Modulation (XMOD)	dB	60	60	60
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	¹ Full channel loading of 64 PAL analog channels (5 MHz NBW) over 85–598 MHz, and 50 256-QAM channels over 85–598 MHz. 40 km receive optical power +0.25 dBm. ² All values are specified with unmodulated carriers of equal power at the input of the transmitter plus QAM channels at -6 dB. 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



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:



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.



Note: Specifications are subject to change without notice.

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