Cisco NCS 1000 Mux/Demux 64-Channel Patch Panel

Contents

Product overview

The Cisco® NCS 1000 Mux/Demux 64-Channel Patch Panel is a standalone passive unit that contains both a 64-channel optical multiplexer and a 64-channel optical demultiplexer, precabled within the unit's housing.

This unit provides support for 400ZR and NCS1004 multihaul coherent channels up to 63 Gbaud at 75-GHz spacing. This filter is designed with optimum tradeoff between bandwidth and isolation for a network designed with 64 channels of 400ZR.

Figure 1.
Cisco NCS 1000 Mux/Demux 64-Channel Patch Panel

The panel's ports are arranged in 18 columns and 5 rows. The placement of the clips provides optimal fiber routing, facilitating the addition of fibers in an incremental manner and resulting in a simple design that is easy to maintain and troubleshoot. A separate tie wrap is provided for fastening the USB cable used for passive inventory management and storage of insertion loss values. The panel shall fit into ETSI 300-mm and ANSI 450-mm racks.

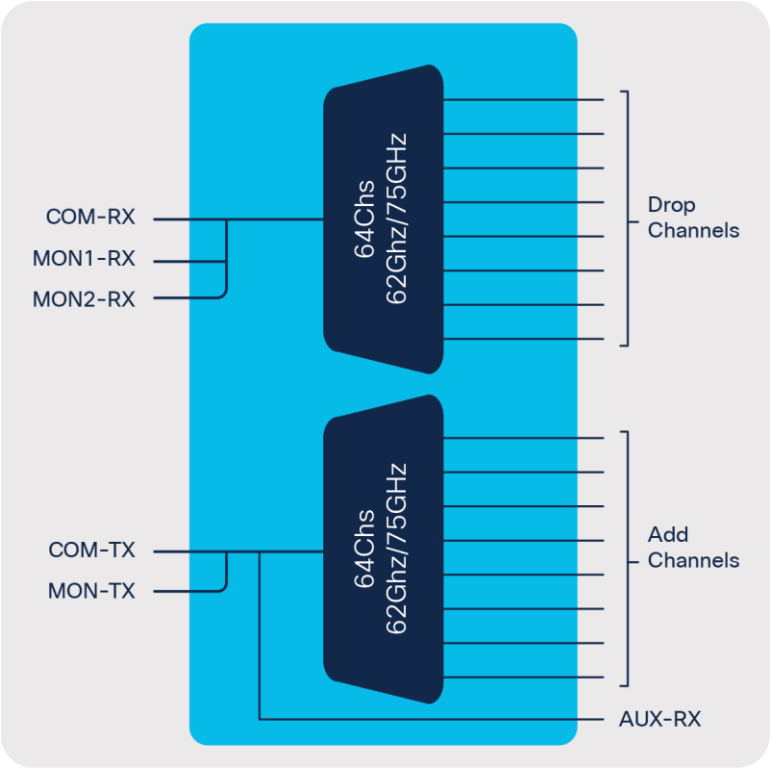

Figure 2.
Cisco NCS 1000 Mux/Demux 64-Channel Patch Panel standalone configuration

Major features and benefits

The Cisco NCS 1000 Mux/Demux 64-Channel Patch Panel provides the following customer benefits:

- Optimized for network architectures with 400ZR and openZR+ DCOs
- Can be used in multiple use cases:
  - Standalone with any third-party line systems
  - With NCS1001 line system for metro P2P applications
  - With NCS2000 line system for ROADM use cases
- Ease of operation with 400ZR or openZR+ optics on the router and NCS1001 as line system
- Suitable for 63-Gbd coherent DWDM channels from Cisco or any alien transponder
- Best-in-class operational efficiency with zero electrical power requirements
- Fiber management plate with integrated clips for secure but easy fiber access
- Low optical insertion loss for improved distance and performance
- USB port for passive inventory

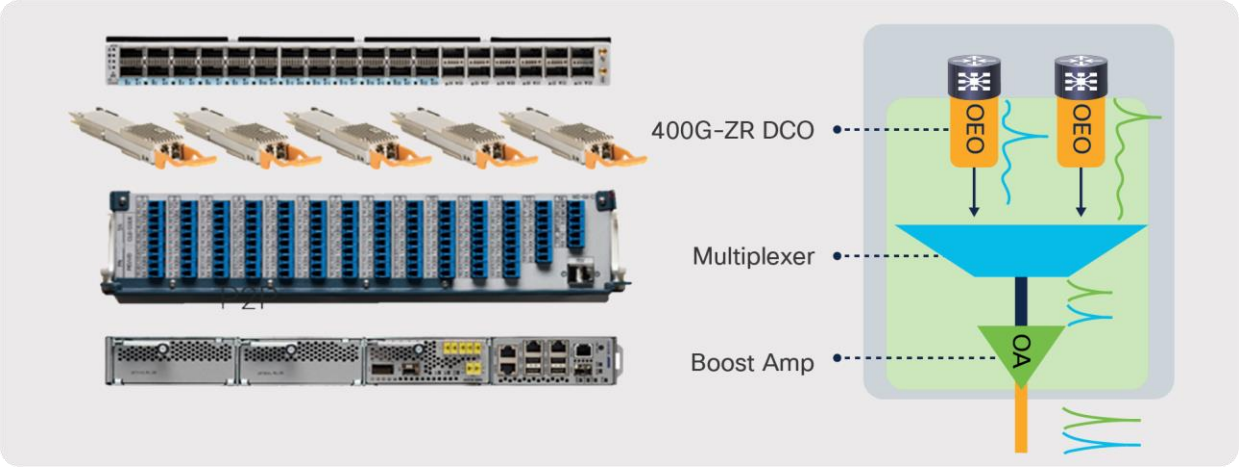

Figure 3.
400G ZR Cisco solution with 64-channel mux/demux

Product specifications

Table 1 provides the channel plan for the Cisco NCS 1000 Mux/Demux 64-Channel Patch Panel. Tables 2, 3, and 4 provide optical and mechanical specifications.

Table 1. Cisco NCS 1000 Mux/Demux 64-Channel Patch Panel channel plan

Channel ID	Frequency (THz)	Wavelength (nm)	Channel ID	Frequency (THz)	Wavelength (nm)
1	196.100	1528.77	33	193.7	1547.72
2	196.025	1529.36	34	193.625	1548.31
3	195.95	1529.94	35	193.55	1548.91
4	195.875	1530.53	36	193.475	1549.52
5	195.8	1531.12	37	193.4	1550.12
6	195.725	1531.70	38	193.325	1550.72
7	195.65	1532.29	39	193.25	1551.32
8	195.575	1532.88	40	193.175	1551.92
9	195.5	1533.47	41	193.1	1552.52
10	195.425	1534.05	42	193.025	1553.13
11	195.35	1534.64	43	192.95	1553.73
12	195.275	1535.23	44	192.875	1554.34
13	195.2	1535.82	45	192.8	1554.94
14	195.125	1536.41	46	192.725	1555.55
15	195.05	1537.00	47	192.65	1556.15
16	194.975	1537.59	48	192.575	1556.76
17	194.9	1538.19	49	192.5	1557.36
18	194.825	1538.78	50	192.425	1557.97
19	194.75	1539.37	51	192.35	1558.58
20	194.675	1539.96	52	192.275	1559.19
21	194.6	1540.56	53	192.2	1559.79
22	194.525	1541.15	54	192.125	1560.40
23	194.45	1541.75	55	192.05	1561.01
24	194.375	1542.34	56	191.975	1561.62

Channel ID	Frequency (THz)	Wavelength (nm)	Channel ID	Frequency (THz)	Wavelength (nm)
25	194.3	1542.94	57	191.9	1562.23
26	194.225	1543.53	58	191.825	1562.84
27	194.15	1544.13	59	191.75	1563.45
28	194.075	1544.72	60	191.675	1564.07
29	194	1545.32	61	191.6	1564.68
30	193.925	1545.92	62	191.525	1565.29
31	193.85	1546.52	63	191.45	1565.90
32	193.775	1547.12	64	191.375	1566.52

Table 2. Optical specifications of Cisco NCS 1000 Mux 64-Channel Patch Panel

Parameter	Minimum	Maximum
Insertion loss	3 dB	5.5 dB
3-dB net bandwidth around ITU-T center wavelength	±33 GHz	N/A
1.5-dB net bandwidth around ITU-T center wavelength	±30 GHz	N/A
Adjacent channel isolation	4.5 dB (Within ±34-GHz BW of the adjacent channel)	N/A
Adjacent channel isolation **@ central wavelength position**	20 dB	N/A
Group delay ripple (GDR)	N/A	±14 ps
Chromatic dispersion	N/A	±150 ps/nm
Return loss	40 dB	N/A
Polarization Dispersion Loss (PDL)	N/A	0.8 dB
Polarization Mode Dispersion (PMD)	N/A	1 ps

Table 3. Optical specifications of Cisco NCS 1000 Demux 64-Channel Patch Panel

Parameter	Minimum	Maximum
Insertion loss	3dB	5.5 dB
3-dB net bandwidth around ITU-T center wavelength	±38 GHz	N/A
1.5-dB net bandwidth around ITU-T center wavelength	±31 GHz	N/A
Adjacent channel isolation	1 dB (Within ±34-GHz BW of the adjacent channel)	N/A
Adjacent channel isolation **@ central wavelength position**	9 dB	N/A
Group Delay Ripple (GDR)	N/A	±1 ps
Chromatic dispersion	N/A	±20 ps/nm
Return loss	40 dB	N/A
Polarization Dispersion Loss (PDL)	N/A	0.7 dB
Polarization Mode Dispersion (PMD)	N/A	0.7 ps

Table 4. Mechanical specifications of Cisco NCS 1000 Mux/Demux 64-Channel Patch Panel

Parameter	Operating range
Operating temperature range	-5° C to 55° C
Storage temperature range	-40° C to 85° C
Operating humidity range	5% RH to 85% RH
Height	12.65 inches
Width	0.97 inches
Depth	9.45 inches
Weight	5.5 pounds

Regulatory compliance

Table 5 lists regulatory compliance information for the patch panel. Note that all compliance documentation may not be completed at the time of product release. Please check with your Cisco sales representative for countries that are not listed below.

Table 5. Regulatory compliance

ANSI system	ETSI system
Countries and regions supported	
• **Canada** • **United States** • **Korea** • **Japan** • **European Union**	• European Union • Africa • CSI • Australia • New Zealand • China • Korea • India • Saudi Arabia • South America
• **EMC (Emissions)**	• FCC 47CFR15, Class A • AS/NZS CISPR 32, Class A • CISPR 32, Class A • EN55032, Class A • ICES-003, Class A • VCCI, Class A • KN 32, Class A • EN/61000-3-2/KN61000-3-2 • EN61000-3-3//KN61000-3-3 • CNS-13438, Class A
• **EMC (Immunity)**	• IEC/EN61000-4-2 Electrostatic Discharge Immunity • IEC/EN61000-4-3 Radiated Immunity • IEC/EN61000-4-4 EFT-B Immunity • IEC/EN61000-4-5 Surge AC Port • IEC/EN61000-4-6 Immunity to Conducted Disturbances • IEC/EN61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations • KN 35
• **EMC (ETSI/EN)**	• EN 300 386 Telecommunications Network Equipment (EMC) • EN55032 Electromagnetic Compatibility of Multimedia Equipment-Emission Requirements • EN55035 Electromagnetic Compatibility of Multimedia Equipment-Immunity Requirements • EN55024 Information Technology Equipment (Immunity) • EN61000-6-1/EN61000-6-2 Generic Immunity Standard • EN61000-3-2 Power Line Harmonics • EN61000-3-3 Voltage Changes, Fluctuations, and Flicker

ANSI system	ETSI system
Safety	
• **CAN/CSA 22.2 No. 62368-1: 2014** • **UL 62368-1, 2nd Ed.**	• IEC 62368-1: 2014 • BS EN 62368-1: 2014 plus A11: 2017
Laser	
• 21CFR1040 (2008/04) (Accession Letter and CDRH Report) Guidance for Industry and FDA Staff (Laser Notice No. 56), May 2019	• Comply with 21 CFR 1040.10 and 1040.11
Optical	
• ITU-T G.691	• ITU-T G.975
Quality	
• **TR-NWT-000332, Issue 4, March 2016**	

Table 6. Ordering information

Part number	Description
NCS1K-MD-64-C=	NCS 1000 64 chs Odd Mux/Demux Patch Panel - C-band

Warranty

The following are the warranty:

- Hardware warranty duration: 5 years
- Software warranty duration: 1 year
- Hardware replacement, repair, or refund procedure: Cisco or our service center will use commercially reasonable efforts to ship a replacement part for delivery within 15 working days after receipt of the defective product at Cisco's site. Actual delivery times of replacement products may vary depending on customer location.

Your formal warranty statement appears in the Cisco Information Packet that accompanies your Cisco product.

Product warranty terms and other information applicable to Cisco products are available at: https://www.cisco.com/go/warranty.

Product Sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's Corporate Social Responsibility (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Table 7. Cisco Environmental Sustainability Information

Sustainability Topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
	Countries and Regions Supported	Table 5: Regulatory Compliance
Power	Power	Max power consumption < 1.25W
Material	Product packaging, weight and materials	Packing box: SINGLE WALL, K3K Packing foam: pink static dissipative closed-cell polyethylene Packing bag: Transparent anti-static grid bag Shipping box: Double wall, v5v5v For additional information, Contact: environment@cisco.com
	Weight	Table 4: Mechanical Specifications
	% Packaging foam reduction from previous generation	Cisco NCS 1000 Mux/Demux 64-Channel Patch Panel uses use the same packing foam as previous generation
	Packaging efficiency	2Pc/3Pc shipped per pallet (Vendor1), 1pc per carton box (vendor 2)
	MTBF	12776287 hours

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

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