

XFP Transceiver 1310nm – 10Km TXFP-1310-010K-LC-A

The **TXFP-1310-010K-LC-A** Transceiver is a multi rate, single channel (TDM) optical interface designed for 10Gb/s data transmission at 1310nm over 2-10Km SMF spans according to the following Telecom and Datacom standards:

- 10GBASE-Lx; IEEE802.3ae - 2002 (9.953 - 10.312 Gb/s);
- 10G Fiber Channel (10.518 – 11.318 Gb/s)
- SDH / STM64; ITU-T G691
SONET / OC192; GR 253-core (9.953 Gb/s)
- SDH / OTU2; ITU-T G709
SONET / OC192 with FEC (10.709 Gb/s).

The **TXFP-1310-010K-LC-A** operates in a wide temperature range from -5 to +70 °C with very low DC power consumption, and extremely good features both for heat dissipation and electromagnetic shielding. The excellent jitter performances are fully compliant with both Telecom and Datacom standards showing:

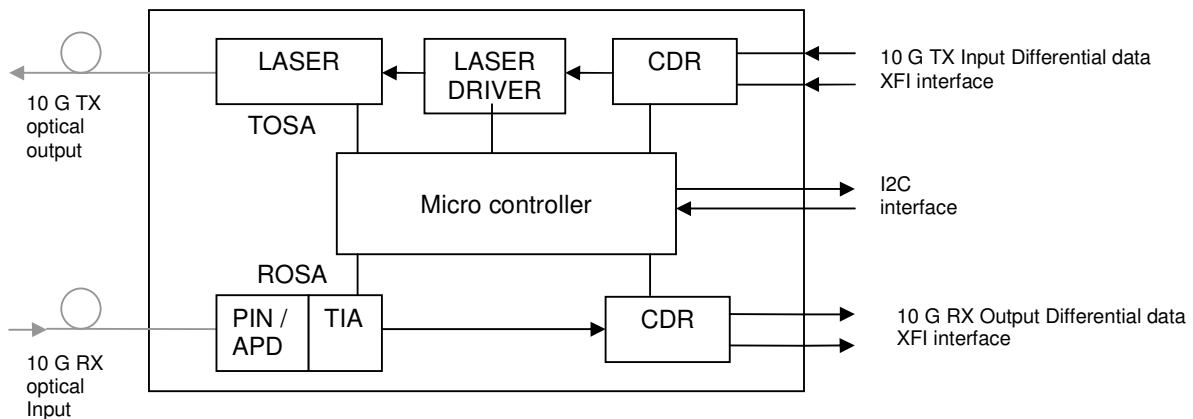
- jitter transfer function with less than 0.03 dB peaking over all frequencies and transfer bandwidth well below 8 MHz;
- jitter tolerance and generation compliant to ITU-T, TELCORDIA and IEEE requirements.



TXFP Series transceiver

As well as all Teleoptix product lines, The **TXFP** Series has been designed, engineered and is currently manufactured according to the highest quality levels requested by the major Telecom and Datacom networks equipment manufacturers.

The **TXFP** Transceiver Series is qualified according to TELCORDIA 468 requirements.



TXFP Series Block Diagram

STORAGE CONDITIONS

Parameter	Symbol	Unit	Condition	Min	Typ	Max
Storage ambient temperature	Ts	°C		-40		+85

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Unit	Condition	Min	Typ	Max
+5V Supply Voltage	VCC5	V				TBD
+3.3V Supply Voltage	VCC3	V				TBD
Static Discharge Voltage		V	HBM Human Body Model: JESD22-A114-B			500

OPERATING CONDITIONS (*)

Parameter	Symbol	Unit	Condition	Min	Typ	Max
Operating Case Temperature	Tc	°C		-5		70
+5V Supply Voltage	VCC5	V		4,8	5	5,2
+3.3V Supply Voltage	VCC3	V		3,1	3,3	3,5
+5V Supply Current	ICC5	mA			2	
+3.3V Supply Current	ICC3	mA			450	600
Power Consumption	P	W	operating		1,5	2,5
Power Consumption	Pd	W	power down mode			1,5

HIGH SPEED ELECTRICAL INTERFACE CHARACTERISTICS (*)

Parameter	Symbol	Unit	Condition	Min	Typ	Max
Bit Rate	B	Gb/s		9,953		11,318
Differential Input data Amplitude	InDD	mVpp	CML - XFI interface according with XFP MSA rev 4.5	120		1000
Differential Output data Amplitude	OutDD	mVpp	CML - XFI interface according with XFP MSA rev 4.5	340		850

JITTER PERFORMANCE CHARACTERISTICS (*)

Parameter	Symbol	Unit	Condition	Min	Typ	Max
Jitter Transfer Bandwidth	JBW	MHz		2		8
Jitter Transfer Peaking	JP	dB	F< 120 KHz			0.03
			F> 120 KHz			1
Jitter Tolerance	JT		ITU-T G825; Telcordia GR253; IEEE 802.3ae	Compliant		
Total Jitter Generation	JG-tot	UIpp	20kHz – 80MHz		0.15	0.3
			4MHz – 80MHz		0.10	0.15

OPTICAL CHARACTERISTICS (*)

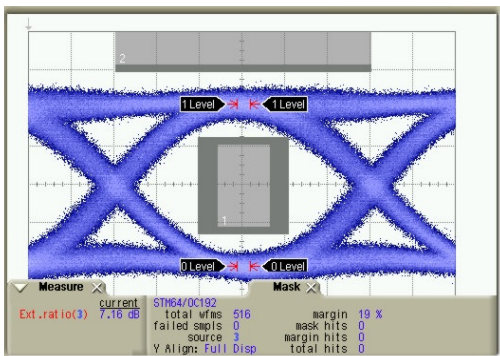
Parameter	Symbol	Unit	Condition	Min	Typ	Max
Emitted Wavelength	L	nm		1290		1330
Optical Output Power	OP	dBm		-6		-1
Spectral Width	DL	nm	@ -20 dB		0,3	1
Side Mode Suppression Ratio	SMSR	dB		30		
Extinction Ratio	ER	dB		6	7	
Optical Output Eye Mask Margin		%	ITU-T G691; ITU-T G709; 10GE		15	
Optical Power Shutdown	PDown	dBm				-30
B-B Sensitivity		dBm	BER=10 ⁻¹² ; PRBS 2 ³¹ -1		-16	-11
Chromatic Dispersion Penalty	DP	dB	BER=10 ⁻¹² ; PRBS 2 ³¹ -1; SMF Chromatic Dispersion = 70ps/nm			1
Overload	OV	dBm		1		
Loss Of Signal Assert Level	LOS_A	dBm	BER > 1E-3		-24	
Loss Of Signal Deassert Level	LOS_D	dBm	BER > 1E-4		-22	
LOS Hysteresys	LOS_H	dB		0.5		

(*): Unless otherwise stated, the parameters values are valid in the full operating conditions range.

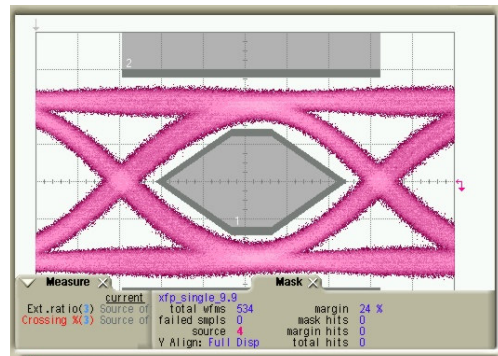
SAFETY

Parameter	Symbol	Unit	Condition	Min	Typ	Max
Laser Safety Class			Class 1 according to IEC 60825		Compliant	

EYE DIAGRAMS

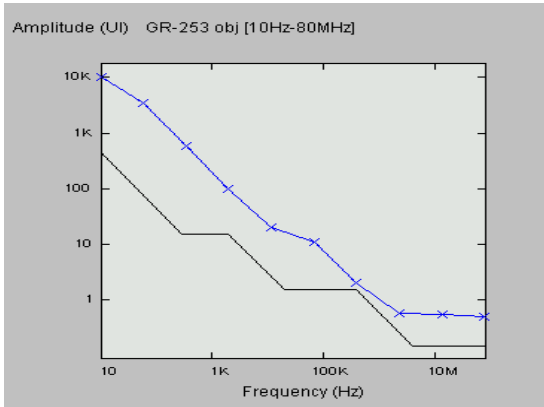


Optical Eye Diagram

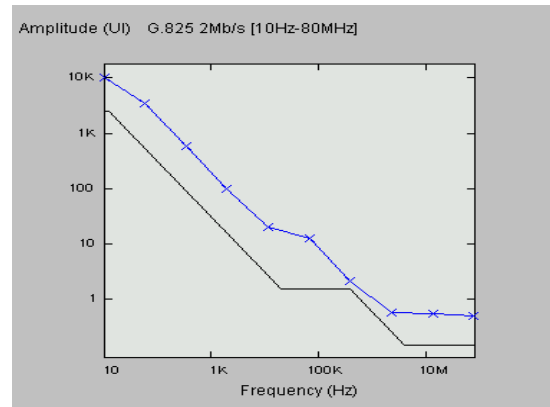


Electrical Eye Diagram

JITTER TOLERANCE

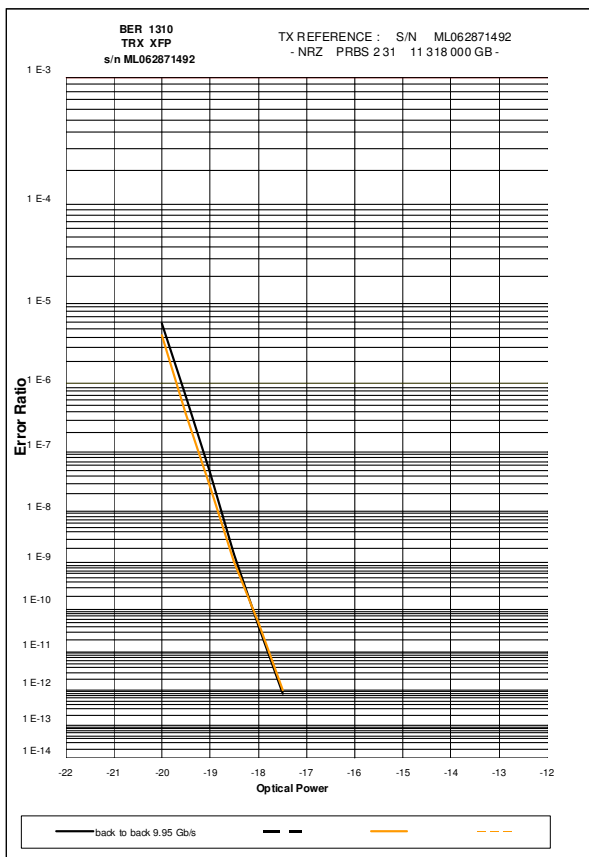


Telcordia GR253 Jitter Tolerance



ITU-T G825 Jitter Tolerance

BER CURVE



B-B & 12km at 11.318 Gb/s

ORDERING INFORMATION:
For orders or more information,
please contact our sales office:

Teleoptix srl,
Via Trento 30,
20059 Vimercate (Milano) – Italy

Phone: +39 039 686 4575
Fax: + 39 039 686 4018
e-mail: info@teleoptix.it