



NoviConnect™ 509 QSFP+ SR Transceiver

NoviConnect 509: This Industry Standard 40GBase-SR4 QSFP+ Transceiver operates at 850nm over Multi-Mode Fiber, with a maximum reach of 150m connected via a MPO connector, is certified for optimal performance with NoviFlow switching products, and is fully compliant with MSA (Multi-Source Agreement) standards. All *NoviConnect* products from NoviFlow are 100% functionally tested to ensure trouble-free installation and operation when used with NoviFlow's NoviSwitch network products.



NoviConnect Transceivers are factory programmed with specific configuration

data required for seamless networking compliance and for optimal network performance when used with NoviFlow switching products. These transceivers can be mixed and connected to devices with MSA industry standard compliant transceivers, for outstanding network performance.

NoviFlow Inc.™ aims to change the traditional approach to networking by making switching smarter. The company was founded to deliver upon the promise of SDN. Our SDN data plane products combine the benefits of virtualization and programmability with network processors that can handle complex flows, making it possible for data center and network operators to keep up with today's exponentially growing networking demand. In order to ensure the highest levels of network performance, seamless compatibility and trouble-free upgrades with our NoviSwitch and NoviKit products, NoviFlow offers a complete line of high-performance and cost-effective SFP transceiver modules.

PRODUCT DESCRIPTION

The *NoviConnect 509 QSFP+ SR Transceiver* (40 Gbps over fiber) is a high performance, cost effective module supporting dual data-rate of 40Gbps and supporting distances up to 150m with MMF.

Key Features:

- Four-Channel full-duplex transceiver modules
- Transmission data rate up to 14.025Gbit/s per channel
- 4 channels 850nm VCSEL array
- 4 channels PIN photo detector array
- Low power consumption <1.5W
- Housing isolated from connector ground
- Operating case temperature 0°C to +70°C
- 3.3V power supply voltage
- RoHS 6 compliant
- Hot Pluggable QSFP form factor
- Maximum link length of 100m on OM3 Multimode
- Fiber (MMF) and 150m on OM4 MMF
- Single MPO connector receptacle
- Built-in digital diagnostic function
- Digital diagnostic compatible with SFF-847 Rev11.0

NoviConnect 509 QSFP+ SR4 Data Sheet

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	Vcc	3.13	3.3	3.47	V
Operating Case Temp.	Tca	0		70	°C
Data Rate Per Lane	fd	2.5		14.025	Gbps
Humidity	Rh	5		85	%
Power Dissipation	Pm			1.5	W
Fiber Bend Radius	3				cm

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Differential Input impedance	Zin	90	100	110	ohm
Differential Output impedance	Zout	90	100	110	ohm
Differential Input Voltage amplitude	ΔV_{in}	300		1100	mVp-p
Differential output voltage amplitude	ΔV_{out}	500		800	mVp-p
Skew	Sw			300	ps
Bit Error Rate	BR			E-12	
Input Logic Level High	VIH	2.0		VCC	V
Input Logic Level Low	VIL	0		0.8	V
Output Logic Level High	VOH	VCC-0.5		VCC	V
Output Logic level Low	VOL	0		0.4	V

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN.	MAX.	UNIT
Supply Voltage	Vcc	-0.3	3.6	V
Input Voltage	Vin	-0.3	Vcc+0.3	V
Storage Temperature	Tst	-20	85	°C
Case Operating Temperature	Top	0	70	°C
Humidity (non-condensing)	Rh	5	95	%

OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	NOTES
TRANSMITTER						
Center Wavelength	λ_C	840	850	860	nm	
RMS Spectral Width	$\Delta\lambda$			0.65	nm	
Average Optical Power per channel	POUT	-7.5		2.5	dBm	
Side Mode Suppression Ratio	SMSR	30			dB	
Difference in launch power between any two lanes (OMA)				4	dB	
Extinction Ratio	ER	3			dB	
Peak power, each lane				4	dBm	
Transmitter and dispersion penalty (TDP), each lane	TDP			3.5	dB	
Eye Mask Coordinates: X1, X2, X3, Y1, Y2, Y3	Specification Values 0.23, 0.34, 0.43, 0.27, 0.35, 0.4					Hit Ratio = 5x10 ⁻⁵
RECEIVER						
Center Wavelength	λ_C	840	850	860	nm	
Stressed receiver sensitivity in OMA, each lane				-5.4	dBm	1
Average power at receiver input, each lane		-9.5		2.4	dBm	
Receiver Reflectance				-12	dB	
Peak power, each lane				4	dBm	
LOS Assert		-30			dBm	
LOS De-Assert - OMA				-7.5	dBm	
LOS Hysteresis		0.5			dB	

NOTES:

Measured with conformance test signal at TP3 for BER = 10e-12

Ordering information: Model number 40000509

For more information, please visit www.noviflow.com™ or e-mail us at contact@noviflow.com.

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