

Headend Optics Platform (CH3000)

High Density RFPON Headend Solution

FEATURES

- High density RFPON tailored solution
 - 1550 nm broadcast support
 - 1610 nm RFoG return
 - Supports GPON, GPON, 10GEPON, or 10GPON, (1490 or 1577 nm downstream, 1310 and 1270 nm PON upstream)
- Dynamic back plate concept allows replacement of EDFA and return receiver without having to disconnect cables on rear of chassis
- Three required modules occupy only two chassis slots
- High output power EDFA provides constant gain and constant current modes
- RFoG Quad Return Receiver supports 5-85 MHz RF passband
- Optical back plate provides completely integrated diplexer for management of forward and return signals



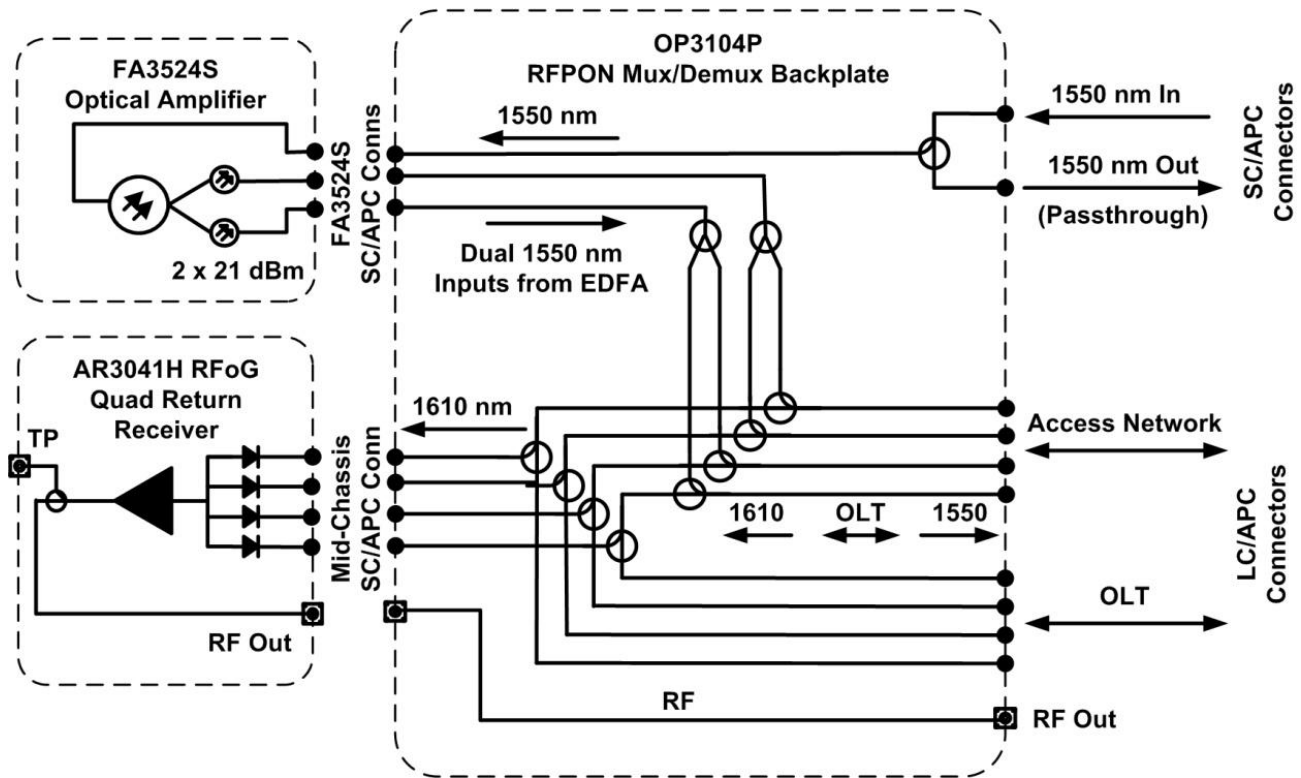
SYSTEM OVERVIEW

The three modules that comprise ARRIS' High Density RFPON Headend Solution are the FA3524S-01-AS Optical Amplifier, the AR3041H-00-0 RFoG Quad Return Receiver, and the OP3104P-0-00-AL Mux/Demux Back plate with integrated RFPON filters.

This suite of equipment provides an immediate high density Headend solution for both RFoG and RFPON architectures (supporting GPON, GPON, 10GEPON, or 10GPON).

Functional block diagram of the High Density RFPON Headend Solution

Detailed product specifications and descriptions of the individual modules comprising the solution are included on the following pages.



FA3524S-01-AS Optical Amplifier

The FA3524S-01-AS Optical Amplifier is a 24 dBm amplifier with two optical output ports, each port providing 21 dBm (nominal) optical output power. When used as a component module of the High Density RFOG Headend Solution, the dual outputs of the FA3524S mate directly, via SC/APC connectors, to the OP3104P Mux/Demux Back plate.

Features

- High output power level (dual 21 dBm)
- Low noise figure
- 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



FA3524S-01-AS SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	13.0" D x 4.3" H x 1.0" W (33 cm x 10.9 cm x 2.5 cm)
Weight	2.0 lbs (0.9 kg)
Environmental	
Operating	0° to +50°C (32° to 122°F)
Storage	-40°C to +85°C (-40°F to +185°F)
Humidity	5% to 95% non-condensing
Power Requirements	
Input voltage	12 V _{DC}
Power consumption, max	20 W
General	
Hot plug-in/out	
Modes of operation	constant current or constant gain
Output power alignment	manual in constant current mode, automatic in constant gain mode
Optical connectors	SC/APC
Optical (each fiber amplifier)	
Output power, nominal	21 dBm
Output power margin	0.3 dB (at 0 dBm input)
Output power stability	± 0.1 dB
Output power adjustment range	-3.0 dB (from nominal output power, min)
Noise figure	4.5 dB typ, 5.0 dB max
Input signal wavelength	1530-1565 nm
Input sensor range	-10 to +10 dBm
Optical signal path isolation	> 30 dB

AR3041H-00-0 RFoG Quad Return Receiver

The AR3041H-00-0 is the receiver for the High Density RFoG Headend Solution. Supporting a return RF passband of 5–85 MHz, it performs the optical-to-electrical (O/E) conversion of returning 1610 nm wavelength signals from four separate optical input streams, combines the RF outputs, and provides gain control of the combined RF signal with a built-in attenuator.

Features

- 5–85 MHz RF bandwidth
- RF output gain control with local or remote status monitoring
- Front access -20 dB output test port
- Hot plug-in/out
- No fan on module (no forced air cooling)
- Occupies one half-depth slot



AR3041H-00-0 SPECIFICATIONS

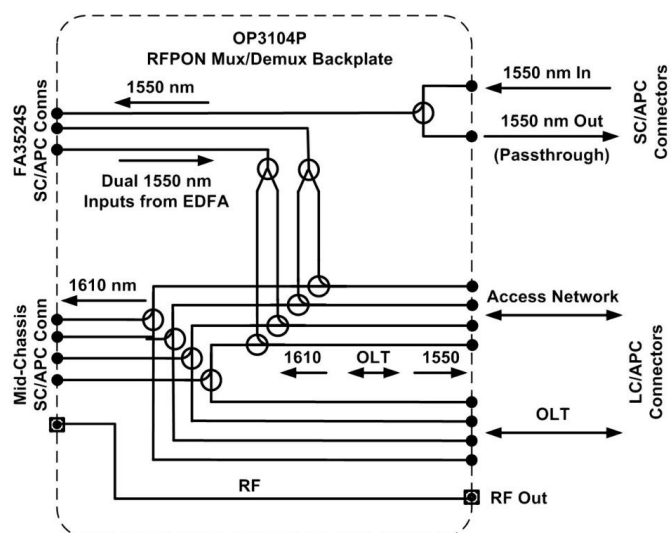
Characteristics	Specification
Physical	
Dimensions	6.6" D x 4.3" H x 1.0" W (16.8 cm x 10.9 cm x 2.5 cm)
Weight	1.5 lbs (0.7 kg)
Environmental	
Operating	-20° to +65°C (-4° to 149°F)
Storage	-40°C to +85°C (-40°F to +185°F)
Humidity	5% to 95% non-condensing
Power Requirements	
Input voltage	12 V _{DC}
Power consumption, max	2 W
General	
Optical connectors	SC/APC
RF connector	G-type
Optical	
Input wavelength, nominal	1610 ± 10 nm
Optical input power per path	-24 to -15 dBm
Electrical, Return RF	
Passband	5–85 MHz
Frequency response	± 1.0 dB
Optical input power per path	-24 to -15 dBm
Standard output level at full gain	34 dBmV (with -24 dBm optical input, 26.7% OMI)
Level stability	± 0.5 dB
Output return loss, min	18 dB
Gain control range	0–20 dB
Gain control step	0.25 dB

OP3104P-0-00-AL Mux/Demux Back Plate with Integrated RFPON Filters

The OP3104P-0-00-AL is a passive optical module that functions as a common back plate for both the FA3524S and AR3041H while also serving as a completely integrated diplexer for the forward and return path optical signals used in RFPON applications as shown in the block diagram below.

Features

- Low optical insertion loss
- Low noise
- Two SC/APC connectors for input of a common 1550 nm broadcast signal (to FA3524S EDFA) and pass through
- Eight LC/APC connectors provide four 1550 nm forward signal inputs and four network outputs (1550 nm forward and 1610 nm return)
- F-type connector provides RF output signal passed through from AR3041H
- Hot plug-in/out



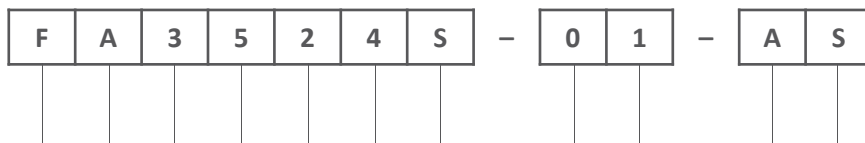
OP3104P-0-00-AL SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	6.6" D x 4.3" H x 1.0" W (16.8 cm x 10.9 cm x 2.5 cm)
Weight	1.5 lbs (0.7 kg)
Environmental	
Operating	-20° to +65°C (-4° to 149°F)
Storage	-40°C to +85°C (-40°F to +185°F)
Humidity	5% to 95% non-condensing
Power Requirements	
Input voltage	12 V _{DC}
Power consumption, max	2 W
General	
Optical connectors	SC/APC
RF connector	G-type

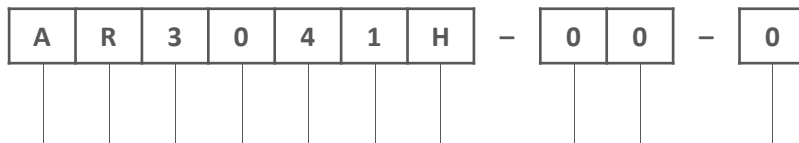
OP3104P-0-00-AL SPECIFICATIONS CONTINUED

Characteristics	Specification
Optical	
Input wavelength, nominal	1610 ± 10 nm
Optical input power per path	-24 to -15 dBm
Electrical, Return RF	
Passband	5-85 MHz
Frequency response	± 1.0 dB
Optical input power per path	-24 to -15 dBm
Standard output level at full gain	34 dBmV (with -24 dBm optical input, 26.7% OMI)
Level stability	± 0.5 dB
Output return loss, min	18 dB
Gain control range	0-20 dB
Gain control step	0.25 dB
Optical	
Wavelengths, nominal	<ul style="list-style-type: none"> Broadcast pass through: 1550 nm downstream Access Network I/O (upstream/downstream): 1270/1577, 1310/1490, 1610/1550 OLT I/O (upstream/downstream): 1270/1577, 1310/1490
Insertion losses and isolation	<ul style="list-style-type: none"> 1550 INP to 1550 OUT (pass through port) Passband, min: 1530-1565 nm Insertion loss, max: 3.6 dB
1550 INP to 1550 OUT (to EDFA)	<ul style="list-style-type: none"> Passband, min: 1530-1565 nm Insertion loss, max: 3.6 dB
1550 INP 1/INP 2 (from EDFA to Access Network)	<ul style="list-style-type: none"> Passband, min: 1530-1563.2 nm Insertion loss, max: 4.2 dB (3.7 dB typ) Isolation, EDFA to OLT, min: 50 dB Isolation, EDFA to 1610 OUT (1,2,3,4), min: 50 dB
OLT to Access Network	<ul style="list-style-type: none"> Passband, min: 1260-1520 nm, 1567-1587 nm Insertion loss, max: 1.2 dB (0.8 dB typ) Isolation, OLT to 1610 OUT (1,2,3,4), min: 50 dB
Access Network to 1610 OUT (1,2,3,4)	<ul style="list-style-type: none"> Passband, min: 1600-1620 nm Insertion loss, max: 1.8 dB Isolation, Access Network to OLT, min: 15 dB
Access Network to OLT	<ul style="list-style-type: none"> Passband, min: 1260-1520 nm, 1567-1587 nm Insertion loss, max: 1.2 dB Isolation, Access Network to 1610 OUT (1,2,3,4), min: 40 dB

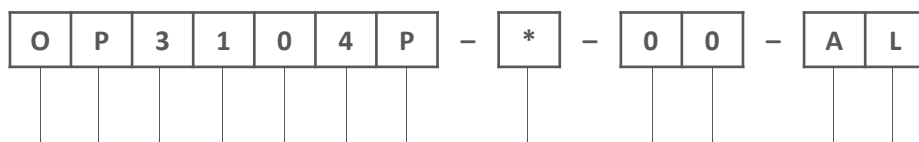
ORDERING INFORMATION



24 dBm Optical Amplifier with dual 21 Output Ports



RFoG Quad Return Receiver



RFPON Mux/Demux Back plate

- "0" Version includes 1550 nm forward pass-through port
- "3" Version does not include the forward pass-through port

RELATED PRODUCTS

CH3000 Chassis	Optical Patch Cords
Optical Transmitters	Optical Passives
Digital Return	Installation Services

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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