

## **SFP-10GB-50DW27-80-AV-OPC**

ADVA® Compatible TAA 10GBase-DWDM SFP+ Transceiver C-Band 50GHz (SMF, 1555.75nm, 80km, LC, DOM)

### **Features**

- SFF-8432 and SFF-8472 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



### **Applications:**

- 10x Gigabit Ethernet over DWDM
- 8x/10x Fibre Channel
- Access and Enterprise

### **Product Description**

This ADVA® compatible SFP+ transceiver provides 10GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1555.75nm via an LC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Arista Networks®. 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.

## Wavelength Guide

Channel #	Center Wavelength (nm)	Channel #	Center Wavelength (nm)
18	1563.05	40	1545.32
19	1562.23	41	1544.53
20	1561.42	42	1543.73
21	1560.61	43	1542.94
22	1559.79	44	1542.14
23	1558.98	45	1541.35
24	1558.17	46	1540.56
25	1557.36	47	1539.77
26	1556.55	48	1538.98
27	1555.75	49	1538.19
28	1554.94	50	1537.40
29	1554.13	51	1536.61
30	1553.33	52	1535.82
31	1552.52	53	1535.04
32	1551.72	54	1534.25
33	1550.92	55	1533.47
34	1550.12	56	1532.68
35	1549.32	57	1531.90
36	1548.51	58	1531.12
37	1547.72	59	1530.33
38	1546.92	60	1529.55
39	1546.12	61	1528.77

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	
Operating Temperature	Tc	0		70	°C	
Supply Current	Icc		450	500	mA	1
Data Rate	DR	1.2	10.3125	11.3	Gbps	2
Maximum Supply Voltage	Vcc	-0.5		4.0	V	1
Bit Error Rate	BER			10 <sup>-12</sup>		

### Notes:

1. For electrical power interface.
2. IEEE 802.3ae.

## Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	V <sub>cc</sub>	3.14	3.3	3.46	V	
Transmitter						
Input Differential Impedance	R <sub>IN</sub>		100			
Differential Data Input Swing	V <sub>IN,pp</sub>	300		850	mV	
Transmit Disable Voltage	V <sub>D</sub>	2		V <sub>cc</sub>	V	
Transmit Enable Voltage	V <sub>EN</sub>	V <sub>ee</sub>		V <sub>ee</sub> +0.8	V	
Receiver						
Differential Data Output Swing	V <sub>OUT,pp</sub>	300		850	mV	
Data Output Rise/Fall Time (20-80%)	T <sub>r</sub> /T <sub>f</sub>	28			ps	
LOS Fault	V <sub>losa</sub>	2		Host_V <sub>cc</sub>	V	
LOS Normal	V <sub>losd</sub>	V <sub>ee</sub>		V <sub>ee</sub> +0.5	V	

## Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Output Optical Power	P <sub>tx</sub>	0		4	dBm	1
Optical Center Wavelength	λ <sub>C</sub>	λ <sub>C</sub> -0.05	λ <sub>C</sub>	λ <sub>C</sub> +0.05		2
Extinction Ratio	ER	9			dB	
Spectral Width (-20dB)	Δλ			0.6	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
Transmitter Dispersion Penalty	TDP			3.2	dB	
Launch Power of Off Transmitter	P <sub>off</sub>			-30	dBm	1
Receiver						
Optical Center Wavelength	λ <sub>C</sub>	1260		1620	nm	
Average Receive Power	P <sub>rx</sub>	-24		-7	dBm	
Receiver Sensitivity @10.3Gbps	S			-24	dBm	3
Receiver Reflectance	RR			-27	dB	
LOS Assert	LOSA	-35			dBm	
LOS De-Assert	LOSD			-27	dBm	
LOS Hysteresis	LOSH	0.5			dB	

### Notes:

1. Average.
2. λ = specified ITU grid wavelength.
3. Measured with the PRBS 2<sup>31</sup>-1 test mode and BER<10<sup>-12</sup>.

## Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground. Common with Receiver Ground.	1
2	Tx_Fault	Transmitter Fault.	
3	Tx_Disable	Transmitter Disable. Laser output disables on "high" or "open."	2
4	SDA	2-Wire Serial ID Interface Data Line.	3
5	SCL	2-Wire Serial ID Interface Clock Line.	3
6	MOD_ABS	Module Absent. Grounded within the module.	3
7	RS0	Rate Select 0. Not used.	
8	LOS	Loss of Signal Indication. "Logic 0" indicates normal operation.	4
9	RS1	Rate Select 1. Not used.	1
10	VeeR	Receiver Signal Ground. Common with Transmitter Ground.	1
11	VeeR	Receiver Signal Ground. Common with Transmitter Ground.	1
12	RD-	Inverse Received Data Out. AC Coupled.	
13	RD+	Non-Inverted Receiver Data Out. AC Coupled.	
14	VeeR	Receiver Signal Ground. Common with Transmitter Ground.	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Signal Ground. Common with Receiver Ground.	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Signal Ground.	1

## Notes:

1. Circuit ground is isolated from the chassis ground.
2. Disabled: Tdis>2V or open. Enabled: Tdis<0.8V.
3. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2V and 3.46V.
4. LOS is open collector output.

## Block Diagram of Transceiver



## Electrical Pad Layout



Top of Board



Bottom of Board



Mechanical Specifications

