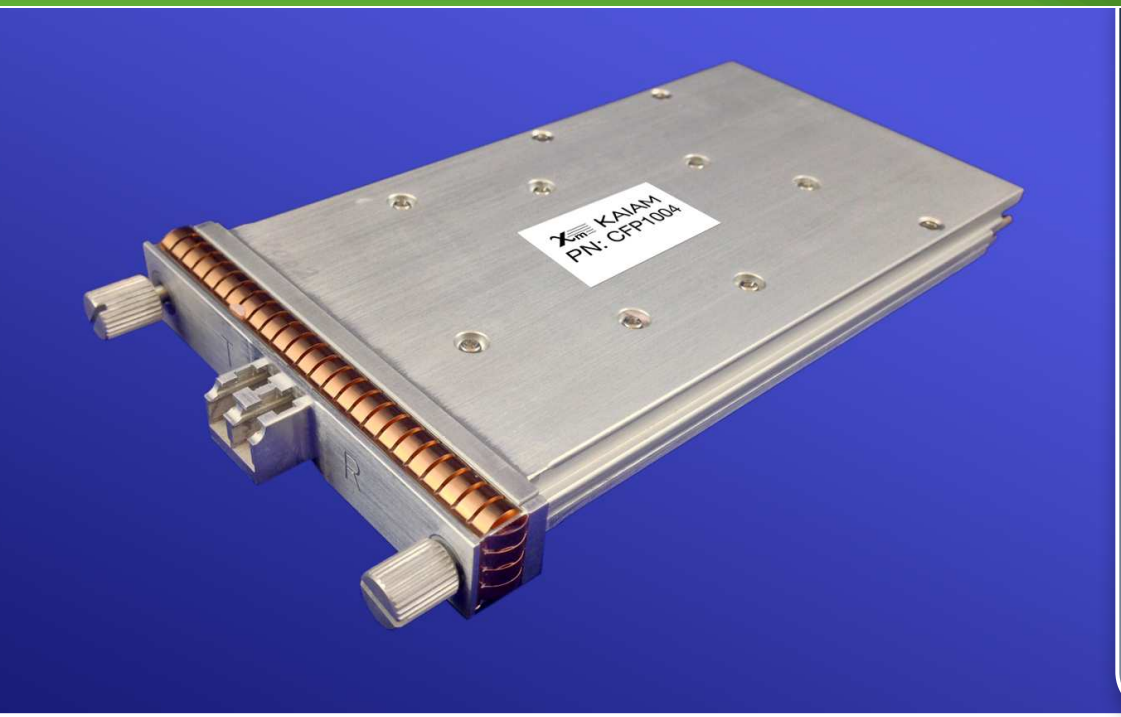
Smart photonic integration



KEY FEATURES

- *100Gb/s = 10x10Gb/s*
- *100GBASE-ER10*
- *20W nominal power dissipation*
- *40km reach*
- *400GHz wavelength spacing*
- *APD receiver*

10x10 Gb/s WDM ER10 CFP

with 40km Reach

Today's hyper-connected world is driving the need for high performance optical modules that deliver scalable solutions to provide more bandwidth with smaller size and cost than existing technologies. For many applications, XFPs or even the newly introduced QSFP+ have too much granularity, are too big and costly.

KAIAM's hybrid integration approach, powered by its novel integration engine technology, delivers 100Gb/s CFP modules with extended reach (to 40km and beyond). Ten 10Gb/s channels are integrated from standard off-the-shelf components into a single package with higher density and performance, providing an alternate solution for 40km 100Gb/s at lower cost and with best-in-class performance.

CFPs are readily customized for high bandwidth applications. On the transmitter side, the output wavelengths are easily modified by selecting subcomponents to match user needs. Similarly, by switching from PIN diodes to APDs on the receiver side, the modules can be made fully compatible with a 40km specification.

KAIAM

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OPTICAL TRANSMITTER PERFORMANCE

PARAMETER	SYM	UNITS	MIN	TYP	MAX	CONDITIONS/COMMENTS
Average Power	P_{avg}	dBm			1.7	
Extinction Ratio	ER	dB	6			
Optical Modulation Amp	OMA	dBm	-4.0	-2.8		
OMA minus TDP	OMA-TDP	dBm	-4.4	-3.8		
Transmitter and Dispersion Penalty	TDP	dB			3.0	
Optical Mask						compliant with 10GBASE-ER
Side Mode Suppression Ratio	SMSR	dB	30			modulated
Optical return loss tolerance		dB			-21	
Relative Intensity Noise	RIN_{OMA}	dB/Hz			-130	
Average launch power of OFF transmitter	P_{OFF}	dBm			-30	

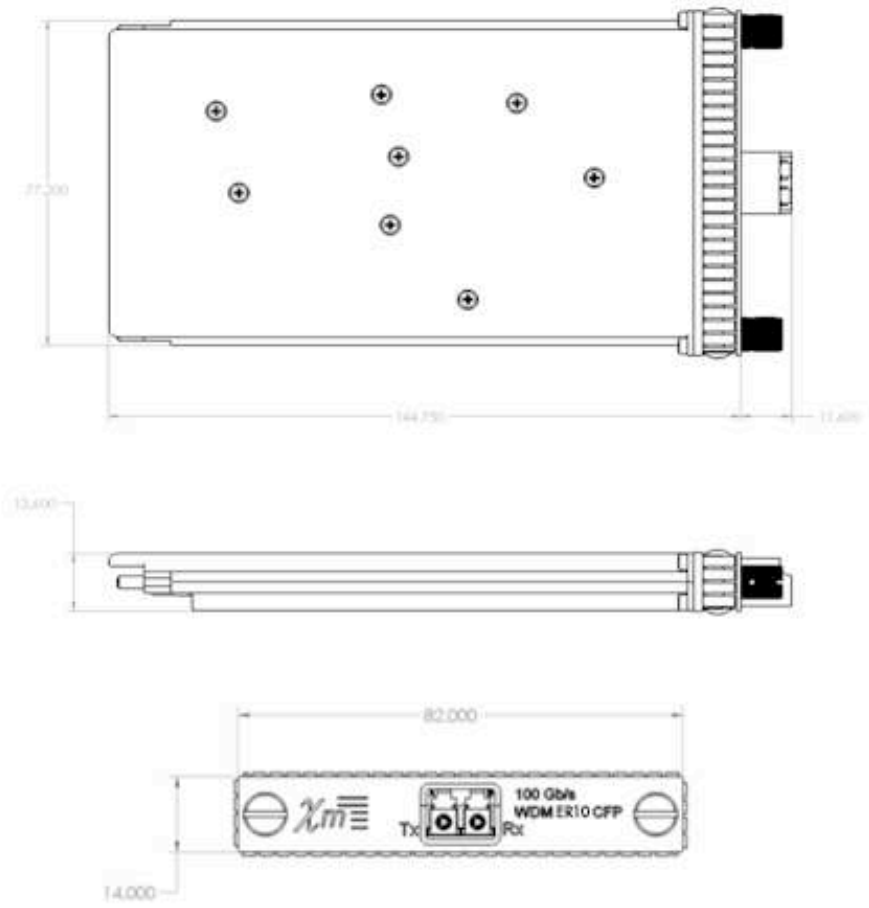
OPTICAL RECEIVER PERFORMANCE

PARAMETER	SYM	UNITS	MIN	TYP	MAX	CONDITIONS/COMMENTS
Optical Central Wavelength		nm	1523		1595	
Sensitivity in OMA	OMA	dBm			-16.4	BER<10^{-12}
Stressed Sensitivity in OMA	OMA_{stress}	dBm			-13.6	
Vertical eye closure for stressed sensitivity test	VECP	dB	2.7			
J2 Jitter for stressed sensitivity test	J2	UI	0.3			
Maximum Received Optical Power (overload)		dBm			-4.0	
Receiver Reflectance		dB			-27	
Loss of Signal Assert (LOS, per channel)		dBm	TBD			
LOS Hysteresis		dB	1		4	

POWER DISSIPATION SPECIFICATIONS

CONDITION/PARAMETER	UNITS	MIN	TYP	MAX	CONDITIONS/COMMENTS
Operating Power Supply Voltage	V	3.135	3.3	3.465	
Total Power Dissipation, all 10 WDM channels active in both Tx and Rx directions	W		20	24	
Low Power Mode Dissipation	W			2	
Inrush/Turn off Current	A	-100		100	
Power Supply Noise (voltage ripple)	%			2	DC – 1MHz
				3	1 – 10MHz

CFP MODULE WITH DUPLEX LC RECEPTACLE



For more information please visit www.kaiamcorp.com or call 1-510-344-2231.