

SV-QSFP-40GT4T4-XXM

Starview QSFP+ 40Gbps Active Optical Cable modules,
distance up to 1m; 3m;5m;7m;10m;15m



Features

- Full duplex 4 channel 850nm parallel active optical cable
- Up to 11.1Gbps Data rate per channel
- Maximum link length of 100m links on OM3 multimode fiber
Or 150m links on OM4 multimode fiber
- High Reliability 850nm VCSEL technology
- Electrically hot-pluggable
- Digital diagnostic QSFP+ MSA compliant
- Case operating temperature range:0°C to 70°C
- Power dissipation < 1.5 W per cable end

Applications

- 40G Ethernet
- Infiniband QDR
- Fiber channel
- HPC Interconnections
- Compliant to QSFP+ MSA
- RoHS Compliant.

Ordering Information

Part number	Description
SV-QSFP-40GT4T4-1M	Starview QSFP+ 40Gbps Active Optical Cable module, distance up to 1m
SV-QSFP-40GT4T4-3M	Starview QSFP+ 40Gbps Active Optical Cable module, distance up to 3m
SV-QSFP-40GT4T4-5M	Starview QSFP+ 40Gbps Active Optical Cable module, distance up to 5m
SV-QSFP-40GT4T4-7M	Starview QSFP+ 40Gbps Active Optical Cable module, distance up to 7m
SV-QSFP-40GT4T4-10M	Starview QSFP+ 40Gbps Active Optical Cable module, distance up to 10m
SV-QSFP-40GT4T4-15M	Starview QSFP+ 40Gbps Active Optical Cable module, distance up to 15m

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	Ts	-40		85	°C
Relative Humidity	RH	5		95	%
Power Supply Voltage	VCC	-0.3		4	V
Signal Input Voltage		Vcc-0.3		Vcc+0.3	V

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0	-	70	°C	Without air flow
Power Supply Voltage	VCC	3.14	3.3	3.46	V	
Power Supply Current	ICC	-		450	mA	per cable end
Data Rate	BR		10.3125		Gbps	Each channel

General Product Characteristics

Parameter	Value	Unit	Notes
Module Form Factor	QSFP+		
Number of Lanes	4 Tx /Rx		
Maximum Aggregate Data Rate	42.0	Gb/s	
Maximum Data Rate per Lane	10.5	Gb/s	
Standard Cable Lengths	3, 5, 7, 10, 15	meters	Other lengths, please contact sales
Protocols Supported	Typical applications include Infiniband, Fiber Channel, 40G Ethernet		
Electrical Interface and Pin-out	38-pin edge connector		Pin-out as defined by the QSFP+ MSA
Standard Optical Cable Type	Multimode ribbon fiber cable assembly, riser-rated		
Maximum Power Consumption per End	1.5	W	
Management Interface	Serial, I2C-based, 400 kHz maximum frequency		As defined by the QSFP+ MSA

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Supply Voltage	Vcc1,VccTx,VccRx	3.14	3.3	3.46	V	
Supply Current	Icc			450	mA	
Transmitter						
Differential data input swing	Vin,pp	180		1000	mV	1
Single ended input voltage tolerance	VinT	-0.3		4.0	V	

Receiver						
Differential data output swing	Vout,pp	300		850	mV	2
Single-ended output voltage		-0.3		4.0	v	

Note(1): AC coupled internally.

Note(2): AC coupled with 100Ω differential output impedance.

High-Speed Electrical Characteristics per Lane

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Reference Differential Input Impedance	Zd		100		Ω	
Termination Mismatch	ΔZM			5	%	1
Input AC Common Mode Voltage				25	mV (RMS)	
Differential Input Return Loss	SDD11				dB	2, 0.01-4.1 GHz
					dB	3, 4.1 – 11.1 GHz
Differential to Common Mode Loss	SCD11			-10	dB	0.01-11.1 GHz
Jitter Tolerance (Total)	TJ			0.40	UI	
Jitter Tolerance (Deterministic)	DJ			0.15	UI	

Note(1): See SFF-8431 section D.15 Termination Mismatch for definition & test recommendations

Note(2): Reflection coefficient given by equation $SDD11(dB) < -12 + 2 \cdot \sqrt{f}$, with f in GHz.

Note(3): Reflection coefficient given by equation $SDD11(dB) < -6.3 + 13 \cdot \log_{10}(f/5.5)$, with f in GHz.

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Reference Differential Output Impedance	Zd		100		Ω	
Termination Mismatch	ΔZM			5	%	
Output AC Common Mode Voltage				15	mV (RMS)	
Differential Output Return Loss	SDD22				dB	4, 0.01-4.1 GHz
					dB	5, 4.1 – 11.1 GHz
Common Mode Output Return Loss	SCC22				dB	6, 0.01-2.5 GHz
				-3	dB	2.5-11.1 GHz
Output Rise and Fall time (20% to 80%)	tRH, tFH	24			ps	
Deterministic Jitter	DJOUT			0.38	UI	7
Total Jitter	TJOUT			0.64	UI	7

4. Reflection coefficient given by equation $SDD22(dB) < -12 + 2 \cdot \sqrt{f}$, with f in GHz.

5. Reflection coefficient given by equation $SDD22(dB) < -6.3 + 13 \cdot \log_{10}(f/5.5)$, with f in GHz.

6. Reflection coefficient given by equation $SCC22(dB) < -7 + 1.6 \cdot f$, with f in GHz.

7. When transmitter input jitter specs are met.