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OTN SYSTEMS DCI PLATFORMS

AAWG 40-Channel 150GHz Mux/Demux Unit

The AAWG (Athermal Array Waveguide Grating) is a passive 40-channel multiplexing and demultiplexing unit for ultra-wide C-band DWDM systems, on the 150GHz grid. Available on the C-EVEN or C-ODD channel plan (ordered separately), it multiplexes 40 individually-wavelengthed signals onto a single fibre, or separates a combined DWDM signal back into its 40 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, suited to 40-wave × 800Gbps high-capacity DWDM systems.



HIGHLIGHTS

40 fixed channels, 150GHz spacing

Ultra-wide C-band, 190.7–196.6 THz; C-EVEN and C-ODD grids can be combined via an interleaver into an 80-channel, 75GHz system.

Athermal AWG technology

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

High-capacity DWDM

Suited to 40-wave × 800Gbps systems.

Combined-port monitoring

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

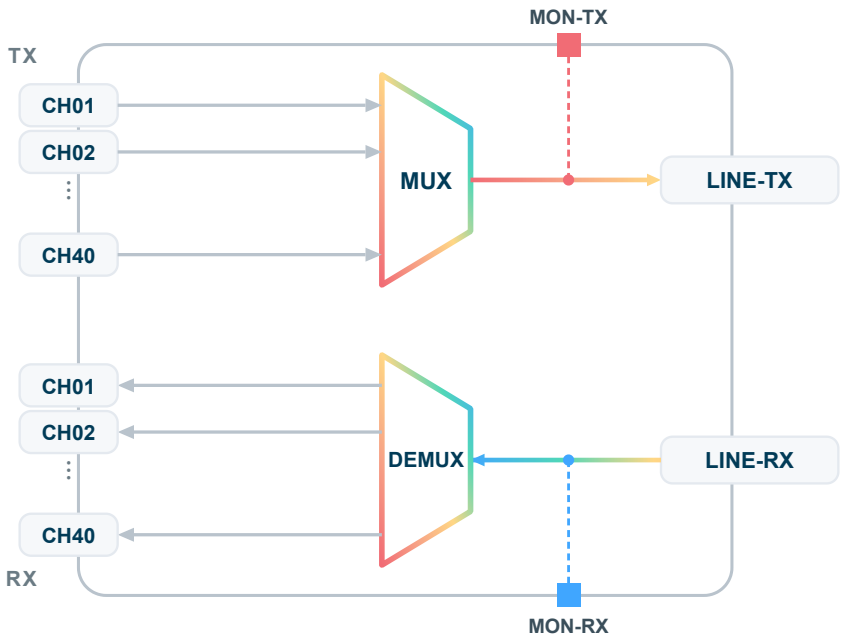
Chassis-managed via RJ-45

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 1U rack unit

44mm (H) × 442mm (W) × 220mm (D); standalone rack-mount unit, not a chassis card.

FUNCTIONAL STRUCTURE



FORMAT

1U

SPECIFICATIONS

Function	Multiplexing and demultiplexing of 40 DWDM optical signals in ultra-wide C-band
Dimensions (H × W × D)	1U: 44mm × 442mm × 220mm
Spectral Type	Flat top
Frequency Range (C-EVEN)	190.7125–196.5625 THz
Frequency Range (C-ODD)	190.7875–196.6375 THz
Channel Spacing	150GHz (1.2nm)
Number of Optical Channels	40
ITU Passband Frequency	±37.5GHz
Wavelength Accuracy	≤0.05nm
Channel Insertion Loss	≤6.8dB
Insertion Loss Uniformity	≤1.5dB
-0.5dB Bandwidth	≥85GHz
-1dB Bandwidth	≥100GHz
-3dB Bandwidth	≥150GHz
Adjacent Channel Isolation	≥4dB
Non-Adjacent Channel Isolation	≥28dB
Total Crosstalk	≥2dB
Return Loss	≥40dB
Polarization Dependent Loss	≤0.5dB
Polarization Mode Dispersion	≤0.5ps
Dispersion	±30ps

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 (CH01–CH40, C-EVEN and C-ODD Grids, 150GHz)				
Ch.	C-EVEN		C-ODD	
Freq. (THz)	λ (nm)	Freq. (THz)	λ (nm)	
CH01	196.5625	1525.176	196.6375	1524.595
CH02	196.4125	1526.341	196.4875	1525.758
CH03	196.2625	1527.508	196.3375	1526.924
CH04	196.1125	1528.676	196.1875	1528.092
CH05	195.9625	1529.846	196.0375	1529.261
CH06	195.8125	1531.018	195.8875	1530.432
CH07	195.6625	1532.192	195.7375	1531.605
CH08	195.5125	1533.367	195.5875	1532.779
CH09	195.3625	1534.545	195.4375	1533.956
CH10	195.2125	1535.724	195.2875	1535.134
CH11	195.0625	1536.905	195.1375	1536.314
CH12	194.9125	1538.087	194.9875	1537.496
CH13	194.7625	1539.272	194.8375	1538.679
CH14	194.6125	1540.458	194.6875	1539.865
CH15	194.4625	1541.647	194.5375	1541.052
CH16	194.3125	1542.837	194.3875	1542.241
CH17	194.1625	1544.029	194.2375	1543.432
CH18	194.0125	1545.222	194.0875	1544.625
CH19	193.8625	1546.418	193.9375	1545.82
CH20	193.7125	1547.615	193.7875	1547.016
CH21	193.5625	1548.815	193.6375	1548.215
CH22	193.4125	1550.016	193.4875	1549.415
CH23	193.2625	1551.219	193.3375	1550.617
CH24	193.1125	1552.424	193.1875	1551.821
CH25	192.9625	1553.631	193.0375	1553.027
CH26	192.8125	1554.839	192.8875	1554.235
CH27	192.6625	1556.05	192.7375	1555.444
CH28	192.5125	1557.262	192.5875	1556.656
CH29	192.3625	1558.477	192.4375	1557.869
CH30	192.2125	1559.693	192.2875	1559.084
CH31	192.0625	1560.911	192.1375	1560.302

Ch.	C-EVEN		C-ODD	
CH32	191.9125	1562.131	191.9875	1561.521
CH33	191.7625	1563.353	191.8375	1562.742
CH34	191.6125	1564.577	191.6875	1563.965
CH35	191.4625	1565.802	191.5375	1565.189
CH36	191.3125	1567.03	191.3875	1566.416
CH37	191.1625	1568.26	191.2375	1567.645
CH38	191.0125	1569.491	191.0875	1568.875
CH39	190.8625	1570.725	190.9375	1570.108
CH40	190.7125	1571.96	190.7875	1571.342

ORDERING INFORMATION

NAME	AAWG (Athermal Array Waveguide Grating) 40-Channel 150GHz Mux/Demux Unit
DESCRIPTION	AAWG (Athermal Array Waveguide Grating) passive 40-channel ultra-wide C-band DWDM multiplexer/demultiplexer, 1U rack unit. Silicon-substrate AWG technology, athermal packaging, 150GHz spacing, C-EVEN (190.7125-196.5625THz) or C-ODD (190.7875-196.6375THz) grid, flat-top spectral response, suited to 40-wave x 800Gbps systems; LINE port power monitoring; RJ-45 management to the DCI-OTN-8S-2U rear interface board.
PART NUMBER	DCI-AAWG-150-F-40-**{Grid}**-1U

{Grid} E (C-EVEN) or O (C-ODD), required - selects which of the two interleaved 150GHz channel plans this unit is built to; see Channel list above