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*100 Gigabit SR4 QSFP28 Transceiver | MM 850nm*

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E.C.I. NETWORKS's offers the full range of proven and tested 100G optical transceivers modules; CFP|CFP2|CFP4|QSFP28|CXP (CPAK not offered; Cisco proprietary optical module). They are a high performance, low power consumption, MSA compliant pluggables which have been specifically developed for flexible and cross-system deployments. They can be used in virtually any type of communication systems (e.g. routers, switches, NICs, gateways, proxies, load balancers, etc.).

## Features

- Part of the Universal QSFP28 Transceiver family and is therefore ideal for flexible and cost-optimized high-speed optical network deployments.
- The MM 850nm VCSEL optic with PIN receiver complies with Class 1 Standard of the International Safety Standard IEC60825
- Offers a power budget of 1.9dB for distances of up to 100m via OM4 @ 4700MHz Multimode fiber.
- The system status of the Universal QSFP28 can be monitored in real time via the transceiver's dynamic monitoring data (also known as DDM or DOM).
- Parameters which can be monitored are; transmitter power level, receiver sensitivity and the operating temperature.
- Available for commercial and Industrial temperature (0°C to +70°C)
- <2W maximum power dissipation, RoHS compliant, Single 3.3V power supply

## Applications

- ◆ High-speed core router interlinks and data center aggregation
- ◆ 100Gigabit Ethernet LAN and complies with the relevant IEEE Standards.
- ◆ 100G visibility and aggregation solutions



## Ordering information

Part Number	Description	Data Rate	Wavelength	Distance	Connector
<b>QSFP28 (100G)</b>					
<b>EN-QSFP28-SR4</b>	100GBASE-SR4 QSFP,4-lanes, 850nm MMF 100m, with MPO Connector	100G	850nm	100m	MTP
<b>EN-QSFP28-eSR4</b>	100GBASE-SR4 QSFP,4-lanes, 850nm MMF 300m, with MPO Connector	100G	850nm	300m	MTP

## Product Selection

xx: Refers to vendor compatibility

I: I refers to Industrial Temperature where applicable

XX: Refers to CWDM or DWDM channel number

Per example:

EN-SFP10G-LR-EZ refers to Commercial Temperature, and compatible with Evertz,

EN-SFP10GIDL-JREX refers to Industrial Temperature, and compatible with Juniper EX Series

EN-SFP10G-CW40-C61-CO refers to Commercial Temperature, CWDM Channel 1610nm, and compatible with Cisco.

\*\* Please note pricing is same for most of the NEMs including Cisco, Juniper, F5, Fortinet, except HP, Evertz. There is an additional charge

## Compatibility; Tested and Proven

- ◆ Proven Compatibility and Interoperability with; Cisco, Juniper, ALCATEL-LUCENT, ADVA, Brocade, CIENA, Huawei, PacketLight, Transmode, NETInsight, ToyoTech, etc.
- ◆ Test and Visibility equipment such as; IXIA, GIGAMON, VSS, SPIRENT, JDSU, XENA, EXFO, etc.



# 100G-SR4 QSFP28 Optical Transceiver Modules EN-QSFP28-SR4-xx



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## Compliance

All our products come with Built-in digital diagnostic functions DDM Compliant with SFF-8472 Rev12 and Compliant with the MSA SFF SPECIFICATIONS.

## Dimensions

Maximum outer dimensions for the QSFP+ and QSFP28 connector module are (H x W x D) 8.5 x 18.4 x 72.4 mm. QSFP+ and QSFP28 connector modules typically weigh 100 grams or less.



## Technical Specifications

<b>FORM FACTOR TYPE</b>	<b>QSFP28</b>
<b>INTERFACE</b>	Multimode
<b>WAVELENGTH TX</b>	850nm
<b>WAVELENGTH RX</b>	850nm
<b>DISTANCE</b>	100m
<b>POWERBUDGET (DB)</b>	1.90dB
<b>PROTOCOLS</b>	100Gigabit Ethernet LAN, 100Gigabit Ethernet OTU4
<b>BANDWIDTH FROM</b>	25.781Gbit/s
<b>BANDWIDTH TO</b>	103.125Gbit/s
<b>LASER</b>	VCSEL
<b>RECEIVER TYPE</b>	PIN
<b>CONNECTOR</b>	MPO
<b>WAVELENGTH TX MIN.</b>	840nm
<b>WAVELENGTH TX MAX.</b>	860nm
<b>WAVELENGTH RX MIN.</b>	840nm
<b>WAVELENGTH RX MAX.</b>	860nm
<b>TRANSMIT MIN.</b>	-8.40dBm
<b>TRANSMIT MAX.</b>	2.40dBm
<b>RECEIVE MIN.</b>	-10.3dBm
<b>RECEIVE MAX. (RECEIVER OVERLOAD)</b>	2.40dBm
<b>TEMPERATURE (MIN)</b>	0°C
<b>TEMPERATURE (MAX)</b>	70°C
<b>TYPE OF DDM / DOM</b>	internal
<b>EXTINCTION RATIO</b>	2dB

## Recommended Operating Conditions and Supply Requirements

Parameter	Symbol	Min	Typical	Max	Units
Operating Case Temperature Commercial	T <sub>OP</sub>	0		70	°C
Operating Case Temperature Extended	T <sub>OP</sub>	-10		80	°C
Operating Case Temperature Industrial	T <sub>OP</sub>	-40		85	°C
Power Supply Voltage	V <sub>CC</sub>	3.135	3.3	3.465	V
Data Rate, each Lane			25.78125		Gb/s each channel
Power Supply Voltage	ICC	0		600	mA
Transmission Distance	D			150	M (OM4)



## Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
<b>Transmitter</b>						
Center Wavelength	$\lambda_{in}$	840		860	nm	
Average Launch Power, each Lane	$P_{AVG}$	-8.4		2.4	dBm	
Optical Extinction Ratio	ER	2			dB	
Optical Return Loss Tolerance	ORL			12	dB	
Eye Mask		Compliant with IEEE 802.3bm				
Average Launch Power OFF Transmitter, each Lane	$P_{off}$			-30	dBm	
Spectral Width (-20dB)				0.6	nm	
<b>Receiver</b>						
Receiver Sensitivity (OMA), each Lane	Rx SEN			-10.3	dBm	
Input Saturation Power (Overload)	$P_{sat}$	2.4			dBm	
Receiver reflectance				-12	dB	
Receiver Wavelength	$\lambda_{in}$	840		860	nm	



**Notice:**

ECI Networks reserves the right to make changes to or discontinue any optical link product or service identified in this publication, without notice, in order to improve design and/or performance. Applications that are described herein for any of the optical link products are for illustrative purposes only.

For further information



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