



X6590-R6A-OPC

NetAPP X6590-R6A Compatible TAA Compliant 40GBase-CU QSFP+ to QSFP+ Direct Attach Cable (Active Twinax, 10m)

Features

- Support for multi-gigabit data rates up to 10Gbps
- Data rates backward compatible to 1Gbps
- Hot-Pluggable SFP 20PIN footprint
- Improved Pluggable from Factor (IPF) compliant for enhanced EMI/EMC performance
- Low Power Consumption 0.2W
- Power Supply 3.3V
- MSA Compatible
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



Applications:

- Data Center: Switches, Storage, Servers and Routers
- High density connections between networking equipment

Product Description

This is a NetAPP X6590-R6A compatible 40GBase-CU QSFP+ to QSFP+ direct attach cable that operates over active copper with a maximum reach of 10.0m (32.8ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	0		70	°C	
Power Supply Voltage	Vcc	3.14	3.3	3.47	V	
Power Dissipation	P _{DISS}			0.2	W	
Differential Input Impedance	ZIN	90	100	110	Ω	2
Differential Output Impedance	ZOUT	90	100	110	Ω	3
Differential Input Voltage Amplitude	ΔVIN	300		1100	mVp-p	
Differential Output Voltage Amplitude	ΔVOUT	500		800	mVp-p	
Skew	Sw			300	ps	
Bit Error Rate	BR			E ⁻¹²		
Input Logic Level - High	VIH	2.0		Vcc	V	
Input Logic Level - Low	VIL	0		0.8	V	
Output Logic Level - High	VOH	Vcc-0.5		Vcc	V	
Output Logic Level - Low	VOL	0		0.4	V	

Notes:

1. BER=10⁻¹² and PRBS 2³¹-1 @10.3125Gbps.
2. Differential input voltage amplitude is measured between Tx#+ and Tx#-.
3. Differential output voltage amplitude is measured between Rx#+ and Rx#-.

Systems

Parameter	Media	Operating Parameters
10Gbps Line Speed, Full Duplex Bit Error Rate: Better Than 10E ⁻¹²	Hot-Pluggable, Industry-Standard Small Form-Factor Pluggable (SFP+) Copper Cable	Supply Voltage: 3.3V Power Consumption (Per End): Max. 0.2W

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λ_C	840	850	860	nm	
RMS Spectral Width	$\Delta\lambda$			0.65	nm	
Average Launch Power Per Channel	POUT	-7.5		-2.5	dBm	
Difference in Launch Power Between Any Two Lanes (OMA)					dB	
Extinction Ratio	ER	3			dB	
Peak Power Per Lane				4	dBm	
Transmitter and Dispersion Penalty (TDP) Per Lane	TDP			3.5	dB	
Average Launch Power of Off Transmitter Per Lane				-30	dB	
Transmitter Eye Mask Definition: (X1, X2, X3, Y1, Y2, Y3)		(0.23, 0.34, 0.43, 0.27, 0.33, 0.4)				1
Receiver						
Center Wavelength	λ_C	840	850	860	nm	
Stressed Receiver Sensitivity in OMA Per Lane				-5.4		2
Maximum Average Power at Receiver Input Per Lane				2.4		
Receiver Reflectance				-12		
Peak Power Per Lane				4		
LOS Assert		-30				
LOS De-Assert – OMA				7.5		
LOS Hysteresis		0.5				

Notes:

1. Hit Ratio = 5×10^{-5} .
2. Measured with conformance test signal at TP3 for BER = $10e^{-12}$.

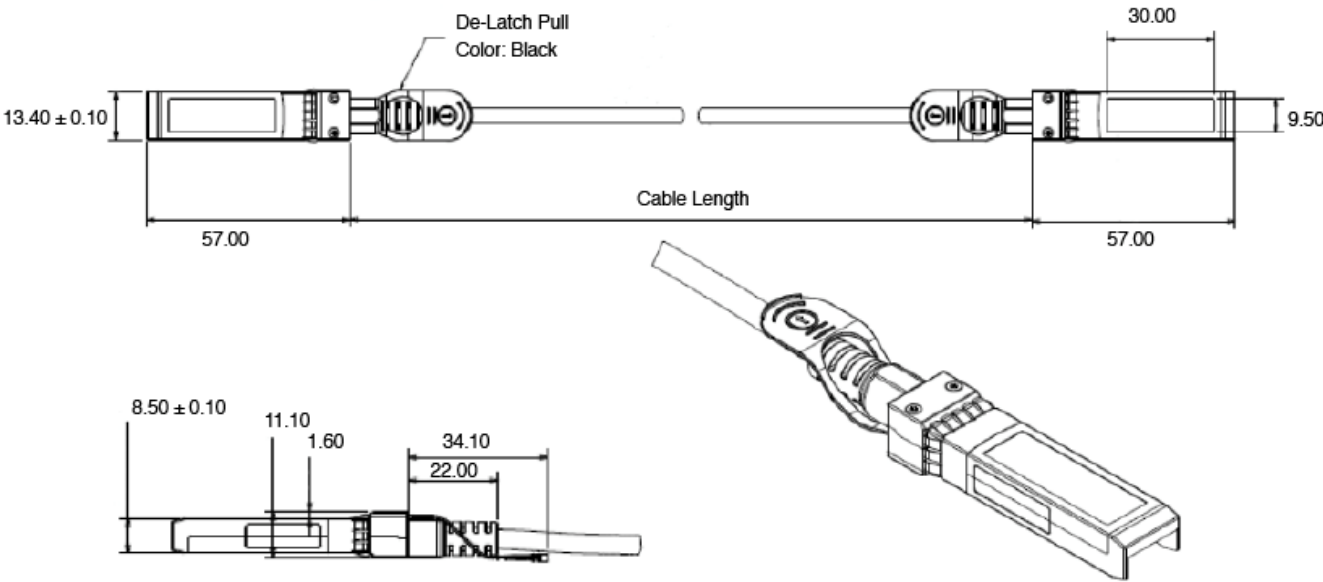
Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1		VeeT	Transmitter Ground.	
2	LVTTL-O	Tx_Fault	N/A.	1
3	LVTTL-I	Tx_Disable	Transmitter Disable.	
4	LVTTL-I/O	SDA	2-Wire Serial Data.	
5	LVTTL-I	SCL	2-Wire Serial Clock.	
6		MOD_DEF0	Module Present. Connected to the VeeT.	
7	LVTTL-I	RS0	N/A.	1
8	LVTTL-O	LOS	Loss of Signal.	
9	LVTTL-I	RS1	N/A.	1
10		VeeR	Receiver Ground.	
11		VeeR	Receiver Ground.	
12	CML-O	RD-	Receiver Data Inverted.	
13	CML-O	RD+	Receiver Data Non-Inverted.	
14		VeeR	Receiver Ground.	
15		VccR	+3.3V Receiver Supply.	
16		VccT	+3.3V Transmitter Supply.	
17		VeeT	Transmitter Ground.	
18	CML-I	TD+	Transmitter Data Non-Inverted.	
19	CML-I	TD-	Transmitter Data Inverted.	
20		VeeT	Transmitter Ground.	

Notes:

1. Signals not supported in SFP+ Copper pulled-down to the VeeT with a 30kΩ resistor.

Mechanical Specifications



OptioConnect

Innovation for the Future of High-Speed Networking

Who We Are

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

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