

Headend Optics Platform (CH3000)

FA3500 Optical Amplifier

FEATURES

- High output power level, from 14 to 21 dBm
- Low noise figure
- Single and dual amplifier configurations
- Gain flattened versions available
- Optical path isolation (input and output)
- Output power alignment
- Constant current and constant gain modes of operation
- Front panel laser On/Off interlock switch
- Hot plug-in/out
- Local and remote status monitoring and control
- Occupies one full-depth slot



PRODUCT OVERVIEW

The ARRIS FA3500 series is a family of high-output, extremely compact 1550 nm optical amplifiers. Output powers ranging from 14 to 21 dBm are available in a single-width module designed for use in the CH3000 3RU chassis. Dual amplifier versions, which provide two optically independent amplifiers in a single-width module, are also available. These high performance amplifiers allow operators to use 1550 nm analog and DWDM transmitters to deliver high-quality broadcast and digital narrowcast content over significant transmission distances.

The compact design makes these amplifiers the highest density EDFAs in the market, dramatically reducing rack space requirements in the headend and hubs. This design enhances the deployment of traditional HFC, passive HFC, and fiber to the home (FTTH) networks.

SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions (without connectors)	13.0" D x 5.25" H x 1.0" W (3RU) (33 cm x 13.3 cm x 2.5 cm)
Weight	2.0 lbs (0.9 kg)
Environmental	
Operating temperature range	<ul style="list-style-type: none"> All models except FA3521F, FA3521H, FA3521J, and FA3524S: -20° to +65°C (-4° to 149°F) Models FA3521F, FA3521H, FA3521J, and FA3524S: 0° to +50°C (32° to 122°F)
Storage temperature range	-40° to +85°C (-40° to 185°F)
Humidity	5% to 95% non-condensing
General	
Hot plug-in/out	
Modes of operation	constant current or constant gain
Output power alignment	<ul style="list-style-type: none"> Manual in constant current mode Automatic in constant gain mode
Optical Interface	
Optical connector	SC/APC (at Back Plate BP-F2, BP-F3, or BP-F4)
Optical	
Input signal wavelength	<ul style="list-style-type: none"> For single wavelength models For gain flattened models FA3517F, FA3517G, FA3519F For gain flattened models FA3521F, FA3521H, FA3521J
	1527.9 nm to 1565.0 nm corresponding to ITU Ch. 62 to Ch. 16
	1530.0 nm to 1565.0 nm corresponding to ITU Ch. 59 to Ch. 16
	1527.9 nm to 1561.4 nm corresponding to ITU Ch. 62 to Ch. 20
Optical signal path isolation	> 30 dB
Output power stability	± 0.1 dB
Output power margin	0.3 dB (at 0 dBm input)
Output power adjustment range	-3.0 dB (from nominal output power, min)

Performance Parameters

Model Number	Module Type	Optimum Composite			Power	Noise	Noise
		Input Sensor Range (dBm) ²	Power Input Range (dBm)	Output Power nominal (dBm) ³	Consumption, max (Watts)	Figure, typ (dB) ⁴	Figure, max (dB) ⁴
FA3514S-00	Single-amplifier	-10 to +10		14	6	4.5	5.0
FA3514D-00	Dual-amplifier	-10 to +10		2 x 14	12	4.5	5.0
FA3517S-00	Single-amplifier	-10 to +10		17	6	4.5	5.0
FA3517D-00	Dual-amplifier	-10 to +10		2 x 17	12	4.5	5.0
FA3517F-00	Gain-flattened single-amplifier ¹	-10 to +10	+5 to +8	17	7	5.0	5.5
FA3517G-00	Gain-flattened dual-amplifier ¹	-10 to +10	+5 to +8	2 x 17	14	5.0	5.5
FA3519F-00	Gain-flattened single-amplifier ¹	-10 to +10	+5 to +8	19	13	5.0	5.5
FA3520S-00	Single-amplifier	-10 to +10		20	13	4.5	5.0
FA3521S-01	Single-amplifier	-10 to +10		21	13	4.5	5.0
FA3521F-00	Gain-flattened single-amplifier ^{1,6}	0 to +20	+5 to +9	21	13	5.0	5.5
FA3521H-00	Gain-flattened single-amplifier ^{1,6}	0 to +20	+9 to +13	21	13	5.5	6.0
FA3521J-00	Gain-flattened single-amplifier ^{1,6}	0 to +20	+13 to +17	21	13	6.5	7.0
FA3524S-01	See Note ⁵	-10 to +10		2 x 21	20	4.5	5.0

NOTES:

¹ Output power levels and noise figures for gain-flattened models shown for operation within optimum power input range.

² Limited operational capability is possible outside of this range.

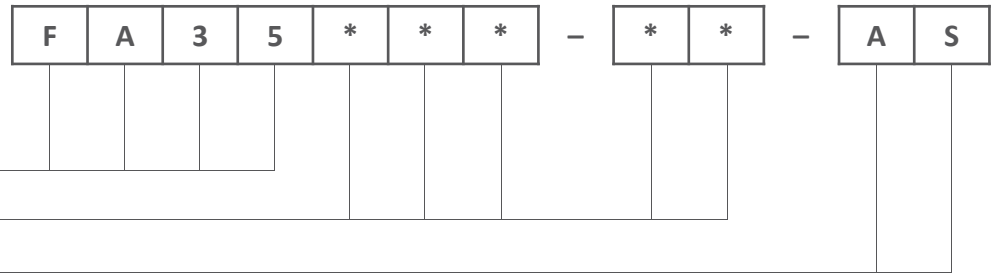
³ Nominal at 0 dBm and 1550 nm. For gain-flattened models, nominal on optimum composite input power over C-band.

⁴ Measured optically at 0 dBm input, $\lambda = 1550$ nm in vacuum, $T_A = 25^\circ\text{C}$.

⁵ Model FA3524S is a 24 dBm amplifier with two optical output ports, each with 21 dBm (nominal) optical output power.

⁶ Units do not operate outside input sensor range.

ORDERING INFORMATION



Fiber Amplifier (EDFA)
Optical output power and module configuration (See Note 1)
AS = SC/APC Connectors

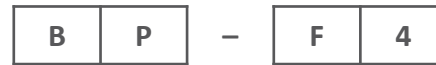
Note 1: Reference the Performance Parameters table, above, for available model numbers and their associated configurations (nominal output power, single or dual amplifiers, with or without gain flattening).

Note 2: Model FA3524S, with dual 21 dBm outputs, requires a special back plate, BP-F3, that is also provided with this module. The FA3524S is a single-width chassis module, because of operating temperature factors, is supplied with the double-wide BP-F3 back plate that forces an extra unoccupied adjacent slot in the CH3000 chassis when installed to provide additional cooling. Because of this, a BP3000 blank face plate is also included with this module to use on the front of the chassis. Special installation instructions for the FA3524S and these plates are included with the shipped unit.

Required Module Back Plates

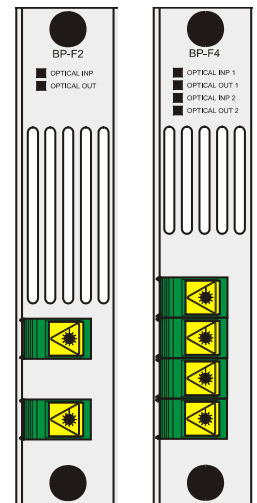


Single Output EDFA



Dual Output EDFA

Back Plate is included with ordered module



RELATED PRODUCTS

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

Customer Care

Contact Customer Care for product information and sales:

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

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