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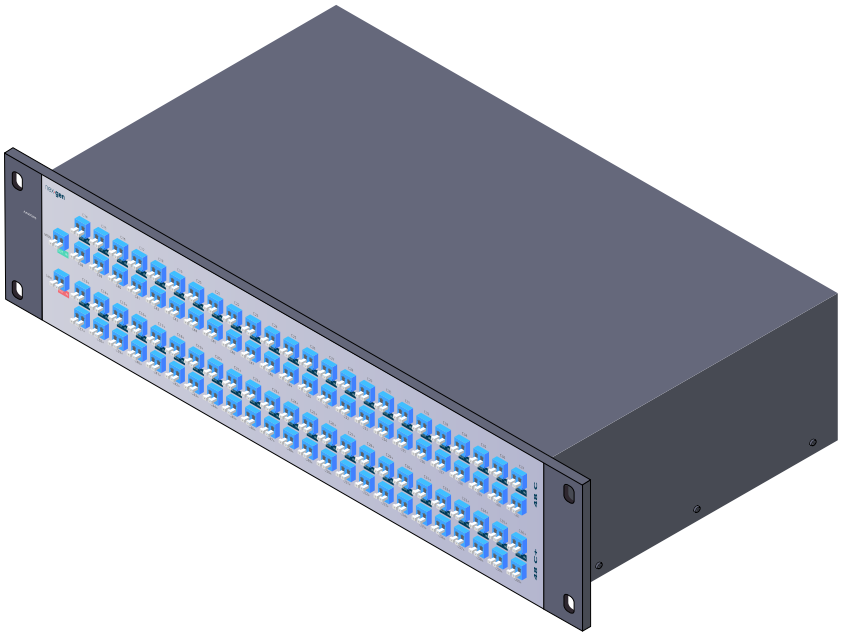
OTN SYSTEMS DCI PLATFORMS

AAWG 96-Channel 50GHz Mux/Demux Unit

The AAWG (Athermal Array Waveguide Grating) is a passive 96-channel multiplexing and demultiplexing unit for C-band DWDM systems, on the ITU 50GHz grid. It multiplexes 96 individually-wavelengthed signals onto a single fibre, or separates a combined DWDM signal back into its 96 channels. Built on silicon-substrate waveguide grating technology with an athermal package for precise, temperature-stable channel coupling, low insertion loss and high channel isolation.



HIGHLIGHTS

96 fixed channels, 50GHz spacing

Covers the full C-band from CH14 to CH61 with interleaved "+" channels, doubling the density of the 100GHz 48-channel version over the same band.

Athermal AWG technology

Silicon-substrate waveguide grating with athermal packaging for stable performance without active temperature control.

Low loss, good isolation

Channel insertion loss ≤6.5dB, adjacent and non-adjacent channel isolation ≥25dB.

Combined-port monitoring

LINE port optical power monitoring, 1% splitting ratio (21–23dB).

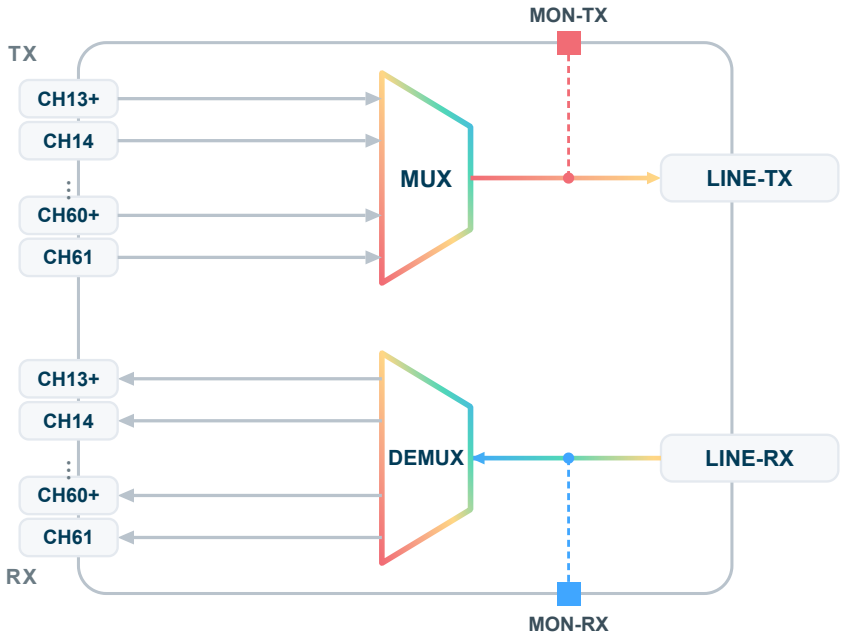
Chassis-managed via RJ-45

RJ-45 management interface to the DCI-OTN-8S-2U rear interface board; reports SN/model/PN and in-place/out-of-place status to the network management system (dumb resource management).

Compact 2U rack unit

88mm (H) × 442mm (W) × 220mm (D); standalone rack-mount unit, not a chassis card.

FUNCTIONAL STRUCTURE



FORMAT

2U

SPECIFICATIONS

Function	Multiplexing and demultiplexing of 96 DWDM optical signals in C-band
Dimensions (H × W × D)	2U: 88mm × 442mm × 220mm
Spectral Type	Flat top
Channel Spacing	50GHz
Number of Optical Channels	96
ITU Passband Frequency	±6.25GHz
Wavelength Accuracy	≤0.04nm
Channel Insertion Loss	≤6.5dB
Insertion Loss Uniformity	≤1.5dB
1dB Bandwidth	≥0.18nm
3dB Bandwidth	≥0.28nm
20dB Bandwidth	≤0.7nm
Adjacent Channel Isolation	≥25dB
Non-Adjacent Channel Isolation	≥25dB
Total Crosstalk	≥20dB
Return Loss	≥40dB
Polarization Dependent Loss	≤0.5dB
Polarization Mode Dispersion	≤1.0ps
Dispersion	±35ps
Operating Temperature	-5 to +65°C
Storage Temperature	-40 to +85°C
MON Port	21–23dB splitting ratio (1%)

Management	RJ-45 interface to the DCI-OTN-8S-2U rear interface board; reports SN/model/PN and in-place/out-of-place status via the network management system (dumb resource management)

Channel List (CH14–CH61 Base + CH13+–CH60+ Interleaved, 50GHz Grid)					
Ch.	**Freq. (THz)**	**λ (nm)**	**Ch.**	**Freq. (THz)**	**λ (nm)**
CH61	196.10	1528.77	CH60+	196.05	1529.16
CH60	196.00	1529.55	CH59+	195.95	1529.94
CH59	195.90	1530.33	CH58+	195.85	1530.73
CH58	195.80	1531.12	CH57+	195.75	1531.51
CH57	195.70	1531.90	CH56+	195.65	1532.29
CH56	195.60	1532.68	CH55+	195.55	1533.07
CH55	195.50	1533.47	CH54+	195.45	1533.86
CH54	195.40	1534.25	CH53+	195.35	1534.64
CH53	195.30	1535.04	CH52+	195.25	1535.43
CH52	195.20	1535.82	CH51+	195.15	1536.22
CH51	195.10	1536.61	CH50+	195.05	1537.00
CH50	195.00	1537.40	CH49+	194.95	1537.79
CH49	194.90	1538.19	CH48+	194.85	1538.58
CH48	194.80	1538.98	CH47+	194.75	1539.37
CH47	194.70	1539.77	CH46+	194.65	1540.16
CH46	194.60	1540.56	CH45+	194.55	1540.95
CH45	194.50	1541.35	CH44+	194.45	1541.75
CH44	194.40	1542.14	CH43+	194.35	1542.54
CH43	194.30	1542.94	CH42+	194.25	1543.33
CH42	194.20	1543.73	CH41+	194.15	1544.13
CH41	194.10	1544.53	CH40+	194.05	1544.92
CH40	194.00	1545.32	CH39+	193.95	1545.72
CH39	193.90	1546.12	CH38+	193.85	1546.52
CH38	193.80	1546.92	CH37+	193.75	1547.32
CH37	193.70	1547.72	CH36+	193.65	1548.12
CH36	193.60	1548.52	CH35+	193.55	1548.92
CH35	193.50	1549.32	CH34+	193.45	1549.72
CH34	193.40	1550.12	CH33+	193.35	1550.52
CH33	193.30	1550.92	CH32+	193.25	1551.32
CH32	193.20	1551.72	CH31+	193.15	1552.12
CH31	193.10	1552.52	CH30+	193.05	1552.93
CH30	193.00	1553.33	CH29+	192.95	1553.73

Ch.	Freq. (THz)	λ (nm)	Ch.	Freq. (THz)	λ (nm)
CH29	192.90	1554.13	CH28+	192.85	1554.54
CH28	192.80	1554.94	CH27+	192.75	1555.34
CH27	192.70	1555.75	CH26+	192.65	1556.15
CH26	192.60	1556.56	CH25+	192.55	1556.96
CH25	192.50	1557.36	CH24+	192.45	1557.77
CH24	192.40	1558.17	CH23+	192.35	1558.58
CH23	192.30	1558.98	CH22+	192.25	1559.39
CH22	192.20	1559.79	CH21+	192.15	1560.20
CH21	192.10	1560.61	CH20+	192.05	1561.01
CH20	192.00	1561.42	CH19+	191.95	1561.83
CH19	191.90	1562.23	CH18+	191.85	1562.64
CH18	191.80	1563.05	CH17+	191.75	1563.46
CH17	191.70	1563.86	CH16+	191.65	1564.27
CH16	191.60	1564.68	CH15+	191.55	1565.09
CH15	191.50	1565.50	CH14+	191.45	1565.91
CH14	191.40	1566.31	CH13+	191.35	1566.72

ORDERING INFORMATION

NAME	AAWG (Athermal Array Waveguide Grating) 96-Channel 50GHz Mux/Demux Unit
DESCRIPTION	AAWG (Athermal Array Waveguide Grating) passive 96-channel DWDM multiplexer/demultiplexer, 2U rack unit. Silicon-substrate AWG technology, athermal packaging, 50GHz ITU grid interleaving CH14-CH61 base channels with CH13+-CH60+ offset channels, flat-top spectral response; channel insertion loss ≤6.5dB, adjacent/non-adjacent isolation ≥25dB; LINE port power monitoring; RJ-45 management to the DCI-OTN-8S-2U rear interface board.
PART NUMBER	**DCI-AAWG-50-F-96-2U**

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nexgen.eu · customer.service@nexgen.eu