



## NoviConnect™ 505 SFP SX Transceiver



**NoviConnect 505:** This Industry Standard SFP-SX compatible 1000Base-SX Small Form Pluggable (SFP) Transceiver operates over Multi-Mode Fiber, supporting dual data-rate of 1.25Gbps/1.06Gbps with a maximum reach of 550m connected via a LC 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 and NoviKit network products and are ideal for use in applications such as Gigabit Ethernet 1000BASE-SX and Fiber Channel SM-LC-L FC-PI.

*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.

### Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883 Method 3015.
- ESD to the Duplex LC Receptacle: compatible with IEC 61000-4-2.
- Immunity compatible with IEC 61000-4-3.
- EMI compatible with FCC Part 15 Class B EN55022 Class B (CISPR 22B) VCCI Class B.
- Laser Eye Safety compatible with FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2.
- RoHs compliant with 2002/95/EC 4.1&4.2 2005/747/EC.

ABSOLUTE MAXIMUM RATINGS

### Key Features:

- *Up to 1.25Gb/s data links*
- *Duplex LC connector*
- *Hot-pluggable SFP footprint*
- *850nm VCSEL Laser transmitter*
- *RoHS compliant and Lead Free*
- *Up to 550m on 50/125µm MMF <sup>[SEP]</sup> Up to 500m on 62.5/125µm MMF*
- *Metal enclosure for lower EMI*
- *Single +3.3V power supply*
- *Low power dissipation <800mW*
- *Commercial and industrial <sup>[SEP]</sup> operating temperature optional*
- *SFP MSA SFF-8074i Compliant*
- *Digital diagnostic compatible with SFF-847 Rev11.0*

NOTE: All information presented in this document is provided as is WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, and is subject to change without notice. Copyright © 2019, NoviFlow Inc.

PARAMETER	SYMBOL	MIN.	MAX.	UNIT
Maximum Supply Voltage	Vcc	-0.5	4.0	V
Storage Temperature	TST	-40	85	°C
Operating Humidity	RH	5	95	%

DIGITAL DIAGNOSTIC MONITORING INTERFACE

PARAMETER	RANGE	ACCURACY	CALIBRATION
Temperature	0°C to 70°C (C)	±3°C	Internal
	-40°C to 85°C (I)		
Voltage	2.97V to 3.63V	±3%	Internal
Bias Current	0mA to 100mA	±10%	Internal
TX Power	-9dBm to -4dBm	±3dB	Internal
RX Power	-18dBm to 0dBm	±3dB	Internal

ELECTRICAL CHARACTERISTICS (TOP=25°C, Vcc=3.3V)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	NO TES
<b>TRANSMITTER</b>						
Input differential impedance	Rin		100		Ω	1
Single ended data input swing	Vin, pp	250		1200	mV	
TX Disable-High		Vcc-1.3		Vcc	V	
TX Disable-Low		Vee		Vee+0.8	V	
TX Fault-High		Vcc-0.5		Vcc	V	
TX Fault-Low		Vee		Vee+0.5	V	
<b>RECEIVER</b>						
Single ended data output swing	Vout, pp	300	400	800	mV	2
Data output rise time	tr			175	ps	3
Data output fall time	tf			175	ps	3
LOS-High		Vcc-0.5		Vcc	V	
LOS-Low		Vee		Vee+0.5	V	

NOTES:

1. AC coupled.
2. Into 100 ohm differential termination.
3. 20% - 80%

OPTICAL AND ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	NO TES
<b>TRANSMITTER</b>						
Output Opt. Power	PO	-9		-4	dBm	1
Optical Wavelength	λ	830	850	860	nm	
Spectral Width	σ			0.85	nm	
Optical Rise/Fall Time	tr/tf			260	ps	2
Total Jitter	TJ			200	ps	
Optical Extinction Ratio	ER	9			dB	
<b>RECEIVER</b>						
RX Sensitivity @1.25 Gbs	RSE NS			-18	dBm	3,4
Maximum Received Power	RX <sub>M</sub> <sub>AX</sub>	0			dBm	
Optical Center Wavelength	λC	770		860	nm	
LOS De-Assert	LOS <sub>D</sub>			-26	dBm	
LOS Assert	LOS <sub>A</sub>	-40			dBm	
LOS Hysteresis		0.5		5	dB	

NOTES:

1. Class 1 Laser Safety.
2. Unfiltered, 20%-80%. Complies with GE and 1x FC eye masks when filtered.
3. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
4. Measured with PRBS 27-1 at 10-10 BER.

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Power Supply Voltage	Vcc	3.13	3.30	3.47	V
Power Supply Current	Icc			250	mA
Case Operating Temperature – Commercial	Tc	0		70	°C
Case Operating Temperature – Industrial	Ti	-40		85	°C
Data Rate (Gigabit Ethernet)			1.25		Gbps
Data Rate (Fibre Channel)			1.063		Gbps
50/125µm MMF	L			550	m

Ordering information: Model number 40000505

For more information, please visit [www.noviflow.com](http://www.noviflow.com)™ or e-mail us at [contact@noviflow.com](mailto:contact@noviflow.com).

NoviFlow products are warranted according to the terms and conditions of the agreements under which they are provided. NoviFlow, the NoviFlow logo, noviflow.com, NoviSwitch, NoviWare, NoviConnect and NoviSwitch are trademarks of NoviFlow Inc. All other product names, company names and trademarks mentioned herein are the property of their respective owners. Document #DSNC505-02