

Features

- XAUI Electrical Interface: 4 Lanes @ 3.125Gbit/s
- DWDM EML laser
- Hot Z-Pluggable
- SC-Duplex Optical Receptacle
- MDIO, DOM Support
- Pin Photo-detector
- Compliant to X2 MSA
- Compliant to IEEE 802.3ae 10GBASE-ER Application
- Case operating temperature: 0 to 70 °C



Applications

- IEEE 802.3ae as 10GBASE-ER, X2 MSA Release1.0B

Optical Characteristics

Parameters	Symbols	Min.	Typ.	Max.	Unit	NOTE
Center Wavelength (BOL)	λ_c	$\lambda_c -25$	λ_c	$\lambda_c +25$	pm	
Center Wavelength (EOL)	λ_c	$\lambda_c -100$	λ_c	$\lambda_c +100$	pm	
Signaling speed		-	10.3125	-	Gbit/s	
Signaling speed variation from nominal		-100	-	+100	ppm	
Optical modulation amplitude	OMA	-2.1	-	-	dBm	
Optical Output Power	Pf	-1	-	+4	dBm	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	
Extinction Ratio	ER	8.2	-	-	dB	
Off Transmit Power	Poff	-	-	-30	dBm	
Receiver Sensitivity	Rsense	-		-16.5	dBm	
Receiver Overload	Rro	+0.5	-	-	dBm	
Receiver Return Loss	RL	12	-	-	dB	

Power Supply Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	NOTE
Supply Voltage	VCC1	3.135	3.300	3.465	V	
Supply Voltage	VCC2	1.152	1.200	1.248	V	
Supply Current	ICC1	-	-	1.2	A	
Supply Current	ICC2	-	-	1.7	A	
Power Consumption	PDS	-	-	4.0	W	
Power supply stabilization time	TDF	-	-	500	ms	
Initialization Time	TINIT	-	-	5	s	
RESET Assert Time	TRESET	1	-	-	ms	
Hold Time after rising edge of RESET	THOLD	500	-	-	ms	

XAUI Driver Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	NOTE
Baud Rate		-	3.125	-	Gbit/s	
Baud Rate Tolerance		-100	-	+100	ppm	
Differential Amplitude		800	-	1600	mVPP	AC, near-end value

1.2V CMOS Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	NOTE
Input High Voltage	VIH	0.84	-	1.5	V	
Input Low Voltage	VIL	-0.3	-	0.36	V	
Input Pull-down Current	IIn	20	40	120	μA	Vih=1.2V
Output High Voltage	VOH	1.0	-	-	V	Pull-up=10k ohm to 1.2V
Output Low Voltage	VOL	-	-	0.2	V	
Pull up Resistance	RLASI	10	-	22	k ohm	
Capacitance	CLASI	-	-	10	pF	
Load Capacitance	CLoad	-	-	320	pF	

MDIO Bidirectional Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	NOTE
Input High Voltage	VIHM	0.84	-	1.5	V	
Input Low Voltage	VILM	-0.3	-	0.36	V	
Output High Voltage	VOHM	1.0	-	1.5	V	
Output Low Voltage	VOLM	-0.3	-	0.2	V	
Pull up Resistance	RMDIO	200	-		Ohm	1
MDC min high/low time	THM,TLM	160	-	-	ns	
MDC Frequency	1/TCK	TBD	-	2.5	MHz	
Setup time	TDIS	10	-	-	ns	
Hold time	TDIH	10	-	-	ns	
MDIO output delay after rising edge of MDC	TPD	0	-	300	ns	
Input Capacitance	Ci	-	-	10	pF	
Bus Loading	CL	-	-	470	pF	

Note:1 The maximum value of RMDIO depends on bus loading(CL),input capacitance(Ci), and MDC frequency(1/TCK).

DWDM Wavelength Guide

ITU Channel Product Code	Frequency (THz)	Center Wavelength(nm)	ITU Channel Product Code	Frequency (THz)	Center Wavelength(nm)
17	191.7	1563.86	40	194.0	1545.32
18	191.8	1563.05	41	194.1	1544.53
19	191.9	1562.23	42	194.2	1543.73
20	192.0	1561.42	43	194.3	1542.94
21	192.1	1560.61	44	194.4	1542.14
22	192.2	1559.79	45	194.5	1541.35
23	192.3	1558.98	46	194.6	1540.56
24	192.4	1558.17	47	194.7	1539.77
25	192.5	1557.36	48	194.8	1538.98
26	192.6	1556.55	49	194.9	1538.19
27	192.7	1555.75	50	195.0	1537.40
28	192.8	1554.94	51	195.1	1536.61
29	192.9	1554.13	52	195.2	1535.82
30	193.0	1553.33	53	195.3	1535.04
31	193.1	1552.52	54	195.4	1534.25
32	193.2	1551.72	55	195.5	1533.47
33	193.3	1550.92	56	195.6	1532.68
34	193.4	1550.12	57	195.7	1531.90

35	193.5	1549.32	58	195.8	1531.12
36	193.6	1548.51	59	195.9	1530.33
37	193.7	1547.72	60	196.0	1529.55
38	193.8	1546.92	61	196.1	1528.77
39	193.9	1546.12			

Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-X2-10GER4D##	Starview X2 module OC-192/ STM-64/ 10G LAN DWDM wavelength SM (LC) with 100GHz spacing, distance up to 40km.####nm SM (LC), distance up to 40km, where ## denotes *[see DWDM Wavelength Guide]	-1 to 4	-16.5 to 0.5	15.5	40	NO