



### **XENPAK-1XGE-SR-OPC**

Juniper Networks® XENPAK-1XGE-SR Compatible TAA 10GBase-SR XENPAK Transceiver (MMF, 850nm, 300m, SC, DOM)

#### **Features**

- INF-8474 Compliance
- Duplex SC Connector
- Multi-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



#### **Applications:**

- 10GBase-SR Ethernet
- 8x/10x Fibre Channel
- Access, Datacenter and Enterprise
- Mobile Fronthaul CPRI/OBSAI

#### **Product Description**

This Juniper Networks® XENPAK-1XGE-SR compatible XENPAK transceiver provides 10GBase-SR throughput up to 300m over multi-mode fiber (MMF) using a wavelength of 850nm via an SC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Juniper Networks®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	V <sub>CC</sub>	-0.5	4.0	V
Storage Temperature	TS	-40	85	°C
Power Case Temperature		0	70	°C
Adaptable Power Supply	Vapsense	0	1.5	V

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V <sub>CC3</sub>	3.13	3.30	3.47	V
	V <sub>APS</sub>	1.152	1.2	1.248	
Power Supply Current	I <sub>CC</sub>			300	mA
Case Operating Temperature – Commercial	T <sub>C</sub>	0		70	°C
Power Dissipation	PD		1.7	2.4	W

## Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
1.2 V CMOS						
Input High Voltage	V <sub>IL</sub> (MAX)	120	600	850	mV	
Input Low Voltage	V <sub>IH</sub> (MIN)	90	100	110	Ω	
Capacitance		2.0		V <sub>CC</sub> +0.3	V	
Pull Up Resistance		V <sub>EE</sub> -0.3		0.8	V	
MDIO I/O						
Output Low Voltage	V <sub>OL</sub>	-0.3		0.2	V	
Output Low Current	I <sub>OL</sub>			4	mA	
Input High Voltage	V <sub>IH</sub>	0.84		1.5	V	
Input Low Voltage	V <sub>IL</sub>	-0.3		0.36	V	
Pull-up Supply Voltage	V <sub>PULL</sub>	1.14	1.2	1.26		
Input Capacitance	C <sub>IN</sub>			10	Pf	
Load Capacitance	C <sub>LOD</sub>			470	Pf	
External Pull-up Resistance	E <sub>PULL</sub>	200			Ohm	

## Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Operating Range				300	m	
Operating Data Rate			10.3125		Gb/s	
Average Optics Power	Po	-6.5		-1	dBm	
Input Centre Wavelength	$\lambda$	840	850	860	nm	
Spectral Width	$\Delta \lambda$			0.45	dB	
Extinction Ratio	ER	3.5	0.4			
Optical Modulation Amplitude	OMA	525			$\mu$ W	
Transmitter and Dispersion Penalty	TDP			3.2	dB	
Receiver						
Operating Data Rate			10.3125		Gb/s	
Average Receiver Power	Po	-9.9		-1.0	dBm	
Sensitivity in OMA	OMA0			-11.1	dBm	1
Stressed Sensitivity in OMA	OMAst			-7.5	dBm	

### Notes:

1. Measured at 10.3125Gb/s, Non-framed PRBS2^31-1, NRZ.

## XAUI I/O Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
XAUI Data Rate	DR		3.125		Gb/s	
XAUI Baud Rate Tolerance		-100		100	Ppm	
Differential Input Voltage Swing		220		1600	Mv	
Differential Output Voltage Swing		800		1600	mVp-p	
Differential Input Impedance		80	100	120	$\Omega$	
Total Output Jitter	TJXAUI			0.35	UI	
Total Deterministic Output Jitter	DJXAUI			0.17	UI	

## Pin Descriptions

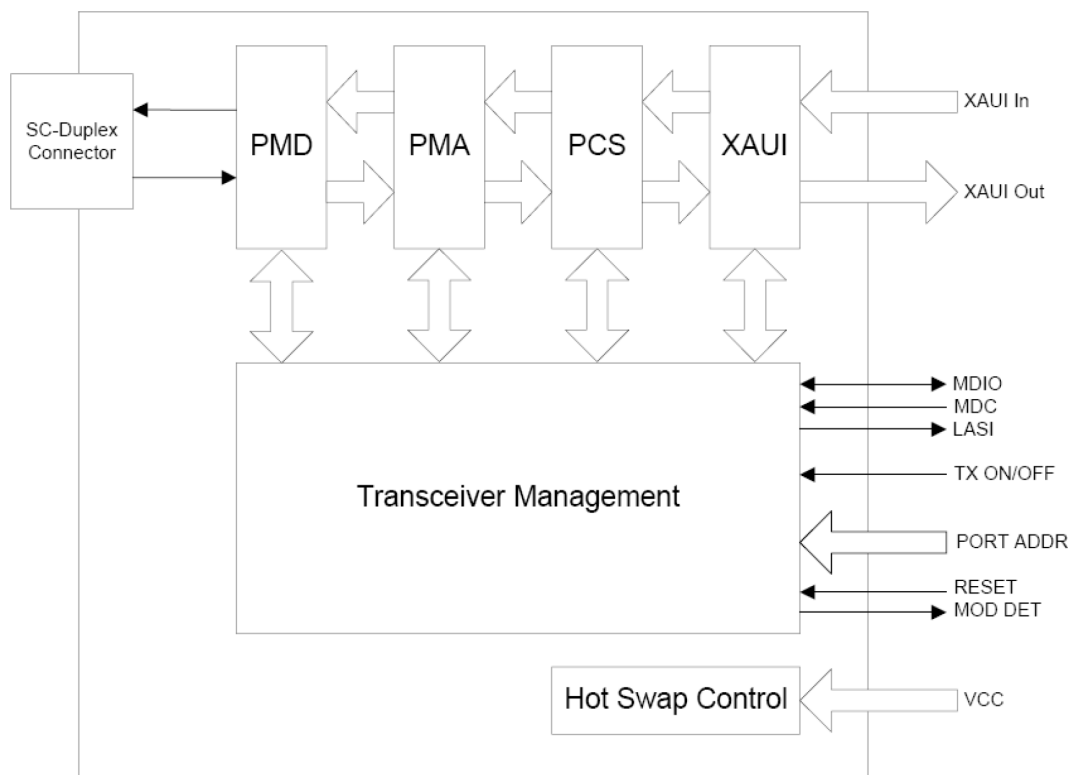
Pin	Symbol	Name/Descriptions	Ref.
1	GND	Electrical Ground.	1
2	GND	Electrical Ground.	2
3	GND	Electrical Ground.	3
4	5.0V	Power	
5	3.3V	Power	
6	3.3V	Power	4
7	APS =1.2V	Adaptive Power Supply.	5
8	APS =1.2V	Adaptive Power Supply.	2
9	LASI	Open Drain Compatible 10K-22K pull up on host. Logic High: Normal Operation Logic Low: LASI Asserted	5
10	RESET	Open Drain compatible. 10-22K pull-up on transceiver Logic high = Normal operation Logic low = Reset Minimum reset assert time 1 ms	1
11	VEND SPECIFIC	Vendor Specific Pin. Leave unconnected when not in use.	1
12	TX ON/OFF	Open Drain compatible. 10-22K pull-up on transceiver Logic high = Transmitter On (capable) Logic low = Transmitter Off (always)	
13	RESERVED	Reserved	
14	MODE DETECT	Pulled low inside module through 1k	1
15	VEND SPECIFIC	Vendor Specific Pin. Leave unconnected when not in use.	
16	VEND SPECIFIC	Vendor Specific Pin. Leave unconnected when not in use.	
17	MDIO	Management Data IO	1
18	MDC	Management Data Clock	
19	PRTAD4	Port Address Bit 4 (Low = 0)	
20	PRTAD3	Port Address Bit 3 (Low = 0)	1
21	PRTAD2	Port Address Bit 2 (Low = 0)	
22	PRTAD1	Port Address Bit 1 (Low = 0)	
23	PRTAD0	Port Address Bit 0 (Low = 0)	
24	VEND SPECIFIC	Vendor Specific Pin. Leave unconnected when not in use.	
25	APS SET	Feedback input for APS	

26	RESERVED	Reserved for Avalanche Photodiode use.	
27	APS SENSE	APS Sense Connection	
28	APS =1.2V	Adaptive Power Supply	
29	APS =1.2V	Adaptive Power Supply	
30	3.3V	Power	
31	3.3V	Power	
32	5.0V	Power	
33	GND	Electrical Ground	
34	GND	Electrical Ground	
35	GND	Electrical Ground	
36	GND	Electrical Ground	
37	GND	Electrical Ground	
38	RESERVED	Reserved	
39	RESERVED	Reserved	
40	GND	Electrical Ground	
41	RX LANE0+	Module XAUI Output Lane 0+	
42	RX LANE0-	Module XAUI Output Lane 0-	
43	GND	Electrical Ground	
44	RX LANE1+	Module XAUI Output Lane 1+	
45	RX LANE1-	Module XAUI Output Lane 1-	
46	GND	Electrical Ground	
47	RX LANE2+	Module XAUI Output Lane 2+	
48	RX LANE2-	Module XAUI Output Lane 2-	
49	GND	Electrical Ground	
50	RX LANE3+	Module XAUI Output Lane 3+	
51	RX LANE3-	Module XAUI Output Lane 3-	
52	GND	Electrical Ground	
53	GND	Electrical Ground	
54	GND	Electrical Ground	
55	TX LANE0+	Module XAUI Input Lane 0+	
56	TX LANE0-	Module XAUI Input Lane 0-	
57	GND	Electrical Ground	
58	TX LANE1+	Module XAUI Input Lane 1+	
59	TX LANE1-	Module XAUI Input Lane 1-	
60	GND	Electrical Ground	

61	TX LANE2+	Module XAUI Input Lane 2+	
62	TX LANE2-	Module XAUI Input Lane 2-	
63	GND	Electrical Ground	
64	TX LANE3+	Module XAUI Input Lane 3+	
65	TX LANE3	Module XAUI Input Lane 3	
66	GND	Electrical Ground	
67	RESERVED	Reserved	
68	RESERVED	Reserved	
69	GND	Electrical Ground	
70	GND	Electrical Ground	

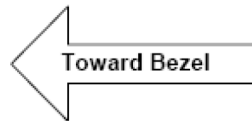
#### Notes:

1. Ground connections are common for TX and RX.
2. All connector contacts are rated at 0.5A nominal.
3. 1.2V CMOS compatible.
4. MDIO and MDC timing must comply with IEEE802.3ae, Clause 45.3.
5. XAUI output characteristics should comply with IEEE802.3ae Clause 47.
6. Transceivers will be MSA compliant when no signals are present on the vendor specific pins.



Functional Diagram of Typical XENPAK Style Transceiver

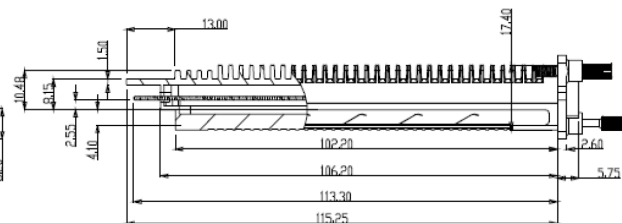
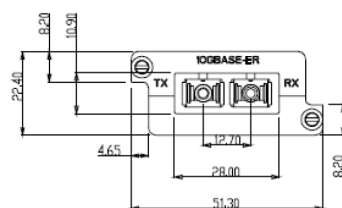
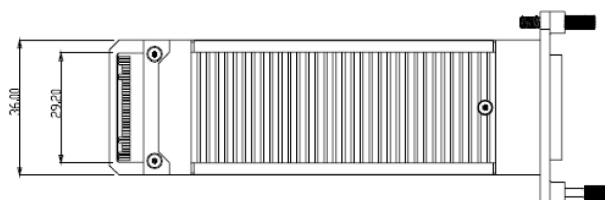
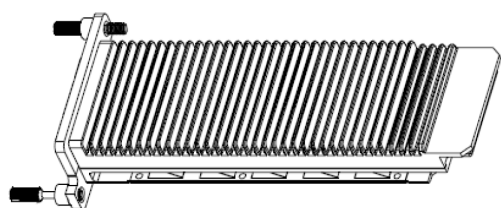
## Electrical Pin-out Details



70	GND
69	GND
68	RESERVED
67	RESERVED
66	GND
65	TX LANE3-
64	TX LANE3+
63	GND
62	TX LANE2-
61	TX LANE2+
60	GND
59	TX LANE1-
58	TX LANE1+
57	GND
56	TX LANE0-
55	TX LANE0+
54	GND
53	GND
52	GND
51	RX LANE3-
50	RX LANE3+
49	GND
48	RX LANE2-
47	RX LANE2+
46	GND
45	RX LANE1-
44	RX LANE1+
43	GND
42	RX LANE0-
41	RX LANE0+
40	GND
39	RESERVED
38	RESERVED
37	GND
36	GND

1	GND
2	GND
3	GND
4	5.0V
5	3.3V
6	3.3V
7	APS
8	APS
9	LASI
10	RESET
11	VEND SPECIFIC
12	TX ON/OFF
13	RESERVED
14	MOD DETECT
15	VEND SPECIFIC
16	VEND SPECIFIC
17	MDIO
18	MDC
19	PRTAD4
20	PRTAD3
21	PRTAD2
22	PRTAD1
23	PRTAD0
24	VEND SPECIFIC
25	APS SET
26	RESERVED
27	APS SENSE
28	APS
29	APS
30	3.3V
31	3.3V
32	5.0V
33	GND
34	GND
35	GND

## Mechanical Dimensions





## **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.

#### **Let's Connect**

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

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