

100G CFP Optical Transceiver Module, SR10

Features

- ◆ Transmission data rate up to 11.2Gbps per channel
- ◆ CFP MSA compliant
- ◆ Compliant to 100GbE IEEE 802.3ba specification for 100GBASE-SR10 links
- ◆ OTU4 compatible
- ◆ 10 channels 850nm VCSEL array
- ◆ 10 channels PIN photo detector array
- ◆ MDIO digital diagnostic and control capabilities
- ◆ TX input and RX output CDR retiming
- ◆ Hot pluggable electrical interface
- ◆ Power class 1 (<8W max)
- ◆ Operating case temperature 0°C to +70°C
- ◆ 3.3V power supply
- ◆ RoHS 6 compliant (lead free)



Applications

- ◆ High-speed core router interlinks and data center aggregation
- ◆ Test equipment
- ◆ 100GBASE-SR10

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	%

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Operating Case temperature	Tca	0		70	°C
Data Rate Per Lane	fd	-		11.2	Gbps
Humidity	Rh	5		85	%
Power Dissipation	Pm			8	W

Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit
Differential input impedance	Zin	90	100	110	ohm
Differential Output impedance	Zout	90	100	110	ohm
Differential input voltage amplitude	ΔV_{in}	120		820	mVp-p
Differential output voltage amplitude	ΔV_{out}	300		820	mVp-p
Input Logic Level High	V _{IH}	2.0		VCC	V
Input Logic Level Low	V _{IL}	0		0.8	V
Output Logic Level High	V _{OH}	VCC-0.5		VCC	V
Output Logic Level Low	V _{OL}	0		0.4	V

Optical Characteristics

Transmitter Optical Specifications (T = 25°C, VCC = 3.3V +/- 5%)

Parameter	Symbol	Min	Typical	Max	Unit
Average Optical Power(per channel)	P _{out}	-8	-2.5	+1	dBm
Average Optical Power(per channel) - Disabled	P _{off}			-30	dBm
Optical Return Loss Tolerance				12	dB
Extinction Ratio	ER	3			dB
Center Wavelength	λ _c	840	850	860	nm
RMS Spectral Width	λ		0.5	0.65	nm
Transmitter eye mask	Compliant to IEEE802.3ba eye mask specification				

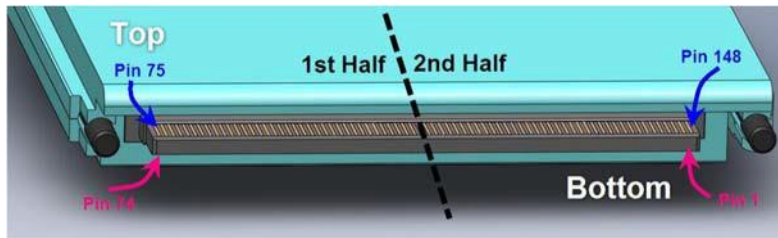
Receiver Optical Specifications (T = 25°C, VCC = 3.3V +/- 5%)

Parameter	Symbo	Min	Typical	Max	Unit
Optical Power Sensitivity(per channel)	P _{in min}	-	-	-9.9	dBm
Optical Power Saturation(per channel)	P _{in}	+1	-	-	dBm
Stressed Receiver Sensitivity	P _s	-	-	-5.4	dBm
Center Wavelength	λ _c	840	850	860	nm
RMS Spectral Width	λ		0.5	0.65	nm
Optical Return Loss	RI	12			dB

Note :

- Optical power sensitivity is measured with BER@10⁻¹² at 10.3125Gbps per channel.

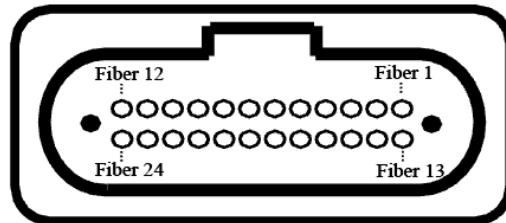
Pin Descriptions



	Top Row (2nd Half)		Bottom Row (2nd Half)
148	GND	1	3.3V_GND
147	REFCLKn	2	3.3V_GND
146	REFCLKp	3	3.3V_GND
145	GND	4	3.3V_GND
144	(S1_REFCLKn)	5	3.3V_GND
143	(S1_REFCLKp)	6	3.3V
142	GND	7	3.3V
141	N.C.	8	3.3V
140	N.C.	9	3.3V
139	GND	10	3.3V
138	(S1_TX3n)	11	3.3V
137	(S1_TX3p)	12	3.3V
136	GND	13	3.3V
135	(S1_TX2n)	14	3.3V
134	(S1_TX2p)	15	3.3V
133	GND	16	3.3V_GND
132	(S1_TX1n)	17	3.3V_GND
131	(S1_TX1p)	18	3.3V_GND
130	GND	19	3.3V_GND
129	(S1_TX0n)	20	3.3V_GND
128	(S1_TX0p)	21	VND_IO_A
127	GND	22	VND_IO_B
126	N.C.	23	GND
125	N.C.	24	(TX_MCLKn)
124	GND	25	(TX_MCLKp)
123	TX3n	26	GND
122	TX3p	27	VND_IO_C
121	GND	28	VND_IO_D
120	TX2n	29	VND_IO_E
119	TX2p	30	PRG_CNTL1
118	GND	31	PRG_CNTL2
117	TX1n	32	PRG_CNTL3
116	TX1p	33	PRG_ALRM1
115	GND	34	PRG_ALRM2
114	TX0n	35	PRG_ALRM3
113	TX0p	36	TX_DIS
112	GND	37	MOD_LOPWR

	Top Row (1st Half)		Bottom Row (1st Half)
111	GND	38	MOD_ABS
110	(S1_RX_MCLKn)	39	MOD_RSTn
109	(S1_RX_MCLKp)	40	RX_LOS
108	GND	41	GLB_ALRMn
107	N.C.	42	PRTADR4
106	N.C.	43	PRTADR3
105	GND	44	PRTADR2
104	(S1_RX3n)	45	PRTADR1
103	(S1_RX3p)	46	PRTADR0
102	GND	47	MDIO
101	(S1_RX2n)	48	MDC
100	(S1_RX2p)	49	GND
99	GND	50	VND_IO_F
98	(S1_RX1n)	51	VND_IO_G
97	(S1_RX1p)	52	GND
96	GND	53	VND_IO_H
95	(S1_RX0n)	54	VND_IO_J
94	(S1_RX0p)	55	3.3V_GND
93	GND	56	3.3V_GND
92	N.C.	57	3.3V_GND
91	N.C.	58	3.3V_GND
90	GND	59	3.3V_GND
89	RX3n	60	3.3V
88	RX3p	61	3.3V
87	GND	62	3.3V
86	RX2n	63	3.3V
85	RX2p	64	3.3V
84	GND	65	3.3V
83	RX1n	66	3.3V
82	RX1p	67	3.3V
81	GND	68	3.3V
80	RX0n	69	3.3V
79	RX0p	70	3.3V_GND
78	GND	71	3.3V_GND
77	(RX_MCLKn)	72	3.3V_GND
76	(RX_MCLKp)	73	3.3V_GND
75	GND	74	3.3V_GND

CFP Optical Interface lanes and Assignment



Ordering information

Part Number	Product Description
CFP-SR10	CFP 100G SR10, 100m on OM3 MMF and 150m on OM4 MMF