STARVIEW
TECHNOLOGIES
Infinite Possibilities

Programmable High-Speed Transceivers Made Simple

starviewtech.net

Our Awards

STARVIEW Technologies

Starview builds high-speed communications infrastructure, and private clouds to power the most demanding work-loads. We integrate our Patents and Intellectual Properties of our own products, with third-party solutions to offer un-precedented values and propositions to our customers.

We are passionate about pushing the envelope in technology, harnessing the latest, fastest and best technologies to meet our customer's requirements, and at the same time, breaking the barriers in price and performance.

Transceiver Modules:

All Starview branded transceiver modules are MSA compliant and are offered with wide variety of form factors: **SFP, SFP+, SFP28, XFP, QSFP+, QSFP28, CFP, CFP2, CFP4, QSFP-DD, QSFP56-DD and OSFP.** These modules are pre-configured before delivery and can be remotely reprogrammed using STAR-POD (Starview Programmable Optical Device) in the field. This unique feature provides flexibility to customers to use a common Starview branded transceiver module to support multiple brands of networking equipment.

Accessories:

STARTAP (Starview Optical Tap): Modular network taps for optical fiber splitting with customized tap ratios
STARMUX (Starview Multiplexer): Compact passive CWDM for fiber congestion alleviation, supporting data rates from 100Mbps to 10Gbps over a single fiber core.
Optical Patch Cables: Pre-terminated in the factory with bend-insensitive fiber
Optical Accessories: Attenuators, couplers, and adapters ensure reliable network communications

Technology Partners

STARVIEW collaborates with leading technology vendors, enabling the integration and customiza-tion of cost-effective wired and wireless solutions for customers.

Maintenance and Support

STARVIEW offers SMART services, including Help Desk, Service Level Agreements, global deploy-ment of network products, structured cabling, in-stallation and commissioning, remote technical support, preventive maintenance, training, and warranty contracts. Customers can activate SMART services via hotline, web portal, or email.

TERMS AND CONDITIONS

ORDERS:

All orders are subjected to acceptance by Starview Technologies

All orders placed by customer must be confirmed in writing. Starview Technologies sales can provide specific delivery schedule or additional information on ordering procedures.

Office/Warehouse addess:

Starview Technologies Pte Ltd

60 Kaki Bukit Place #05-19 Eunos Techpark Singapore 415979

Attn: Sales (sales@starviewtech.net)

Credit Acceptance:

All orders are subject to acceptance by Starview Technologies's Finance Department. If applicable, Starview Technologies will establish an account and Customer will complete the form requested by Starview Technologies

Minimum Orders:

For international customers, the minimum order value is US$1,000 per order. For any order value below US$1,000, a processing fee of US$30 shall be imposed, to cover bank charges imposed during inter-bank transfer. The processing fee will be waived if payment is made via Flywire. A Flywire online link will be provided upon order acceptance.

Payment Terms:

All payments are 100% nett in advance unless otherwise stated

All payments are net 30 days for approved Customer in good standing.

Payments by checque should be mailed to Starview Technologies Pte Ltd

US Dollar Accounts

Starview Technologies Pte Ltd

Oversea-Chinese Banking Corporation Limited

65 Chulia St, #01-01 OCBC Centre, Singapore 049513

Account No.   : USD 601-421522-201

Payments may also be made in the following manner:

Letter of Credit

Please note that a US$250 handling fee will be charged for orders of less than US$25,000 that are paid for by letter of credit. All Letters of Credit must be received at least two (2) weeks prior to the scheduled shipment date.

Changes to Orders

All requests to change the order are subject to acceptance by Starview Technologies. All requests must be made in writing, and to be received at least two (2) weeks prior to the scheduled shipping date.

Prices

All prices are subject to change without notice.

RESCHEDULING, CANCELLATION AND RESTOCKING

All requests to reschedule, cancel and restock an order are subject to acceptance by Starview Technologies.   Specific fees are applicable for any rescheduling and cancellation requested less than thirty (30) days prior to a scheduled delivery date and for restocking that is requested less than thirty (30) days after receipt of the product by the Customer. Starview Technologies will not restock if requested more than thirty (30) days after receipt of the product by the Customer.

DELIVERIES

Starview Technologies will make reasonable efforts to meet Customer's delivery requirements. If Starview Technologies is unable to meet Customer's delivery requirements, alternative arrangements may be agreed upon by the parties.

SHIPPING

For deliveries to Singapore, price includes custom fees and duties. If the order value is less than SGD1,000 (or USD800) before GST, please arrange for self-collection at our warehouse address. A delivery charge of SGD30 (or USD25) shall apply if delivery is required.

For shipping outside Singapore, prices are ex-works Singapore.

INSTALLATION AND ACCEPTANCE

The installation for some systems must be performed by Starview Technologies. Following the installation, the Customer shall provide written acceptance of installed systems in accordance with Starview Technologies's Acceptance Test Procedures.

RETURNS

All products returned to Starview Technologies require a Return Merchandise Authorization (RMA) number. To obtain an RMA number and ship-to-address instructions, contact Starview Technologies's Technical Support at support@starviewtech.net. Starview Technologies will not be responsible for any product returned without an RMA number.

BASIC WARRANTY

For a period of Twenty Four (24) months from the date of shipment products are warranted under normal use:

1) to be free from any defect in design, material, and workmanship,

2) to conform strictly to specifications and approved samples,

3) to be fit and sufficient for the purpose intended.

Starview Technologies will repair or replace, free of charge, any part proven to be defective within the basic warranty period. Return-to-Customer shipping costs will be paid by Starview Technologies for products under the basic warranty if submitted by the original purchaser, excluding customer's country import duties/taxes. Shipping to Starview shall be at customer's expense. This basic warranty is standard to all Starview Technologies products. Turnaround for repair is estimated to be between 4-6 weeks.

Any request from Customer for a root-cause analysis (RCA) report is subject to Starview Technologies discretion, and at a chargeable fees. Estimated labour charges, expenses, and other relevant costs will be charged to the Customer, and paid in advance to Starview Technologies before the commencement of the RCA. The RCA report shall be final and shall be accepted by the Customer.

This warranty is in lieu of all other warranties, express, implied or statutory, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. In no event shall Starview Technologies be liable for special, incidental or consequential damages.

EXCEPTIONS TO BASIC WARRANTY

Warranty is voided if equipment or parts is subjected to misuse, negligence or accidental destruction, eg used in environments where it is not designed for, subjected to abnormal voltages, or damages caused to TX/RX components by abnormally high laser power. All consumable parts are excluded from the basic warranty.

Caution: Only Starview Technologies's trained personnel may open the case of an instrument since permanent damage to the unit may occur. All Starview Technologies warranties will immediately become null and void if any unauthorized third party opens an instrument case, removes the warranty sticker from across the seam of the case, removes any of the case screws, if the product serial number is altered, erased or removed, if the hardware or software is altered, if the units are not installed according to manufacturer's instructions or applicable security standards.

GENERAL INFORMATION

Starview Technologies's office is open from 9.00 a.m. to 18:00 p.m (GMT + 08.00)

All sales of Starview Technologies equipment shall be governed by and interpreted in accordance with the laws applicable in Singapore, except as to (i) conflicts of laws provisions; and (ii) the reference to the Incoterm "ex-works", which incorporates into these Terms and Conditions all the current rules of the International Chamber of Commerce pertaining to the 2000 Incoterms.

STARVIEW TECHNOLOGIES

Why Programmable High-Speed Transceivers Made Simple?

STARPOD
Program Your Transceivers

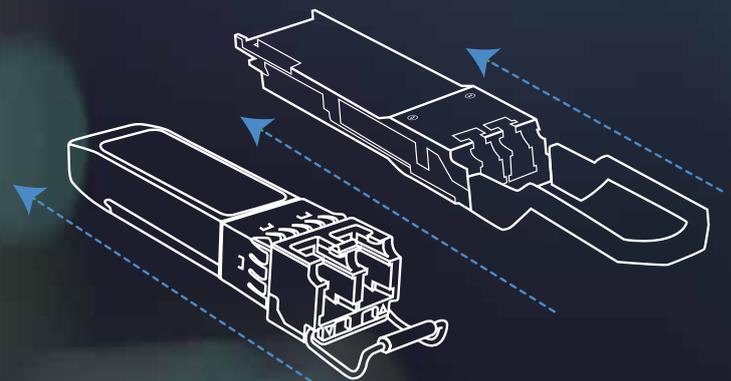Reprogramming Starview Transceivers

DWDM Wavelength Tuning

Remote Diagnostic

Patent No: US 9,959,110 B2   AU 2014395561
SG 11201604256V   CN ZL201480074114.9

HP

HUAWEI

Juniper

CISCO

QSFP+/ QSFP28/ QSFP56

SFP/ SFP+/ SFP28

Features

- Programming Kit for Starview SFP/ SFP+/ SFP28 and QSFP+/ QSFP28/ QSFP56
- User friendly graphical user interface(GUI)
- USB port for basic set up
- Multi-vendor programming
- Wavelength tuning for DWDM tunable SFP+ module

Why STARPOD?

1   **User friendly interface**

Easy to use menu with click and select interface

2   **Fast and Efficient**

Immediate use of Starview transceiver to work on device after reprogramming

3   **Cost Saving**

Saves on CAPEX and OPEX with one common type of transceiver

Starview Programmable Optical Device (STARPOD) is designed to allow the user to re-program Starview transceiver modules (typically SFP/SFP+ and QSFP+/QSFP28/QSFPP56) in the field. The STARPOD is also capable to tune the DWDM wavelengths of the DWDM tunable SFP+ module. This flexibility to re-program the transceiver module allows the user to connect the module to interwork with multiple leading vendors. The user will save time and money to support the wide varieties of networking equipment today.

Using STARPOD with a computer, the user re-programs the transceiver module in less than a minute. After re-programming, the transceiver module can work with the leading vendor of choice. The module can be re-programmed as many times as required.

Starview Technologies offers a wide range of highly reliable transceiver modules allowing the user to protect their investment cost especially with STARPOD.

STARPOD Purchase vs Transceiver Purchase

Using STARPOD, you recover your investment by re-programming and re-using your transceivers multiple times. If you are keeping transceivers as spares to support multiple brands of network equipment, a single generic type of Starview transceiver is only needed. You program Starview transceivers as needed, instead of keeping multiple transceivers of the same type for different equipment brands. Transceivers can also be preconfigured before delivery. You decide what is best for you.

One time Cost: Purchase price of STARPOD. Only 1 transceiver type is needed for each network equipment brand. You program as needed

Running costs: None

One time Cost: At least 1 transceiver of each type, multiplied by number of network equipment brand

Running costs: Multiple transceivers needed for each brand, even if they are of the same type

STARPOD - Transceiver Database and more....

- CISCO
- Juniper
- Alcatel Lucent Enterprise
- Extreme Networks
- Dell
- Huawei
- HP Enterprise
- H3C
- Arista Networks
- Transition Networks

- Aruba
- BTI
- Intel
- EXFO
- Viavi
- Allied Telesis
- Tellabs
- ALAXLA Networks
- PacketLight
- Netscout

- Adtran
- Brocade
- Ericsson
- RAD
- Avaya
- Nokia
- VSS Monitoring
- Gigamon
- Cyan
- Hitachi Metals

- Edge-core
- Anritsu
- ECI
- Mellanox
- Ubiquiti
- Ciena
- D-Link
- And many more...

Specifications

Modules	SFP/ SFP+/ SFP28 and QSFP+/ QSFP28/ QSFP56
Data Rate/Wavelength/Distance	As per module data rate
Dimension	Width: 4.09" [104 mm] Depth: 4.21" [107 mm] Height: 1.18" [30 mm]
Power Input	USB
Operating System	Microsoft Windows 7 and above
Warranty	2 Years

Supported Wavelengths for Tunable DWDM SFP+ Transceivers

The following table provides correlation of the ITU-frequency DWDM channel number, wavelength and frequency

## ITU Channel	Wavelength	Frequency (THz)	## ITU Channel	Wavelength	Frequency (THz)	## ITU Channel	Wavelength	Frequency (THz)
11.5	1568.36	191.15	28	1554.94	192.80	44.5	1541.75	194.45
12	1567.95	191.20	28.5	1554.54	192.85	45	1541.35	194.50
12.5	1567.54	191.25	29	1554.13	192.90	45.5	1540.95	194.55
13	1567.13	191.30	29.5	1553.73	192.95	46	1540.56	194.60
13.5	1566.72	191.35	30	1553.33	193.0	46.5	1540.16	194.65
14	1566.31	191.40	30.5	1552.93	193.05	47	1539.77	194.70
14.5	1565.90	191.45	31	1552.52	193.10	47.5	1539.37	194.75
15	1565.50	191.50	31.5	1552.12	193.15	48	1538.98	194.80
15.5	1565.09	191.55	32	1551.72	193.20	48.5	1538.58	194.85
16	1564.68	191.60	32.5	1551.32	193.25	49	1538.19	194.90
16.5	1564.27	191.65	33	1550.92	193.30	49.5	1537.79	194.95
17	1563.86	191.70	33.5	1550.52	193.35	50	1537.40	195.0
17.5	1563.45	191.75	34	1550.12	193.40	50.5	1537.00	195.05
18	1563.05	191.80	34.5	1549.72	193.45	51	1536.61	195.10
18.5	1562.64	191.85	35	1549.32	193.50	51.5	1536.22	195.15
19	1562.23	191.90	35.5	1548.91	193.55	52	1535.82	195.20
19.5	1561.83	191.95	36	1548.51	193.60	52.5	1535.43	195.25
20	1561.42	192.0	36.5	1548.11	193.65	53	1535.04	195.30
20.5	1561.01	192.05	37	1547.72	193.70	53.5	1534.64	195.35
21	1560.61	192.10	37.5	1547.32	193.75	54	1534.25	195.40
21.5	1560.20	192.15	38	1546.92	193.80	54.5	1533.86	195.45
22	1559.79	192.20	38.5	1546.52	193.85	55	1533.47	195.50
22.5	1559.39	192.25	39	1546.12	193.90	55.5	1533.07	195.55
23	1558.98	192.30	39.5	1545.72	193.95	56	1532.68	195.60
23.5	1558.58	192.35	40	1545.32	194.0	56.5	1532.29	195.65
24	1558.17	192.40	40.5	1544.92	194.05	57	1531.90	195.70
24.5	1557.77	192.45	41	1544.53	194.10	57.5	1531.51	195.75
25	1557.36	192.50	41.5	1544.13	194.15	58	1531.12	195.80
25.5	1556.96	192.55	42	1543.73	194.20	58.5	1530.72	195.85
26	1556.55	192.60	42.5	1543.33	194.25	59	1530.33	195.90
26.5	1556.15	192.65	43	1542.94	194.30	59.5	1529.94	195.95
27	1555.75	192.70	43.5	1542.54	194.35	60	1529.55	196.0
27.5	1555.34	192.75	44	1542.14	194.40	60.5	1529.16	196.05

Ordering Information

SV-STARPOD2-USB	Starview Programmable Optical Device (STARPOD) for reprogramming Starview Transceiver modules (SFP/ SFP+/ SFP28/ QSFP+/ QSFP28/ QSFP56) to support various manufacturer's coding, c/w USB cable and AC/DC power adapter. STARPOD software can be downloaded at www.starviewtech.net

Your Reliable Fiber Optic Transceiver Provider

SFP / SFP+ / SFP28 / QSFP+ / QSFP28 / QSFP56 / OSFP / DAC / AOC..

700+
Customers Trusted

30+
Countries We Sold

>60%
Save Cost for You

30+
Compatible Brands

Programmable

Multi-Vendor Support

Fast Delivery

Tech Support

Why Choose STARVIEW Transceivers?

Starview is a reliable supplier of Optical Transceiver modules for more than 10 years, with good customer track records. Starview offers a wide range of transceiver modules, and owns patent for STARPOD (Starview Programmable Optical Device) to program our modules to work in various manufacturer's devices.

Starview offers a wide range of Transceiver modules with leading-edge optical components, low cost and fast lead time. All SVI transceiver modules are pre-coded before delivery to ensure inter-operability with the vendors' networking equipment, and equipped with DDM (Digital Diagnostic Monitoring) capabilities. The DDM features allow users to remotely monitor in real-time the transceiver receive optical power, transmitter optical power, laser bias current, transceiver input voltage and temperature. This function provides network manager an effective tool for implementing reliable performance monitoring of their networking devices.

Starview Transceivers are fully ROHS and MSA compliant, supports multiple network protocols to enable high speed voice, video and data communications. These applications can be used for Ethernet, Fiber Channel, 4G LTE, GPON and SONET/ SDH. SVI Transceivers are available to transmit data over Copper, Singlemode or Multimode fiber, with options to select such as transmission distances, wavelengths, power consumption and operating temperatures.

Further savings on OPEX (Operating Expenses) can be achieved with STARPOD. Using STARPOD, SVI transceiver modules are field reprogrammableaainteroperability of the transceiver module with a certificate of compatibility and money back guarantee if the module does not work.

Compatibility

Our modules are pre-configured with the standard vendor's coding before delivery

Full traffic test

Our modules are fully tested to ensure quality and reliability.

Laser color

Our modules are fully tested with Optical Spectrum Analyser to ensure the wavelength is correctly transmitted
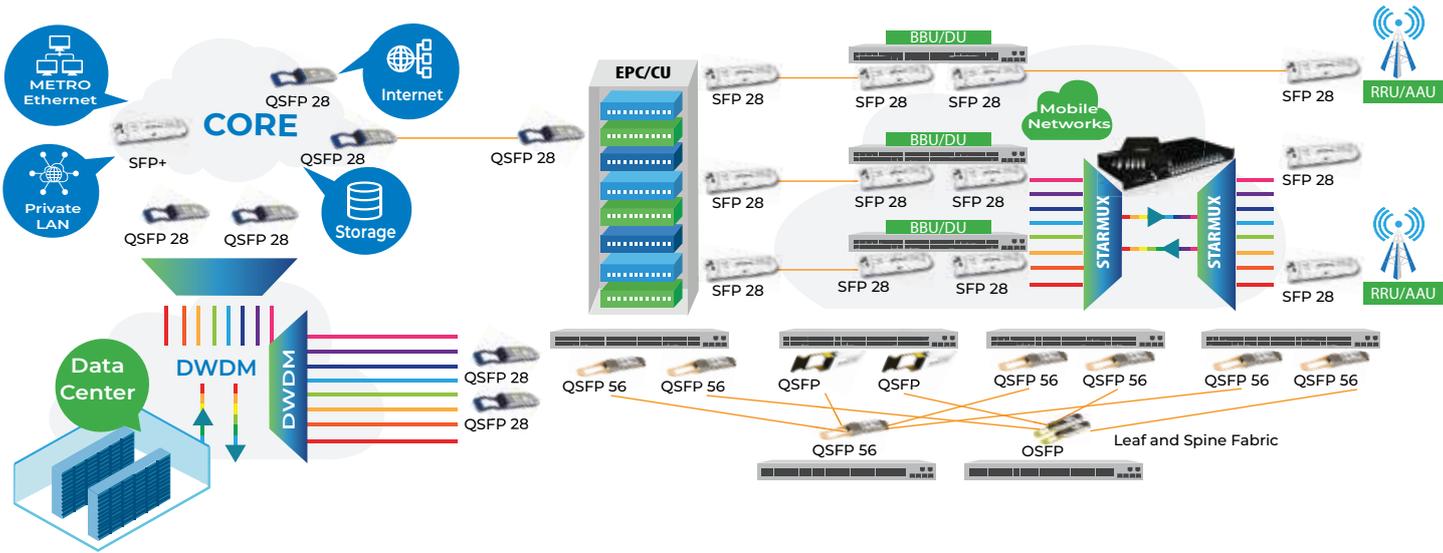
EEPROM and label contents

All our module EEPROM is fully compatible with STARPOD for reprogramming in the field with our standard module part number

Lens inspection and clean

Our modules are fully inspected to ensure the TOSA and ROSA windows are without dust

STARVIEW Transceivers

	SFP+	SFP28Q		SFP+	QSFP28	Single Lambda	QSFP56	QSFP28-DDQ	SFP56-DD	OSFP
	5G Wireless Backhaul			**40G,50G &100G connectivity**			**200G Transceiver**		**400G Transceiver**	**800G Transceiver**
	10G SFP+	25G SFP28	84	40G QSFP+	100G QSFP28	Single Lambda Q	SFP56	QSFP28-DDQ	SFP56-DDO	QSFP & OSFP
	Industrial Temp	**Industrial Temp**								
	Dual Fiber LR 10km/20km ER 40km ZR 80km	*Dual Fiber* LR 10km/20km ER 40km		*Dual Fiber* SR4 150m/300m LR 2km/10km ER 40km	*Four channel 4x25.78Gbps* CWDM4 2KM LWDM 10/40km SR4 100m LR4 10/20km ER4 40km ZR4 80km	*Single Lambda 1x106.25Gbps* DR 500m FR 2km LR 10km CWDM LR 10km	*4x53.125Gbps* PSR4 100m FR4 2km LR4 10m ER4 40km	*8x25.78Gbps* 2x CWDM4 2km 2x LR4 10km	*8x53.125Gbps* SR8 100m(OM4) LR 10km ER 40km	*QSFP 8x100Gbps* DR8 500m
	CWDM/DWDM LR 10km/20km ER 40km ZR 80km	*CWDM* LR 10km		*BIDI* SR 150m					*4x106.25Gbps* DR4 500m FR4 2km LR4 10km ER4 40km ZR+ 120km / 480km	*8x53.125Gbps* SR8 100m(OM4) *4x106.25Gbps* DR4 500m FR4 2km LR4 10km	*OSFP 8x100Gbps* SR8 50m
	BIDI LR 10km/20km ER 40km ZR 80km	*BIDI* LR 10km/20km ER 40km								

Starview Transceiver Module Deployment

- CISCO
- Juniper
- Alcatel Lucent
- Extreme Networks
- Force 10
- Huawei
- HP
- H3C
- Arista Networks
- Transition Networks

- ADVA Optical Networking
- BTI
- Intel
- EXFO
- JDSU
- Allied Telesis
- Tellabs
- Nortel
- ALAXLA Networks
- Netscout

- Adtran
- Brocade
- Ericsson
- RAD
- Avaya
- NSN
- VSS Monitoring
- Gigamon
- Cyan
- Hitachi Metals
- Etc.
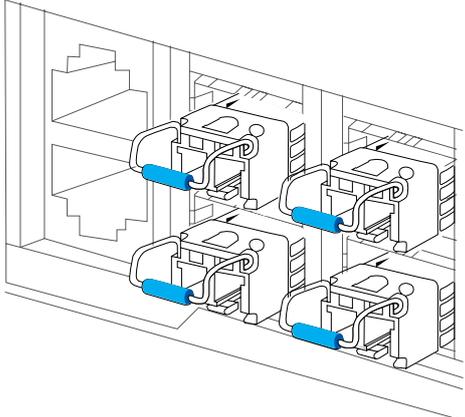
800G QSFP56-DD

Compact Quad Small Form Pluggable – Double Density

Features

- Available with 8 x 100G options:
- 8 x 100Gbps DR8

Applications

- Data Centers
- Cloud Networks
- Connector type: MPO-16(APC)
- Compliant with IEEE 802.3bs, IEEE P802.3cm and QSFP-DD MSA

Specifications

Standards	IEEE 802.3bs, IEEE P802.3cm
Dimensions	Width: 0.86" [22 mm] Depth: 4.64" [118 mm] Height: 0.52" [13.2 mm]
Power	16V
Power Consumption	< 1 0 Watts
Connector Type	MPO-16(APC)
Environment	0°C – 70°C
Compliance	IEEE 802.3bs and QSFP-DD MSA
Warranty	2 year

MPO-16

TX   RX

800G-DR8

Ordering Information

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
800 Gb/s	SV-QSFP-800G-PDR8	SM	1310	0.5	-2.9 to 4.0	-5.9 to 4.0	3.0

800G OSFP

800Gbps Compact Octal Small Form Factor Pluggable – Double Density

Features

- Available with 8 x 100G options:
- 800G-2xSR4/ SR8

Applications

- Data Centers
- Cloud Networks
- Connector type: MPO-12(APC)
- Compliant with IEEE 802.3bs, IEEE P802.3cm and OSFP MSA

Specifications

Standards	IEEE 802.3bs, IEEE P802.3cm
Dimensions	Width: 0.86" [22 mm] Depth: 4.64" [118 mm] Height: 0.52" [13.2 mm]
Power	15V
Power Consumption	< 1 5 Watts
Connector Type	MPO-16(APC)
Environment	0°C – 70°C
Compliance	IEEE 802.3bs and OSFP MSA
Warranty	2 year

MPO-12

TX   RX
1 2 3 4   4 3 2 8

800G SR8

Ordering Information

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
800 Gb/s	SV-OSFP-800G-PSR8	MM	850	0.05	-4.6 to 4.0	-6.3 to 4.0	1.7

AOC

Fiber OSFP Modules

Features

- Available with 8 x 50G and 4 x 100G options:
- 4 x 100Gbps DR4
- 4 x 100Gbps FR1 (or DR4+)
- 4 x 100Gbps FR4
- 4 x 100Gbps LR1 (or DR4++)
- 4 x 100Gbps LR4

Applications

- Data Centers
- Cloud Networks
- Connector type: MPO-16(APC), MPO-12(APC), LC
- Compliant with IEEE 802.3bs, IEEE P802.3cm and 100GLambda MSA
- The OSFP has an advantage in a clearer way to 800G and superior thermal performance

Specifications

Standards	IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA
Dimensions	Width: 0.88" [22 mm] Depth: 3.95" [100 mm] Height: 0.51" [13 mm]
Power	3.3V
Power Consumption	< 1 0 Watts
Connector Type	MPO-16(APC), MPO-12(APC), LC
Environment	0°C – 70°C
Compliance	400GAUI-8; IEEE 802.3bs and OSFP MSA
Warranty	2 year

Dual LC
400G-FR4

MPO-12
400G-DR4 and 400G-DR4+

MPO-16
400G-SR8

CS
400G-2FR4
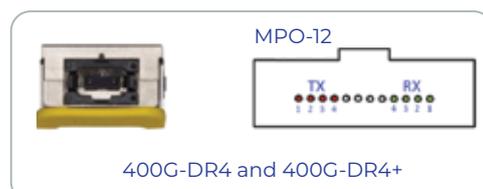
Standard temperature:
0°C to +70°C

Ordering Information

Active Optical Cables

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-AOC-400GOSFPT6T6-1M			1			
	SV-AOC-400GOSFPT6T6-3M			3			
400 Gb/s	SV-AOC-400GOSFPT6T6-5M			5			
	SV-AOC-400GOSFPT6T6-7M			7			
	SV-AOC-400GOSFPT6T6-10M			10			

Fiber OSFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-OSFP-400G-PSR8	MM	850	0.1	-6.0 to 4.0	-7.9 to 4.0	1.9
400 Gb/s	SV-OSFP-400G-PDR4	SM	1310	0.5	-2.9 to 4.0	-5.9 to 4.0	3.0
	SV-OSFP-400G-PFR1	SM	1310	2	-2.9 to 4.0	-7.3 to 4.0	4.4
	SV-OSFP-400G-CFR4	SM	CWDM	2	-3.3 to 3.5	-7.3 to 3.5	4.0

400G QSFP56-DD

Compact Quad Small Form Pluggable – Double Density

Features

- Available with 8 x 50G and 4 x 100G options:
- 8 x 50Gbps SR8
- 4 x 100Gbps DR4
- 4 x 100Gbps FR1 (or DR4+)
- 4 x 100Gbps FR4
- 4 x 100Gbps LR1 (or DR4++)
- 4 x 100Gbps LR4

Applications

- Data Centers
- Cloud Networks
- Connector type: MPO-16(APC), MPO-12(APC), LC
- Compliant with IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA
- The QSFP-DD has an advantage in that is more widely adopted and offers simpler backward compatibility

Specifications

Standards	IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA
Dimensions	Width: 0.72" [18 mm] Depth: 3.67" [93mm] Height: 0.51" [13 mm]
Power	3.3V
Power Consumption	< 10 Watts
Connector Type	MPO-16(APC), MPO-12(APC), LC
Environment	0°C – 70°C
Compliance	400GAUI-8; IEEE 802.3bs and OSFP MSA
Warranty	2 year

Dual LC

400G-FR4

MPO-12

400G-DR4 and 400G-DR4+

MPO-16

400G-SR8

CS

400G-2FR4
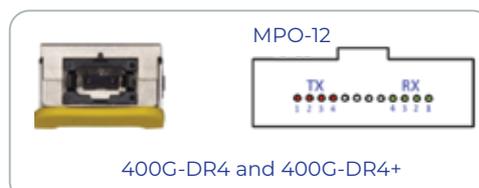
Ordering Information

Active Optical Cables

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-AOC-400GT6T6-1M			1			
	SV-AOC-400GT6T6-3M			3			
400 Gb/s	SV-AOC-400GT6T6-5M			5			
	SV-AOC-400GT6T6-7M			7			
	SV-AOC-400GT6T6-10M			10			
	SV-AOC-400GT6T5-1M			1			
	SV-AOC-400GT6T5-3M			3			
4 x 100 Gb/s	SV-AOC-400GT6T5-5M			5			
	SV-AOC-400GT6T5-7M			7			
	SV-AOC-400GT6T5-10M			10			

Direct Attach Cable

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-DAC-400GT6T6-1M			1			
400 Gb/s	SV-DAC-400GT6T6-3M			3			

Fiber QSFP56-DD Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-400G-PSR4	MM	850	0.05	-4.6 to 4.0	-6.3 to 3.5	1.7
	SV-QSFP-400G-PSR8	MM	850	0.1	-6.0 to 4.0	-7.9 to 4.0	1.9
	SV-QSFP-400G-PDR4	SM	1310	0.5	-2.9 to 4.0	-5.9 to 4.0	3.0
	SV-QSFP-400G-PFR1	SM	1310	2	-2.4 to 4.0	-6.4 to 4.0	4.0
	SV-QSFP-400G-CFR4	SM	CWDM	10	-3.3 to 3.5	-7.3 to 3.5	4.0
	SV-QSFP-400G-PLR1	SM	1310	10	-1.4 to 4.5	-7.7 to 4.5	6.3
	SV-QSFP-400G-PLR4	SM	1310	10	-1.4 to 4.5	-7.7 to 4.7	6.3
	SV-QSFP-400G-CLR4	SM	CWDM	10	-2.8 to 5.6	-9.1 to 5.6	6.3
400 Gb/s	SV-QSFP-400G-LR8	SM	LWDM	10	-2.8 to 5.3	-9.1 to 5.3	6.3
	SV-QSFP-400G-ER8	SM	LWDM	40	-0.6 to 5.6	-18.6 to -4.4	18
	SV-QSFP-400G-ER4L	SM	Narrow LWDM	30	0 to 5.6	-14.7 to -3.4	14.7
	SV-QSFP-400G-ER4N	SM	Narrow LWDM	40	1.5 to 7.1	-16.2 to -3.4	17.7
	SV-QSFP-400G-ZR	SM	DWDM	120	-10.0 to -6.0	-20.0 to 0	10
	SV-QSFP-400G-ZR+	SM	DWDM	480	-10.0 to -6.0	-20.0 to 0	10
	SV-QSFP-400G-HZR4+	SM	Tuneable	120	-5.0 to 3.0	-24.0 to -12.0	19
	SV-QSFP-400G-PSR4.2	MM	850 - 910	0.15	-6.5 to 4.0	-8.5 to 4.0	2

Compact Quad Small Form Pluggable
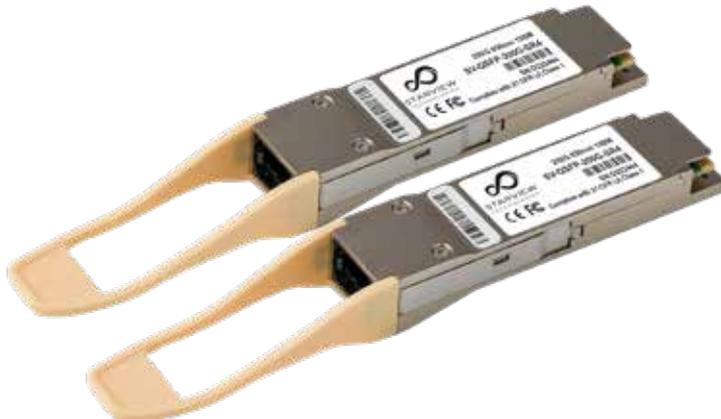
Features

- up to 200Gbps
- 4 x 50Gbps SR4
- 4 x 50Gbps FR4

Applications

- Data Centers
- Cloud Networks
- Compliant with IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA

Specifications

Standards	IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA
Dimensions	Width: 0.72" [18 mm] Depth: 3.67" [93mm] Height: 0.47" [12 mm]
Power	3.3V
Power Consumption	PSR/FR4 < 5 Watts. LR4 < 10.8 Watts. ER4 < 12 Watts.
Connector Type	MPO-12(APC), LC
Environment	0°C – 70°C
Compliance	IEEE802.3bs. 200GAUI-8 and 200GAUI-4 electrical interface
Warranty	2 year

Dual LC

200G-PSR4

MPO-12

200G FR4/LR4/ER4
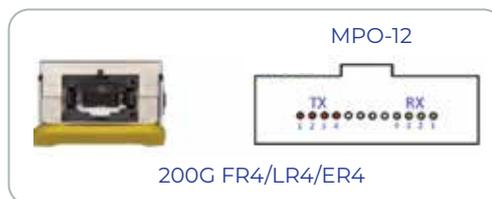
Standard temperature:
0°C to +70°C

Ordering Information

Direct Attach Cable

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-DAC-200GT5T5-1M			1			
200 Gb/s	SV-DAC-200GT5T5-3M			3			

Fiber QSFP56 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-200G-PSR4	MM	850	0.1	-6.5 to 4	-8.4 to 4.0	1.9
200 Gb/s	SV-QSFP-200G-FR4	SM	CWDM	2	-4.2 to 4.7	-8.2 to 4.7	4.0
	SV-QSFP-200G-LR4	SM	LWDM	10	-3.4 to 5.3	-9.7 to 5.3	6.3
	SV-QSFP-200G-ER4	SM	LWDM	40	0.0 to 6.5	-15.5 to -3.0	15.5

200G QSFP-DD

Compact Quad Small Form Pluggable – QSFP Double Density

Features

- 8 x 25Gbps DR4
- 8 x 25Gbps FR4
- 8 x 25Gbps LR4

Applications

- Data Centers
- Cloud Networks
- Connector type: Dual CS
- Compliant with IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA

Specifications

Standards	IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA
Dimensions	Width: 0.72" [18 mm] Depth: 3.67" [93mm] Height: 0.47" [13 mm]
Power	3.3V
Power Consumption	< 8.0 Watts
Connector Type	Dual CS
Environment	0°C – 70°C
Compliance	IEEE802.3bs. 200GAUI-8 and 200GAUI-4 electrical interface
Warranty	2 year

CS

2xCS Connectors
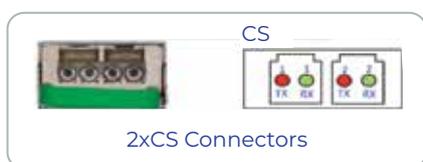
Standard temperature:
0°C to +70°C

Ordering Information

QSFP-DD Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-2x100G-CDR4	SM	CWDM4	2	-6.5 to 2.5	-11.5 to 2.5	5.0
200 Gb/s	SV-QSFP-2x100G-CFR4	SM	CWDM4	10	-6.5 to 2.5	-13.0 to 2.5	6.5
	SV-QSFP-2x100G-CLR4	SM	LWDM	10	-4.3 to 4.5	-10.6 to 4.5	6.3

100G Single Lamda

Compact Quad Small Form Pluggable (QSFP)

Features

- 2 x 50Gbps DR
- 2 x 50Gbps FR
- 2 x 50Gbps LR
- 2 x 50Gbps CLR

Applications

- 100G Single Lamda breakout connection to 400G
- Data Centers
- Cloud Networks
- Connector type: LC
- Compliant with IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA

The electrical connector interface is 4 x 25G NRZ – the same as all existing 'legacy' 100G QSFP modules. The optical output of a 100G-DR or 100G-FR or 100G-LR module however is a single 100Gbit/s PAM-4 optical signal. The 100G-DR,100G-FR and 100G-LR modules includes a gearbox chip to convert the 4 x 25G NRZ electrical signals to a 1 x 100G PAM-4 optical signal. This is in contrast to legacy QSFP100 modules (such as a CWDM4 or LR4 100G module), which have 4 x 25G NRZ optical wavelengths multiplexed onto one fiber. Because of the different optical modulation scheme, 100G-DR,100G-FR and 100G-LR modules will not interoperate with legacy 100G modules (such as CWDM4, LR4 etc.), but they will interop with 400G-DR4 and 400G-DR4+ modules using breakout cables. The 100G-DR will also interop with the 100G-FR and 100G-LR, over a distance of 500m

Specifications

Standards	IEEE 802.3bs, IEEE P802.3cm and 100G Lambda MSA
Dimensions	Width: 0.70" [18 mm] Depth: 3.67" [78mm] Height: 0.51" [13 mm]
Power	3.3V
Power Consumption	< 4 Watts
Connector Type	LC
Environment	0°C – 70°C
Compliance	400GAUI-8; IEEE 802.3bs and QSFP28 MSA
Warranty	2 year

Dual LC

Standard temperature:
0°C to +70°C

Ordering Information

100G Single Lambda Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-100G-DR	SM	1310	0.5	-2.9 to 4.0	-5.9 to 4.0	4.5
100 Gb/s	SV-QSFP-100G-FR	SM	1310	2	-2.4 to 4.0	-6.4 to 4.5	4.0
	SV-QSFP-100G-LR	SM	1310	10	-1.4 to 4.5	-7.7 to 4.5	6.3

CWDM 100G Single Lambda Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
100 Gb/s	SV-QSFP-100G-LRC##	SM	1270 ~ 1331	10	-1.4 to 4.5	-7.7 to 4.5	3.1

denotes wavelength range from 1270~1610nm.
 27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm,
45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm,57=1570nm, 59=1590nm, 61=1610nm

C Band DWDM Dual Fiber Strands Single Lambda Modules
100GHz Spacing Wavelength

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
100 Gb/s	SV-QSFP-100G-ZXD8##	SM	DWDM Wavelength	80	-2.4 to 4.0	-6.4 to 4.5	4.0

100G QSFP28

AOC

QSFP28 Modules

Features

- 4 x 28Gbps Transmission
- Active Optical Cable with QSFP28 pre-terminated lengths
- Active Optical Breakout Cable with QSFP28 and 4 x SFP28 pre-terminated lengths
- MPO-8 Fiber QSFP28 Modules
- Dual Fiber Strands QSFP28 Modules

Applications

- 100GE (103.125Gbps)
- OTU-4 (111.81Gbps)
- Supports various wavelengths such as 850nm, IEEE 100G standard (1295.56, 1300.05, 1304.59, 1309.14nm), and non-standard CWDM (1271, 1291, 1311, 1331nm) wavelengths, with distances up to 40km

Specifications

Standards	IEEE 802.3 2003
Dimensions	Width: 0.72" [18.35 mm] Depth: 2.83" [72 mm] Height: 0.33" [12.4 mm]
Power	4.5V
Power Consumption	<4.5 Watts
Connector Type	MPO or LC
Environment	0°C – 70°C
Compliance	IEC-60825; FDA 21;CFR 1040.10 and 1040.11
Warranty	2 year

Dual LC

MPO-12
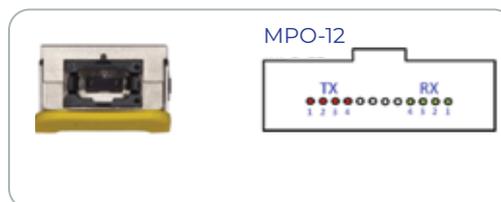
Standard temperature:
0°C to +70°C

Active Optical Cables

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-AOC-100GT4T4-1M			1			
	SV-AOC-100GT4T4-3M			3			
100 Gb/s	SV-AOC-100GT4T4-5M			5			
	SV-AOC-100GT4T4-7M			7			
	SV-AOC-100GT4T4-10M			10			
	SV-AOC-100GT4T3-1M			1			
	SV-AOC-100GT4T3-3M			3			
4x25 Gb/s	SV-AOC-100GT4T3-5M			5			
	SV-AOC-100GT4T3-7M			7			
	SV-AOC-100GT4T3-10M			10			

Direct Attach Cable

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-DAC-100GT4T4-1M			1			
100 Gb/s	SV-DAC-100GT4T4-3M			3			
	SV-DAC-100GT4T4-5M			5			
	SV-DAC-100GT4T3-1M			5			
	SV-DAC-100GT4T3-3M			5			
	SV-DAC-100GT4T3-5M			5			

*F denotes dual rate 100G and OTU-4

Dual Fiber Strands QSFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-100G-PSR4	MM	850	0.10	-8.4 to 2.4	-30.0 to -5.2	21.6
	SV-QSFP-100G-SWDM4	MM	SWDM	0.15	-5.5 to 3.0	-9.4 to 3.4	3.9
	SV-QSFP-100G-CDR4	SM	1310	0.50	-6.5 to 2.5	-11.5 to 2.5	5.0
	SV-QSFP-100G-PLR4L	SM	1310	2	-5.5 to 2.0	-10.2 to 2.0	4.7
	SV-QSFP-100G-CLR4L	SM	CWDM	2	-4.0 to 2.5	-10 to 2.5	6.0
	SV-QSFP-100G-CLR4 ∗	SM	CWDM	10	-4.0 to 2.5	-25 to -11.5	21.0
100 Gb/s	SV-QSFP-100G-LR4	SM	LWDM	10	-4.3 to 4.5	-12 to -8.6	7.7
	SV-QSFP-100G-LR4F ∗	SM	LWDM FEC	10	-0.6 to 4.0	-11.6 to -8.4	11.0
	SV-QSFP-100G-ER4	SM	LWDM	40	-2.5 to 6.5	-20.5 to -3.5	18.0
	SV-QSFP-100G-ER4F	SM	LWDM FEC	30/40	-2.5 to 6.5	-20.5 to -3.5	18.0
	SV-QSFP-100G-ZR4	SM	LWDM	80	3.0 to 7.0	-31.0 to 4.5	34.0
	SV-QSFP-100G-eZR4+	SM	LWDM	100	-9.0 to 14.0	-30.0 to 4.5	39.0
	SV-QSFPDD-100G-ZR	SM	DWDM	120	-8.0 to 1.0	-30.0 to -2.8	22.0

Ordering Information

Single Fiber Strand QSFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-100G-SR2	MM	850nm – 900nm	0.15	-6.5 to 4.0	-8.2 to 4.0	2
	SV-QSFP-100G-LRD11	SM	1271 TX 1331 RX	10	-1.4 to 4.5	-7.7 to 4.5	6.3
	SV-QSFP-100G-LRD12	SM	1331 TX 1271 RX	10	-1.4 to 4.5	-7.7 to 4.5	6.3
100 Gb/s	SV-QSFP-100G-LRD21	SM	1291 TX 1331 RX	20	-0.2 to 6.6	-10 to 6.6	9.8
	SV-QSFP-100G-LRD22	SM	1331 TX 1291 RX	20	-0.2 to 6.6	-10 to 6.6	9.8
	SV-QSFP-100G-LRD41	SM	1304 TX 1309 RX	40	1.5 to 7.1	-16.2 to -3.4	17.7
	SV-QSFP-100G-LRD42	SM	1309 TX 1304 RX	40	1.5 to 7.1	-16.2 to -3.4	17.7
	SV-QSFP-100G-LRD85	SM	1271 TX 1331 RX	80	2.0 to 6.0	-30.0 to -7.0	32.0
	SV-QSFP-100G-LRD86	SM	1331 TX 1271 RX	80	2.0 to 6.0	-30.0 to -7.0	32.0

Ordering Information

Dual Fiber Strands QSFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-100G-ER4H	SM	LWDM	40	-2.5 to 6.5	-20.5 to -3.5	18.0
100 Gb/s	SV-QSFP-100G-ZR4H	SM	LWDM	80	7.0 to 12.5	-40 to -27	34.0
	SV-QSFP-100G-eZR4H+	SM	LWDM	100	9.0 to 12.5	-30 to -6	39.0

Single Fiber Strand QSFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-100G-LRD11H	SM	1271 TX 1331 RX	10	-1.4 to 4.5	-7.7 to 4.5	6.3
	SV-QSFP-100G-LRD12H	SM	1331 TX 1271 RX	10	-1.4 to 4.5	-7.7 to 4.5	6.3
100 Gb/s	SV-QSFP-100G-LRD41H	SM	1304 TX 1309 RX	40	1.5 to 7.1	-16.2 to -3.4	17.7
	SV-QSFP-100G-LRD42H	SM	1309 TX 1304 RX	40	1.5 to 7.1	-16.2 to -3.4	17.7

40G QSFP

AOC

Dual Fiber Strands QSFP Modules

Features

- 4 x 10Gbps Transmission
- Active Optical Cable with QSFP pre-terminated lengths
- Active Optical Cable with QSFP and SFP+ pre-terminated lengths
- MPO-8 Fiber QSFP Modules
- Dual Fiber Strands QSFP Modules

Applications

- 40GE
- Infiband
- Supports various wavelengths such as 850nm, 1310nm , CWDM (1270/1290/1310/1330nm) and distances up to 40km

Specifications

Standards	IEEE 802.3 2003
Dimensions	Width: 0.72" [18.35 mm] Depth: 3.07" [78 mm] Height: 0.47" [12 mm]
Power	4.5V
Power Consumption	<3.5 Watts
Connector Type	MPO or LC
Environment	0°C – 70°C
Compliance	IEC-60825; FDA 21;CFR 1040.10 and 1040.11
Warranty	2 year

Dual LC

MPO-12
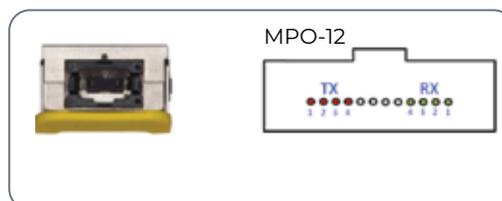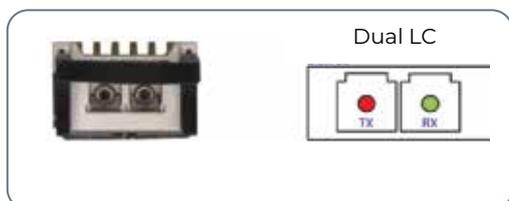
Standard temperature:
0°C to +70°C

Ordering Information

Active Optical Cables

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-AOC-40GT4T4-1M			1			
	SV-AOC-40GT4T4-3M			3			
40 Gb/s	SV-AOC-40GT4T4-5M			5			
	SV-AOC-40GT4T4-7M			7			
	SV-AOC-40GT4T4-10M			10			
	SV-AOC-40GT4T3-1M			1			
	SV-AOC-40GT4T3-3M			3			
4x10.3125 Gb/s	SV-AOC-40GT4T3-5M			5			
	SV-AOC-40GT4T3-7M			7			
	SV-AOC-40GT4T3-10M			10			

Direct Attach Cable

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-DAC-40GT4T4-1M			1			
	SV-DAC-40GT4T4-3M			3			
40 Gb/s	SV-DAC-40GT4T4-5M			5			
	SV-DAC-40GT4T4-7M			7			
	SV-DAC-40GT4T4-1M			10			
	SV-DAC-40GT4T4-3M			1			
4x10.3125 Gb/s	SV-DAC-40GT4T4-5M			3			
	SV-DAC-40GT4T4-7M			5			
	SV-AOC-40GT4T3-7M			7			

C Band DWDM Dual Fiber Strands QSFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
40 Gb/s	SV-QSFP-40G ZXD8D##	SM	DWDM Wavelength	80	-1.0 to 3.0	-27.0 to 4.0	26.0

denotes DWDM 100GHz Spacing Wavelength Guide on page 109

Dual Fiber Strands QSFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-QSFP-40G-PSR4	MM	850	0.15	-7.6 to 1.0	-9.5 to 2.4	1.9
	SV-QSFP-40G-PESR4	MM	850	0.3	-7.3 to 1.0	-9.9 to 2.4	2.6
	SV-QSFP-40G-PLR4L	SM	CWDM Lite	1.4	-5.5 to 1.5	-11.5 to 1.5	6.0
	SV-QSFP-40G-LR4L	SM	CWDM Lite	2	-7.0 to 2.3	-11.7 to 2.3	4.7
40 Gb/s	SV-QSFP-40G-LX4	SM	CWDM	2	-7.0 to 0	-11.7 to 0	4.7
	SV-QSFP-40G-PLR4	SM	1310	10	-5.5 to 1.5	-12.6 to 1.5	7.1
	SV-QSFP-40G-LR4	SM	CWDM	10	-7.0 to 2.3	-13.7 to 2.3	6.7
	SV-QSFP-40G-LR4F*	SM	CWDM	10	-7.0 to 2.3	-11.5 to 2.3	4.5
	SV-QSFP-40G-ER4	SM	CWDM	40	-2.7 to 4.5	-21.2 to -4.5	18.5
	SV-QSFP-40G-ZR4	SM	LWDM	80	1.0 to 6.0	-25.0 to -8.0	26

*F denotes dual rate 40GE and OTU-3

Single Fiber Strand QSFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
40 Gb/s	SV-QSFP-40G-SR2	MM	850nm - 900nm	0.15	-4.0 to 5.0	-30.0 to -12.0	26

AOC

SFP28 Modules

Features

- Compliant to IEEE802.3by 25GBASE-SR
- 25Gb/s optical interface
- Supports various wavelengths such as 850nm, 1310nm and CWDM, and distances up to 40km
- 25G PIN photo-detector
- 2-wire interface for management specifications compliant with SFF-8472 digital diagnostic monitoring interface for optical transceivers
- 25G electrical interface (OIF CEI-28G-VSR)
- Advanced firmware allow customer system encryption information to be stored in transceiver
- RoHS compliant

Applications

- 25G Ethernet
- 5G Network
- High-speed storage area networks
- Computer cluster cross-connect
- Custom high-speed data pipes
- Wireless base station system

Specifications

Standards	IEEE 802.3 by 25GBASE-LR
Dimensions	Width: 0.71" [18 mm] Depth: 3.07" [78 mm] Height: 0.33" [8 mm]
Power	MM 3.6 V SM 3.3 V
Power Consumption	MM 1.0 Watts SM 1.5 Watts
Connector Type	LC
Environment	-40°C – 85°C; 0°C – 70°C
Compliance	SFF-8472 IEEE802.3by 25GBASE-SR
Warranty	2 year

Ordering Information

Active Optical Cables

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-AOC-25GT5T5-1M			1			
	SV-AOC-25GT5T5-3M			3			
25 Gb/s	SV-AOC-25GT5T5-5M			5			
	SV-AOC-25GT5T5-7M			7			
	SV-AOC-25GT5T5-10M			10			

Direct Attach Cable

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-DAC-25GT5T5-1M			1			
25 Gb/s	SV-DAC-25GT5T5-3M			3			
	SV-DAC-25GT5T5-5M			5			

Dual Fiber SFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
25 Gb/s	SV-SFP28-SRD	MM	850	0.1	-8.4 to 2.4	-10.3 to 2.4	1.9
	SV-SFP28-LRD1	SM	1310	10	-7.0 to 2.0	-14.0 to -11.3	7.0
	SV-SFP28-LRD2	SM	1310	20	-1.0 to 6.0	-14.5 to 2.5	15.5
	SV-SFP28-LRD4	SM	1310	40	-1.6 to 6.0	-19.0 to -4.0	17.4
	SV-SFP28-ZRD	SM	1300	80	2.0 to 7.0	-25.5 to -6.0	27.5
Fiber Channel	SV-SFP28-32GSRD	MM	850	0.1	-6.2 to 2.0	-30.0 to -10.2	20.8
8G/ 16G/ 32 Gb/s	SV-SFP28-32GLRD1	SM	1310	10	-5.0 to 2.0	-11.4 to 2.0	6.4

CWDM Dual Fiber Strands SFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
25 Gb/s	SV-SFP28-LRD1C##	SM	1270 ~ 1330	10	-6.5 to 6	-14.0 to 2.5	7.5
	SV-SFP28-LRD4C##	SM	1271 ~ 1331	40	0 to 6	-19.0 to 3.0	19.0

denotes wavelength range from 1270~1610nm.
 27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm,
45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm,57=1570nm, 59=1590nm, 61=1610nm

Single Fiber Strand SFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
25 Gb/s	SV-SFP28-LRD11	SM	1270 TX 1330 RX	10	-7.0 to -2.0	-12.0 to 2.0	5.0
	SV-SFP28-LRD12	SM	1330 TX 1270 RX	10	-7.0 to -2.0	-12.0 to 2.0	5.0

C Band DWDM Dual Fiber Strands SFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
25 Gb/s	SV-SFP28-LRD1D##	SM	DWDM Wavelength	10	-3.0 to 2.0	-10.0 to 2.0	7.0

denotes DWDM 100GHz Spacing Wavelength Guide on page 109

Industrial temperature:
-40°C to +85°C

Dual Fiber SFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFP28-LRD1H	SM	1310	10	-7.0 to 2.0	-14.0 to 11.3	7.0
25 Gb/s	SV-SFP28-LRD2H	SM	1310	20	1.0 to 6.0	-14.5 to 2.5	15.5
	SV-SFP28-LRD4H	SM	1550	40	-1.0 to 6.0	-21.0 to -4.0	20.0
	SV-SFP28-ZRDH	SM	1300	80	2.0 to 7.0	-25.5 to -6.0	27.5

Single Fiber Strand SFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFP28-LRD11H	SM	1270 TX 1330 RX	10	-4.0 to 2.2	-12.0 to 2.0	5.0
	SV-SFP28-LRD12H	SM	1330 TX 1270 RX	10	-4.0 to 2.2	-12.0 to 2.0	5.0
	SV-SFP28-LRD21H	SM	1270 TX 1330 RX	20	1.0 to 6.0	-12.0 to 2.0	5.0
25 Gb/s	SV-SFP28-LRD22H	SM	1330 TX 1270 RX	20	1.0 to 6.0	-12.0 to 2.0	5.0
	SV-SFP28-LRD31H	SM	1270 TX 1330 RX	30	-1.0 to 6.0	-12.0 to 2.0	5.0
	SV-SFP28-LRD32H	SM	1330 TX 1270 RX	30	-1.0 to 6.0	-12.0 to 2.0	5.0
	SV-SFP28-LRD41H	SM	1270 TX 1330 RX	40	-1.0 to 6.0	-12.0 to 2.0	5.0
	SV-SFP28-LRD42H	SM	1330 TX 1270 RX	40	-1.0 to 6.0	-12.0 to 2.0	5.0

CWDM Dual Fiber Strands SFP28 Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
25 Gb/s	SV-SFP28-LRD1C##H	SM	1270 ~ 1330	10	-6.5 to 6	-14.0 to 2.5	7.5

denotes wavelength range from 1270~1610nm.
 27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm,
45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm,57=1570nm, 59=1590nm, 61=1610nm

10G SFP+

Features

- Hot-Pluggable SFP+ Footprint
- Duplex/ Simplex LC Optical Transceiver
- Digital Diagnostic Function
- Class 1 Laser International Safety
- Standard IEC-60825 Compliant
- Compatible with SFP+ Multi-Sourcing Agreement (MSA)
- Dual Fiber Strands SFP+ Modules
- CWDM Dual Strands SFP+ Modules
- C Band DWDM Dual Fiber Strands SFP+ Modules
- Single Fiber Strand (Bi-Di) SFP+ Modules

Applications

- OC192/STM64
- 1/10G Ethernet
- 1/2/4/8G Fiber Channel
- CPRI and OBSAI (1.25Gbps to 6.25Gbps)

Specifications

Standards	IEEE 802.3 2003; ANSI X3.297-1997
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power	3.3V
Power Consumption	0.66 Watts (fiber) 1.0 Watts (copper)
Connector Type	LC
Environment	SFP+ -5°C – 85°C; 0°C – 70°C
Compliance	IEC-60825; FDA 21;CFR 1040.10 and 1040.11
Warranty	2 year
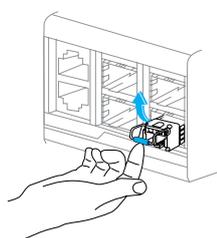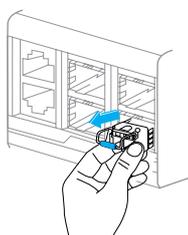
Step 1

Step 2

Step 1 : Open the bale clasp on the SFP module with your index finger in a downward direction

Step 2 : Grasp the SFP module between your thumb and index finger, and carefully remove it from the switching module port

Standard temperature:
0°C to +70°C

Ordering Information

Active Optical Cables

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-AOC-10GT3T3-1M			1			
	SV-AOC-10GT3T3-3M			3			
1/10 GbE	SV-AOC-10GT3T3-5M			5			
1/ 2/ 4/ 8 (FC)	SV-AOC-10GT3T3-7M			7			
	SV-AOC-10GT3T3-10M			10			

Direct Attach Cable

Data Rate	Part Number	Type	Wavelength	Length	TX Power	RX Sens.	Fiber Budget
			nm	m	dBm	dBm	dB
	SV-DAC-10GT3T3-1M			1			
1/10 GbE	SV-DAC-10GT3T3-1M			3			
1/ 2/ 4/ 8 (FC)	SV-DAC-10GT3T3-1M			5			
	SV-DAC-10GT3T3-1M			7			

Single Fiber Strand SFP+ Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFPP-10GLRD11	SM	1270 TX 1330 RX	10	-6.0 to -1.0	-14.4 to 0.5	8.4
	SV-SFPP-10GLRD12	SM	1330 TX 1270 RX	10	-6.0 to -1.0	-14.4 to 0.5	8.4
	SV-SFPP-10GLRD21	SM	1270 TX 1330 RX	20	-6.0 to -0.5	-15.0 to 0.5	9.0
1/10 GbE	SV-SFPP-10GLRD22	SM	1330 TX 1270 RX	20	-6.0 to -0.5	-15.0 to 0.5	9.0
1/ 2/ 4/ 8 (FC)	SV-SFPP-10GLRD41	SM	1270 TX 1330 RX	40	0 to 5.0	-15.0 to 0.5	15.0
	SV-SFPP-10GLRD42	SM	1330 TX 1270 RX	40	0 to 5.0	-15.0 to 0.5	15.0
	SV-SFPP-10GLRD61	SM	1270 TX 1330 RX	60	0 to 5.0	-20.0 to -6.0	20.0
	SV-SFPP-10GLRD62	SM	1330 TX 1270 RX	60	0 to 5.0	-20.0 to -6.0	20.0
	SV-SFPP-10GLRD85	SM	1550 TX 1490 RX	80	0 to 5.0	-23.0 to -6.0	23.0
	SV-SFPP-10GLRD86	SM	1490 TX 1550 RX	80	0 to 5.0	-23.0 to -6.0	23.0

Dual Fiber Strands SFP+ Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFPP-8GSRD	MM	850	0.15	-6.0 to -1.0	-10.0 to 0.5	1.0
Fiber Channel	SV-SFPP-8GLRD1	SM	1310	10	-6.0 to -1.0	-15.0 to 0.5	9.0
1/ 2/ 4/ 8 (FC)	SV-SFPP-8GLRD2	SM	1310	20	-6.0 to -1.0	-15.0 to 0.5	9.0
	SV-SFPP-8GERD4	SM	1550	40	-1.0 to 3.0	-16.0 to 0.5	15.0
	SV-SFPP-8GZRD8	SM	1550	80	0 to 4.0	-23.0 to -6.0	23.0
	SV-SFPP-10GSRD	MM	850	0.3	-6.0 to -1.0	-10.0 to 0.5	1.0
	SV-SFPP-10GLRD	SM	1310	2	-8.2 to 0.5	-14.4 to 0.5	6.2
1/10 GbE	SV-SFPP-10GLRD1	SM	1310	10	-6.0 to -1.0	-14.4 to 0.5	8.4
1/ 2/ 4/ 8 (FC)	SV-SFPP-10GLRD2	SM	1310	20	-6.0 to -1.0	-14.4 to 0.5	8.4
	SV-SFPP-10GERD4	SM	1550	40	-1.0 to 3.0	-15.8 to 0.5	14.8
	SV-SFPP-10GERD4(LP)*	SM	1550	40	-1.0 to 3.0	-15.8 to 0.5	14.8
	SV-SFPP-10GERD8	SM	1550	80	0 to 4.0	-23.0 to -7.0	23.0
	SV-SFPP-10GERD10	SM	1550	100	1.5 to 5.0	-24.5 to -8.0	26.0
	SV-SFPP-10GERD12	SM	1550	120	2.0 to 6.0	-26.0 to -8.0	28.0
Fiber Channel	SV-SFPP-16GSRD	MM	850	0.1	-7.8 to 0	-10.5 to 0	2.7
4/ 8/ 16 (FC)	SV-SFPP-16GLRD1	SM	1310	10	-5 to 2.0	-12 to 2.0	7.0
	SV-SFPP-16GLRD4	SM	1550	40	0 to 4.0	-26 to -4.0	26.0

*LP denotes low power consumption

Copper SFP+ Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
10 GbE	SV-SFPP-T3A			0.03			
1/ 2.5/ 5/ 10 GbE	SV-SFPP-T3A-M			0.03			
	SV-SFPP-T3A-10			0.10			

C Band DWDM Dual Fiber Strands SFP+ Modules
50GHz Spacing Wavelength

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
1 / 10 GbE	SV-SFPP-10GERD4AD##	SM	DWDM Wavelength	40	-1.0 to 3.0	-15.8 to 0.5	14.8
1/ 2/ 4/ 8 (FC)	SV-SFPP-10GERD8AD##	SM	DWDM Wavelength	80	-1.0 to 4.0	-23.0 to -6.0	22.0
	SV-SFPP-ZXDA8DT	SM	Tunable DWDM Wavelength	80	-1.0 to 3.0	-27.0 to -6.0	26.0

denotes DWDM 50GHz Spacing Wavelength Guide on page 109

CWDM Dual Fiber Strands SFP+ Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
1 / 10 GbE	SV-SFPP-10GERD4C##	SM	1270 ~ 1610	40	-1.0 to 3.0	-15.0 to 0.5	14.0
1/ 2/ 4/ 8 (FC)	SV-SFPP-10GERD8C##	SM	1470 ~ 1610	80	0 to 4.0	-23.0 to -7.0	23.0
4/ 8/ 16 (FC)	SV-SFPP-16GERD4C##	SM	1470 ~ 1610	40	0 to 4.0	-26.0 to -14.0	26.0

denotes wavelength range from 1270~1610nm.
27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm, 45=1450nm,
47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm,57=1570nm, 59=1590nm, 61=1610nm

C Band DWDM Dual Fiber Strands SFP+ Modules
100GHz Spacing Wavelength

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
1 / 10 GbE	SV-SFPP-10GERD4D##	SM	DWDM Wavelength	40	-1.0 to 3.0	-15.8 to 0.5	14.8
1/ 2/ 4/ 8 (FC)	SV-SFPP-10GERD8D##	SM	DWDM Wavelength	80	0 to 4.0	-23.0 to -7.0	23.0

denotes DWDM 100GHz Spacing Wavelength Guide on page 109

Industrialtemperature:

-5°C to +85°C

Dual Fiber Strands SFP+ Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
Fiber Channel	SV-SFPP-8GLRD1H	SM	1310	10	-6.0 to -1.0	-15.0 to 0.5	9.0
1/ 2/ 4/ 8 (FC)	SV-SFPP-8GLRD2H	SM	1310	20	-6.0 to -1.0	-15 to 0.5	9.0
	SV-SFPP-8GERD4H	SM	1550	40	-1.0 to 3.0	-16 to 0.5	15.0
	SV-SFPP-8GZRD8H	SM	1550	80	0 to 4.0	-23 to -6	23.0
	SV-SFPP-10GLRDH	SM	1310	2	-8.2 to 0.5	-14.4 to 0.5	6.2
1/10 GbE	SV-SFPP-10GLRD1H	SM	1310	10	-6.0 to -1.0	-14.4 to 0.5	8.4
1/ 2/ 4/ 8 (FC)	SV-SFPP-10GLRD2H	SM	1310	20	-6.0 to -1.0	-14.4 to 0.5	8.4
	SV-SFPP-10GERD4H	SM	1550	40	-1.0 to 3.0	-15.8 to 0.5	14.8
	SV-SFPP-10GERD8H	SM	1550	80	0 to 4.0	-23.0 to -7.0	23.0

Copper SFP+ Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
10 GbE	SV-SFPP-T3AH			0.03			

CWDM Dual Fiber Strands SFP+ Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
1 / 10 GbE	SV-SFPP-10GERD4C##H	SM	1470 ~ 1610	40	-1.0 to 3.0	-15.0 to 0.5	14.0
1/ 2/ 4/ 8 (FC)	SV-SFPP-10GERD8C##H	SM	1470 ~ 1610	80	0 to 4.0	-23.0 to -7.0	23.0

denotes wavelength range from 1270~1610nm.
27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm, 45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm,57=1570nm, 59=1590nm, 61=1610nm

Single Fiber Strand SFP+ Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFPP-10GLRD11H	SM	1270 TX 1330 RX	10	-6.0 to -1.0	-14.4 to 0.5	8.4
	SV-SFPP-10GLRD12H	SM	1330 TX 1270 RX	10	-6.0 to -1.0	-14.4 to 0.5	8.4
	SV-SFPP-10GLRD21H	SM	1270 TX 1330 RX	20	-6.0 to -0.5	-15.0 to 0.5	9.0
1/10 GbE	SV-SFPP-10GLRD22H	SM	1330 TX 1270 RX	20	-6.0 to -0.5	-15.0 to 0.5	9.0
1/ 2/ 4/ 8 (FC)	SV-SFPP-10GLRD41H	SM	1270 TX 1330 RX	40	0 to 5.0	-15.0 to 0.5	15.0
	SV-SFPP-10GLRD42H	SM	1330 TX 1270 RX	40	0 to 5.0	-15.0 to 0.5	15.0
	SV-SFPP-10GLRD61H	SM	1270 TX 1330 RX	60	0 to 5.0	-20.0 to -6.0	20.0
	SV-SFPP-10GLRD62H	SM	1330 TX 1270 RX	60	0 to 5.0	-20.0 to -6.0	20.0

CPRI Modules

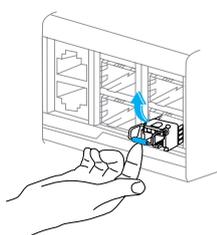| Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFPP-6GSRDH	SM	850	0.3	-6.0 to -1.0	-15.0 to -1.0	6.0
Multi-rate	SV-SFPP-6GLRDH	SM	1310	2	-6.5 to 0.5	-14.4 to 0.5	7.9
1.25Gb/s to	SV-SFPP-6GLRD1H	SM	1310	10	-8.2 to 0.5	-14.4 to 0.5	6.2
6.25Gb/s	SV-SFPP-6GLRD2H	SM	1310	20	-8.2 to 0.5	-14.4 to 0.5	6.2
	SV-SFPP-6GLRD4H	SM	1550	40	-3.0 to 3.0	-14.1 to -1.0	11.1
	SV-SFPP-6GLRD8H	SM	1550	80	0 to 4.0	-24.0 to -7.0	24

Features

- Hot-Pluggable SFP Footprint
- Duplex/ Simplex LC Optical Transceiver
- Digital Diagnostic Function (optional)
- Class 1 Laser International Safety
- Standard IEC-60825 Compliant
- Compatible with SFP Multi-Sourcing Agreement (MSA)
- Copper SFP Modules
- Dual Fiber Strands SFP Modules
- CWDM Dual Fiber Strands SFP Modules
- C and L Band DWDM Dual Fiber Strands SFP Modules
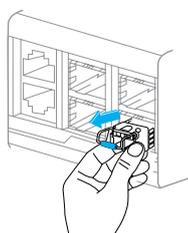- Single Fiber Strand (Bi-Di) SFP Modules

Applications

- Ethernet (100M/ 1G)
- 1G/ 2G/ 4G Fiber channel
- OC-3/12/48 or STM-1/4/16
- CPRI/ OBSAI
- Multi-rate 100Mbps to 1.25Gbps and 100Mbps to 4.25Gbps
- GPON OLT/ ONT (1.25/2.5Gbps)

Specifications

Standards	IEEE 802.3 2003; ANSI X3.297-1997
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power	3.3V
Power Consumption	0.66 Watts (fiber) 1.0 Watts (copper)
Connector Type	LC
Environment	SFP -40°C – 85°C; 0°C – 70°C
Compliance	IEC-60825; FDA 21;CFR 1040.10 and 1040.11
Warranty	2 year

Step 1 : Open the bale clasp on the SFP module with your index finger in a downward direction

Step 2 : Grasp the SFP module between your thumb and index finger, and carefully remove it from the switching module port

Step 1   Step 2

Ordering Information

Standard temperature:
0°C to +70°C

Copper SFP Modules

Data Rate	Part Number	Equipment Compatibility	Distance	Interface Type	Link Auto	LOS Ground	Support TX Disable
			km				
10/100/1000Mb/s	SV-SFP-T1A		0.1	SGMII	Yes	Yes	No
	SV-SFP-T1C	Alcatel SDH	0.1	SGMII	Yes	No	No
1000Mb/s	SV-SFP-T2A		0.1	Serdes	No	No	No
2500Mb/s	SV-SFP-T2.5A		0.1	Serdes	No	Yes	Yes

Dual Fiber Strands SFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFP-OC3MD	MM	1310	2	-24.0 to -14.0	-28.0 to -8.0	5.0
	SV-SFP-OC3SD2	SM	1310	20	-15.0 to -8.0	-29.0 to -8.0	14.0
100 Mb/s	SV-SFP-OC3SD4	SM	1310	40	-7.0 to -2.0	-32.0 to -10.0	25.0
(FE / STM-1 / OC-3)	SV-SFP-OC3SD8	SM	1550	80	-5.0 to 0	-33.0 to -10.0	28.0
	SV-SFP-OC3SD12	SM	1550	120	-2.0 to 3.0	-34.0 to -10.0	32.0
	SV-SFP-OC3SD16	SM	1550	160	1.0 to 5.0	-37.0 to -10.0	36.0
	SV-SFP-OC12SD2	SM	1310	20	-15.0 to -8.0	-28.0 to -8.0	13.0
622 Mb/s	SV-SFP-OC12SD4	SM	1310	40	-5.0 to 0	-28.0 to -8.0	23.0
(STM-4 / OC-12)	SV-SFP-OC12SD8	SM	1550	80	-3.0 to 2.0	-28.0 to -8.0	25.0
	SV-SFP-OC12SD12	SM	1550	120	0 to 5.0	-31.0 to -8.0	31.0
	SV-SFP-SXD	MM	850	0.22	-9.0 to -3.0	-17.0 to 0	5.0
	SV-SFP-ESXD	MM	1300	2	-5.0 to 0	-20.0 to 0	15.0
	SV-SFP-LXD1	SM	1310	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD2	SM	1310	20	-9.0 to -3.0	-20.0 to -3.0	11.0
1.25 Gb/s	SV-SFP-LXD4	SM	1310	40	-5.0 to 0	-24.0 to -1.0	19.0
(Gbe / FC)	SV-SFP-ZXD6	SM	1550	60	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-ZXD8	SM	1550	80	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-ZXD12	SM	1550	120	0 to 5.0	-31.0 to -10.0	31.0
	SV-SFP-ZXD16	SM	1550	160	2.0 to 6.0	-34.0 to -10.0	36.0
	SV-SFP-2GSXD	MM	850	0.3	-10.0 to -3.0	-18.0 to -3.0	5.0
	SV-SFP-2GLXD	SM	1310	2	-9.0 to -3.0	-18.0 to -3.0	9.0
Multi-rate	SV-SFP-2GLXD1	SM	1310	10	-5.0 to 0	-19.0 to 0	14.0
100 Mb/s to 2.488 Gb/s	SV-SFP-2GLXD2	SM	1310	20	-5.0 to 0	-19.0 to 0	14.0
	SV-SFP-2GLXD4	SM	1310	40	-2.0 to 3.0	-19.0 to 0	17.0
	SV-SFP-2GZXD4	SM	1550	40	-2.0 to 3.0	-19.0 to 0	17.0
	SV-SFP-2GZXD8	SM	1550	80	0 to 5.0	-26.0 to -9.0	26.0
	SV-SFP-2GZXD12	SM	1550	120	2.0 to 6.0	-30.0 to -10.0	32.0
	SV-SFP-4GSXD	MM	850	0.55	-9.0 to -2.5	-16.0 to 0	4.0
	SV-SFP-4GLXD	SM	1310	2	-6.0 to -1.0	-18.0 to 0.5	12.0
Multi-rate	SV-SFP-4GLXD1	MM	1310	10	-6.0 to -1.0	-18.0 to 0.5	12.0
100 Mb/s to 4.25 Gb/s	SV-SFP-4GLXD2	SM	1310	20	-6.0 to -1.0	-18.0 to 0.5	12.0
	SV-SFP-4GLXD4	SM	1310	40	-1.0 to 4.0	-18.0 to 0.5	17.0

Single Fiber Strand SFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFP-OC3SD21	SM	1310 TX 1550 RX	20	-15.0 to -7.0	-28.0 to -8.0	13.0
	SV-SFP-OC3SD22	SM	1550 TX 1310 RX	20	-15.0 to -7.0	-28.0 to -8.0	13.0
	SV-SFP-OC3SD41	SM	1310 TX 1550 RX	40	-7.0 to -2.0	-32.0 to -8.0	25.0
	SV-SFP-OC3SD42	SM	1550 TX 1310 RX	40	-7.0 to -2.0	-32.0 to -8.0	25.0
	SV-SFP-OC3SD61	SM	1310 TX 1550 RX	60	-3.0 to +3.0	-32.0 to -3.0	29.0
100 Mb/s	SV-SFP-OC3SD62	SM	1550 TX 1310 RX	60	-3.0 to +3.0	-32.0 to -3.0	29.0
(FE / STM-1 / OC-3)	SV-SFP-OC3SD83	SM	1490 TX 1550 RX	80	-5.0 to 0	-33.0 to -8.0	28.0
	SV-SFP-OC3SD84	SM	1550 TX 1490 RX	80	-5.0 to 0	-33.0 to -8.0	28.0
	SV-SFP-OC3SD123	SM	1490 TX 1550 RX	120	-2.0 to 3.0	-34.0 to -10.0	32.0
	SV-SFP-OC3SD124	SM	1550 TX 1490 RX	120	-2.0 to 3.0	-34.0 to -10.0	32.0
	SV-SFP-OC3SD163	SM	1490 TX 1550 RX	160	0 to 5.0	-35.0 to -10.0	35.0
	SV-SFP-OC3SD164	SM	1550 TX 1490 RX	160	0 to 5.0	-35.0 to -10.0	35.0
	SV-SFP-ESXD1	MM	1310 TX 1550 RX	2	-11.0 to -3.0	-19.0 to -3.0	8.0
	SV-SFP-ESXD2	MM	1550 TX 1310 RX	2	-11.0 to -3.0	-19.0 to -3.0	8.0
	SV-SFP-LXD11	SM	1310 TX 1550 RX	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD12	SM	1550 TX 1310 RX	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD13	SM	1310 TX 1490 RX	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD14	SM	1490 TX 1310 RX	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD21	SM	1310 TX 1550 RX	20	-9.0 to -3.0	-20.0 to -3.0	11.0
1.25 Gb/s	SV-SFP-LXD22	SM	1550 TX 1310 RX	20	-9.0 to -3.0	-20.0 to -3.0	11.0
(Gbe)	SV-SFP-LXD23	SM	1310 TX 1490 RX	20	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD24	SM	1490 TX 1310 RX	20	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD41	SM	1310 TX 1550 RX	40	-5.0 to 0	-24.0 to 1.0	19.0
	SV-SFP-LXD42	SM	1550 TX 1310 RX	40	-5.0 to 0	-24.0 to 1.0	19.0
	SV-SFP-LXD43	SM	1310 TX 1490 RX	40	-5.0 to 0	-24.0 to 1.0	19.0
	SV-SFP-LXD44	SM	1490 TX 1310 RX	40	-5.0 to 0	-24.0 to 1.0	19.0
	SV-SFP-LXD61	SM	1310 TX 1550 RX	60	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-LXD62	SM	1550 TX 1310 RX	60	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-LXD85	SM	1550 TX 1490 RX	80	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-LXD86	SM	1490 TX 1550 RX	80	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-LXD125	SM	1550 TX 1490 RX	120	0 to 5.0	-31.0 to -10.0	31.0
	SV-SFP-LXD126	SM	1490 TX 1550 RX	120	0 to 5.0	-31.0 to -10.0	31.0
	SV-SFP-2GLXD21	SM	1310 TX 1550 RX	20	-5.0 to 0	-19.0 to -1.0	14.0
	SV-SFP-2GLXD22	SM	1550 TX 1310 RX	20	-5.0 to 0	-19.0 to -1.0	14.0
Multi-rate	SV-SFP-2GLXD41	SM	1310 TX 1550 RX	40	-2.0 to 3.0	-19.0 to 0	17.0
100 Mb/s to 2.67 Gb/s	SV-SFP-2GLXD42	SM	1550 TX 1310 RX	40	-2.0 to 3.0	-19.0 to 0	17.0
	SV-SFP-2GLXD85	SM	1490 TX 1550 RX	80	0 to 5.0	-26.0 to -8.0	26.0
	SV-SFP-2GLXD86	SM	1550 TX 1490 RX	80	0 to 5.0	-26.0 to -8.0	26.0

C Band DWDM Dual Fiber Strands SFP Modules
100GHz Spacing Wavelength

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
Multi-rate	SV-SFP-ZXD8D##	SM	DWDM Wavelength	80	0 to 4.0	-26.0 to -10.0	26.0
100 Mb/s to 1.25 Gb/s	SV-SFP-ZXD12D##	SM	DWDM Wavelength	120	0 to 5.0	-30.0 to -10.0	30.0
	SV-SFP-ZXD16D##	SM	DWDM Wavelength	160	1.5 to 6	-32 to -7	33.5
Multi-rate	SV-SFP-2GZXD8D##	SM	DWDM Wavelength	80	0 to 4.0	-28.0 to -10.0	28.0
100 Mb/s to 2.67 Gb/s	SV-SFP-2GZXD12D##	SM	DWDM Wavelength	120	0 to 5.0	-29.0 to -9.0	29.0

denotes DWDM 100GHz Spacing Wavelength Guide on page 109

C Band DWDM Dual Fiber Strands SFP Modules
50GHz Spacing Wavelength

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
Multi-rate	SV-SFP-ZXD8AD##	SM	DWDM Wavelength	80	0 to 4.0	-26.0 to -3.0	26.0
100 Mb/s to 1.25 Gb/s	SV-SFP-ZXD12AD##	SM	DWDM Wavelength	120	0 to 5.0	-30.0 to -6.0	30.0
Multi-rate	SV-SFP-2GZXD8AD##	SM	DWDM Wavelength	80	0 to 4.0	-28.0 to -10.0	28.0
100 Mb/s to 2.67 Gb/s	SV-SFP-2GZXD12AD##	SM	DWDM Wavelength	120	0 to 5.0	-29.0 to -9.0	29.0

denotes DWDM 50GHz Spacing Wavelength Guide on page 109

CWDM Dual Fiber Strands SFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
100 Mb/s	SV-SFP-OC3SD12C##	SM	1470nm ~ 1610nm	120	-2.0 to 3.0	-34.0 to -10.0	32.0
(FE / STM-1 / OC-3)	SV-SFP-OC3SD16C##	SM	1450nm ~ 1610nm	160	0 to 5.0	-35.0 to -10.0	35.0
	SV-SFP-ZXD4C##	SM	1270nm ~ 1610nm	40	-5.0 to 0	-24.0 to -1.0	19.0
1.25 Gb/s	SV-SFP-ZXD8C##	SM	1270nm ~ 1610nm	80	0 to 5.0	-26.0 to -3.0	26.0
(Gbe / FC)	SV-SFP-ZXD12C##	SM	1470nm ~ 1610nm	120	0 to 5.0	-32.0 to -10.0	32.0
	SV-SFP-ZXD16C##	SM	1470nm ~ 1610nm	160	2.0 to 6.0	-34.0 to -10.0	36.0
	SV-SFP-2GZX4CD##	SM	1270nm ~ 1610nm	40	-2.0 to 3.0	-19.0 to 0	17.0
Multi-rate	SV-SFP-2GZX8CD##	SM	1270nm ~ 1610nm	80	0 to 5.0	-28.0 to -9.0	28.0
100 Mb/s to 2.488 Gb/s	SV-SFP-2GZX12CD##	SM	1470nm ~ 1610nm	120	2.0 to 6.0	-30.0 to -10.0	32.0
100 Mb/s to 4.25 Gb/s	SV-SFP-4GZXD4C##	SM	1310nm ~ 1610nm	40	-1.0 to 4.0	-18.0 to 0.5	17.0

denotes wavelength range from 1270~1610nm.
27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm, 45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm,57=1570nm, 59=1590nm, 61=1610nm

SGMII SFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
100 Mb/s	SV-SFP-SGLXD2		1310nm	20.0	-15.0 to -8.0	-31.0 to -8.0	16.0
	SV-SFP-SGLXD4		1310nm	40.0	-5.0 to 0	-34.0 to 0	29.0

SGMII SFP Modules - Single Fiber Strand SFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
100 Mb/s	SV-SFP-SGLXD41		1310 TX 1550 RX	40.0	-8.0 to -3.0	-32.0 to -8.0	24.0
	SV-SFP-SGLXD42		1550 RX 1310RX	40.0	-8.0 to -3.0	-32.0 to -8.0	24.0

Industrial temperature:
-40°C to +85°C

Dual Fiber Strands SFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFP-OC3MDH	MM	1310	2	-24.0 to -14.0	-28.0 to -8.0	5.0
	SV-SFP-OC3SD2H	SM	1310	20	-15.0 to -8.0	-29.0 to -8.0	14.0
100 Mb/s	SV-SFP-OC3SD4H	SM	1310	40	-7.0 to -2.0	-32.0 to -10.0	25.0
(FE / STM-1 / OC-3)	SV-SFP-OC3SD8H	SM	1550	80	-5.0 to 0.0	-33.0 to -10.0	28.0
	SV-SFP-OC3SD12H	SM	1550	120	-2.0 to 3.0	-34.0 to -10.0	32.0
	SV-SFP-OC3SD16H	SM	1550	160	1.0 to 5.0	-37.0 to -10.0	36.0
	SV-SFP-OC12SD2H	SM	1310	20	-15.0 to -8.0	-28.0 to -8.0	13.0
622 Mb/s	SV-SFP-OC12SD4H	SM	1310	40	-5.0 to 0	-28.0 to -8.0	23.0
(STM-4 / OC-12)	SV-SFP-OC12SD8H	SM	1550	80	-3.0 to 2.0	-28.0 to -8.0	25.0
	SV-SFP-OC12SD12H	SM	1550	120	0 to 5.0	-31.0 to -8.0	31.0
	SV-SFP-SXDH	MM	850	0.22	-9.0 to -3.0	-17.0 to 0	5.0
	SV-SFP-ESXDH	MM	1300	2	-5.0 to 0	-20.0 to 0	15.0
	SV-SFP-LXD1H	SM	1310	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD2H	SM	1310	20	-9.0 to -3.0	-20.0 to -3.0	11.0
1.25 Gb/s	SV-SFP-LXD4H	SM	1310	40	-5.0 to 0	-24.0 to -1.0	19.0
(Gbe / FC)	SV-SFP-ZXD6H	SM	1550	60	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-ZXD8H	SM	1550	80	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-ZXD12H	SM	1550	120	0 to 5.0	-31.0 to -10.0	31.0
	SV-SFP-ZXD16H	SM	1550	160	2.0 to 6.0	-34.0 to -10.0	36.0
	SV-SFP-2GSXDH	MM	850	0.30	-10.0 to -3.0	-18.0 to -3.0	5.0
Multi-rate	SV-SFP-2GLXDH	SM	1310	2	-9.0 to -3.0	-18.0 to -3.0	9.0
100 Mb/s to 2.488 Gb/s	SV-SFP-2GLXD1H	SM	1310	10	-5.0 to 0	-19.0 to 0	14.0

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFP-2GLXD2H	SM	1310	20	-5.0 to 0	-19.0 to 0	14.0
Multi-rate	SV-SFP-2GZXD4H	SM	1550	40	-2.0 to 3.0	-19.0 to 0	17.0
100 Mb/s to 2.488 Gb/s	SV-SFP-2GZXD8H	SM	1550	80	0 to 5.0	-26.0 to -9.0	26.0
	SV-SFP-2GZXD12H	SM	1550	120	1.0 to 6.0	-30.0 to -6.0	31.0
	SV-SFP-4GSXDH	MM	850	0.55	-9.0 to -2.5	-16.0 to 0	4.0
	SV-SFP-4GLXDH	SM	1310	2	-6.0 to -1.0	-18.0 to 0.5	12.0
Multi-rate	SV-SFP-4GLXD1H	MM	1310	10	-6.0 to -1.0	-18.0 to 0.5	12.0
100 Mb/s to 4.25 Gb/s	SV-SFP-4GLXD2H	SM	1310	20	-6.0 to -1.0	-18.0 to 0.5	12.0
	SV-SFP-4GLXD4H	SM	1310	40	-1.0 to 4.0	-18.0 to 0.5	17.0

Copper SFP Modules

Data Rate	Part Number	Equipment Compatibility	Distance	Interface Type	Link Auto	LOS Ground	Support TX Disable
			km				
	SV-SFP-T1AH		0.1	SGMII	Yes	Yes	No
10/100/1000Mb/s	SV-SFP-T1BH	CISCO ASR9K	0.1	SGMII	Yes	No	Yes
	SV-SFP-T1CH	Alcatel SDH	0.1	SGMII	Yes	No	No
	SV-SFP-T2AH		0.1	Serdes	No	No	No
1000Mb/s	SV-SFP-T2BH	CISCO Nexus, Huawei	0.1	Serdes	No	Yes	Yes

Single Fiber Strand SFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFP-OC3SD21H	SM	1310 TX 1550 RX	20	-15.0 to -7.0	-28.0 to -8.0	13.0
	SV-SFP-OC3SD22H	SM	1550 TX 1310 RX	20	-15.0 to -7.0	-28.0 to -8.0	13.0
	SV-SFP-OC3SD41H	SM	1310 TX 1550 RX	40	-7.0 to -2.0	-32.0 to -8.0	25.0
	SV-SFP-OC3SD42H	SM	1550 TX 1310 RX	40	-7.0 to -2.0	-32.0 to -8.0	25.0
100 Mb/s	SV-SFP-OC3SD61H	SM	1310 TX 1550 RX	60	-3.0 to 3.0	-32.0 to -3.0	29.0
(FE / STM-1 / OC-3)	SV-SFP-OC3SD62H	SM	1550 TX 1310 RX	60	-3.0 to 3.0	-32.0 to -3.0	29.0
	SV-SFP-OC3SD83H	SM	1490 TX 1550 RX	80	-5.0 to 0	-33.0 to -8.0	28.0
	SV-SFP-OC3SD84H	SM	1550 TX 1490 RX	80	-5.0 to 0	-33.0 to -8.0	28.0
	SV-SFP-OC3SD123H	SM	1490 TX 1550 RX	120	-2.0 to 3.0	-34.0 to -10.0	32.0
	SV-SFP-OC3SD124H	SM	1550 TX 1490 RX	120	-2.0 to 3.0	-34.0 to -10.0	32.0
	SV-SFP-ESXD1H	MM	1310 TX 1550 RX	2	-11.0 to -3.0	-19.0 to -3.0	8.0
1.25 Gb/s	SV-SFP-ESXD2H	MM	1550 TX 1310 RX	2	-11.0 to -3.0	-19.0 to -3.0	8.0
(Gbe)	SV-SFP-LXD11H	SM	1310 TX 1550 RX	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD12H	SM	1550 TX 1310 RX	10	-9.0 to -3.0	-20.0 to -3.0	11.0

Single Fiber Strand SFP Modules

Data Rate	Part Number	Type	Wavelength	Distance	TX Power	RX Sens.	Fiber Budget
			nm	km	dBm	dBm	dB
	SV-SFP-LXD13H	SM	1310 TX 1490 RX	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD14H	SM	1490 TX 1310 RX	10	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD21H	SM	1310 TX 1550 RX	20	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD22H	SM	1550 TX 1310 RX	20	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD23H	SM	1310 TX 1490 RX	20	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD24H	SM	1490 TX 1310 RX	20	-9.0 to -3.0	-20.0 to -3.0	11.0
	SV-SFP-LXD41H	SM	1310 TX 1550 RX	40	-5.0 to 0	-24.0 to 1.0	19.0
1.25 Gb/s	SV-SFP-LXD42H	SM	1550 TX 1310 RX	40	-5.0 to 0	-24.0 to 1.0	19.0
(Gbe)	SV-SFP-LXD43H	SM	1310 TX 1490 RX	40	-5.0 to 0	-24.0 to 1.0	19.0
	SV-SFP-LXD44H	SM	1490 TX 1310 RX	40	-5.0 to 0	-24.0 to 1.0	19.0
	SV-SFP-LXD61H	SM	1310 TX 1550 RX	60	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-LXD62H	SM	1550 TX 1310 RX	60	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-LXD85H	SM	1550 TX 1490 RX	80	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-LXD86H	SM	1490 TX 1550 RX	80	0 to 5.0	-26.0 to -3.0	26.0
	SV-SFP-LXD125H	SM	1550 TX 1490 RX	120	0 to 5.0	-31.0 to -10.0	31.0
	SV-SFP-LXD126H	SM	1490 TX 1550 RX	120	0 to 5.0	-31.0 to -10.0	31.0
	SV-SFP-2GLXD21H	SM	1310 TX 1550 RX	20	-5.0 to 0	-19.0 to -1.0	14.0
	SV-SFP-2GLXD22H	SM	1550 TX 1310 RX	20	-5.0 to 0	-19.0 to -1.0	14.0
Multi-rate	SV-SFP-2GLXD41H	SM	1310 TX 1550 RX	40	-2.0 to 3.0	-19.0 to 0	17.0
100 Mb/s to 2.67 Gb/s	SV-SFP-2GLXD42H	SM	1550 TX 1310 RX	40	-2.0 to 3.0	-19.0 to 0	17.0
	SV-SFP-2GLXD85H	SM	1490 TX 1550 RX	80	0 to 5.0	-26.0 to -8.0	26.0
	SV-SFP-2GLXD86H	SM	1550 TX 1490 RX	80	0 to 5.0	-26.0 to -8.0	26.0

Maintenance Package for Transceiver Modules

Starview Maintenance package for transceiver modules provide value added RMA and advance replacement services to assist the customer's service operation, improve operational efficiency , and reduce the CAPEX and OPEX. We provide:

·   Repair and Return(R&R)Service
·   24X7 spare parts replacement
·   Logistical service for replacement

Starview maintenance package Repair & Return(R&R) process:

·   Module will be one to one replaced on site or in starview office.
·   Check the existing module performance characteristics.
·   Ensure module performance within manufacturer's specifications.
·   Replace module with Starview part if it is confirmed defective.
·   Starview module warrant 2 years against manufacturing defect.
·   Clean module TX/RX lenses if module is not defective.
·   Return customer's module on the next two(2) business day.
·   Starview warrants its replacement module to work with major equipment vendor

100GHz Spacing Wavelength

## ITU Channel	Wavelength	Frequency (THz)	## ITU Channel	Wavelength	Frequency (THz)	## ITU Channel	Wavelength	Frequency (THz)	## ITU Channel	Wavelength	Frequency (THz)
17	1563.86	191.7	40	1545.32	194.0	62	1563.86	191.7	91	1585.36	189.1
18	1563.05	191.8	41	1544.53	194.1	63	1563.05	191.8	92	1584.53	189.2
19	1562.23	191.9	42	1543.73	194.2	64	1562.23	191.9	93	1583.69	189.3
20	1561.42	192.0	43	1542.94	194.3	65	1561.42	192.0	94	1582.85	189.4
21	1560.61	192.1	44	1542.14	194.4	66	1560.61	192.1	95	1582.02	189.5
22	1559.79	192.2	45	1541.35	194.5	67	1559.79	192.2	96	1580.18	189.6
23	1558.98	192.3	46	1540.56	194.6	68	1558.98	192.3	97	1580.35	189.7
24	1558.17	192.4	47	1539.77	194.7	69	1558.17	192.4	98	1579.52	189.8
25	1557.36	192.5	48	1538.98	194.8	70	1557.36	192.5	00	1578.69	190.0
26	1556.55	192.6	49	1538.19	194.9	71	1556.55	192.6	01	1577.86	190.1
27	1555.75	192.7	50	1537.40	195.0	72	1555.75	192.7	02	1577.03	190.2
28	1554.94	192.8	51	1536.61	195.1	73	1554.94	192.8	03	1576.20	190.3
29	1554.13	192.9	52	1535.82	195.2	74	1554.13	192.9	04	1575.37	190.4
30	1553.33	193.0	53	1535.04	195.3	75	1553.33	193.0	05	1574.54	190.5
31	1552.52	193.1	54	1534.25	195.4	76	1552.52	193.1	06	1573.71	190.6
32	1551.72	193.2	55	1533.47	195.5	77	1551.72	193.2	07	1572.06	190.7
33	1550.92	193.3	56	1532.68	195.6	78	1550.92	193.3	08	1571.24	190.8
34	1550.12	193.4	57	1531.90	195.7	79	1550.12	193.4	09	1570.42	190.9
35	1549.32	193.5	58	1531.12	195.8	80	1549.32	193.5	10	1569.59	191.0
36	1548.51	193.6	59	1530.33	195.9	81	1548.51	193.6	11	1568.77	191.1
37	1547.72	193.7	60	1529.55	196.0	82	1547.72	193.7	12	1567.95	191.2
38	1546.92	193.8	61	1528.77	196.1	83	1546.92	193.8	13	1567.13	191.3
39	1546.12	193.9				84	1546.12	193.9	14	1566.31	191.4
						89	1587.04	188.9	15	1565.50	191.5
						90	1586.20	189.0	16	1564.68	191.6

50GHz Spacing Wavelength

## ITU Channel	Wavelength	Frequency (THz)
17	1563.86	191.70
17.5	1563.45	191.75
18	1563.05	191.80
18.5	1562.64	191.85
19	1562.23	191.90
19.5	1561.83	191.95
20	1561.42	192.0
20.5	1561.01	192.05
21	1560.61	192.10
21.5	1560.20	192.15
22	1559.79	192.20
22.5	1559.39	192.25
23	1558.98	192.30
23.5	1558.58	192.35
24	1558.17	192.40
24.5	1557.77	192.45
25	1557.36	192.50
25.5	1556.96	192.55
26	1556.55	192.60
26.5	1556.15	192.65
27	1555.75	192.70
27.5	1555.34	192.75
28	1554.94	192.80
28.5	1554.54	192.85
29	1554.13	192.90
29.5	1553.73	192.95
30	1553.33	193.0
30.5	1552.93	193.05
31	1552.52	193.10

## ITU Channel	Wavelength	Frequency (THz)
31.5	1552.12	193.15
32	1551.72	193.20
32.5	1551.32	193.25
33	1550.92	193.30
33.5	1550.52	193.35
34	1550.12	193.40
34.5	1549.72	193.45
35	1549.32	193.50
35.5	1548.91	193.55
36	1548.51	193.60
36.5	1548.11	193.65
37	1547.72	193.70
37.5	1547.32	193.75
38	1546.92	193.80
38.5	1546.52	193.85
39	1546.12	193.90
39.5	1545.72	193.95
40	1545.32	194.0
40.5	1544.92	194.05
41	1544.53	194.10
41.5	1544.13	194.15
42	1543.73	194.20
42.5	1543.33	194.25
43	1542.94	194.30
43.5	1542.54	194.35
44	1542.14	194.40
44.5	1541.75	194.45
45	1541.35	194.50
45.5	1540.95	194.55

## ITU Channel	Wavelength	Frequency (THz)
46	1540.56	194.60
46.5	1540.16	194.65
47	1539.77	194.70
47.5	1539.37	194.75
48	1538.98	194.80
48.5	1538.58	194.85
49	1538.19	194.90
49.5	1537.79	194.95
50	1537.40	195.0
50.5	1537.00	195.05
51	1536.61	195.10
51.5	1536.22	195.15
52	1535.82	195.20
52.5	1535.43	195.25
53	1535.04	195.30
53.5	1534.64	195.35
54	1534.25	195.40
54.5	1533.86	195.45
55	1533.47	195.50
55.5	1533.07	195.55
56	1532.68	195.60
56.5	1532.29	195.65
57	1531.90	195.70
57.5	1531.51	195.75
58	1531.12	195.80
58.5	1530.72	195.85
59	1530.33	195.90
59.5	1529.94	195.95
60	1529.55	196.0
60.5	1529.16	196.05

Calculating Fiber Loss & Distance Estimates

Estimate Total Link Loss

This calculation will estimate the total link loss through a particular fiber optic link where the fiber length, as well as the number of splices and connectors, are known. This calculation is simply the sum of all worst-case loss variables in the link:

Link Loss = [fiber length (km) x fiber attenuation per km]
          + [splice loss x # of splices]
          + [connector loss x # of connectors] + [safety margin]

For example: Assume a 40 km single mode link at 1310nm with 2 connector pairs and 5 splices.

Link Loss = [40 km x 0.4 dB/km] + [0.3 dB x 5] + [0.75 dB x 2] + [3.0 dB] = 21.0 dB

In this example, an estimated 21.0 dB of power would be required to transmit across this link. Of coarse, it is very important to
measure and verify the actual link loss values once the link is established to identify any potential performance issues.

Estimate Fiber Distance

This calculation will estimate the maximum distance of a particular fiber optic link given the optical budget and the number of
connectors and splices contained in the link:

fiber Length = [Optical budget] - [link loss]
                   [fiber loss/km]

Fiber Length = {[(min. TX PWR) - (RX sensitivity)] - [splice loss x # of splices]
               - [connector loss x # of connectors] - [safety margin]}
                              [fiber lost/km]

For example: Assume a Fast Ethernet Single mode link at 1310nm with 2 connector pairs and 5 splices.

Fiber Length = [26.0 dB] - [0.5 dB] - [1.5 dB] - [3.0 dB] = 52.5 km
                    [0.4 dB/km]

Estimate fiber link budget(dB) = Tx Power(min) - Rx sensitivity(max)

Estimate fiber link distance(km) = Link budget / Fiber attenuation*
*Multimode fiber needs to add 3dB link margin

In this example, an estimated 52.5 km distance is possible before dissipating the optical power to a value below the RX sensitivity.
As always, it is very important to measure and verify the actual link loss values once the link is established to identify any potential
performance issues. Actual maximum distances will very depending on:
· 	Actual optical fiber attenuation per km
· 	Optical fiber design and age
· 	Quality of connectors and actual loss per pair
· 	Quality of splices and actual loss per splice
· 	Quantity of splices and connectors in the link

Calculating Fiber Loss and Distance Estimates

Fiber Type	Wavelength	Fiber attenuation / km*	Fiber attenuation / km #	Connector Loss	Splice Loss
Multimode 50/125 µm	850nm	3.5 dB	2.5 dB	0.75 dB	0.3 dB
	1300nm	1.5 dB	0.8 dB	0.75 dB	0.3 dB
Multimode 62.5/125 µm	850nm	3.5 dB	3.0 dB	0.75 dB	0.3 dB
	1300nm	1.5 dB	0.7 dB	0.75 dB	0.3 dB
Single Mode 9 µm	1310nm	0.4 dB	0.35 dB	0.75 dB	0.3 dB
Single Mode 9 µm	1550nm	0.3 dB	0.22 dB	0.75 dB	0.3 dB

*These values are per TIA/EIA and other industry specifications and are the values used by Starview International in all link loss calculations.

#These values are one example of the performance that can be obtained with a new fiber installation.

Fiber Optic Definitions

Maximum Transmit Power
The maximum output power in dBm(decibels relative to 1mW) of the optical transmitter/transceiver.

Minimum Transmit Power
The minimum output power in dBm (decibels relative to 1mW) of the optical transmitter/transceiver.

Launch Power
The actual output power in dBm (decibels relative to 1mW) of the optical transmitter/transceiver. This value will reside somewhere within the max. and min. transmit power levels listed.

Receive Sensitivity
The minimum input power in dBm (decibels relative to 1mW) necessary to correctly drive the optical receiver.

Maximum Receive Power
The maximum input power in dBm (decibels relative to 1mW) the optical receiver can safely accept without overdriving the receiver.

Link Budget
The amount of power available for dissipation over the fiber link between end devices. It is calculated using worst case assumptions by subtracting the receive sensitivity from the minimum transmit power.

Link Loss
The total amount of power dissipation over the fiber link between end devices. It is calculated using maximum loss values for distance, splices and connectors.

Splice Loss
The amount of power loss attributable to a fiber optic spliced connection.

Connector Loss
The amount of power loss attributable to a fiber optic connector pair.

Attenuation
The amount of power loss per kilometer over the fiber link. Attenuation is wavelength specific and will depend greatly on type and condition of the optical fiber found in the link.

Safety Margin
It is common practice to add a couple of dB loss as a safety buffer to account for items such as fiber aging, splice and connector degradation over time and environmental factors such as temperature and humidity.

The IEEE also recommends maximum cable distances as defined in the table below:

Standard	Data Rate (Mbps)	Cable Type	IEEE Standard Distance
10BASE-FL	10	850nm Multimode 50/125 µm or 62.5/125 µm	2 km
100BASE-FX	100	1300nm Multimode 50/125 µm or 62.5/125 µm	2 km
100BASE-SX	100	850nm Multimode 50/125 µm or 62.5/125 µm	300 m
1000BASE-SX	1000	850nm Multimode 50/125 µm	550 m
		850nm Multimode 62.5/125 µm	220 m
1000BASE-LX	1000	1300nm Multimode 50/125 µm or 62.5/125 µm	550 m
		1310nm Single mode 9/125 µm	5 km
1000BASE-LH	1000	1550nm Single mode 9/125 µm	70 km

Starview International assumes the multimode standard distances defined by IEEE for all of its products.

Transceivers FAQ

1. What is the difference between Starview Technologies SFP and Original Vendor SFP?

In reality, there is no difference. Original vendor SFP are much higher in cost as they claim to be of much better quality. Most if not all, network equipment vendors do not produce their own SFP modules. These productions are outsourced to contract manufacturer and then labeled as their specific brand

2. Is it true that key equipment vendors, such as Cisco and Alcatel, only allow their SFP ports to be used by their in-house modules?

No, vendors are supposed to allow third party SFP to be used on their equipment as the SFP transceiver is specified by a multi-source agreement (MSA) between competing vendors. MSA specifies the physical dimensions, connectors, and signaling used in the SFP module so that multiple vendors can build compatible products at competitive costs. All Starview International SFP are produced with high precision in conjunction to the MSA and are compatible to use on equipments specified as a SFP port.
See the SFF committee's INF-8074i specification Rev 1.0 for details. Please note that Starview Technologies SFP is not the vendor's OEM brand SFP modules.

3. How do we define a good quality SFP?

It is a misconception that SFP depends only on optical budget. Stability and reliability is an important aspect. The performance of the optical specifications changes with temperature and aging due to time. During production, it is possible for manufacturers to increase the optical budget by purposely adjusting the optical transmit power during the calibration process. This cause the TOSA to over-perform and will have a significant impact on the stated SFP lifespan.

Our factory produces all individual components required in the SFP modules, including the TOSA and ROSA. Every stage of the SFP assembly undergoes strict quality assurance policy with uncompromising standards. Design considerations of each SFP modules are done by experienced R&D engineers in this field. We are able to provide full detailed test reports, for each product part number, with optical budget measurement, digital eye diagrams, MTBF and thermal chamber test.

4. Why some third-party SFP "refuse" to work on the equipment when the original SFP from the same equipment vendors work fine?

SFP enjoys such a huge popularity success in the industry that certain equipment vendors attempt to prevent their customers from making choices. The firmware in the equipment will check for an identifying data in the SFP's memory, and if the data does not belong to the equipment vendor, the equipment refuses to enable that slot. Most vendor explanation for this "feature" is that it represents a symbol of product quality and ensures that the transceiver module is certified and tested by the original vendors.

The original idea of having "ID" in the SFF-8472 was actually meant for network management software to 'inventory' the pluggable modules. However some vendors used this to lock out all other third party. This allows vendor to monopolize the transceivers for their equipment and charge at premium prices for "better" quality products.

5. Can end-user re-use Starview Technologies SFP on other equipment vendor after first using the SFP on a particular equipment vendor?

Yes. As Starview Technologies is the original SFP manufacturer, we have the equipment and technical know-how to reprogram the data in the SFP, if necessary, to be compatible with a new equipment vendor. This can be performed for a nominal sum of fee. Please contact our sales staff for more information on this.

Please note that Starview Technologies SFP is not the vendor's OEM brand SFP modules.

6. Does using Starview Technologies SFP voids the warranty of the equipment it is used on?

No. If the equipment is defective, the vendors are obliged to fulfill the terms of the warranty because Starview Technologies SFP are fully compliant to MSA, unless it can be verified that it is the use of Starview Technologies SFP that damaged the equipment.

It is unlikely that SFP will induce damages to the slot on equipment by itself because:

· SFP converts electrical data from the equipment to optical signal. There is no incoming power surge from optical ports to damage the equipment.

· SFP draws voltage/power from the equipment and it is more likely that the equipment damaged the SFP. All current and voltage required are as per MSA and the equipment should be able to support the power requirements for each SFP ports.

· SFP size will fit accordingly to any MSA compliant device without damaging the electrical circuitry on the equipment.

· If installations of SFP modules are handled by personnel who are properly grounded, there is no electrostatic damage to the equipment circuitry.

Some vendor does try to protect the sales revenue of their SFP by denying support if the serial number does not match their record. In this case, Starview Technologies will offer tech support if it is a physical layer 1 problem. If the problem is not on the physical layer but exists on a higher protocol layer, it is your right as a customer to demand support from the equipment vendor.

7. What is the warranty coverage for using Starview Technologies SFP?

Starview Technologies SFP offers standard 2 year warranty. Extended warranty and maintenance services are available. It may be interesting to note that some vendors such as Cisco offers only 90days warranty on their SFP.

8. Why should customers consider using Starview Technologies?

Key advantages that Starview Technologies can bring to our customers are price competitiveness, quality/reliable, fast response, compatibility, large range of optical transceivers, quick lead time and maintenance services.

In addition, as most network equipment vendors do not produce the SFP themselves, the range of optics options they are able to produce are limited. Cisco offers only 8 CWDM wavelengths instead of 16. Cisco also does not have single fiber solution for more than 10km. Starview Technologies offers much more complete optics options for project needs.

9. Why Starview Technologies can offer Starview International SFPs at much lower cost than the original hardware vendors?

In reality, most if not all, network equipment vendors do not produce their own SFP modules. The productions are outsource to contract vendors and labeled as their specific brand. Hence, these SFP are higher in cost because of additional margins at each party.

Starview Technologies is an in-house product for Starview International with our production house in China. This allows end-user to by-pass the in-between parties and allow customer to purchase straight from the production source. We also have a large customer base and are able to mass produce at a cost-effective level.

10. Why are there some SFP suppliers on the market who are able to provide at more competitive prices?

In general, these suppliers with ultra-low cost SFP have low regards for quality as they take their SFP from sources that provide the lowest price. The specifications for their SFP may keep varying as to what is stated as the source of their SFP depends on price and they have 2-3 suppliers for the same product. Some possible sources of ultra-low cost SFP comes below.

·   Some factory source low-grade components from different parties and only performs assemblies. The finished products are of varying quality and have no strict quality control as they lack necessary test tools.

·   Contract manufacturers tend to over produce the required amount during production to replace out the low quality yields. Some customer may also return rejected batches which failed to meet their expectations. The "leftover" pieces are consolidated and released to companies with low budgets.

·   Purchase of stocks that are kept over an extended period of time.

·   Refurnished/RMA products that are repackaged and sold as brand-new

These suppliers also have unusual huge amount of stocks and are able to deliver at any time. In truth, manufacturers produce on demands or forecast and keep only limited stocks on fast-moving products.

11. Other than SFP, what other form factors does Starview Technologies offers?

Starview Technologies provides form factors modules such as GBIC, SFP, SFP plus, Xenpak, X2 and XFP. QSFP for 40G data-rate are also available.

In addition, we can offer a wide range of transceivers supporting protocols such as FE/GE, Fiber-Channels, SDH/SONET, 10GE and 40G. Optics options include single-fiber, SGMII, PON, CWDM/ DWDM.

12. What is the typical lead-time for Starview Technologies SFP?

7-14 days depending on the requested items and quantities. We are also able to produce and keep in stock if there is a committed forecast from the customer.

13. How do I choose a SFP for my application?

Basic key considerations when selecting an SFP are as followings:

·   Protocol/data rate used on the equipment

·   Optical transmitting wavelength preference

·   Optical transmission distance. Note: 60km and above, we recommend user to specify the optical budget required for the link instead.

·   Type of fiber used: Singlemode /Multimode, Dual Fiber/Single Fiber

·   Form Factor: GBIC, SFP*, SFP+,XFP, etc

·   DDM preference

 For other unique application, please contact our sales staff.

* Please note that SFP is also commonly known as mini-gbic.

 14. What is Digital Diagnostic Monitoring (DDM) feature?

DDM is also known as digital optical monitoring (DOM) or Digital Monitoring Interface (DMI). Modern optical SFP support DDM functions according to the industry-standard SFF-8472. The SFP MSA defines a memory map describing the transceiver's capabilities, standard interfaces, vendor, and other information. This feature gives the end user the ability to monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

15. Is a SFP module hot swappable?

Yes, Starview Technologies SFP is hot swappable, however, the equipment SFP port must be specified as hot-swappable as well. Please note that some equipment such as Cisco takes some time enable the physical port after inserting a new module. Also, when the physical module is removed, the equipment may enter a error disable state for a configurable period of time ranging from 30sec to 24hours. During the error disable period, even when the fault is recovered, the data link cannot be established. The results are the same even if you use the original vendor version of SFP.

16. Is SFP protocol transparent?

SFP are totally transparent to Ethernet/IP protocols and have no constraint on the transmission frame size. All Starview Technologies SFP supports wire-rate data transmission at full-duplex mode. Higher layer level protocol issues are restricted to the equipment itself.

The reason is because SFP connects to the electrical circuitry of the equipment and only converts electrical data to an optical signal with no modifications in the protocol/frames. Hence, SFPs are operating solely on physical layer translation but the SFP in use must match the data-rate of the protocol specified on the equipment SFP port.

However, the use of poor quality SFP does induces additional transmission errors on the optical port such as CRC, frame slip, jitter, bit-error, etc. This is exceptional true on long distance transmission.

17. How do you reprogram the CISCO switches?

The following procedure is offered on a trial basis and is not guaranteed to work successfully on all CISCO switches and firmware revisions. It is recommended that you update the firmware on the switch first to make sure the latest revision is installed, increasing the likelihood of success with this procedure. The switch model tested are 2960, 2970G, 3560, 3560G, 3750.

a. Connect to the switch console port and log on in "enabled" mode to allow privileged commands

b. Once enabled, enter "config t" to allow configuration from the terminal

c. Specify which port you would like to configure by entering the command "Interface Gigabit ?/?" where ?/? is the unit and port number you are trying to re-configure

d. After entering that information, enter "service unsupported-transceiver"

e. Enter "Shutdown". The switch will respond with a message stating that the port is administratively down.

f. Enter "no shutdown". You may get a warning(s) about using "Unsupported Transceivers", but once the messages are done, the port will come online and function normally with the Starview Technologies SFP.

STARPOD FAQ

1. Why is it called STARPOD?

STARPOD stands for Starview Programmable Optical Device. It allows programming of the Starview Transceiver modules remotely by the user themselves. Traditionally all Transceiver modules are programmed in factory during production. However when user decides to change or upgrade their network equipment to a different vendor, the transceiver module is not reusable.

2. Who are the main users of STARPOD?

STARPOD is suitable for all network users that uses Transceiver modules in their networking devices. STARPOD gives them the flexibility and versatility of deploying Transceiver modules to any of their network equipment, thus saving time and money. Nowadays Transceiver modules form a major cost to the total Cost of Ownership. STARPOD has the potential to overcome the cost of investment and allows flexibility of usage of the transceiver modules to work with any manufacturers' networking equipment.

3. What are the advantages of using STARPOD?

The advantages of using STARPOD are:
a)   Allows flexibility of reprogramming Starview transceiver modules remotely
b)   Faster response time to integrate the existing transceiver modules to support various network equipment
c)   Better Return of Investment for Transceiver modules
d)   Ease of use and do not require any trained personnel

4. What is the use of STARPOD?

STARPOD allows programming of the Starview Transceiver module to work with major equipment vendor. Most of the Network Equipment Vendor will encode information into the EEPROM of the Transceiver module so that it will reject any 3rd party devices. STARPOD is able to decode and overwrite the information into the EEPROM of the Starview Transceiver module so that these Network Equipment vendors will see the Transceiver module corresponds to their equipment coding to work normally.

5. What are the equipment vendors supported by STARPOD?

STARPOD supports equipment coding such as CISCO, Juniper, Alcatel Lucent, Extreme Networks, Huawei, Force 10, ZTE, HP, Arista Networks, ADVA Optical Networking, BTI, Intel, EXFO, JDSU, ATI, Tellabs NSN, Netscount, Brocade, Adtran, Ericsson, RAD, Avaya, Cyan and many more. If the equipment is not within this list, Starview is able to decode an original transceiver module to re-program into the Starview Technologies module.

6. Does STARPOD only support Starview Transceiver modules?

Every manufacturer has their own password protection on their transceiver modules. Likewise Starview has our own password protection of our EEPROM embedded in the Transceiver module. The password protection on the EEPROM is to disallow any change of the Transceiver information by unauthorized access. Hence the STARPOD can only be programmed the Starview Transceiver modules, or any other Transceiver modules that does not have password protection on their EEPROM.

7. How does STARPOD do the reprogramming of the Transceiver module?

The user must ensure that the STARPOD is connected to the computer and has a valid internet link. During the operation of STARPOD, the device will tally the transceiver module part number and serial number with our Starview database via the internet link. This is to ascertain that it belongs to the part of our production supply. Upon successful matching with our database, the transceiver coding will then be downloaded from the internet and be programmed into the EEPROM.

8. What must the user do at first when they want to re-program the Transceiver module?

The user must send a request via email or telephone call to any of our Starview authorized agent or reseller to provide the following information:
·   Equipment vendor and part no of the Network Equipment to be used
·   Part no and Serial no of the transceiver module to be reprogrammed
Upon receiving this information, a license key shall be generated within the same business day. The Starview authorized agent or reseller will contact the user and send the license key via email. The user will simply key in the license key via the STARPOD software to download the equipment coding into the transceiver module. The reprogramming process will take less than 1 minute.

9. What happens if the user wants to revert to the previous coding or if the coding that was sent will not work in the networking equipment?

Should the user wants to revert to the previous code, the same process of requesting the license key apply. Each license key is only valid for one time use, and is not reversible. If the coding programmed into the transceiver module does not work, Starview will resend the license key (not chargeable) to ensure that the transceiver module works with the vendor's network equipment unit. Else money back will be guaranteed.

10. How does the license key works?
The license key can be purchased via the Starview authorized agent or reseller in advance or at the point of usage. It comes at the price of 1, bundle of 10 and bundle of 100. The license keys will be tracked by Starview Technologies when it is used. Each license key is valid for only 1 equipment coding. The license key is only valid as a one-time usage. When the user requests for the equipment coding, Starview will upload the code into the cloud encrypted by a license key. Each license key will carry the coding information of the network equipment vendor, part no and serial no of the transceiver module to be re-programmed, and it is stored inside the network cloud. Once the license key is used, it will not be able to reuse.

11.   Does STARPOD re-programming require that the Starview Transceiver module remains under warranty?

No, STARPOD does not require that the Starview transceiver module is within the warranty period in order to do re-programming. As long as the Transceiver module is still in good working condition, the STARPOD is use to access the EEPROM to program the transceiver module to work with the network equipment vendor.

12.   What is the difference between STARPOD and other manufacturer's programming board?

STARPOD provides a license key to download the complete coding file into the EEPROM of the Starview transceiver module. It over-writes the existing file completely. Other manufacturer's programming board requires user to check the HEX code at each manufacturer's code destination in the EEPROM file, and change it manually. In addition, there is a checksum to ensure that it corresponds to Vendor's network equipment. Overall it takes a lot of understanding to study the coding in the EEPROM file.

13.   Why Starview is able to decode so many manufacturers' network equipment coding while others are not?

Starview has a team of trained engineers with many years of experience to decode the manufacturers' network equipment code. We have understood the mechanism of various network equipment manufacturers on their coding process and is able to re-construct the coding into our STARPOD. Other competitors may have a NDA signed with the original manufacturer, or does not have trained engineers to understand the codes.

14.   What are the modules supported by STARPOD?

Currently STARPOD supports SFP, SFP+ and XFP transceiver modules. STARPOD does not matter if the transceiver module is copper, Singlemode, multimode or WDM. STARPOD will re-program the EEPROM in these transceiver modules as long as it is supported by the form factor.

15.   Can STARPOD be used on Apple computers?

Currently STARPOD only works on Windows platform and it is not supported by Apple.

16.   Does STARPOD affect the transmission characteristics of the Transceiver module?

No. STARPOD only accesses the information in the EEPROM and does not affect the configurations of the TOSA and ROSA components of the Transceiver module.

17.   How does the user know the functionality of the Transceiver module is End of Life (EOL)?

STARPOD is not able to determine the EOL of the transceiver module. It basically re-programs the coding of the transceiver module EEPROM to work with the vendor's networking equipment.

18.   How is STARPOD information or software upgrade being updated?

All STARPOD information shall be updated in our website https://starviewtech.net whenever a new update is released. The Starview authorized agent or reseller will constantly be updated on any new release and these information will be sent to the user..

Transceiver 3rd Party FAQ

1. What are 3rd party transceiver modules?

3rd party transceiver modules originate from manufacturers who are Original Equipment Manufacturers (OEMs) that supplies to brand owners such as Cisco, Juniper, HP, Huawei, ALE etc. None of these brand owners manufactures their own transceivers, but relabel them for resale.

2. Why can some OEMs make cheap transceivers?

There is always a huge margin on transceivers made by the big brand owners. For the same quality of transceivers, sourcing direct from the OEM saves money. Among the OEMs, prices can also vary widely. Different OEMs sources have different quality and prices of components; have different manufacturing processes and different quality control processes. This will invariably result in different quality of end products, e.g. without proper heat dissipation or EMI isolation. It is important to source transceivers from reliable OEMs. Some low-quality transceivers have short life spans, and may last just 1 to 2 years, just enough for the warranty period to expire. We have also found smaller OEMs repackaging used transceivers to be sold as new, or lower manufacturing QC or specifications to increase manufacturing yield. Caveat emptor!

3. I can find many online websites that offer transceivers at affordable prices and ready stocks. Are they reliable?

Prices and stocks can readily be available from the internet. However, you cannot be sure of the quality or reliability. Many of these sites are not operated by the OEMs. You buy at your own risks. You must also know what you are buying, because product returns may not be offered, or even if they are offered, you have to pay for return shipping which is often expensive. Transceivers have firmware built-in, so technical support is crucial when things do not work. Communication and language is another issue when the supplier is not proficient in English.

4. I have a reliable agent in China who sources direct from OEMs. Why should I source from Starview?

Great that you have a reliable agent, because you may not have direct access to the OEM because you cannot commit to high volumes. Just make sure that they do not change the source OEM without your knowledge, and that they are able to provide after-sales technical support if things do not work.

5. The transceivers are so cheap. Isn't it better to replace them with new ones when they do not work?

In the first place, transceivers should last their intended life-span of at least 5 years. When good quality transceivers do not work after deployment, it is usually the result of contaminated optics between the path of transmitter to receiver. A good engineer should have the proper tools to find and clean the source of the contamination.

6. I just want the lowest price and do not care about the support

Due to industry competitiveness, prices are still the main decisive factor. However if you consider the Total Cost of Ownership (TCO), savings on CAPEX can eventually result in higher OPEX, e.g. engineering support, traveling and downtime. Choosing a reliable vendor with good after-sales support will eliminate many technical issues later

7. I am offered a programming board. Isn't this similar to STARPOD?

The programming board is used to alter the firmware of the transceivers. This is a very low level board down to bit and bytes in the registers. It requires very deep technical knowledge to operate the boards. STARPOD is designed by STARVIEW to simplify the entire process. It can be used by any field engineer with very little training. It can also be used in the field as a diagnostic tool to allow STARVIEW to provide remote support in a timely fashion.

8. Why should I consider Starview when there are so many vendors out there that I can easily purchase the modules?

Starview is based in Singapore, and is reputable company supplying reliable transceiver modules to major customers such as telecom operators and large data centers. Starview can offer up to 5 years warranty, with good technical knowledge and efficient after-sales support. Starview also has the knowledge to advise customer on the correct transceiver module to use, as well as the expertise to provide interoperability of transceiver modules to work with major networking equipment.

9. What can I gain by using Starview transceiver modules comparing with those I get from other vendors?

a) Excellent 24x7 technical support and after-sales service
b) Trouble ticketing system to log customer's issue, which the customer can share with their other engineers in future
c) Remote diagnostic tool to capture the module interoperability issue
d) Competitive prices and fast delivery lead time
e) Wide choice of transceiver modules to select
f) Ease of mind during deployment and troubleshooting
g) Strong references with major telcos/ data centers
h) MSA compliant Transceiver modules
i) Reprogramming of the modules can be done on site by untrained/ non-technical personnel to interwork with various networking equipment vendors
j) Starview is a solution provider that can complement many other networking products as a niche and cost effective solution

10. I am happy with my current vendor and have no problem using them

Great!! If at any time you are reconsidering another source, please keep us in mind.

starviewtech.net

version 2026.0

Value-Added Resellers