

Optical Node Series (NC)

OP4528

Light-Plex™ Optical Narrowcast Demux with BC/NC Combiner (with Optical Power Level Management)

FEATURES

- Low loss integrated 8-channel narrowcast demultiplexer with broadcast splitter and broadcast/narrowcast combiner
- Non-service-interrupting remote power level monitoring and management
- Eliminates most fiber jumpers normally associated with BC-NC combining
- Low insertion loss



PRODUCT OVERVIEW

The ARRIS series of OP4528 Light-Plex modules provide a combined narrowcast demultiplexer with a broadcast/narrowcast combiner. Each OP4528 demultiplexes up to eight DWDM wavelengths and is available in various wavelength combinations. The OP4528 features four optical input ports (one carrying the DWDM narrowcast services for up to 40 ITU-grid optical channels and the remaining three for either a single eight-way split or dual four-way splits of broadcast services). Of the nine output ports, eight provide the combined output of the split broadcast signal and one of the eight demultiplexed narrowcast channels (via a common, industry-standard female MPO style connector), and the remaining port provides a passthrough of narrowcast channels not demultiplexed by the unit.

One broadcast optical (“A”) signal can be equally split eight ways, or each of two independent broadcast signals (“B1” and “B2”) can be split four ways, while the narrowcast carriers are separated by an eight-channel demultiplexer on the DWDM ITU Grid (ITU-T G.694.1) with 100 GHz spacing between channels. Each demultiplexed optical carrier is then multiplexed with one of the common broadcast optical signals and passed to one of eight output ports. DWDM optical carriers whose wavelengths are not dropped by the demux are passed through to the DWDM output port.

Up to three OP4528s can be installed in a single VH4000 Virtual Hub with their DWDM narrowcast passthrough signals cascaded from one unit to another, resulting in a single Virtual Hub capable of service to up to 20,000 homes. One OP4528 can also be installed in any NC4000 series node.

The OP4528 features built-in optical power level management capabilities which simplify the installation, set up and maintenance of Fiber Deep DWDM architectures. As new video or data carriers are added, operators can realign power levels remotely via an SNMP interface to an element management system. By adding optical narrowcast carriers, the OP4528 allows MSOs to offer new revenue-generating services such as digital video, video-on-demand, high speed data and telephony more easily and cost effectively than ever before.

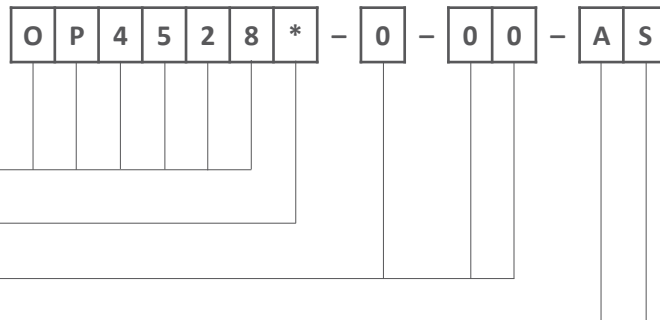
RELATED PRODUCTS

NC4000 Optical Node	Optical Patch Cords
VH4000 VHub	Optical Passives
EDFA modules	Installation Services

SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	4.0" D x 4.5" H x 2.3" W (10.2 cm x 11.4 cm x 5.8 cm)
Weight	2.0 lbs (0.91 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
Power Requirements	
Powering	24 V _{DC} (146 mA)
Power consumption	3.5 W
Optical Interface	
Optical connectors	<ul style="list-style-type: none"> • SC/APC for broadcast inputs and narrowcast DWDM input and cascade output • MPO (female) for 8 combined broadcast and narrowcast outputs
Inputs	<ul style="list-style-type: none"> • DWDM INP (narrowcast content), BROADCAST A, B1, B2
Outputs	<ul style="list-style-type: none"> • DWDM OUT (pass-through of all DWDM wavelengths not dropped) • BC & NC Ch xx-yy OUT (common MPO connector with 8 discrete fibers for the combined broadcast and one dropped) • DWDM NC signal for each of narrowcast signals #1 through #8)
Optical NC channel spacing	100 GHz on DWDM ITU Grid
Optical	
Optical return loss	45 dB min (> 50 dB typ)
Polarization Dependent Loss (PDL)	0.25 dB max (< 0.2 typ)
Directivity	55 dB min (> 60 dB typ)
Broadcast	
Insertion loss (including connectors)	<ul style="list-style-type: none"> • Broadcast Input Port A: 11.3 dB max (< 10.7 dB typ) • Broadcast Input Ports B1, B2: 8.1 dB max (< 7.6 dB typ)
Uniformity (including connectors)	1.2 dB max (< 0.7 dB typ)
Passband	At any given output port, the pass band for the BC signal transverses the entire C-band (or EDFA gain band), excluding the NC wavelength to be dropped at that port.
Input power range	<ul style="list-style-type: none"> • Broadcast A: +4 to +22 dBm • Broadcast B1, B2: +1 to +22 dBm
Output power range	<ul style="list-style-type: none"> • Broadcast A: -5 to +11 dBm • Broadcast B1, B2: -5 to +14 dBm
DWDM Narrowcast	
ITU channels dropped	See <i>ITU Channel Plans</i>
Passband @ 0.5 dB	± 0.125 nm
Ripple within passband	0.5 dB
Insertion loss (including connectors)	<ul style="list-style-type: none"> • DWDM IN to #n OUT: 5.1 dB max (4.0 dB typ) • DWDM IN to DWDM OUT: 2.5 dB max (< 1.9 dB typ)
Paired insertion loss (including connectors)	<ul style="list-style-type: none"> • With 8 total NC channels: 5.8 dB (4.6 dB typ) (Paired insertion loss measured when combined with a single correspondent 8-λ model OP35M8x-x-xx-AS mux module in the headend or hub, Ch. yy INP to Ch. yy OUT)
Optical channel isolation	<ul style="list-style-type: none"> • Adjacent: 55 dB min (> 65 dB typ) • Non-adjacent: 55 dB min (> 65 dB typ)
Uniformity	1.6 dB max (<i>difference between max and min output power across the eight output ports</i>)
Input power range	-8 to +16 dBm/λ
Output power range	-13 to +11 dBm/λ
Control Facilities	
Attenuation set modes	(1) Attenuation, (2) NC Output Power, or (3) BC/NC Ratio
Attenuation control step size	0.1 dB
Attenuation control accuracy	± 0.15 dB (< 0.1 dB typ)
ITU Channel Plans	
	ARRIS supports DWDM network architectures with a variety of products on the standard DWDM ITU Grid (ITU-T G.694.1). For more complete description of available DWDM ITU Grid channels and ARRIS's partitioning into convenient logical channel groups for DWDM mux and demux applications, please refer to the ARRIS DWDM ITU Grid Channel Plan data sheet.

ORDERING INFORMATION



- Light-Plex™ Optical Narrowcast Demux with BC/NC Combiner
- * = ITU Channel Plan Group (K, M, P, S or U)
(Reference ARRIS DWDM ITU Channel Plan Data Sheet)
- (Reserved Fields)*
- AS = SC/APC Connector

Customer Care

Contact Customer Care for product information and sales:

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Note: Specifications are subject to change without notice.

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