

10G/25G/50Gbps SFP56 LR 10km Transceiver CL50GSFP56LR

Product Features:

- Support eCPRI wireless and 50GBASE-LR application
- Comply with IEEE 802.3cd 50GBASE-LR
- Comply with IEEE 802.350GAUI-1 C2M electrical interface.
- Management Interface comply with SFF-8472
- Comply with SFF-8432 with duplex LC connector
- Up to 10km transmission on SMF
- 2-wire interface with integrated Digital Diagnostic monitoring
- DFB laser and PIN receiver
- Support 10Gbps/25Gbps/26.5625GBd rate selection
- Single +3.3V power supply
- Power consumption lower than 2W
- Operating case temperature: Industry temp: -40~+85°C, Commercial temp: 0~70°C



Functional Characteristics (Optical)

The following tables list the performance specifications for the various functional blocks of the integrated optical transceiver module.

Table 1 – 50GBase LR Transmitter Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Center Wavelength Range	λC	1304.5		1317.5	nm	1
		1300		1320		2
Modulation Fomart		PAM4 26.5625Gbps				
Average Output Power	P0UT	-4.5	-	4.2	dBm	
Outer Optical Modulation Amplitude	OMA	- 1.5	-	4	dBm	
TDECQ	TDECQ			3.2	dB	
Average Output Power (Laser Off)	P0UT-OFF	-	-	-30	dBm	
Extinction Ratio	ER	3.5	-	-	dB	
RIN15.6OMA	-	-	-	- 132	dB/Hz	
Optical return loss tolerance	-	-	-	15.6	dB	
Transmitter reflectance	-	-	-	-26	dB	
Receiver						
Center Wavelength Range	λC	1295	1311	1325	nm	
Damage threshold	-	-	-	3.8	dBm	3
Average receive power		- 10.8		3	dBm	
Receiver Power (OMAouter)	-	-	-	3	dBm	4
Receiver sensitivity (OMAouter)		Max(−8.4, SECQ − 9.8)	dBm			

LOS Assert	LOSA	-30	-	-	dBm	
LOS De-assert	LOSD	-	-	- 11	dBm	
LOS Hysteresis	LOSH	0.5	-	-	dB	

Notes1:For C temp 0~70°C

Notes2:For I temp -40~85°C

Notes3:The receiver shall be able to tolerate, without damage, continuous exposure to an optical signal having this average power level. The receiver does not have to operate correctly at this input power

Notes4:Measured with a PRBS31Q test pattern @26.5625 GBd, BER≤2.4X10⁻⁴.

Table 2 – 25GBase LR Transmitter Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Center Wavelength Range	λ_C	1304.5		1317.5	nm	1
		1300		1320		2
Modulation Fomart		25G NRZ @25.78Gbps				
Average Output Power	P _{OUT}	-4.5	-	4.2	dBm	
Outer Optical Modulation Amplitude	OMA	- 1.5	-	4	dBm	
Average Output Power (Laser Off)	P _{OUT} -OFF	-	-	-30	dBm	
Extinction Ratio	ER	3.5	-	-	dB	
Optical return loss tolerance	-	-	-	18	dB	
Transmitter reflectance	-	-	-	-26	dB	
Receiver						
Center Wavelength Range	λ_C	1295	1311	1325	nm	
Damage threshold	-	-	-	3.8	dBm	3
Average receive power		- 10.8		3	dBm	
Receiver Power (OMA _{outer})	-	-	-	3	dBm	4
Receiver sensitivity		< -12	dBm			
LOS Assert	LOSA	-30	-		dBm	
LOS De-assert	LOSD	-	-	- 14	dBm	
LOS Hysteresis	LOSH	0.5	-	-	dB	

Notes1:For C temp 0~70°C

Notes2:For I temp -40~85°C

Notes3:The receiver shall be able to tolerate, without damage, continuous exposure to an optical signal having this average power level. The receiver does not have to operate correctly at this input power

Notes4: Measured with a PRBS31Q test pattern @25.78 GBd, BER≤5X10⁻⁵.

Table 3 – 10GBase LR Transmitter Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Center Wavelength Range	λ_C	1304.5		1317.5	nm	1
		1300		1320		2
Modulation Fomart		10.3125Gbps				
Average Output Power	P _{OUT}	-4.5	-	4.2	dBm	



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Outer Optical Modulation Amplitude	OMA	- 1.5	-	4	dBm	
Average Output Power (Laser Off)	P0UT-OFF	-	-	-30	dBm	
Extinction Ratio	ER	3.5	-	-	dB	
Optical return loss tolerance	-	-	-	20	dB	
Transmitter reflectance	-	-	-	-26	dB	
Receiver						
Center Wavelength Range	λ_C	1295	1311	1325	nm	
Damage threshold	-	-	-	3.8	dBm	3
Average receive power		- 10.8		3	dBm	
Receiver Power (OMA _{outer})	-	-	-	3	dBm	4
Receiver sensitivity		< - 14.5	dBm			
LOS Assert	LOSA	-30	-		dBm	
LOS De-assert	LOSD	-	-	- 11	dBm	
LOS Hysteresis	LOSH	0.5	-	-	dB	

Notes1:For C temp 0~70°C

Notes2:For I temp -40~85°C

Notes3:The receiver shall be able to tolerate, without damage, continuous exposure to an optical signal having this average power level. The receiver does not have to operate correctly at this input power

Notes4: Measured with a PRBS31Q test pattern @25.78 GBd, BER≤10X10⁻¹².

Ordering Information

Table 4 - Ordering Information

Part No	Application	Data Rate	Laser Source	Fiber Type
CLSFP10G25G50GSR	50GBASE-SR 0~70°C	26.5625 GBd	VCSEL	SMF
CLSFP10G25G50GSRI	50GBASE-SR-40~85°C			

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