

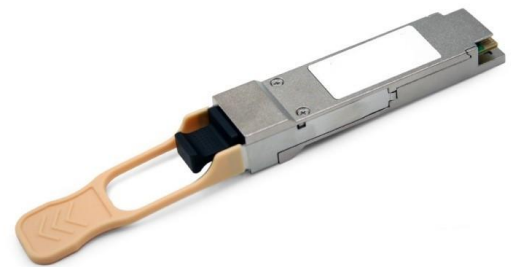
CHT-QSFP28-100G-SR4



Chimera's CHT-QSFP28-100G-SR4 100G QSFP28 transceiver modules are designed for use in 100 Gigabit Ethernet, 128GFC and 4x28G OTN client links over multimode fibre. They are compliant with the QSFP28 MSA 128GFC and IEEE 802.3bm 100GBASE-SR4 and CAUI-4. Digital diagnostics functions are available via the I2C interface as specified by the QSFP28 MSA.

Key Features

- Hot-pluggable QSFP28 form factor
- Supports 103.1Gb/s to 112.2Gb/s aggregate bit rates
- Power dissipation < 3.5W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 100m on OM4 Multimode Fibre (MMF)
- 4x25Gb/s 850nm VCSEL-based transmitter
- 4x25G electrical interface
- Single MPO12 receptacle
- I2C management interface



Applications

- 100GBASE-SR4 100G Ethernet
- 128G Fibber Channel
- 4x28Gb/s Multimode OTN

European Standards | Best Performance & Guaranteed Reliability | Lifetime Warranty | Fully Compliant With MSA

+44 (0) 845 130 1585 | sales@megnet.co.uk | www.megnet.co.uk

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Storage Temperature	T _s	-20	-	+85	°C	
Supply Voltage	V _{CC}	-0.3	-	+3.6	V	
Case Operating Temperature	T _{OP}	0	-	70	°C	
Operating Relative Humidity	RH	-	-	+85	%	
Receiver Damage Threshold, per Lane	PR _{dmg}	5.5	-	-	dBm	

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T _C	0	-	+70	°C	
Power Supply Voltage	V _{CC}	3.13	3.3	3.47	V	
Aggregate Bit Rate	BR _{AVE}	103.1	-	112.2	Gb/s	
Lane Bit Rate	BR _{LANE}	25.78	-	28.05	Gb/s	
Humidity	Rh	5	-	85	%	
Fibber Bend Radius	Rb	3	-	-	cm	

Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Supply Voltage	Vcc	3.135		3.465	V	
Supply Current	Icc			1.5	A	
Module total power	P			3.5	W	
Signalling rate per lane		25.78	-	28.05	Gb/s	2
Differential data input voltage per lane	Vin,pp,diff			900	mV	
Single-ended voltage tolerance	Vin,pp	-0.35		3.3	V	
Receiver						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Signalling rate per lane			25.78		Gb/s	2
Differential data output swing	Vout,pp	400	600	800	mVpp	
Transition time (20% to 80%)	Tr, Tf	12			ps	
Bit Error Rate	BER			E-12		3

Notes:

1. Maximum total power value is specified across the full operational temperature and voltage range when CDRs are locked or a lack of input signal results in squelch being activated. If incorrect frequencies cause the CDRs to continuously attempt to lock, maximum power dissipation may reach 4.5 W.
2. $\pm 100\text{ppm}$
3. BER=10-12; PRBS 231-1@25.78125Gbps.

Optical Characteristics(EOL, T_{OP} = 0 to 70°C, V_{CC} = 3.135 to 3.465 Volts)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Signalling Speed per Lane		25.78125 ± 100ppm			Gb/s	1
Centre wavelength		840	-	860	nm	
RMS Spectral Width	SW	-	-	0.6	nm	
Average Launch Power per Lane	TXPx	-8.4	-	2.4	dBm	
Transmit OMA per Lane	TxOMA	-6.4	-	3	dBm	
Launch Power [OMA] minus TDEC per Lane	P-TDEC	-7.3	-		dBm	
TDEC per Lane	TDEC	-	-	4.3	dBm	
Optical Extinction Ratio	ER	2	-		dB	
Receiver						
Signalling Speed per Lane		25.78125 ± 100ppm			GBd	2
Centre wavelength		840	-	860	nm	
Average Receive Power per Lane	RXPx	-10.3	-	2.4	dBm	3
Receiver Reflectance	Rfl	-	-	-12	dB	
Stressed Receiver Sensitivity (OMA) per Lane	SRS	-	-	-5.2	dBm	
LOS De-Assert	LOSD	-	-	-12	dBm	
LOS Assert	LOSA	-30	-	-	dBm	
LOS Hysteresis		0.5	2	-	dB	

Notes:

1. Transmitter consists of 4 lasers operating at a maximum speed of 25.78125Gb/s ±100ppm each.
2. Receiver consists of 4 photodetectors operating at a maximum speed of 25.78125Gb/s ±100ppm each.
3. Minimum value is informative only and not the principal indicator of signal strength.
4. Hit Ratio 5 x 10⁻⁵ hits/sample.

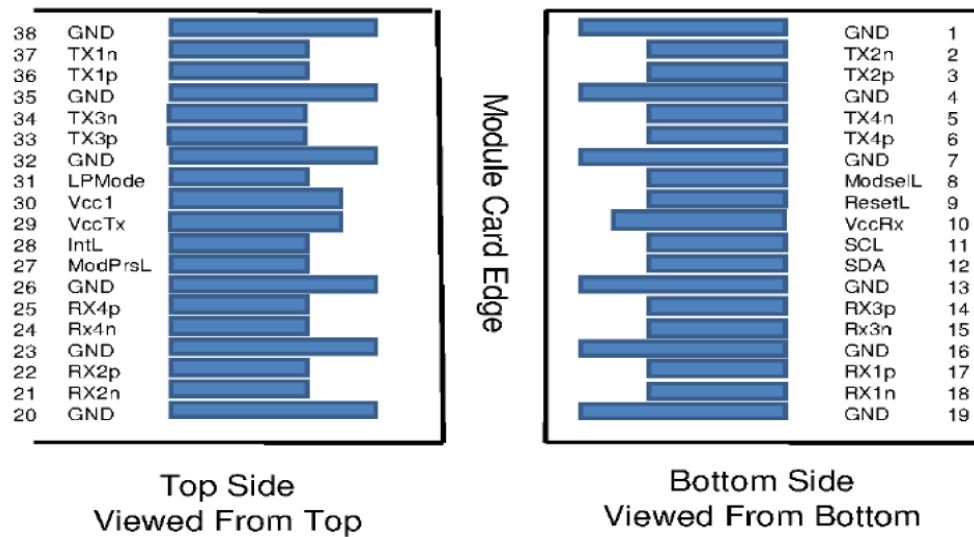
Ethernet Operation

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Signalling Speed per Lane		27.95~28.05			Gb/s	4
Centre wavelength		840	-	860	nm	
RMS Spectral Width	SW	-	-	0.6	nm	
Average Launch Power per Lane	TXPx	-9	-	2.4	dBm	
Transmit OMA per Lane	TxOMA	-7.1	-	3	dBm	
Launch Power [OMA] minus TDEC per Lane	P-TDEC	-8.0	-		dBm	
TDEC per Lane	TDEC	-	-	5.0	dBm	
Optical Extinction Ratio	ER	3	-		dB	
Receiver						
Signalling Speed per Lane		27.95~28.05			GBd	5
Centre wavelength		840	-	860	nm	
Average Receive Power per Lane	RXPx	-10.9	-	2.4	dBm	6
Receiver Reflectance	Rfl	-	-	-12	dB	
Stressed Receiver Sensitivity (OMA) per Lane	SRS	-	-	-4.7	dBm	7
LOS De-Assert	LOSD	-	-	-13	dBm	
LOS Assert	LOSA	-30	-	-	dBm	
LOS Hysteresis		0.5	2	-	dB	

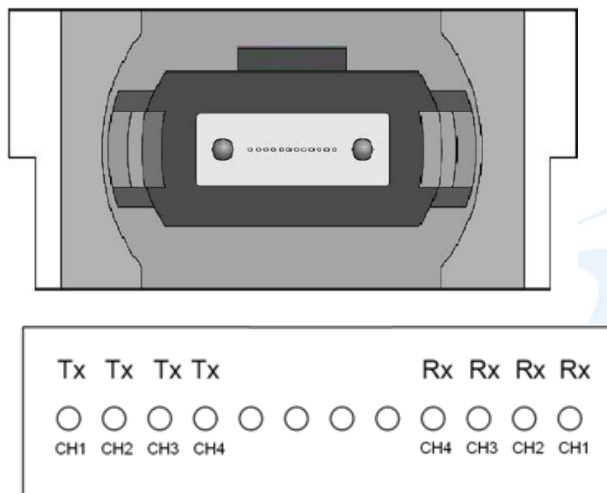
Notes:

1. Transmitter consists of 4 lasers operating at a maximum speed of 27.95 Gb/s each for OTU4 and 28.05 Gb/s each for Fibre Channel.
2. Hit ratio = 1.5×10^{-3} hits/sample.
3. Receiver consists of 4 photodetectors operating at a maximum speed of 27.95 Gb/s each for OTU4 and 28.05 Gb/s each for Fibre Channel.
4. Minimum value is informative only and not the principal indicator of signal strength.

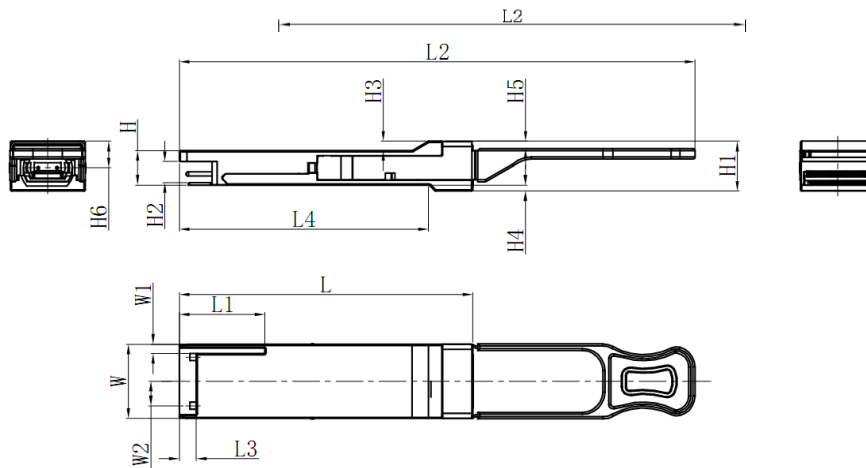
Pin Description



Optical Interface



Mechanical Dimension



Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	72.2	—	122	4.35	18.45	—	6.2	8.6	12.0	5.35
Typical	72.0	—	—	4.20	18.35	—	—	8.5	11.8	5.2
MIN	68.8	16.5	118	4.05	18.25	2.2	5.8	8.4	11.6	5.05

Ordering Information

Part Number	Product Description
CHT-QSFP28-100G-SR4	112.2Gbps VXSEL 70m@OM3/100m@OM4 0°C ~ +70°C