



Features

- Four-channel full-duplex transceiver module
- Up to 25.78125Gbps data rate per channel
- Compliant with IEEE802.3ba 100GBase-SR4 Ethernet standard
- Compliant with IEEE802.3bm CAUI-4 Interface
- Compliant with QSFP28 MSA SFF-8636
- Built-in diagnostic monitoring interface for Optical Transceivers (DOM)
- 850nm VCSEL array transmitter
- MMF OM3 70m and OM4 100m point-to-point transmission
- Support Hot Pluggable
- Single 1x12 MPO receptacle connector
- 2-wire I2C interface for management and diagnostic monitor
- RoHS Compliant



Application

- 100GBase-SR4 100G Ethernet
- Breakout to 25GBase-SR Ethernet
- Data Center Application

Ordering Information

PART NO.	TX	RX	DISTANCE	DOM	TEMPERATURE
GL100G-QSFP-SR4	850 nm	850nm	MMF OM3 70m MMF OM4 100m	Support	0~70°C

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2F, No.181, Zhouzi St., Neihu District, Taipei 11493, Taiwan (R.O.C)

TEL : +886-2-2799-7121 FAX : +886-2-2799-7181 Sales@galloplight.com



100GBase-SR4 QSFP28 Optical Transceiver Multi-Mode 850nm, OM4 100m, DOM



Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Storage Temperature	T_s	-40	+85	°C	
Supply Voltage	V_{cc}	-0.5	4.0	V	
Storage Relative Humidity	RH	5	95	%	

Recommended Operating Conditions

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Case Operating Temperature	T_C	0	---	70	°C	
Supply Voltage	V_{cc}	3.13	3.3	3.47	V	
Supply Current	$I_{TX} + I_{RX}$	---		600	mA	
Power Consumption	P			2	W	

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Transmitter Electro-optical Interface

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Data Rate	DR		25.78125		Gbps	
Optical Output Power	P _O	-8.4		+2.4	dBm	1
Optical Extinction Ratio	ER	2.0			dB	
Center Wavelength	λ_c	840	850	860	nm	
Spectral Width (RMS)	$\Delta\lambda$			0.6	nm	
Eye Mask {X1,X2,X3,Y1,Y2,Y3}		{0.3, 0.38, 0.45, 0.35, 0.41, 0.5}				
Output Power @Tx_Dis Asserted	P _{OFF}			-30	dBm	
Differential Input Voltage Swing	V _{DIFF}	180		1000	mV	
Differential Input Impedance	Z _d	80	100	120	Ω	
LVTTL I/O – High	V _{IO_H}	2.0		V _{cc}	V	
LVTTL I/O – Low	V _{IO_L}	V _{ee}		0.7	V	

Note 1: Coupling into a 50/125 μ m multi-mode fiber.

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Receiver Electro-optical Interface

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Data Rate	DR		25.78125		Gbps	
Damage Threshold	TH _D	+3.4			dBm	
Receiver Sensitivity	P _{IN}	-10.3		+2.4	dBm	1
Operating Center Wavelength	λ _c	840	850	860	nm	
Loss of Signal (LOS) - Asserted	P _A	-30			dBm	
Loss of Signal (LOS) - De-asserted	P _D			-12	dBm	
Differential Output Voltage Swing	V _{DIFF}	300		850	mV	
Differential Input Impedance	Z _d	80	100	120	Ω	

Note 1: With BER better than or equal to 5×10^{-5} , measured in the center of the eye opening with 25.78125Gbps, PRBS 2³¹ - 1

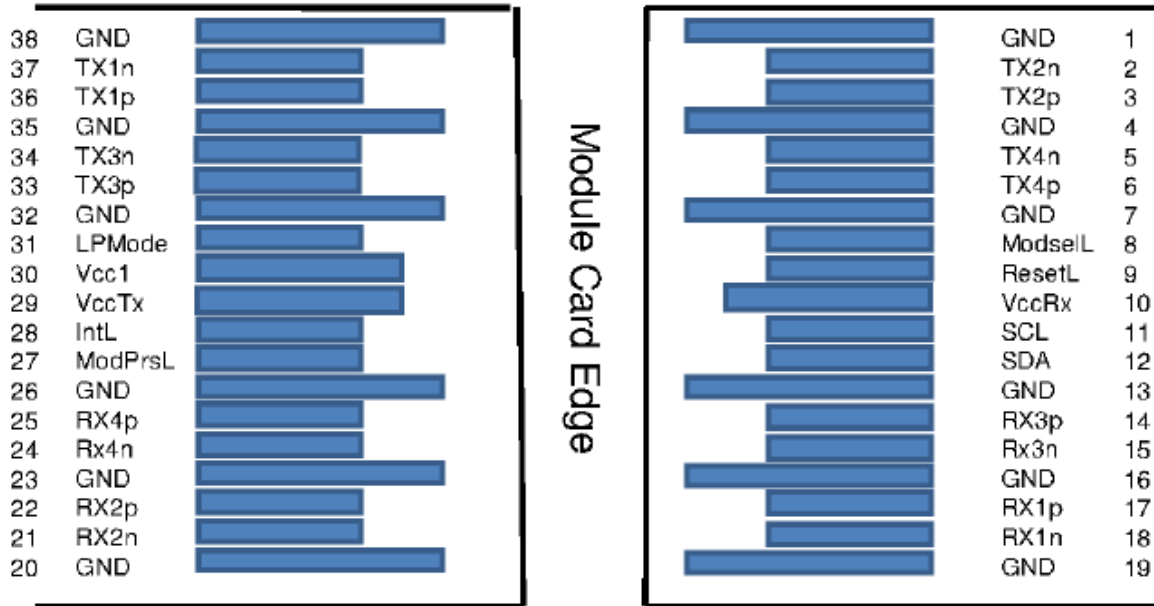
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Pin Assignment



PIN NO.	PIN NAME	FUNCTION	NOTE
1	GND	Ground	
2	Tx2n	Transmitter ch#2 Inverted Data Input	CML-I
3	Tx2p	Transmitter ch#2 Non-Inverted Data Input	CML-I
4	GND	Ground	
5	Tx4n	Transmitter ch#4 Inverted Data Input	CML-I
6	Tx4p	Transmitter ch#4 Non-Inverted Data Input	CML-I
7	GND	Ground	
8	ModSelL	Module Select	LVTTL-I
9	ResetL	Module Reset	LVTTL-I
10	VccRx	Receiver +3.3V Power Supply	
11	SCL	2-Wire Serial Interface Clock	LVCOMS-I/O
12	SDA	2-Wire Serial Interface Data	LVCOMS-I/O

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13	GND	Ground	
14	Rx3p	Receiver ch#3 Non-Inverted Data Output	CML-O
15	Rx3n	Receiver ch#3 Inverted Data Output	CML-O
16	GND	Ground	
17	Rx1p	Receiver ch#1 Non-Inverted Data Output	CML-O
18	Rx1n	Receiver ch#1 Inverted Data Output	CML-O
19	GND	Ground	
20	GND	Ground	
21	Rx2n	Receiver ch#2 Inverted Data Output	CML-O
22	Rx2p	Receiver ch#2 Non-Inverted Data Output	CML-O
23	GND	Ground	
24	Rx4n	Receiver ch#4 Inverted Data Output	CML-O
25	Rx4p	Receiver ch#4 Non-Inverted Data Output	CML-O
26	GND	Ground	
27	ModPrsL	Module Present	LVTTTL-O
28	IntL	Interrupt	LVTTTL-O
29	VccTx	Transmitter +3.3V Power Supply	
30	Vcc1	+3.3V Power Supply	
31	LPMMode	Low Power Mode	LVTTTL-I
32	GND	Ground	
33	Tx3p	Transmitter ch#3 Non-Inverted Data Input	CML-I
34	Tx3n	Transmitter ch#3 Inverted Data Input	CML-I
35	GND	Ground	
36	Tx1p	Transmitter ch#1 Non-Inverted Data Input	CML-I
37	Tx1n	Transmitter ch#1 Inverted Data Input	CML-I
38	GND	Ground	

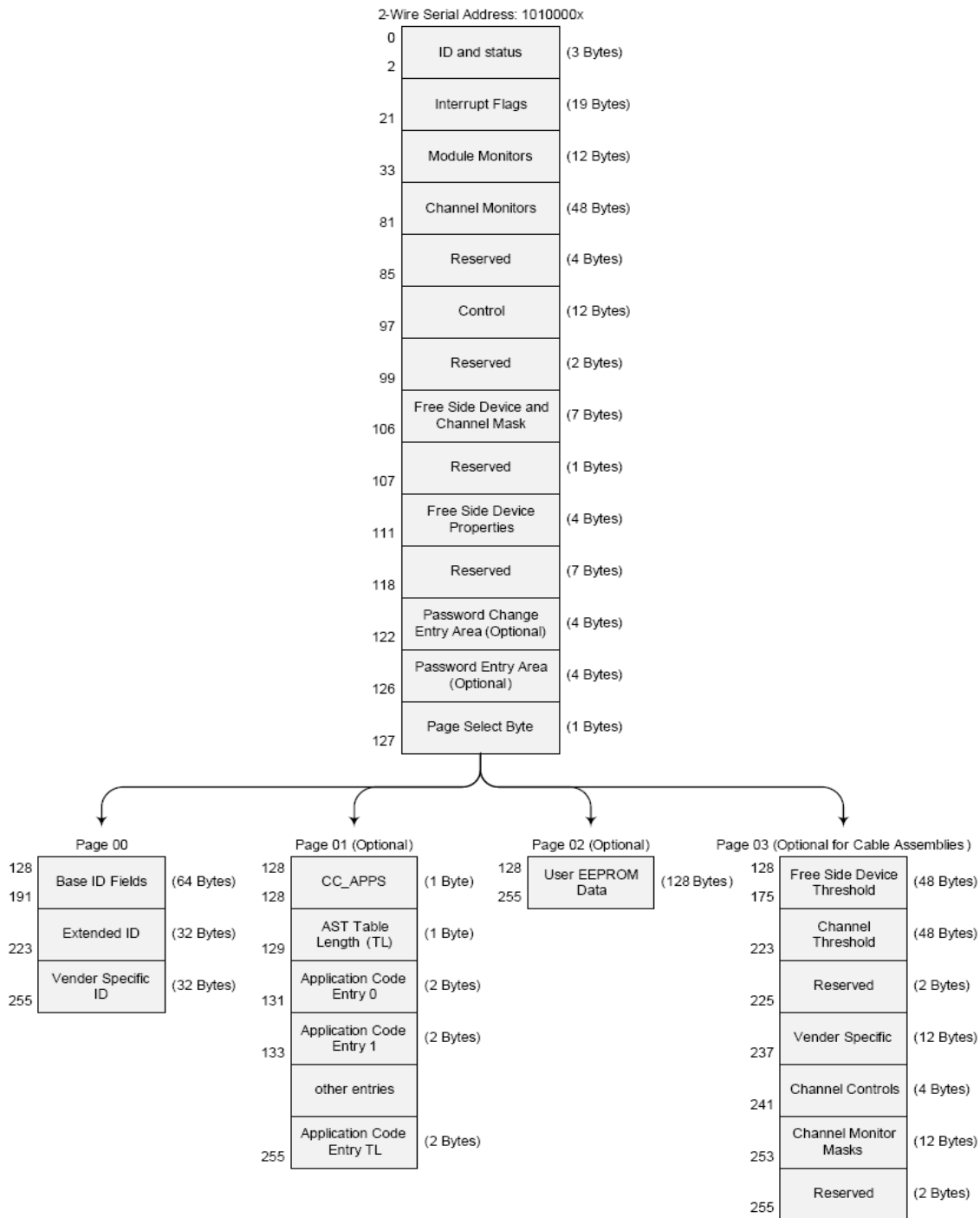
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Digital Diagnostic Memory Map



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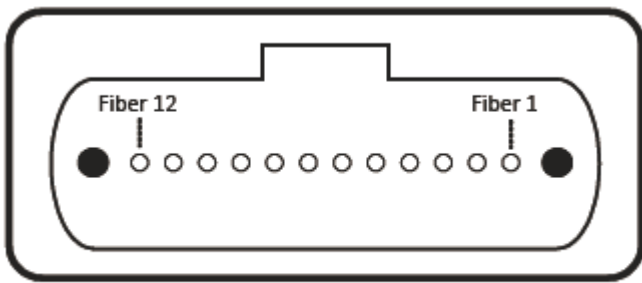
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Digital Diagnostic Monitoring Characteristics

PARAMETER	SYMBOL	ACCURACY	UNIT	NOTE
Transceiver Temperature	T_{INT}	± 3	$^{\circ}C$	
Transceiver Supply Voltage	V_{INT}	± 3	%	
TX Bias Current	I_{BIAS}	± 10	%	
TX Output Power	P_{TX}	± 3	dB	
RX Received Optical Power	P_{RX}	± 3	dB	

Optical Interface Layout (1x12 MPO)



Outside view of the QSFP module MPO

Fiber #	Lane Assignment
1	RX0
2	RX1
3	RX2
4	RX3
5,6,7,8	Not used
9	TX3
10	TX2
11	TX1
12	TX0

lane assignment

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Mechanical Dimensions (All dimensions are $\pm 0.20\text{mm}$ Unless Otherwise Specified, Unit: mm):

