

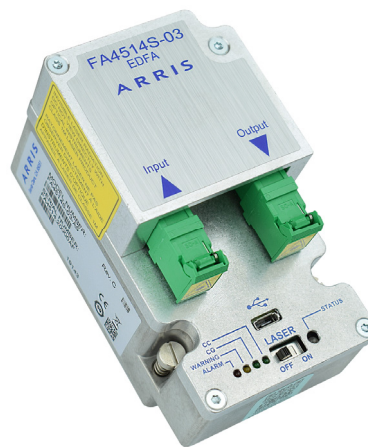
Optical Node Series (NC)

FA45xxS-03

Constant Current/Constant Gain Single Slot Optical Amplifiers

FEATURES

- 14, 17, 21, or 24 (2x21) dBm output power level
- Extended optical range ITU Channels 14–62, 1566.75–1527.6 nm
- Microprocessor controlled
- User-selectable Constant Current or Constant Gain mode
- User settable output level
- Extended optical input range -30 to +10 dBm
- Low noise figure
- Optical path isolation (input and output)
- Remote status monitoring and control
- Improved auto-recovery
- ASE muting with variable threshold
- Auto-limiting optical output for eye safety
- Hot plug-in/out



PRODUCT OVERVIEW

The ARRIS FA4514S-03, FA4517S-03, FA4521S-03, and FA4524S-03 modules are high-output, compact 1550 nm single slot high performance optical amplifiers that enable operators to use 1550 nm and DWDM analog transmitters to deliver high-quality broadcast and digital narrowcast content over significant transmission distances.

These third-generation optical amplifiers introduce a microprocessor to offer significant enhancements in the deployment of traditional HFC, Fiber Deep, and fiber to the home (FTTH) networks. The modules can be user selectable to operate in two modes, either constant current which delivers a fixed optical output power, typically used for single wavelength deployments; or constant gain, which is for multiwavelength applications where the optical level per wavelength remains constant with varying numbers of wavelengths.

The extended optical input range supports low level data signals. The automatic ASE muting feature has user settable threshold values where the EDFA output is muted when the incoming optical signal is below threshold value with optical power automatically restored when the signal returns. The optical output is auto limited to not exceed 21.7 dBm ensuring optical eye safety limits are continuously maintained.

Operational monitoring has been increased. This includes remote monitoring of optical levels, laser operating conditions, and alarm status with the option to set alarm parameters to suit local operating conditions.

The units are designed as plug-in modules for ARRIS's NC4000 series Fiber Node Platforms, including the NH4000 "Virtual Hub" and Universal Virtual Hub (UVHub), and, when used in the latter, provides a practical alternative to OTN-style cabinets.

SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	4.0" L x 2.2" H x 2.3" W (10.2 cm x 5.6 cm x 5.8 cm)
Weight	0.6 lbs. (0.3 kg)
Environmental	
Operating Temperature Range	-40° to +85°C (-40° to 185°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
Optical Interface	
Optical Connectors	SC/APC
Power Requirements	
Input Voltage	24 V _{DC}
Power Consumption	<ul style="list-style-type: none"> FA4514 and FA4517: 9 W max FA4521: 10 W max FA4524: 14 W max
Status Indicator LEDs	
CC (Constant Current Mode) LED	On/Green = operating in constant current (power) mode
CG (Constant Gain Mode) LED	On/Green = operating in constant gain mode
Warning LED	On/Yellow = when <ul style="list-style-type: none"> at least one Major Alarm has occurred at least one Minor Alarm has occurred (Summary of Minor Alarms) any Alarm History is available
Alarm LED Major Alarm(s)	On/Red = when at least one Major Alarm has occurred Yellow Warning LED will also be on NOTE: Available module status alarm options are viewed and managed in Opti-Trace [®] CMS. Alarm severity (Major or Minor) for each parameter and threshold (alarm) minimum/maximum levels for Major and Minor Alarms can be manually set in Opti-Trace CMS. Status indicator LEDs (Warning, Alarm, Status) are activated when a set threshold is exceeded.
Optical	
Input Signal Wavelength	<ul style="list-style-type: none"> 1566.75–1527.6 nm, ITU Channels 14–62
Optical Signal Path Isolation, Input	<ul style="list-style-type: none"> FA4521S-03, FA4524S-03 > 30 dB: all temperatures FA4514S-03, FA4517S-03 > 30 dB: from -20° to 70°C, > 20 dB otherwise
Output Power Stability (All Models)	<ul style="list-style-type: none"> Constant Current Mode: ± 0.6 dB Constant Gain Mode: ± 0.7 dB

SPECIFICATIONS CONTINUED

Characteristics	Specification			
Performance Parameters				
	FA4514S-03	FA4517S-03	FA4521S-03	FA4524S-03
Nominal Output Power (dBm) (with 0 dBm Input)	14	17	21	21 (x2)
Noise Figure (dB) (at 0 dBm Input, Over All Wavelengths and Temperatures)	6.2 (typ 5.6)	5.8 (typ 5.2)	5.8 (typ 5.2)	5.8 (typ 5.2)
Noise Figure, Broadcast (1545–1563 nm Input) (dB)	5.2 (typ 4.7)	5.0 (typ 4.5)	5.0 (typ 4.5)	5.0 (typ 4.5)
Composite Input Power Range				
Constant Current Mode	-10 to +11	-6 to +10	-6 to +11	-6 to +11
Constant Gain Mode Min	-6 (4 λ at -12 dBm each)	-6 (4 λ at -12 dBm each)	-6 (4 λ at -12 dBm each)	-6 (4 λ at -12 dBm each)
Constant Gain Mode Max	+11 (20 λ at -2 dBm each)	+11 (20 λ at -2 dBm each)	+11 (20 λ at -2 dBm each)	+11 (20 λ at -2 dBm each)
Constant Gain Mode Range ¹ (dB)	4–20	6–23	6–27	6–26
Remote Monitoring/Control Parameters				
Status Displayed	Optical input and output power, EDFA gain, board temperature, ASE muting status, laser status, local summary. Local parameters for monitoring are displayed through USB port access.			
Control Parameter	Constant gain and gain value; constant current mode and output power; ASE muting enable and threshold			

NOTES:

- Gain control step = 0.25 dB for all models.
If Gain = (6–Δ) dB, the minimum composite input power is (-8+Δ) dBm.
If Gain = (6–Δ) dB, the minimum composite input power is (-6+Δ) dBm.

ORDERING INFORMATION

Model Name	Description
FA45xxS-03-AS	High Output, Constant Current/Constant Gain, Single Slot Optical Amplifier, SC/APC Connector xx= Nominal output power: (14, 17, 21, and 24 dBm). Specify xx desired level.

RELATED PRODUCTS

NC4000 HFC Nodes	NH/VH4000 VHub/UVHub
XE4202M 10G EPON R-OLT	RFoG and OR41x8 Receivers
Fiber Service Cables	CP8xxx Optical Network Units

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.

Copyright Statement: © 2020 CommScope, Inc. All rights reserved. ARRIS, the ARRIS logo, and Opti-Trace are trademarks of CommScope, Inc. and/or its affiliates. All other trademarks are the property of their respective owners. No part of this content may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from CommScope, Inc and/or its affiliates ("CommScope"). CommScope reserves the right to revise or change this content from time to time without obligation on the part of CommScope to provide notification of such revision or change.

1513444RevC_FA45xxS-03 Single-Slot-EDFA

09/2020 EA-32033

Ask us about the complete Access Technologies Solutions portfolio:

Nodes-NC