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# OPTICAL TRANSPORT CATALOGUE

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## Small Form Factor Pluggable SFP

- Supported speed 100 ~ 2500M
- Supported by any modern equipment

### OPTICAL MODULES– 100/1000M

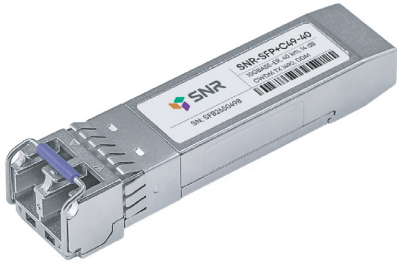
Form factor	Type	Max Speed	Working Wavelength nm.	Max Range KM	Wholesale Budget	Connector	Standards
SFP	Copper	1Gb	-	0,1	-	RJ-45	Fe Gbe
	Dual-fiber	155Mb	850	Up to 2	Up to 9	2 x LC	Fe STM-1
			1310	Up to 80	Up to 34		
			1550	Up to 200	Up to 47		
		1,25Gb	850	Up to 0,55	Up to 9		Fe Gbe STM-1 STM-4 FC1x
			1310	Up to 40	Up to 22		
			1550	Up to 160	Up to 40		

**OPTICAL TRANSCEIVERS – 100/1000M**

Form factor	Type	Max Speed	Working Wavelength Nm	Max. Range Km	Wholesale Budget Db	Connector	Standards
SFP	WDM	155Mb	1310/1490	Up to 80	Up to 21	1 x SC*	Fe STM-1
			1310/1550	Up to 80	Up to 28		
		1,25Gb	11310/1490	Up to 40	Up to 21		Fe Gbe STM-1 STM-4 FC1x
			1310/1550	Up to 40	Up to 21		
			1490/1550	Up to 80	Up to 24		
			1510/1570	Up to 140	Up to 34		
	CWDM	1270-1450	Up to 120	Up to 41	2 x LC		
		1470-1610	Up to 160	Up to 41			
		DWDM	1528-1564	Up to 160		Up to 41	

**OPTICAL TRANSCEIVERS – 2.5GB**

Form factor	Type	Max. Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards
SFP	Dual-fiber	2,5Gb	1310	Up to 40	Up to 22	2 x LC	Fe Gbe STM-1 STM-4 STM-16 FC1x FC2x CPRI 2,5
			1550	Up to 120	Up to 28		
	WDM		1310/1490	Up to 40	Up to 18	1 x SC*	
			1310/1550	Up to 40	Up to 18		
			1490/1550	Up to 80	Up to 26		
	CWDM		1270-1610	Up to 120	Up to 34	2 x LC	
	DWDM		1528-1564	Up to 160	Up to 41		



## Small Form factor Pluggable Plus SFP+

- Supported speed 1 ~ 16G
  - Supported by any modern equipment
- 



## X Form factor Pluggable Plus XFP

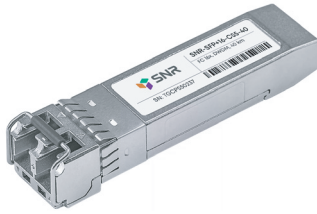
- Supported speed 10G
  - Currently almost not used
-

## OPTICAL TRANSCEIVERS – 10GB

Form factor	Type	Max Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards	
SFP	Copper	10Gb	-	0,02	-	RJ-45	10Gbe	
	DAC	10Gb	-	0,003	-	-	Gbe, 10Gbe	
	Dual-fiber	11,1Gb		850	0,3	Up to 5	2 x LC	Gbe 10Gbe OBSAI 3G OBSAI 6G CPRI 3G CPRI 6G FC 4x FC 8x FC 10G
				1310	60	Up to 24		
	WDM			1550	100	Up to 26		
				1270/1330	Up to 60	Up to 21	1 x LC	
	CWDM			1270-1350	Up to 60	Up to 21	2 x LC	
				1370-1390	Up to 45	Up to 21		
				1410-1430	Up to 20	Up to 21		
				1450	Up to 10	Up to 21		
				1470-1610	Up to 70	Up to 23		
				1528-1564	Up to 80	Up to 24		
DWDM	Tunable			Up to 80	Up to 24			

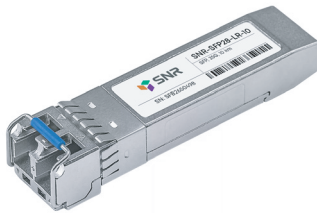
## OPTICAL TRANSCEIVERS – 10GB

Form factor	Type	Max Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards			
XFP	Dual-fiber	11,1Gb				2 x LC	10Gbe FC 8x FC 10G OTU2			
	WDM							850	0,3	Up to 5
	CWDM							1310	60	Up to 24
						1550		100	Up to 26	
	DWDM					1270/1330		Up to 60	Up to 21	1 x LC
						1270-1350		Up to 60	Up to 23	
						1370-1390		Up to 45	Up to 23	
						1410-1430		Up to 20	Up to 23	
						1450		Up to 10	Up to 23	
						1470-1610		Up to 70	Up to 23	
	1528-1564					Up to 80		Up to 24		
						Tunable		Up to 80	Up to 24	



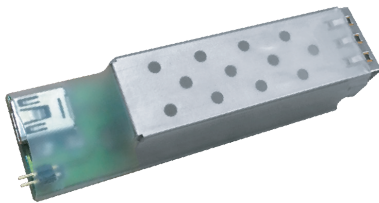
### Small Form factor Pluggable Plus 16G SFP+16

- Supported speed 10Gb / FC4x/8x/16x



### Small Form factor Pluggable 28

- Supported speed 25G/FC 32x



### SFPWriter

- Programmer for SFP/SFP+ modules

## OPTICAL TRANSCEIVERS – 16/32GB

Form factor	Type	Max Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards	
SFP+16	Dual-fiber	14,025Gb	850	0,1	Up to 14	2 x LC	10Gbe FC 4x FC 8x FC 16x	
	CWDM		1310	20	Up to 14			
			1470-1610	Up to 40	Up to 23			
	DWDM		1528-1564	Up to 40	Up to 24			
SFP28	Dual-fiber	25G	1330	Up to 80	Up to 21			
	WDM		1270/1330	Up to 40	Up to 21			
			1295/1309	Up to 80	Up to 21			
	Dual-fiber	32G	850	Up to 0,1	Up to 5			OTU 32GFC 25Gbe CPRI 10
			1310	Up to 25	Up to 9			
	CWDM	25G	1270-1610	Up to 10	Up to 5			25Gbe CPRI 10
	WDM		1270/1330	Up to 40	Up to 21	25Gbe CPRI 10		
			DWDM	25G	1528-1564	Up to 10	Up to 8	25Gbe
	1260-1360	Up to 40	Up to 18					





## QSFP+(Quad Small Form-Factor Pluggable Plus)

- Supported speed 10 / 40G / 56G
- The most common form factor for 40G



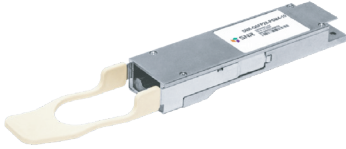
## SNR-QSFP+DA, Direct Attach Cable

- Supported speed 10 / 40G / 56G
- The most common form factor for 40G

### OPTICAL TRANSCEIVERS – 40-56GB

Form factor	Type	Max Speed	Working wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards
QSFP+	DAC	Up to 40Gb	-	Up to 0,003	-	-	10Gbe 40Gbe
	DAC -> 4 x SFP+		-	Up to 0,003	-	8 x LC	
	AOC	Up to 56Gb	850	Up to 0,1	-	-	
	AOC – 4 x SFP+	Up to 40Gb		Up to 0,1	-	8 x LC	
	SR4			Up to 0,4	Up to 3	MPO	
	PSM4	Up to 40Gb	1264-1324	Up to 10	Up to 24	2 x LC	
	LR4			Up to 20	Up to 5		
	ER4-light			Up to 25	Up to 9		
	ER4			Up to 40	Up to 16		

## Quad Small Form factor Pluggable 28 QSFP28



- Supported speed 10Gb / FC4x/8x/16x

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## Centrum Form factor Pluggable CFP



- Supported speed 100G/OTU4

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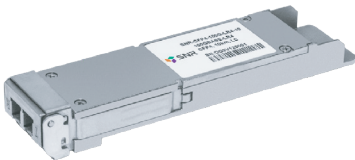
## CFP2



- Supported speed 100G/OTU4

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## CFP4



- Supported speed 100G/OTU4

## OPTICAL TRANSCEIVERS – 100GB/112GB

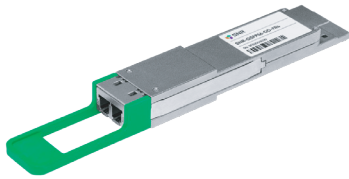
Form factor	Type	Max Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards
QSFP28	DAC	Up to 112G	-	Up to 0,003	-	-	100Gbe
	DAC -> 4 x SFP28		-	Up to 0,003		8 x LC	100Gbe, 25Gbe
	AOC	Up to 103G	850	Up to 0,07		Up to 3	-
	SR4			Up to 0,1	MPO		
	CWDM4		1270-1330	Up to 20	Up to 8		
	PSM4		1294-1308	Up to 10			
	LR4	Up to 20		Up to 6			
	ER4-light	Up to 112G		Up to 30	Up to 12		
	ER4		Up to 40	Up to 16			
	DWDM	до 100G	1528-1564	Up to 80*	Up to 7	2 x LC	
	ZR4	до 100G	1294-1308	Up to 80	Up to 31		
	DR1	до 100G	1310	Up to 0,5	Up to 3,1		
	FR1	до 100G	1310	Up to 2	Up to 4,3		
	WDM	до 100G	1270/1330	10	Up to 6,3		
	WDM	до 100G	1304/1309	30	Up to 7,4		
	WDM	до 100G	1309/1304	40	Up to 15,5		

## OPTICAL TRANSCEIVERS – 100GB/112GB

Form factor	Type	Max Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards
CFP	DAC	Up to 112G	-	Up to 0,003	-	-	100Gbe
	LR4		1294-1308	Up to 10	Up to 7	2 x LC	
	ER4-Light			Up to 25	Up to 12		
	ER4			Up to 40	Up to 17		

CFP2	DAC	Up to 112G	1294-1308	Up to 0,003	-	-	
	LR4			Up to 10	Up to 7	2 x LC	
	ER4-light			Up to 25	Up to 12		
	ER4			Up to 40	Up to 17		
CFP4	DAC		-	-	-	-	
	SR4	Up to 103G	850	Up to 0,15	Up to 4,5	MPO	100Gbe
	LR4	Up to 112G	1294-1308	Up to 20	Up to 7,8	2 x LC	100Gbe OTU4

### Quad Small Form factor Pluggable 56 (QSFP56)



Supported speed 200G

### OPTICAL TRANSCEIVERS – 200GB

Form factor	Type	Max Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards
QSFP56	AOC	200G	-	0.03	-	-	200Gbe
	DAC		-	0,005			
	SR4		850	Up to 0,1	Up to 6,5	MPO	
	FR4		1270-1330	Up to 2	Up to 4,8	LC	
	LR4		1310	Up to 10	Up to 7,3	LC	

## COMPATIBILITY OF TRANSCEIVERS WITH EQUIPMENT WORLD FAMOUS MANUFACTURERS

Our customers' networks have switches, routers, servers and storage systems from dozens of different manufacturers. The SNR trademark is compatible with almost any brands of equipment, optical modules for different form factors and speeds.

## RELIABILITY AND HIGH QUALITY OF THE MANUFACTURED PRODUCTS

The quality of our products is in the first place. That is why we carefully select suppliers of components, use fully automated assembly lines, and test each assembled module. For the period from 2015 to 2018, the failure rate of modules is less than 0.06%

## HUGE MODERN MODEL RANGE

It doesn't matter which equipment you prefer - the time-tested 10G or the hottest new products with 200G ports. We are ready to offer modules for any speeds and form factors from 100M to 200G.

## EXTENDED STANDARD WARRANTY

For all SNR modules, we are ready to extend the standard warranty of 3 years, for an additional one or two years.

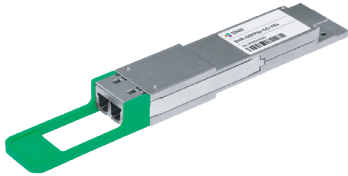
## CUSTOMIZATION ACCORDING TO YOUR REQUIREMENTS

At your request, it is possible to make modules with your stickers and articles. You can find out more from your manager.

## WAREHOUSE PROGRAM AND CUSTOM DELIVERIES

The most popular models of transceivers are available in large quantities in the NAG warehouse, so in most cases the delivery time is quite short. Scarce models can always be reserved from the nearest delivery.

## QSFP Double Density (QSFP-DD)

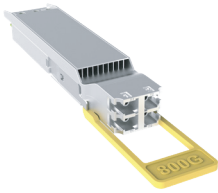


Supported speeds 400G

### OPTICAL TRANSCEIVERS – 400GB

Form factor	Type	Max Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards
QSFP-DD	AOC	400G	-	0.1	-	-	400Gbe
	SR8		850	до 0,003	0.5	MPO	
	DR4		1310	до 0,003			
	FR4		1270/1290/ 1310/1330	до 0,003	2	LC	
	CWDM4			до 0,003			
OSFP	AOC		-	до 0,003	0.1	-	
	SR8		850	до 0,003	0.5	MPO	
	DR4		1310	до 0,003			
	FR4		1270/1290/ 1310/1330	до 0,003	2	LC	
	CWDM4			до 0,003			

## QSFP Double Density (QSFP-DD800)



- Supported speeds 800G

### OPTICAL TRANSCEIVERS – 800GB

Form factor	Type	Max Speed	Working Wavelength Nm	Max Range Km	Wholesale Budget Db	Connector	Standards
QSFP-DD	AOC	800G	-	0,03	-	-	800Gbe
	SR8		850	Up to 0,1	0.5	MPO/Dual MPO	
	DR8		1310	Up to 0,5			
	FR		1310	Up to 2	2		
	LR		1310	Up to 10	10	MPO/Dual MPO	
	FR8		WDM	Up to 2		LC	
OSFP-800	AOC		-	Up to 0,03	0.1	-	
	SR8		850	Up to 0,1	0.5	MPO/Dual MPO	
	DR8		1310	Up to 0,5			
	LR		1310	Up to 10	2		
	FR8		WDM	Up to 2	10	LC	



## Media converters of the series CVT-100

- Supported speed 100base-FX, 10/100base-T

### MEDIA CONVERTERS – 100MB

Series	Optical link speed, Mb	Speed of the copper link, Mb	Wavelengths, Nm	Max Range Km	Availability of LFP	MTU	Presence of DIP
SNR-CVT-100AB	100	10/100	1310, 1550	20	Yes	1600	Yes
SNR-CVT-100AB-V2					No	1520	No
SNR-CVT-100AB-V3							
SNR-CVT-100AB-mini							





## Media converters of the series CVT-1000

- Supported speed 1000base-FX, 100/1000base-T



## Media converters of the series CVT-1000 mini

- Supported speed 1000base-FX, 100/1000base-T

### MEDIA CONVERTERS – 1000MB

Series	Optical link speed, Mb	Speed of the copper link, Mb	Wavelengths, Nm	Max Range Km	Availability of LFP	MTU	Presence of DIP	
SNR-CVT-1000SFP	100/1000	10/100/1000	Depends on SFP	Depends on SFP	Yes	9000	Yes	
SNR-CVT-1000SFP-V2	1000							
SNR-CVT-1000SFP-I								
SNR-CVT-1000SFP-POE	100/1000							
SNR-CVT-1000A								1310
SNR-CVT-1000B								1550
SNR-CVT-2SFP	100/1000/2500	-			No		No	



## Media Converters - Chassis

- Accommodates up to 14 media converters, comes with one or two power supplies

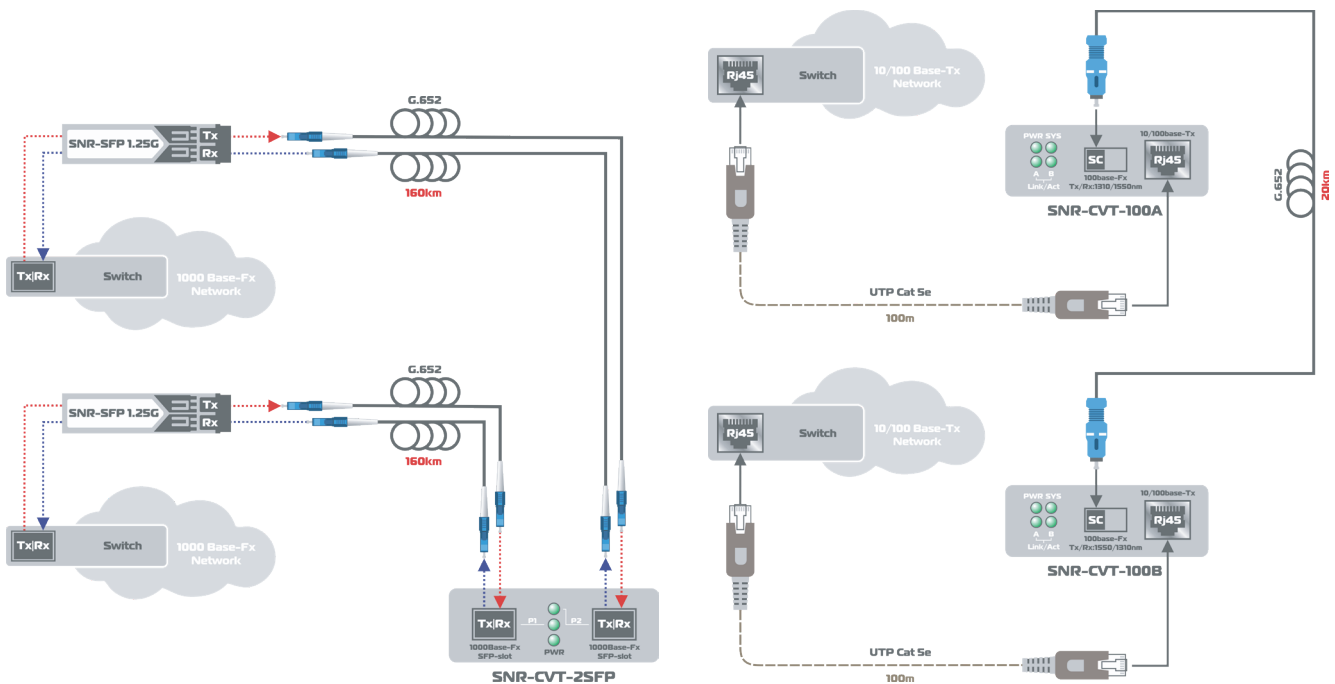


## Unmanaged media converters 10G SNR-CVT-SFP+

- The supported speed is 100base-FX, 10/100base-T is made in
- A reduced format for ease of installation

## MEDIA CONVERTERS – 10GB

Series	Ports	Availability of management	Regeneration	Max Range , km	Availability of LFP
SNR-CVT-SFP+	2 x SFP+	Yes	3R	Depends from SFP	Yes
SNR-CVT-SFP+V2	2 x SFP+	No	2R		
SNR-CVT-SFP+UTP-V2	SFP+ RJ45				



## RELIABILITY AND HIGH QUALITY OF MANUFACTURED PRODUCTS

The quality of our products is in the first place. That is why our converters have protection for copper ports from thunderstorms and other discharges.

## HUGE MODERN MODEL RANGE

We can offer any converters from 100Mb to 10G, from standard to industrial

## EXTENDED STANDARD WARRANTY

We are ready to extend the standard 3-year warranty for all SNR converters for an additional one or two years.

## WAREHOUSE PROGRAM AND CUSTOM DELIVERIES

All 100Mb/1G models are always available in stock. We are ready to bring industrial or 10G series in the shortest possible time.

## COMPATIBLE WITH SFP MODULES FROM ANY MANUFACTURERS

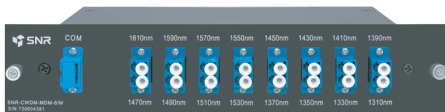
Together with our 1000Mb or 10G series media converters, modules from any manufacturers can be used.

## Thin Film filters

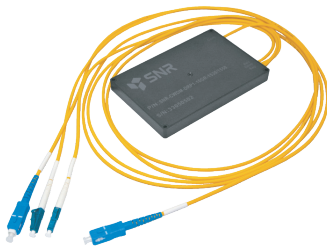


- A passive device designed to work in CWDM networks.
- The filter allows you to remove/add one wavelength.
- Two filters are needed to raise the duplex channel.

## Multiplexer/Demultiplexer



- A passive device designed to work in CWDM networks.
- Allows you to combine/disconnect channels with different wavelengths for transmission through one or two optical fibers(s).
- Allows you to transmit up to 9 duplex channels through one fiber.
- The applied attenuation will depend on the number of channels.



## OADM(Optical ADD/DROP Module)

- A passive device designed for input/output of a single duplex channel.
- Produced for single and dual fiber lines.

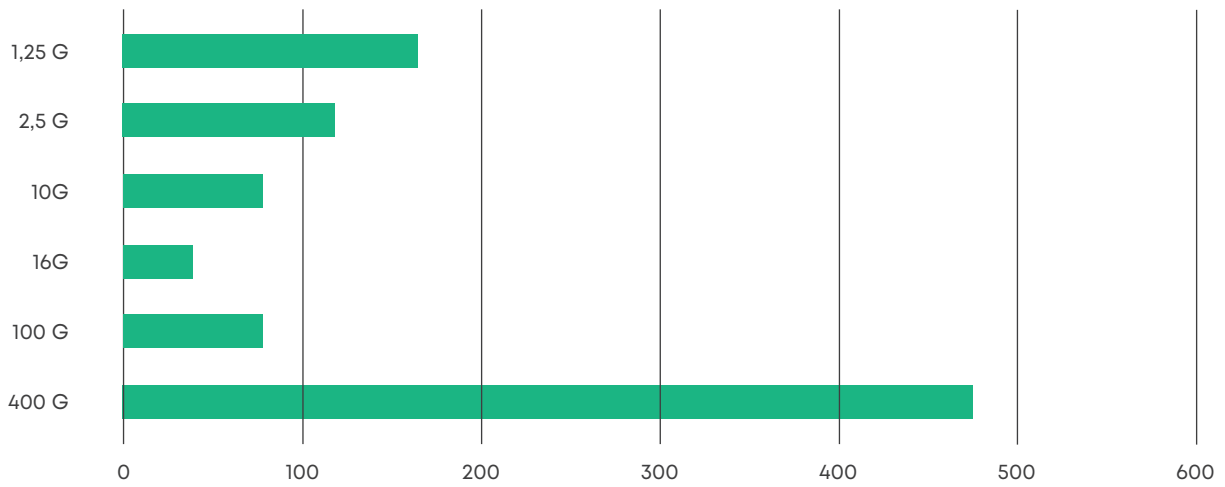
### OUR MODEL RANGE

Article number	Type of equipment	Number of OB	Working wavelength, nm	Maximum number of channels	Typical attenuation	
SNR-CWDM-MDM-X/M	Multiplexer/ Demultiplexer	1	1270~1610	9	2	1,6dB
SNR-CWDM2-MDM-X/Y		2			3	2,2dB
SNR-CWDM-DRP1-10GR-XXXX/YYYY	OADM	1		1	8	2,6dB
SNR-CWDM2-DRP1-10GR-XXXX/YYYY		2			4	1,5dB
				1	1	1,5dB
					1	1,5dB



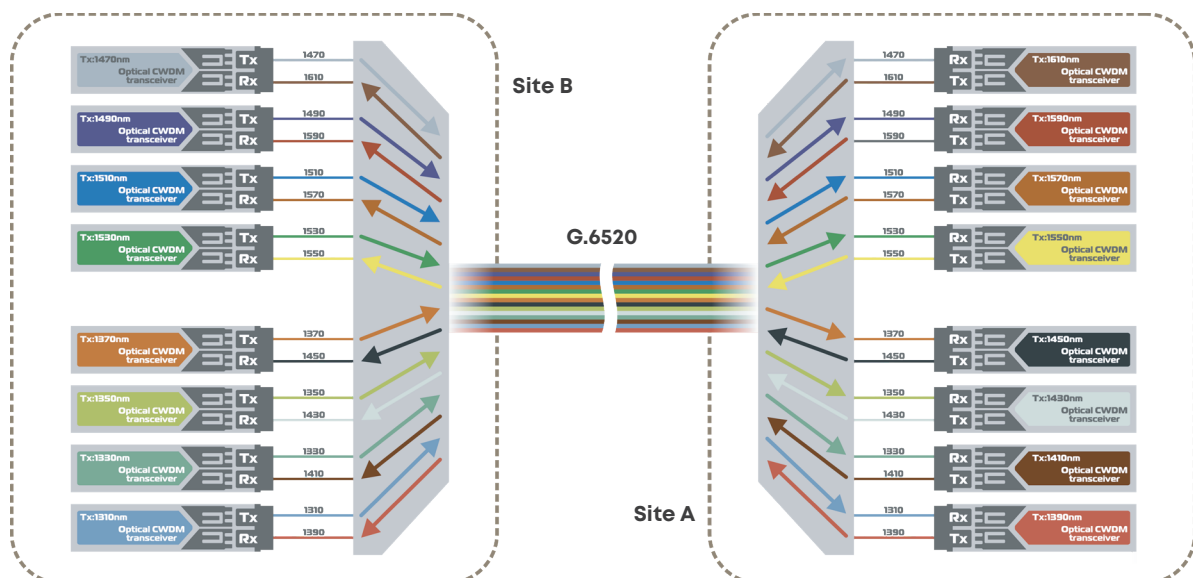
## Optical modules

- Wavelength range: 1270~1610 nm
- Transmission speeds:  
Ethernet: 1/10G; FC: x1/4/8/16; STM: 1/4/16/16
- Form factor variants
- Operating temperature: -5~+70C

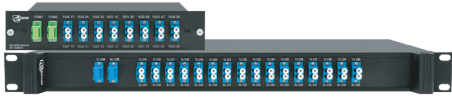


SNR-CWDM-MDM-8

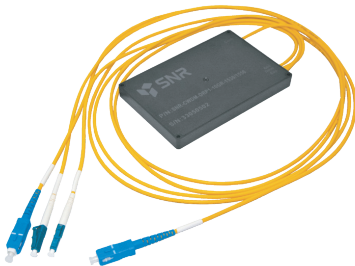
SNR-CWDM-MDM-8



## xWDM solutions



- A passive device designed to work in DWDM networks.
- Allows you to combine/disconnect channels with different wavelengths for transmission through one or two optical fibers.
- The applied attenuation will depend on the number of channels.
- Frequency grid 50 or 100GHz.



## OADM(Optical ADD/DROP Module)

- A passive device designed for input/output of a one duplex channel.
- Produced for single or dual fiber lines.

### OUR MODEL RANGE

Part number	Type of equipment	Quantity of optical Fibers	Working wavelength, nm	Maximum number of channels	Typical attenuation	
SNR-DWDM1-MDM-X	Multiplexer/ Demultiplexer	1	1563~1564	48	1	3,2dB
SNR-DWDM2-MDM-X		2			8	4,2dB
SNR-DWDM-OADM2-X				8	3,5dB	
				16	4,6dB	
		32		5,7dB		
	48	6dB				
SNR-CWDM2-DRP1-10GR	OADM	1		1	1	1,5dB
SNR-DWDM-B/R	B/R filter	2		1	1	1,5dB
		-	-	-	-	1,5dB

## Passive chromatic dispersion compensators



- Operating wavelength range: 1563.86-1563.86nm
- Chromatic dispersion compensation from 20..160km
- Low attenuation level
- Operating temperature: -10~+70C

A passive device designed to work in DWDM networks. Allows you to compensate for the variance accumulated when the signal passes through the trough the optical fiber. Used in 10/40G networks.

Article number	Type	Compensated dispersion (ps/nm)	Range, Km	Typical attenuation, dB
SNR-DCM-20	Dispersion Compensation Fiber	-330	20	3,4
SNR-DCM-40		-658	40	5,2
SNR-DCM-60		-985	60	6,8
SNR-DCM-80		-1315	80	8,3
SNR-DCM-100		-1644	100	9,7
SNR-DCM-120		-1980	120	10,9
SNR-DCM-160		-2670	160	13,1

## EDFA power amplifiers



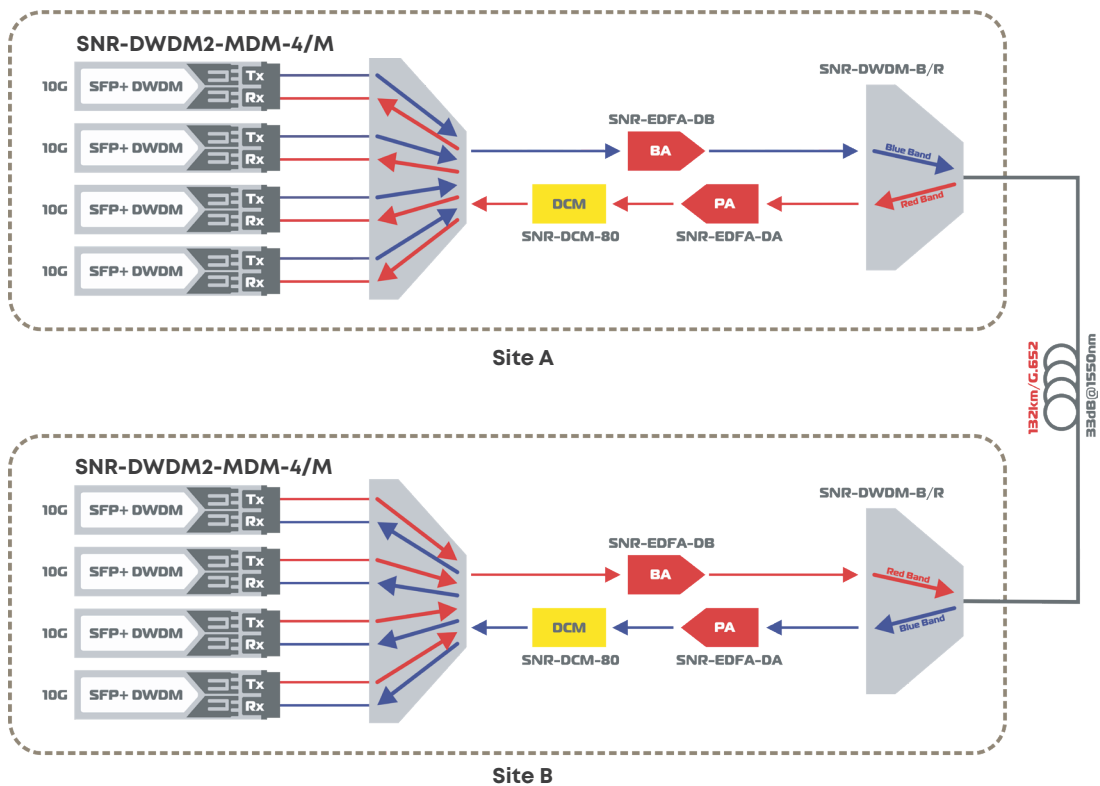
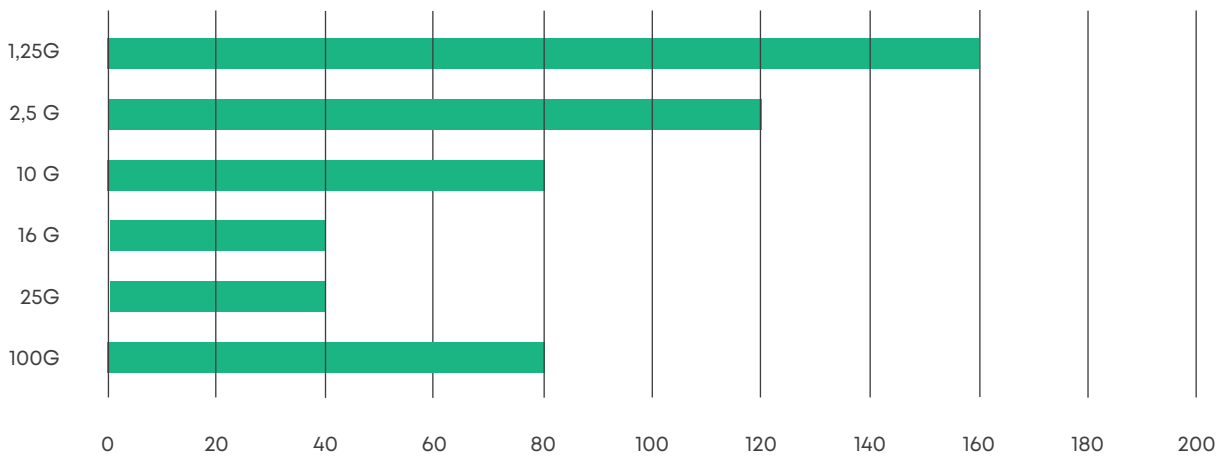
- Wavelength range: 1529~1563 nm
- Operating mode: APC and AGC
- Power supply Units: 2 x AC (DC)
- Cooling: Passive

EDFA optical power amplifier. An active device designed to work in DWDM networks.

Article number	Type of equipment	Quantity of OB	Maximum number of channels	Typical attenuation
BO-EDFA-DB	Booster	-6 ~ +3	+10 ~ +17	14 ~ 23
BO-EDFA-DA	Preamp	-8 ~ -30dB	+10 ~ +17	19 ~ 29dB



- Wavelength range: 1270~1610 nm
- Transmission speeds:  
Ethernet:1/10G; FC: x1/4/8/16; STM:  
1/4/16/16
- Versions: SFP/SFP+/SFP 16
- Operating temperature: -5~+70C





## ADVANTAGES OF OUR XWDM SOLUTIONS

- Experience in the development of compaction projects for
- More than 10 years Preparation of a technical solution for
- Your tasks Competitive cost of products
- Reliability and high quality of manufactured products
- Compatibility with various customer equipment Prompt and
- Highly qualified TAC
- Customer reviews

NAG is a leading telecom and IT solution provider representing a 20-year history of expertise. NAG has been working with a large number of customers in the CIS and around the world since 2004 providing the following solutions:

- full range of equipment for telecom operators;
- L2 and L3 Networking solutions;
- SOHO WiFi Routers and IPTV STB equipment;
- intelligent video surveillance systems with built-in analytics;
- Servers and Storages;
- Infrastructure and Power supply solutions.

With over 650 dedicated employees, including a strong engineering team of 150+ employees, NAG operate offices in Dubai (UAE), Almaty (Kazakhstan) and Tashkent (Uzbekistan). Our logistics centers in Washington (USA) and Shanghai (China) allow working directly with foreign partners and ship out goods with the highest quality and optimized timelines.

**UAE, DUBAI**

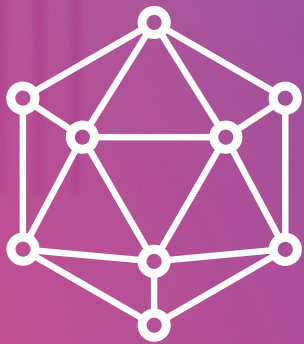
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**nag**<sup>®</sup>  
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— developer of equipment and solutions for the telecommunications industry, industry and business. We have accumulated extensive experience in the development and construction of communication networks, data transmission networks, as well as network infrastructures and information security systems.

