

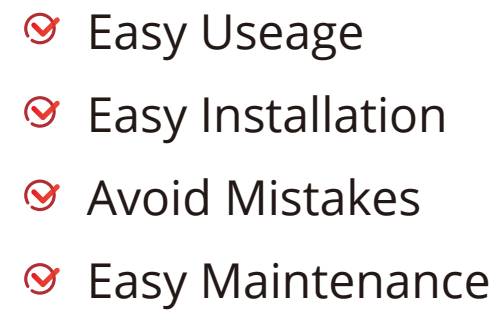
GigaLight

HD Video and Broadcasting Television Optical Transceivers Devices

- 48G/12G/3G-SDI Optical Transceivers
- 8K/4K-SDI Extenders
- Parallel High-Speed Optical Transceivers
- xWDM High-Speed Optical Transceivers
- xWDM MUX/DEMUX



8K UHD Video over Fiber Solution



12G Extender
(1x12G-SDI, Dual Fiber)

24G Extender
(2x12G-SDI, 2x Dual Fiber)

48G Extender
(4x12G-SDI, Single Fiber)

- The diagram illustrates a 12G-SDI signal transmission system connecting two video production centers, Video Production Center A and Video Production Center B, over a 20km distance.

Video Production Center A: An 8K Production Switcher is connected to a 12G-SDI Coaxial Cable. The cable is connected to a BNC connector, which is then connected to a QSFP+ port on a 12G-SDI switch.

Transmission: The signal travels through a 20km Duplex SMF (Single-mode Fiber) cable. The fiber has four pairs of fibers, labeled 1270, 1290, 1310, and 1330 on both ends.

Video Production Center B: The signal is received at a QSFP+ port on a 12G-SDI switch. This switch is connected to a BNC connector, which is then connected to another 12G-SDI Coaxial Cable. This cable is connected to an 8K Production Switcher.

Key Features:

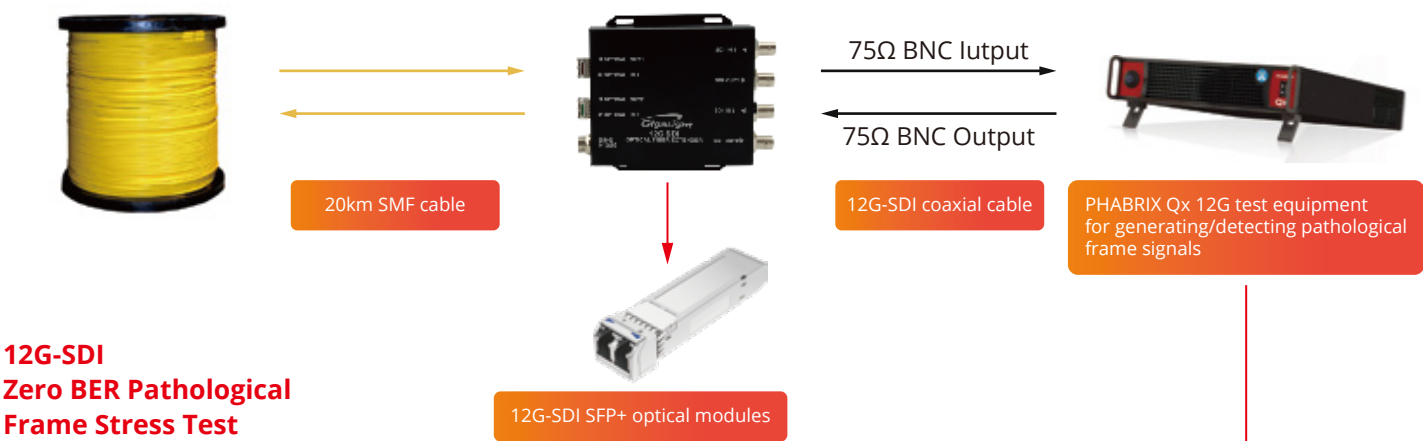
 - Compliant to SMPTE ST 2082-1 (11.88Gb/s)
 - Compatible with SMPTE ST 2081-1 (5.94Gb/s)
 - Compatible with SMPTE ST 424 (2.97Gb/s)
 - Compatible with DVB-ASI (270Mb/s)
 - Compatible with MADI (125Mb/s)

12G-SDI Testing Platform

- ✔ 100% patterns (e.g., 4096×2160 P47.95/P48/P50/P59.94/P60 and 3840×2160 P50/P59.94/60)
- ✔ Perfectly passed 12G-SDI zero BER pathological frame stress test
- ✔ Electric eye margin, amplitude, jitter and fall times are all compliant to SMPTE standards



Highlights of GIGALIGHT 12G-SDI Video Optical Modules



12G-SDI Zero BER Pathological Frame Stress Test

Patterns	Number(pairs)	Result
4096x2160P47.95 YCbCr:422:10 12G	8192	PASS
4096x2160P48 YCbCr:422:10 12G	8192	PASS
4096x2160P50 YCbCr:422:10 12G	8192	PASS
4096x2160P59.94 YCbCr:422:10 12G	8192	PASS
4096x2160P60 YCbCr:422:10 12G	8192	PASS
3840x2160P50 YCbCr:422:10 12G	7680	PASS
3840x2160P59.94 YCbCr:422:10 12G	7680	PASS
3840x2160P60 YCbCr:422:10 12G	7680	PASS
4096x2160P30 YCbCr:422:10 6G	8192	PASS
4096x2160P29.97 YCbCr:422:10 6G	8192	PASS
4096x2160P25 YCbCr:422:10 6G	8192	PASS
4096x2160P24 YCbCr:422:10 6G	8192	PASS
4096x2160P23.98 YCbCr:422:10 6G	8192	PASS
4096x2160P30 YCbCr:422:10 6G	7680	PASS
4096x2160P29.97 YCbCr:422:10 6G	7680	PASS
4096x2160P25 YCbCr:422:10 6G	7680	PASS
4096x2160P24 YCbCr:422:10 6G	7680	PASS
3840x2160P23.98 YCbCr:422:10 6G	7680	PASS
2048x1080P50 YCbCr:422:10 3G B	4096	PASS
2048x1080P59.94 YCbCr:422:10 3G B	4096	PASS
2048x1080P60 YCbCr:422:10 3G B	4096	PASS
2048x1080P50 YCbCr:422:10 3G A	2048	PASS
2048x1080P59.94 YCbCr:422:10 3G A	2048	PASS
2048x1080P60 YCbCr:422:10 3G A	2048	PASS
2048x1080P30 YCbCr:444:10 3G A	4096	PASS



Compliant to SMPTE Standards

- SMPTE ST-2082: 12G-SDI
- SMPTE ST-2081: 6G-SDI
- SMPTE 424M: 3G-SDI



Built-in CDR chip
Eliminate the jitter noise accumulated by the signal source, reduce jitter, and improve signal quality



Flexible Customization Options
Five module types (TR, 2Tx, 2Rx, Tx, Rx) and two PIN types (MSA, Non-MSA) optional to meet the needs of various application scenarios



Zero Latency
Transmit uncompressed original digital baseband signal with no delay



CWDW Solution Optional
8 CWDW wavelengths (1270nm to 1450nm) optional to save fiber resources by using with passive CWDW MUX/DEMUX



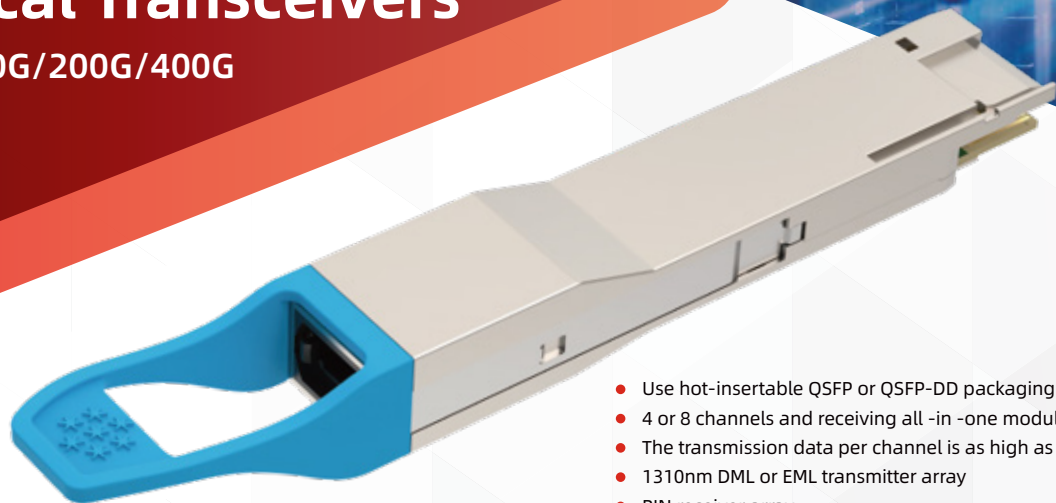
Passed Pathological Frame Stress Test
3G/6G/12G-SDI pathological frame stress test passed



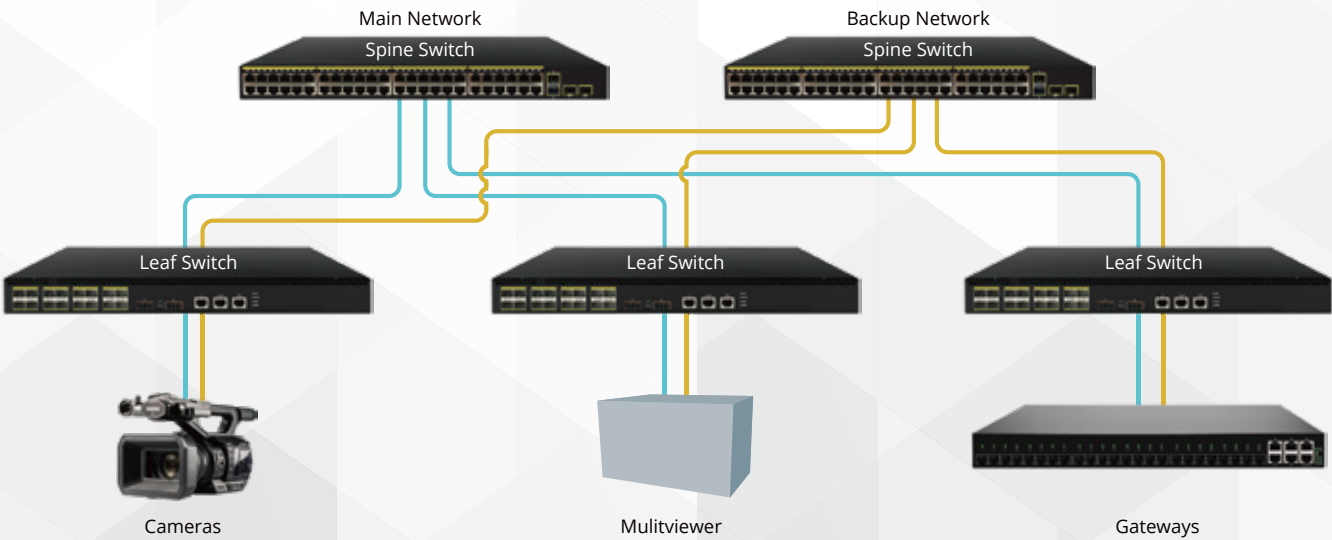
Trusted Reliability
Adopt mature chips and pass the 2000-hour reliability test compliant to GR-468 standards

Parallel High-Speed Optical Transceivers

40G/100G/200G/400G



- Use hot-insertable QSFP or QSFP-DD packaging
- 4 or 8 channels and receiving all -in -one module
- The transmission data per channel is as high as 10/25/50Gbps
- 1310nm DML or EML transmitter array
- PIN receiver array
- Compliance with IEEE 802.3 Ethernet standard
- The XPSM series has high sensitivity and supports OTN rate
- The commercial -grade working temperature range from 0°C to 70°C
- Part of the industrial-grade working temperature range from -40°C to +85°C
- Power voltage 3.3V
- Comply with RoHS Environmental Standards (Leadless)

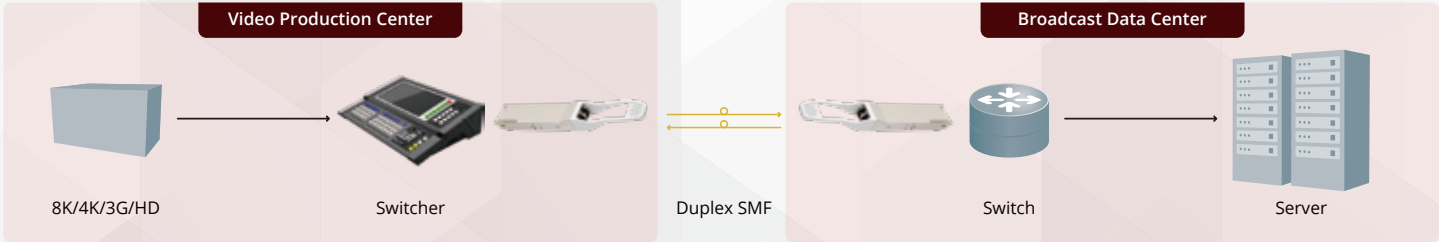


xWDM High-Speed Optical Transceivers

40G/100G/200G/400G



- Use hot-insertable QSFP or QSFP-DD packaging
- 2 or 4 or 8 channels to send and receive integrated modules
- The transmission data per channel is as high as 10/25/50Gbps
- CWDM, LWDM or DWDM working wavelength
- DML or EML transmitter
- PIN or APD receiver
- Compliance with IEEE 802.3 Ethernet standard
- Optional support for Ethernet and OTN rate dual -rate versions
- The temperature range of commercial work -grade work from 0°C to 70°C
- Power voltage 3.3V
- Comply with RoHS Environmental Standards (Leadless)



xWDM MUX/DEMUX

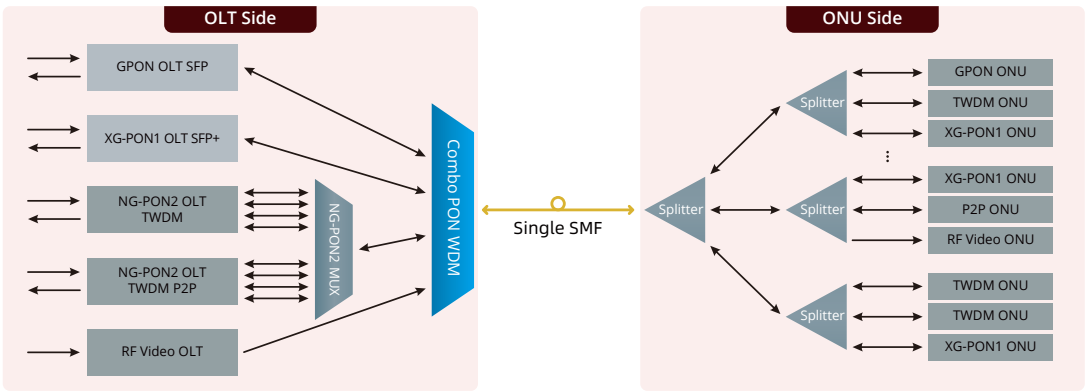
Combo PON WDM GPON & XG-PON1 & NG-PON2 & RF Video

DWDM MUX DEMUX 32/40/48/64/80/96 Channels Optional

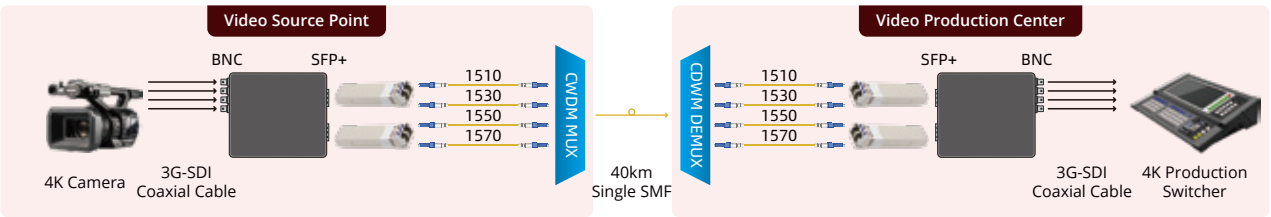
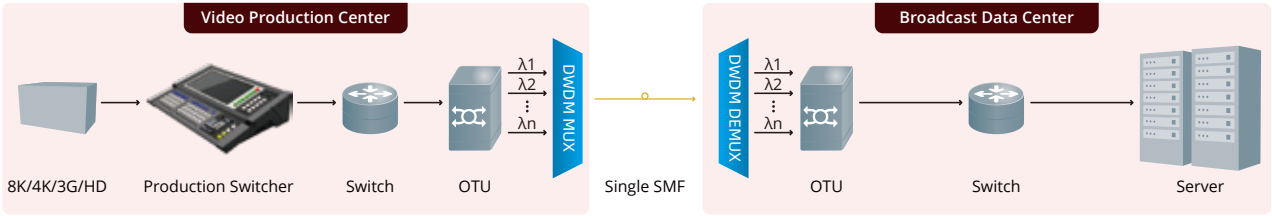
CWDM MUX DEMUX 2-18 Channels Optional

- Based on thermal array waveguide light grid (AAWG) technology
- Ultra -low insertion and good channel consistency
- Ultra -high string disturbance, loss and directionability
- Channel interval 50/75/100/150GHz
- EXP port optional
- Capacity of rack or MINI module or standard metal module
- Single -mode LC/UPC or LC/APC adapter (customized other types)
- The working temperature range from -5°C to+70°C
- The storage temperature range from -40°C to+85°C

- Made with film filtering (TFF) technology
- Ultra -low insertion and good channel consistency
- Ultra -high string disturbance, loss and directionability
- LGX box package (customized other types)
- Single -mode SC/UPC or SC/APC adapter (customized other types)
- The working temperature range from -5°C to+70°C
- The storage temperature range from -40°C to+85°C



- Made with film filtering (TFF) technology
- Ultra -low insertion and good channel consistency
- Ultra high isolation, loss and directionability
- EXP port optional
- LGX box package (customized other types)
- Single -mode LC/UPC or LC/APC adapter (customized other types)
- The working temperature range from -5°C to+70°C
- The storage temperature range from -40°C to+85°C



48G/12G/3G-SDI
Optical Transceivers

P/N	Description
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48G SDI QSFP+ PSM4 Optical Transceivers

GQM-SPO480-L24C(M)	48G SDI QSFP+ PSM4 20km
GQM-SPO480-CL4C(M)	48G SDI QSFP+ PSM4 CWDM 10km

12G-SDI SFP+ Series

GHB-2612GL-L2CD(M)	12G-SDI SFP+ 1310nm 20km
GHB-6212GL-L2CD(M)	12G-SDI SFP+ 1310nm 20km Single Tx
GHP-3112G-L2CD(M)	12G-SDI SFP+ 1310nm 20km Duplex 2Tx
GHT-3112G-L2CD(M)	12G-SDI SFP+ 1310nm 20km Single Rx
GTT-313112G-L2CD	12G-SDI SFP+ 20km Duplex 2Rx

12G-SDI SFP+ BiDi Series

GHR-12G-L2CD(M)	12G-SDI SFP+ BiDi Tx-1270nm Rx-1330nm 20km
GRR-12G-L2CD	12G-SDI SFP+ BiDi Tx-1330nm Rx-1270nm 20km

12G-SDI SFP+ CWDM Series

GHPC-xx12G-L1CD(M)	12G-SDI SFP+ CWDM 1270nm-1450nm 10km
GHTC-xx12G-L1CD(M)	12G-SDI SFP+ CWDM 1270nm-1450nm 10km Single Tx
GTTC-xxxx12G-L1CD	12G-SDI SFP+ CWDM 1270nm-1450nm 10km Duplex 2Tx

3G-SDI SFP Series

GHP-313G-xxCD(M)	3G-SDI SFP 1310nm 2km/20km/40km/80km
GHP-553G-LxCD(M)	3G-SDI SFP 1550nm 40km/80km
GHT-313G-xxCD(M)	3G-SDI SFP 1310nm 2km/20km/40km Single Tx
GHT-553G-L4CD(M)	3G-SDI SFP 1550nm 40km Single Tx
GTT-31313G-xxCD	3G-SDI SFP 1310nm&1310nm 2km/20km/40km Duplex 2Tx
GTT-55553G-L4CD	3G-SDI SFP 1550nm&1550nm 40km Duplex 2Tx
GHR-3G-xxCD(M)	3G-SDI SFP 2km/20km/40km Single Rx
GRR-3G-xxCD	3G-SDI SFP 2km/20km/40km Duplex 2Rx

3G-SDI SFP CWDM Series

GHPC-xx3G-L2CD(M)	3G-SDI SFP CWDM 1270nm-1610nm 20km
GHPC-xx3G-L4CD(M)	3G-SDI SFP CWDM 1270nm-1610nm 40km
GHPC-xx3G-L8CD(M)	3G-SDI SFP CWDM 1270nm-1610nm 80km
GHTC-xx3G-L4CD(M)	3G-SDI SFP CWDM Tx 1270nm-1450nm 10km Single Tx
GTTC-xxxx3G-L4CD	3G-SDI SFP CWDM Tx 1270nm-1450nm 10km Duplex 2Rx

8K/4K-SDI Extender

P/N	Description
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48G SDI QSFP+ PSM4 Extenders

GQS-E-4×12G-TR	48G SDI QSFP+ PSM4 Extenders
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4×12G-SDI CWDM Extenders

G-SDI-E-4×12G-T	4 × 12G-SDI CWDM EXTENDERS TX, 4 BNC Input port & 1 FC Output port
G-SDI-E-4×12G-R	4×12G-SDI CWDM Extenders Rx, 1 FC Input port & 4 BNC Output port

12G-SDI Mini Extenders

G-SDI-E-1×12G-TR	12G-SDI Mini Extenders, 1 BNC Input port & 1 BNC Output port, 1 SFP+ Output & Input port
G-SDI-E-4×12G-Tx	12G-SDI Mini Extenders Tx, 1 BNC Input port & 1 SFP+ Tx Output port
G-SDI-E-4×12G-Rx	12G-SDI Mini Extenders Rx, 1 SFP+ Rx Input port & 1 BNC Output port

2×12G-SDI Extenders

G-SDI-E-2×12G-TR	2×12G-SDI Extenders, 2 BNC Input port & 2 BNC Output port, 2 SFP+ Output & Input port
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4×3G-SDI Extenders

G-SDI-E-4×3G-Tx	4×3G-SDI Extenders Tx, 4 BNC Input port & 2 SFP+ 2Tx Output port
G-SDI-E-4×3G-Rx	4×3G-SDI Extenders Rx, 2 SFP+ 2Rx Input port & 4 BNC Output port

Parallel High-Speed
Optical Transceivers

P/N	Description
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GQM-SPO400-xx4C	40G QSFP+ PSM4/XPSM4
GQM-SPO111-xx4C	100G QSFP28 PSM4/XPSM4
GDM-SPO201-xx8C	200G QSFP-DD PSM8/XPSM8
GDM-SPO201-xx4C	200G QSFP-DD PSM4/XPSM4
GDM-SPO401-xx8C	400G QSFP-DD PSM8/XPSM8

xWDM High-Speed
Optical Transceivers

P/N	Description
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GQS-SPO400-Lx4C	40G QSFP+ LR4
GQS-SPO400-ER4C	40G QSFP+ ER4
GQS-SPO400-ZR4C	40G QSFP+ ZR4
GQS-SPO101-4LR4T	100G QSFP28 4WDM-10
GQS-SPO111-Lx4C	100G QSFP28 LR4
GQS-SPO111-ES4C	100G QSFP28 ER4 Lite
GQS-SPO111-ZR4C	100G QSFP28 ZR4
GQS-Dxx101-05C	100G QSFP28 PAM4 DWDM
GQD-SPO201-Lx8C	200G QSFP-DD LR8
GQD-SPO201-Lx4C	200G QSFP-DD LR4
GQD-SPO401-Lx8C	400G QSFP-DD LR8
GQD-SPO401-LR4C	400G QSFP-DD CWDM4

xWDM MUX/DEMUX

P/N	Description
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CWDM MUX DEMUX

GWM-04QM51PS0905-555	4CH CWDM MUX, 1510-1570nm
GWM-04QD51PS0905-555	4CH CWDM DEMUX, 1510-1570nm
GWM-08QM47PS0905-555	8CH CWDM MUX, 1470-1610nm
GWM-08QD47PS0905-555	8CH CWDM DEMUX, 1470-1610nm
GWM-12QM27PM0905-555 (Skip39/41/47/49)	12CH CWDM MUX, 1270-1570nm skip 1390/1410/1470/1490nm
GWM-12QD27PM0905-555 (Skip39/41/47/49)	12CH CWDM DEMUX, 1270-1570nm skip 1390/1410/1470/1490nm
GWM-16QM27PM0905-555 (Skip39/41)	16CH CWDM MUX, 1270-1610nm skip 1390/1410nm
GWM-16QD27PM0905-555 (Skip39/41)	16CH CWDM DEMUX, 1270-1610nm skip 1390/1410nm

DWDM MUX DEMUX

GAAWG-1FM17	17CH DWDM MUX, O-band, 150GHz
GAAWG-1FD17	17CH DWDM DEMUX, O-band, 150GHz
GAAWG-1FM32C281U21010-55	32CH DWDM MUX, C28-C59, 100GHz
GAAWG-1FD32C281U21010-55	32CH DWDM DEMUX, C28-C59, 100GHz
GAAWG-1FM40C211U21010-55	40CH DWDM MUX, C20-C59, 100GHz
GAAWG-1FD40C211U21010-55	40CH DWDM DEMUX, C20-C59, 100GHz
GAAWG-1FM48C171U21010-55	48CH DWDM MUX, C17-C64, 100GHz
GAAWG-1FD48C171U21010-55	48CH DWDM DEMUX, C17-C64, 100GHz
GAAWG-1FM64C12U21010-55	64CH DWDM MUX C1-C64 75GHz
GAAWG-1FD64C12U21010-55	64CH DWDM DEMUX C1-C64 75GHz
GAAWG-1FM80C202U21010-55	80CH DWDM MUX, C20-C59, 50GHz
GAAWG-1FD80C202U21010-55	80CH DWDM DEMUX, C20-C59, 50GHz
GAAWG-1FM96C152U21010-55	96CH DWDM MUX C15-C62 50GHz
GAAWG-1FD96C152U21010-55	96CH DWDM DEMUX C15-C62 50GHz

Combo PON WDM

GCWM-3PS0905-55	GPON & XG-PON1 & NG-PON2 & RF Video
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