100Gb/s CFP2 Optical Transceiver

Features

℃ ℃

Application

Standards

Output Low Voltage (I_{OL}=100uA)	3.3VOL	V			0.2
Minimum Pulse Width of Control Pin Signal	t_CNTL	us	100		
1.2V LVCMOS Electrical Characteristics					
Input High Voltage	1.2VIH	V	0.84		1.5
Input Low Voltage	1.2VIL	V	-0.3		0.36
Input Leakage Current	1.2IIN	uA	-100		+100
Output High Voltage	1.2VOH	V	1.0		1.5
Output Low Voltage	1.2VOL	V	-0.3		0.2
Output High Current	1.2IOH	mA			-4
Output Low Current	1.2IOL	mA	+4		
Input Capacitance	Ci	pF			10
Optical transmitter Characteristics					
Signaling Rate for Each Lane （100GbE）		Gbps	-	25.78125	
Signaling Rate for Each Lane （OTU4）				27.95249	
Four Lane Wavelength Range	λ1	nm	1294.53	1295.56	1296.59
	λ2		1299.02	1300.05	1301.09
	λ3		1303.54	1304.58	1305.63
	λ4		1308.09	1309.14	1310.19
Side Mode Suppression Ratio	SMSR	dB	30		-

Time					“OR” of Associated MDIO alarm& status registers.Please see MDIO document for further details
Global Alarm De-assert Delay Time	GLB_ALRMn_deassert		150	ms	

Differential Voltage						Differential
RMS jitter[1,2]	σ			10	ps	Random Jitter Over frequency band of 10KHz<f<10MHz
Clock Duty Cycle		40		60	%	
Clock Rise/Fall Time 10%/90%	$t_{r/f}$	200		1250	ps	1/64 of electrical lane rate
		50		315		1/16 of electrical lane rate

Optional Transmitter and Receiver Monitor Clock Characteristics

		Min	Typ	Max	Unit	Notes
Impedance	Zd	80	100	120	Ω	
Frequency					MHz	1/8 of Network lane rate
Output Differential Voltage	V_{DIFF}	400		1200	mV	Peak to Peak Differential
Clock Duty Cycle		40		60	%	

CFP Register Allocation

CFP Register Allocation					
Staring Address in Hex	Ending Address in Hex	Access Type	Allocated Size	Data Bit Width	Table Name and Description
0000	7FFF	N/A	32768	N/A	Reserved for IEEE 802.3 use
8000	807F	RO			

B000	FFFF	RO	5x4096	N/A	Reserved by CFP MSA

CFP NVR1

CFP NVR1

Hex Addr	Size	Access Type	Bit	Register Name	Content (HEX)	LSB Unit
				Base ID Information		
8000	1	RO	7~0	Module Identifier	11	N/A

806E	1	RO	7~0	Digital Diagnostic Monitoring Type	C	N/A
806F	1	RO	7~0	Digital Diagnostic Monitoring Capability 1	3	N/A
8070	1	RO	7~0	Digital Diagnostic Monitoring Capability 2	F	

80BA	2	RO	7~0	Laser Temperature High Warning Threshold	3C	SeeA2C0h
80BC	2	RO	7~0	Laser Temperature Low Warning Threshold	28	SeeA2C0h
80BE	2	RO	7~0	Laser Temperature Low Alarm Threshold	23	SeeA2C0h

		RW	7~0	Alarm Source Code		
A009	1	RO		**PRG_ALRM2 Source Select**	0002h	
			15~8	Reserved		
		RW	7~0	Alarm Source Code		
A00A	1	RO		**PRG_ALRM1 Source Select**	0001h	
			15~8	Reserved	00h	
		RW	7~0	Alarm Source Code	00h	
A00B	1	RO		Module Bi-/Uni-Directional Operating Mode Select	0000h	
			15~3	Reserved	0	
		RW	2~0	Module Bi/uni-Directi9.767.52 0.4799		

A013	1	RW		**Individual Network Lane TX_DIS Control**	0000h	
			15	Lane 15 Disable	0	
			14	Lane 14 Disable	0	
			13	Lane 13 Disable	0	
			12	Lane 12 Disable	0	
			11	Lane 11 Disable	0	
			10	Lane 10 Disable	0	
			9	Lane 9 Disable	0	
			8	Lane 8 Disable	0	
			7	Lane 7 Disable	0	
			6	Lane 6 Disable	0	
			5	Lane 5 Disable	0	
			4	Lane 4 Disable	0	
			3	Lane 3 Disable	0	
			2	Lane 2 Disable	0	
			1	Lane 1 Disable	0	
			0	Lane 0 Disable	0	
A014	[redacted]					

				Summary		
			9	Module Fault Summary	0	
				Module General Status Summary	0	
				Module State Summary	0	
				Reserved	0	
				Soft GLB_ALRM Test Status	0	
				Network Lane Alarm and Warning Summary	0000h	
				Lane 15 Alarm and Warning Summary	0	
				Lane 14 Alarm and Warning Summary	0	

			8	Lane 8 Fault and Status Summary	0	
			7	Lane 7 Fault and Status Summary	0	
			6	Lane 6 Fault and Status Summary	0	

			2	Mod Aux 2 High Warning	0	
			1	Mod Aux 2 Low Warning	0	
			0	Mod Aux 2 Low Alarm	0	
A021	1	RO		Reserved	0000h	
A022	1			**Module State Latch**	0000h	
		RO	15~9	Reserved	0	
		RO/LH/COR	8	High-Power-down State Latch	0	
		RO/LH/COR	7	TX-Turn-off State Latch	0	
		RO/LH/COR	6	Fault State Latch	0	
		RO/LH/COR	5	Ready State Latch	0	
		RO/LH/COR	4	TX-Turn-on State Latch	0	

		RO/LH/COR	5	Mod Aux 1 Low Warning Latch	0	
		RO/LH/COR	4	Mod Aux 1 Low Alarm Latch	0	
		RO/LH/COR	3	Mod Aux 2 High Alarm Latch	0	
		RO/LH/COR	2	Mod Aux 2 High Warning Latch	0	
		RO/LH/COR	1	Mod Aux 2 Low Warning Latch	0	
		RO/LH/COR	0	Mod Aux 2 Low Alarm Latch	0	
A027	1	RO		Reserved	0000h	
A028	1			**Module Stable Enable**	006Ah	
		RO	15~9	Reserved	0	
		RW	8	High-Power-down State Enable	0	
		RW	7	TX-Turn-off State Enable	0	

A02F	1	RO	15~0	Module Temp Monitor A/D Value	0000h	
A030	1	RO	15~0	Module Power supply	0000h	
				3.3 V Monitor A/D Value	0000h	
A031	1	RO	15~0			

A210	16	RO		**Network Lane n Fault and Status**	0000h	
			15	Lane TEC Fault	0	
			14	Lane Wavelength Unlocked Fault	0	
			13	Lane APD Power Supply Fault	0	
			12~8	Reserved	0	
			7	Lane TX_LOSF	0	
			6	Lane TX_LOL	0	
			5	Reserved	0	
			4	Lane RX_LOS	0	
			3	Lane RX_LOL	0	
			2	Lane RX FIFO error	0	
			1	Reserved	0	
			0	Reserved	0	

CFP Host lane Lane VR1

Host Lane VR1

Host Lane VR1						
Hex Addr	Size	Access Type	Bit	Register Name	Content (HEX)	LSB Unit
Host Lane FAWS Status Registers						
A400	16			**Host Lane m Fault and Status**	0000h	
		RO	15~2	Reserved	0	
		RO	1	Lane TX FIFO Error	0	
		RO	0	TX_HOST_LOL	0	
Host Lane FAWS Latch Registers						
A410	16			**Host Lane m Fault and Status Latch**	0000h	
		RO	15~2	Reserved	0	
		RO/LH/COR	1	Lane TX FIFO Error Latch	0	
		RO/LH/COR	0	TX_HOST_LOL Latch	0	

Table : CFP2 Pin-Map

1	GND	104	GND
2	*(TX_MCLKn)*	103	N.C.
3	*(TX_MCLKp)*	102	N.C.
4	GND	101	GND
5	N.C.	100	TX3n
6	N.C.	99	TX3p
7	3.3V_GND	98	GND
8	3.3V_GND	97	TX2n
9	3.3V	96	TX2p
10	3.3V	95	GND
11	3.3V	94	N.C.
12	3.3V	93	N.C.
13	3.3V_GND	92	GND
14	3.3V_GND	91	N.C.
15	VND_IO_A	90	N.C.
16	VND_IO_B	89	GND

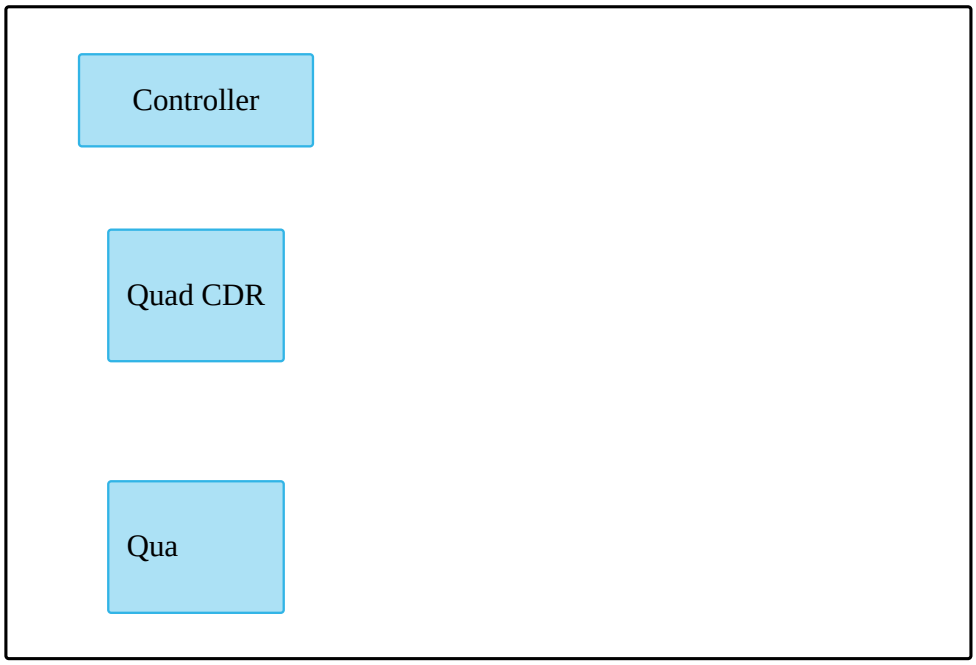
24	TX_DIS	81	N.C.
25	RX_LOS	80	GND
26	MOD_LOPWR	79	*(REFCLKn)*
27	MOD_ABS	78	*(REFCLKp)*
28	MOD_RSTn	77	GND
29	GLB_ALRMn	76	N.C.
30	GND	75	N.C.
31	MDC	74	GND
32	MDIO	73	RX3n
33	PRTADR0	72	RX3p
34	PRTADR1	71	GND
35	PRTADR2	70	RX2n
36	VND_IO_C	69	RX2p
37	VND_IO_D	68	GND
38	VND_IO_E	67	N.C.
39	3.3V_GND	66	N.C.
40	3.3V_GND	65	GND
41	3.3V	64	N.C.
42	3.3V	63	

5	**N.C.**			No Connect
6	**N.C.**			No Connect
7	**3.3V_GND**			3.3V Module Supply Voltage Return Ground,can be separate or tied together with Signal
8	**3.3V_GND**			
9	**3.3V**			3.3V Module Supply Votage
10	**3.3V**			

35	**PRTADR2**	I	1.2V CMOS	MDIO Physical Port address bit 2
36	**VND_IO_C**	I/O		Module Vendor I/O C. Do Not Connect!

71	**GND**			
72	**RX3p**	O	CML	Output Data
73	**RX3n**	O	CML	Inverted Output Data
74	**GND**			
75	**N.C.**			
76	**N.C.**			
77	**GND**			
78	**(REFCLKp)**			
79	**(REFCLKn)**			

Block diagram



Package outline

Immunity	IEC61000-4-3 Class 2	Compliant with any electo-magnetic regulations
Safety		
	UL	
	TUV-GS	
	CE	

Ordering Information

Part No	Specifications			Application Code
	Pack	Data rate	Pout	