SFP-1GB-DW1120-80-I-N-OPC

Alcatel-Lucent Nokia® Compatible TAA 1000Base-DWDM SFP Transceiver 100GHz (SMF, 1568.77nm to 1561.42nm, 80km, LC, DOM, -40 to 85C)

Features

- Supports 1.25Gbps Bit Rates
- Up to 80km Link Length @1.25Gbps
- 100GHz ITU-Based Channel Spacing (C-Band)
- Monolithic EML Tunable TOSA
- APD Receiver with Limiting Amplifier
- Duplex LC Connector
- Low Power Consumption: 2.7w
- Positive Power Supply Lines: 3.3V
- Operating Temperature: -40 to 85 Celsius
- RoHS Compliant and Lead-Free

Applications:

- 10x Gigabit Ethernet over DWDM
- Gigabit Ethernet over CWDM
- Access, Metro and Enterprise

Product Description

This Alcatel-Lucent Nokia® compatible SFP transceiver provides 1000Base-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1568.77nm to 1561.42nm via an LC connector. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 85C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Alcatel-Lucent Nokia®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

ITU Channel Wavelength Guide

ITU Channel	Frequency (THz)	Center Wavelength (nm)	ITU Channel	Frequency (THz)	Center Wavelength (nm)
11	191.1	1568.11	**36**	193.6	1548.51
12	191.2	1567.95	**37**	193.7	1547.72
13	191.3	1567.13	**38**	193.8	1546.92
14	191.4	1566.31	**39**	193.9	1546.12
15	191.5	1565.50	**40**	194.0	1545.32
16	191.6	1564.68	**41**	194.1	1544.53
17	191.7	1563.86	**42**	194.2	1543.73
18	191.8	1563.05	**43**	194.3	1542.94
19	191.9	1562.23	**44**	194.4	1542.14
20	192.0	1561.42	**45**	194.5	1541.35
21	192.1	1560.61	**46**	194.6	1540.56
22	192.2	1559.79	**47**	194.7	1539.77
23	192.3	1558.98	**48**	194.8	1538.98
24	192.4	1558.17	**49**	194.9	1538.19
25	192.5	1557.36	**50**	195.0	1537.4
26	192.6	1556.55	**51**	195.1	1536.61
27	192.7	1555.75	**52**	195.2	1535.82
28	192.8	1554.94	**53**	195.3	1535.04
29	192.9	1554.13	**54**	195.4	1534.25
30	193.0	1553.33	**55**	195.5	1533.47
31	193.1	1552.52	**56**	195.6	1532.68
32	193.2	1551.72	**57**	195.7	1531.9
33	193.3	1550.92	**58**	195.8	1531.12
34	193.4	1550.12	**59**	195.9	1530.33
35	193.5	1549.32	**60**	196.0	1529.55

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	0		3.6	V	
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	-40		85	°C	
Operating Relative Humidity	RH	5		85	%	
Storage Relative Humidity	RH	5		95	%	
Power Consumption				2.7	W	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Transmitter						
Differential Data Input Swing	VIN	170		700	mV	
Input Differential Impedance	ZIN		100		Ω	
Transmitter Disable Voltage	VDIS	2.0		Vcc	V	
Transmitter Enable Voltage	VEN	0		0.8	V	
Receiver						
Differential Data Output Swing	VOUT	300		850	mV	
Output Differential Impedance	ZOUT		100		Ω	
LOS Assert Voltage	VLOSA	2.0		Vcc	V	
LOS De-Assert Voltage	VLOSD	0		0.8	V	

Timing Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Module Initialize Time	Tinit			20	s	
Module Channel Switch Time	Tsel			200	ms	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter (10G & 1.25G)						
Average Output Power	PAVE	-2		3	dBm	1
Optical Wavelength	λ	As Per ITU-T 694.1, 100GHz Spacing			nm	2
Center Frequency Spacing	Δv	100			GHz	
Center Frequency Stability	-	-12.5		+12.5	GHz	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Output Power (Laser Off)	Poff			-30	dBm	
Extinction Ratio	ER	8.2			dB	3
Dispersion Penalty	DP			2	dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
Optical Return Loss Tolerance	ORLT	21			dB	
Receiver (10G)						
Optical Center Wavelength		1260		1600	nm	
Received Sensitivity	RSENS			-23	dBm	4
Optical Power Overload	POL			-7	dBm	
Receiver Reflectance	RFL			-27	dB	
Rx_LOS of Signal Assert	LOSA	-40			dBm	
Rx_LOS of Signal De-Assert	LOSD			-25	dBm	
Rx_LOS of Signal Hysteresis	LOSH	0.5		6	dB	
Receiver (1.25G)						
Optical Center Wavelength		1260		1600	nm	
Received Sensitivity	RSENS			-28	dBm	5
Optical Power Overload	POL			-7	dBm	
Receiver Reflectance	RFL			-27	dB	
Rx_LOS of Signal Assert	LOSA	-40			dBm	
Rx_LOS of Signal De-Assert	LOSD			-30	dBm	
Rx_LOS of Signal Hysteresis	LOSH	0.5		6	dB	

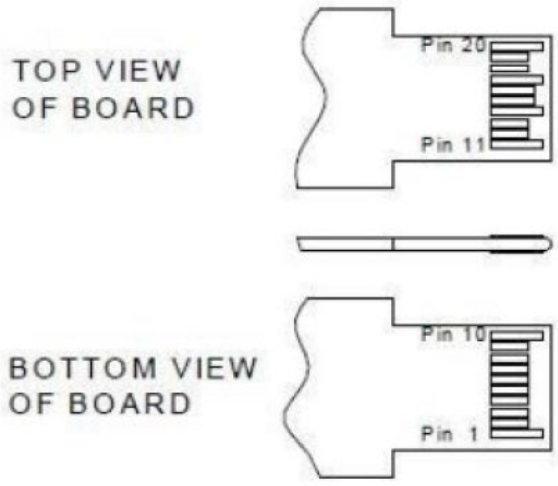
Notes:

1. The optical power is launched into SMF.
2. See details in ITU Channel Wavelength Guide.
3. Measured with PRBS 2^{31}-1 test pattern @10.3125Gbps or 2^{7}-1 test pattern @1.25Gbps.
4. Measured with worst ER=8.2dB, BER less than $1E^{-12}$, and PRBS 2^{31}-1 @10.3125Gbps.
5. Measured with worst ER=8.2dB, BER less than $1E^{-12}$, and PRBS 2^{7}-1 @1.25Gbps.

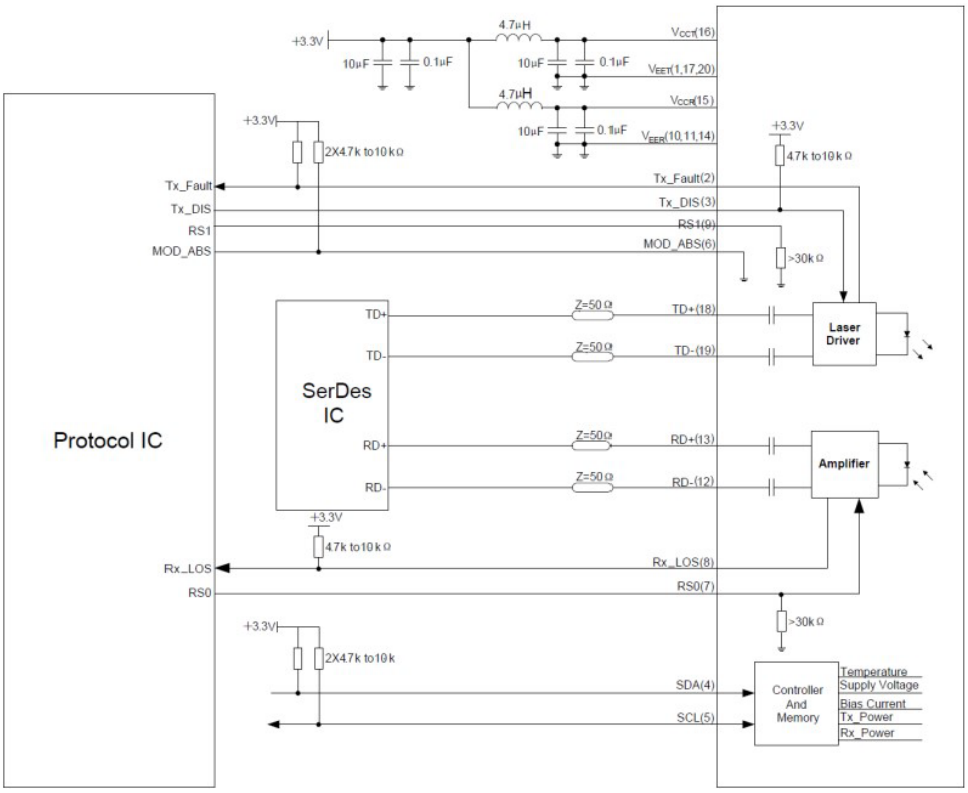
Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground. Common with Receiver Ground.	
2	Tx_Fault	Transmitter Fault.	
3	Tx_Disable	Transmitter Disable. Laser output disabled on “high” or “open.”	
4	SDA	2-Wire Serial Interface Data.	
5	SCL	2-Wire Serial Interface Clock.	
6	MOD_ABS	Module Absent. Grounded within the Module.	
7	RS0	Rate Select 0.	
8	LOS	Loss of Signal Indication. “Logic 0” indicates normal operation.	
9	RS1	No Connection Required.	
10	VeeR	Receiver Ground. Common with Transmitter Ground.	
11	VeeR	Receiver Ground. Common with Transmitter Ground.	
12	RD-	Receiver Inverted Data Out. AC Coupled.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
14	VeeR	Receiver Ground. Common with Transmitter Ground.	
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground. Common with Receiver Ground.	
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground. Common with Receiver Ground.	

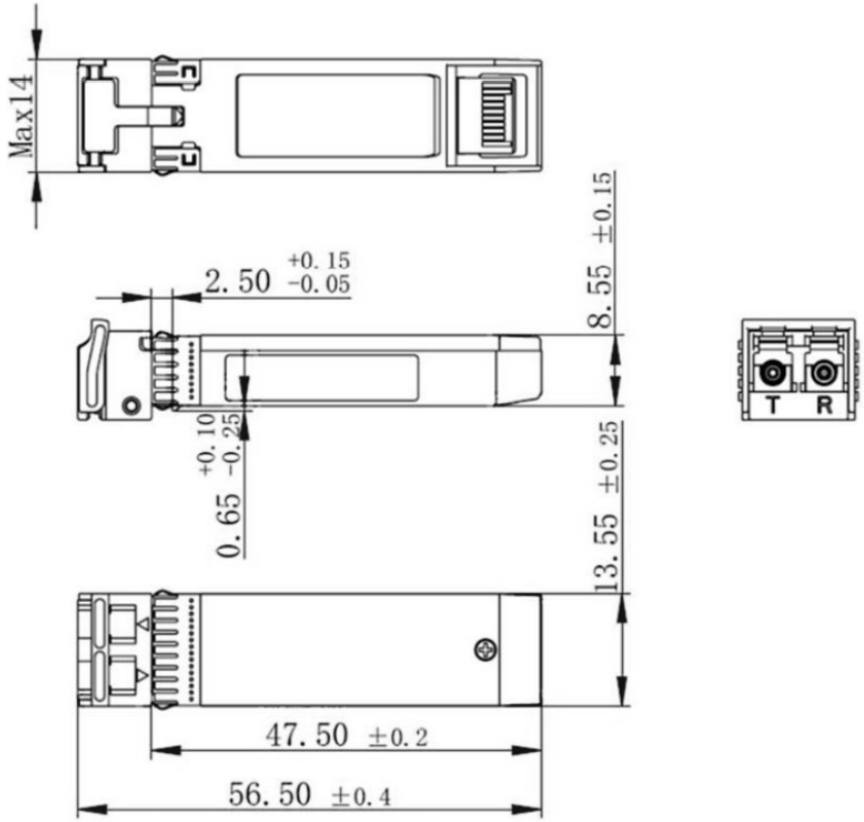
Electrical Pin-Out Details



Recommended Interface Circuit



Mechanical Specifications



OptioConnect
Innovation for the Future of High-Speed Networking

Who We Are
OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do
At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design
Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team
Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission
To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect
Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.
www.optioconnect.com | info@optioconnect.com