

Optical Passives (OSP)

OP51B4H-CFx

Bidirectional Mux/Demux Module (CWDM/DWDM) for BK Fiber Node Platforms

FEATURES

- Bidirectional 4-channel forward path optical mux and 4-channel return path optical demux in a single slot 'BK' plug-in module
- Single COM port supports both forward and return path transmission of analog and digital signals on one optical fiber
- Mux: Combines 4 CWDM return path channels (1511, 1571, 1591 and 1611 nm)
- Demux: Separates 4 ITU forward path channels specifically selected for use with AT3545G series Full Spectrum DWDM transmitters
- Operating temperature range -40° to $+85^{\circ}\text{C}$
- High optical isolation to minimize crosstalk
- Low polarization dependent loss (PDL)
- Available with SC/APC or E2000/APC optical connectors
- Epoxy-free on optical path



PRODUCT OVERVIEW

ARRIS's OP51B4H-CFx series bidirectional 4-channel CWDM multiplexer and 4-channel DWDM demultiplexer is a single fiber, single slot, plug-in module for BK Fiber Node platforms, and is a component of ARRIS's integrated digital transport system.

The OP51B4H-CFx is intended to support network architectures where a single fiber is deployed between the headend and the node to support both downstream and upstream signal traffic. The optical multiplexer portion is designed to combine or add 4 return path CWDM wavelengths (1511, 1571, 1591 and 1611 nm) at the node. The optical demultiplexer portion is designed to separate or drop 4 forward path DWDM ITU-grid wavelengths, specifically selected for use with ARRIS's AT3545G series Full Spectrum DWDM transmitters located at the headend.

SPECIFICATIONS

Characteristics	Specification																																				
Physical																																					
Dimensions	4.0" L x 9.9" H x 1.6" W (10.0 cm x 25.0 cm x 4.0 cm)																																				
Weight	2.0 lbs (0.9 kg)																																				
Environmental																																					
Operating Temperature Range	-40°C to +85°C (-40°F to +185°F)																																				
Storage Temperature Range	-40°C to +85°C (-40°F to +185°F)																																				
Humidity	5% to 95% non-condensing																																				
Optical																																					
Return loss, min	45 dB																																				
Polarization dependent loss, max	0.2 dB (<0.1 dB typ)																																				
Power handling, max (any CWDM input port)	21.8 dBm																																				
Power handling, max (COM port)	24.8 dBm																																				
Wavelength passthrough	1420-1610 nm																																				
Optical Interfaces																																					
Optical connectors	SC/APC or E2000/APC																																				
COM	Combined output/input for CWDM Mux/DWDM Demux																																				
CWDM Mux inputs	• <i>nnnn</i> (4 channel add inputs for 1511, 1571, 1591 or 1611 nm)																																				
DWDM Demux outputs	• <i>Ch yy</i> (4 channel drop outputs for Channel Group CFX)																																				
ITU Channel Plans																																					
	ARRIS supports DWDM network architectures with a variety of products having 100 GHz center frequency spacing on the standard DWDM ITU Grid (ITU-T G.694.1).																																				
4-channel Bidirectional Mux/Demux Modules are available for the following custom channel groups:	<ul style="list-style-type: none"> • CF1 Chs 20, 21, 24, and 29 • CF2 Chs 35, 42, 52, and 54 • CF3 Chs 23, 33, 44, and 47 • CF4 Chs 51, 57, 58, and 59 																																				
	<table border="1"> <thead> <tr> <th></th> <th>CWDM Mux inputs</th> <th>DWDM Demux outputs</th> </tr> </thead> <tbody> <tr> <td>Insertion losses, max¹ (dB)</td> <td></td> <td></td> </tr> <tr> <td>Ch <i>yy</i> INP to DWDM OUT</td> <td>2.7</td> <td>N/A</td> </tr> <tr> <td>DWDM INP to Ch <i>yy</i> OUT</td> <td>N/A</td> <td>1.8</td> </tr> <tr> <td>Uniformity, max¹ (dB)</td> <td></td> <td></td> </tr> <tr> <td>Module</td> <td>0.8</td> <td>0.8</td> </tr> <tr> <td>Paired</td> <td>0.6</td> <td>0.6</td> </tr> <tr> <td>Passband @ 0.5 dB (nm)</td> <td>13</td> <td>± 0.12</td> </tr> <tr> <td>Directivity, input ports, min (dB)</td> <td>55</td> <td>N/A</td> </tr> <tr> <td>Directivity, pass-through port, min (dB)</td> <td>45</td> <td>N/A</td> </tr> <tr> <td>Isolation, adjacent channel, min (dB)</td> <td>N/A</td> <td>30</td> </tr> <tr> <td>Isolation, non-adjacent channel, min (dB)</td> <td>N/A</td> <td>45</td> </tr> </tbody> </table>		CWDM Mux inputs	DWDM Demux outputs	Insertion losses, max ¹ (dB)			Ch <i>yy</i> INP to DWDM OUT	2.7	N/A	DWDM INP to Ch <i>yy</i> OUT	N/A	1.8	Uniformity, max ¹ (dB)			Module	0.8	0.8	Paired	0.6	0.6	Passband @ 0.5 dB (nm)	13	± 0.12	Directivity, input ports, min (dB)	55	N/A	Directivity, pass-through port, min (dB)	45	N/A	Isolation, adjacent channel, min (dB)	N/A	30	Isolation, non-adjacent channel, min (dB)	N/A	45
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NOTES:

¹ Including connectors;

² Paired insertion loss when combined with 4-ch CWDM demux module and 4-channel DWDM mux module and vice-versa



ORDERING INFORMATION

Part Number	
OP51B4H-CFx-00-1-zz	x = CFx = Custom DWDM ITU Channel Group: (1, 2, 3 or 4) zz = Connector options: (AS = SC/APC connector; AE = E2000/APC connector)

RELATED PRODUCTS

Optical Transmitters	Optical Passives
Digital Return	Optical Patch Cords
Optical Nodes	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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