

## FTCS-M131X-02DXX 10Gbps 220m Multi Mode Datacom SFP+ Transceiver

### Features

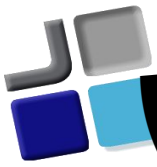
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### Applications

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### Product de



Absolute

Parameters	Symbol	Min	Max	Unit

Recommended operating

Parameter	Symbol	Min.	Typical	Max	Unit
					°



### LOW Speed Characteristics

Parameter	Symbol	Min.	Typical	Max	Unit

### Electrical characteristics

Parameter	Conditions	Symbol	Min.	Typical	Max	Unit
<b>Transmitter</b>						
<b>Receiver</b>						

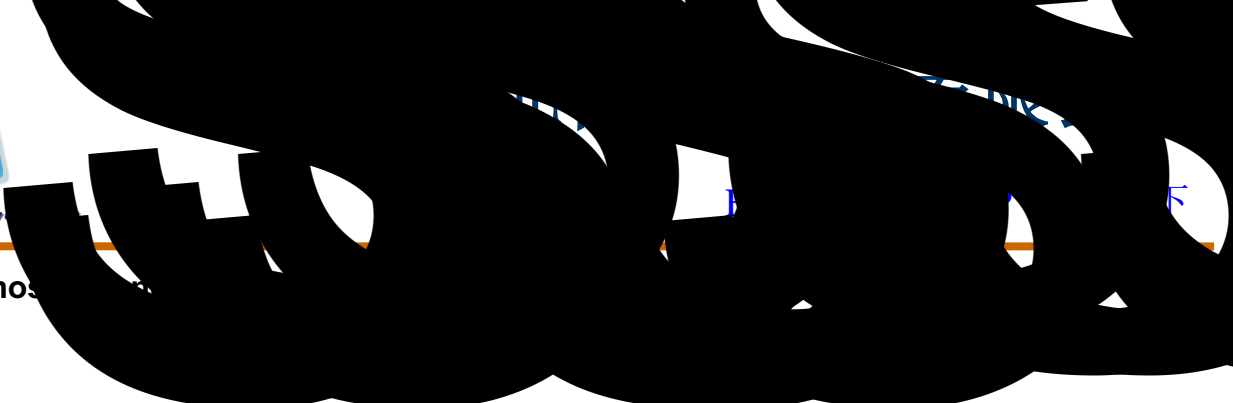
### General Specifications

Parameter	Symbol	Min.	Typical	Max	Unit	Notes



## Optical characteristics

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
<b>Transmitter</b>						
Wavelength	$\lambda$				nm	
Optical Power	$P_{opt}$				mW	
Modulation Frequency	$f_{mod}$				MHz	
Extinction Ratio	$ER$				dB	
Chirp Parameter	$C$					
Backscattering Coefficient	$BS$				dB	
Return Loss	$RL$				dB	
Insertion Loss	$IL$				dB	
Reflection Coefficient	$\Gamma$					
Transmission Coefficient	$T$					
Attenuation Coefficient	$\alpha$				dB/km	
Dispersion Coefficient	$D$				ps/nm.km	
Birefringence	$\Delta n$					
Optical Loss	$L$				dB	
Nonlinear Coefficient	$n_2$					
Group Velocity Dispersion	$GVD$				ps <sup>2</sup> /nm.km	
Phase Matching Angle	$\theta$				degrees	
Wave Number	$k$				1/m	
Angular Frequency	$\omega$				rad/s	
Linear Frequency	$f$				Hz	
Refractive Index	$n$					
Group Refractive Index	$n_g$					
Phase Refractive Index	$n_p$					
Propagation Constant	$\beta$				1/m	
Wave Vector	$k$				1/m	
Angular Momentum	$L$				kg.m <sup>2</sup> /s	
Linear Momentum	$p$				kg.m/s	
Energy	$E$				J	
Power	$P$				W	
Force	$F$				N	
Acceleration	$a$				m/s <sup>2</sup>	
Displacement	$x$				m	
Velocity	$v$				m/s	
Angular Velocity	$\omega$				rad/s	
Angular Acceleration	$\alpha$				rad/s <sup>2</sup>	
Phase	$\phi$				rad	
Phase Shift	$\Delta\phi$				rad	
Phase Difference	$\Delta\phi$				rad	
Phase Error	$\Delta\phi$				rad	
Phase Deviation	$\Delta\phi$				rad	
Phase Fluctuation	$\Delta\phi$				rad	
Phase Noise	$\Delta\phi$				rad	
Phase Jitter	$\Delta\phi$				rad	
Phase Drift	$\Delta\phi$				rad	
Phase Wander	$\Delta\phi$				rad	
Phase Scrambling	$\Delta\phi$				rad	
Phase Modulation	$\Delta\phi$				rad	
Phase Encoding	$\Delta\phi$				rad	
Phase Filtering	$\Delta\phi$				rad	
Phase Amplification	$\Delta\phi$				rad	
Phase Attenuation	$\Delta\phi$				rad	
Phase Reflection	$\Delta\phi$				rad	
Phase Transmission	$\Delta\phi$				rad	
Phase Conversion	$\Delta\phi$				rad	
Phase Interference	$\Delta\phi$				rad	
Phase Diffraction	$\Delta\phi$				rad	
Phase Scattering	$\Delta\phi$				rad	
Phase Absorption	$\Delta\phi$				rad	
Phase Emission	$\Delta\phi$				rad	
Phase Refraction	$\Delta\phi$				rad	
Phase Reflection Coefficient	$\Gamma$					
Phase Transmission Coefficient	$T$					
Phase Conversion Coefficient	$C$					
Phase Interference Coefficient	$I$					
Phase Diffraction Coefficient	$D$					
Phase Scattering Coefficient	$S$					
Phase Absorption Coefficient	$A$					
Phase Emission Coefficient	$E$					
Phase Refraction Coefficient	$R$					
Phase Reflection Loss	$RL$				dB	
Phase Transmission Loss	$TL$				dB	
Phase Conversion Loss	$CL$				dB	
Phase Interference Loss	$IL$				dB	
Phase Diffraction Loss	$DL$				dB	
Phase Scattering Loss	$SL$				dB	
Phase Absorption Loss	$AL$				dB	
Phase Emission Loss	$EL$				dB	
Phase Refraction Loss	$RL$				dB	
Phase Reflection Gain	$RG$				dB	
Phase Transmission Gain	$TG$				dB	
Phase Conversion Gain	$CG$				dB	
Phase Interference Gain	$IG$				dB	
Phase Diffraction Gain	$DG$				dB	
Phase Scattering Gain	$SG$				dB	
Phase Absorption Gain	$AG$				dB	
Phase Emission Gain	$EG$				dB	
Phase Refraction Gain	$RG$				dB	
Phase Reflection Efficiency	$\eta$					
Phase Transmission Efficiency	$\eta$					
Phase Conversion Efficiency	$\eta$					
Phase Interference Efficiency	$\eta$					
Phase Diffraction Efficiency	$\eta$					
Phase Scattering Efficiency	$\eta$					
Phase Absorption Efficiency	$\eta$					
Phase Emission Efficiency	$\eta$					
Phase Refraction Efficiency	$\eta$					
Phase Reflection Factor	$\Gamma$					
Phase Transmission Factor	$T$					
Phase Conversion Factor	$C$					
Phase Interference Factor	$I$					
Phase Diffraction Factor	$D$					
Phase Scattering Factor	$S$					
Phase Absorption Factor	$A$					
Phase Emission Factor	$E$					
Phase Refraction Factor	$R$					



Parameter	Symbol	Min.	Max	Unit	Notes
<b>Accuracy</b>					
<b>Dynamic Range Accuracy</b>					

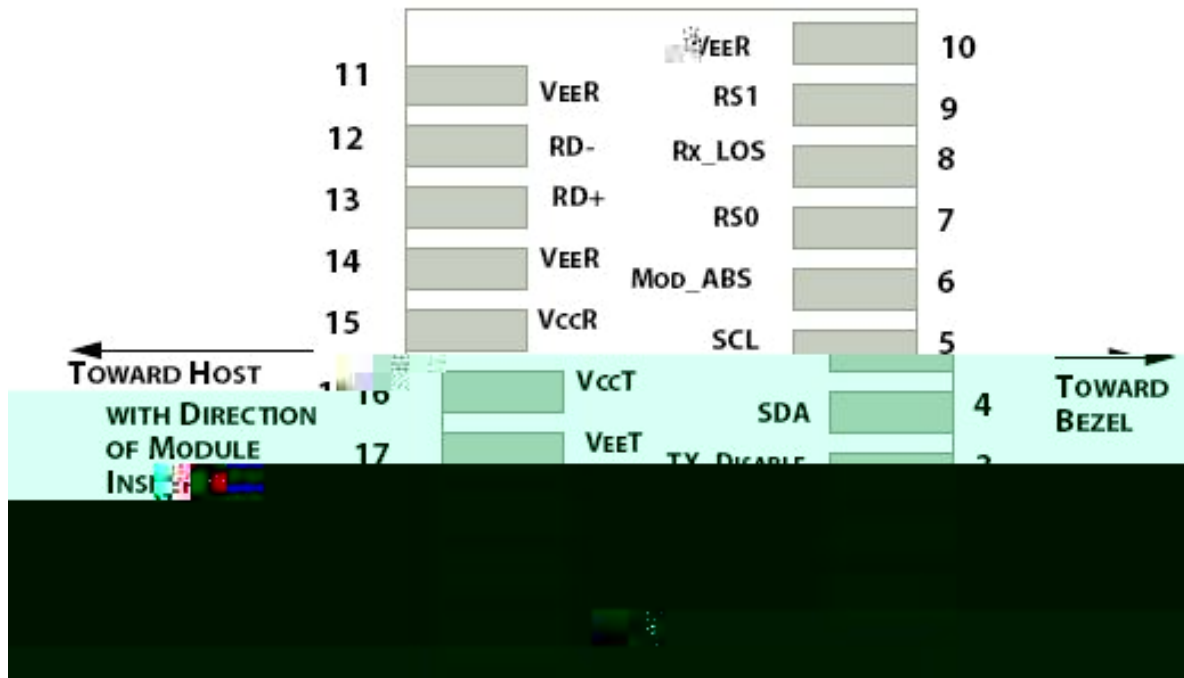


Figure 2: Interface to Host PCB

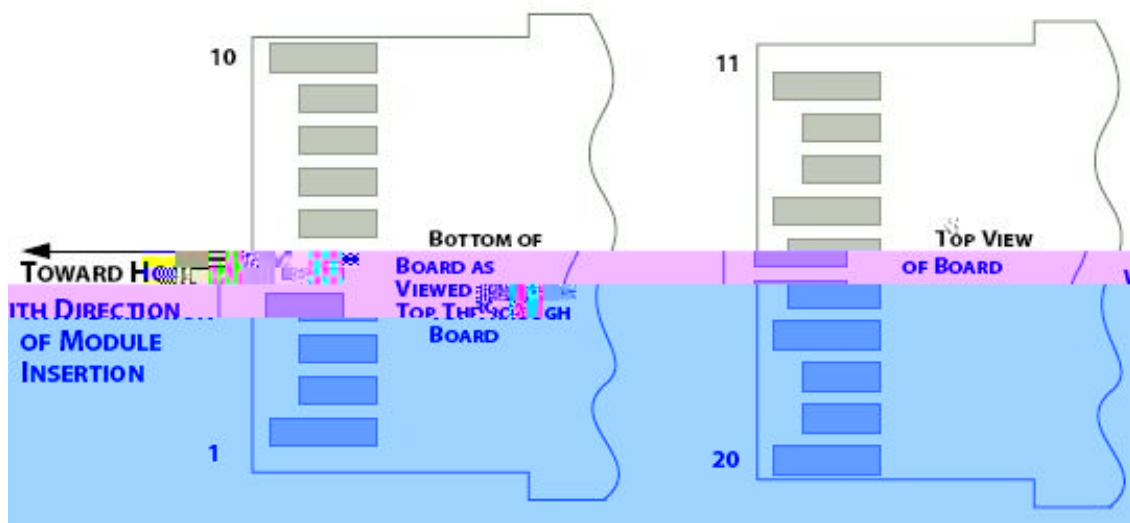


Figure 3: Module Contact Assignment

### Pin definition

Pin	Symbol	Name/Description



F-tone Networks

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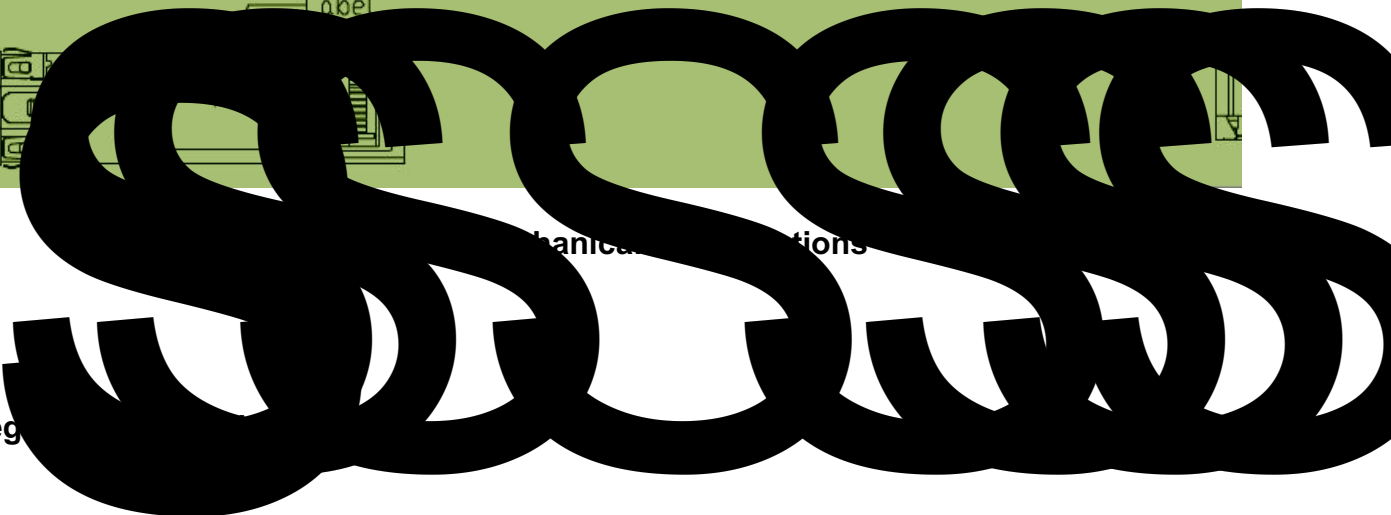
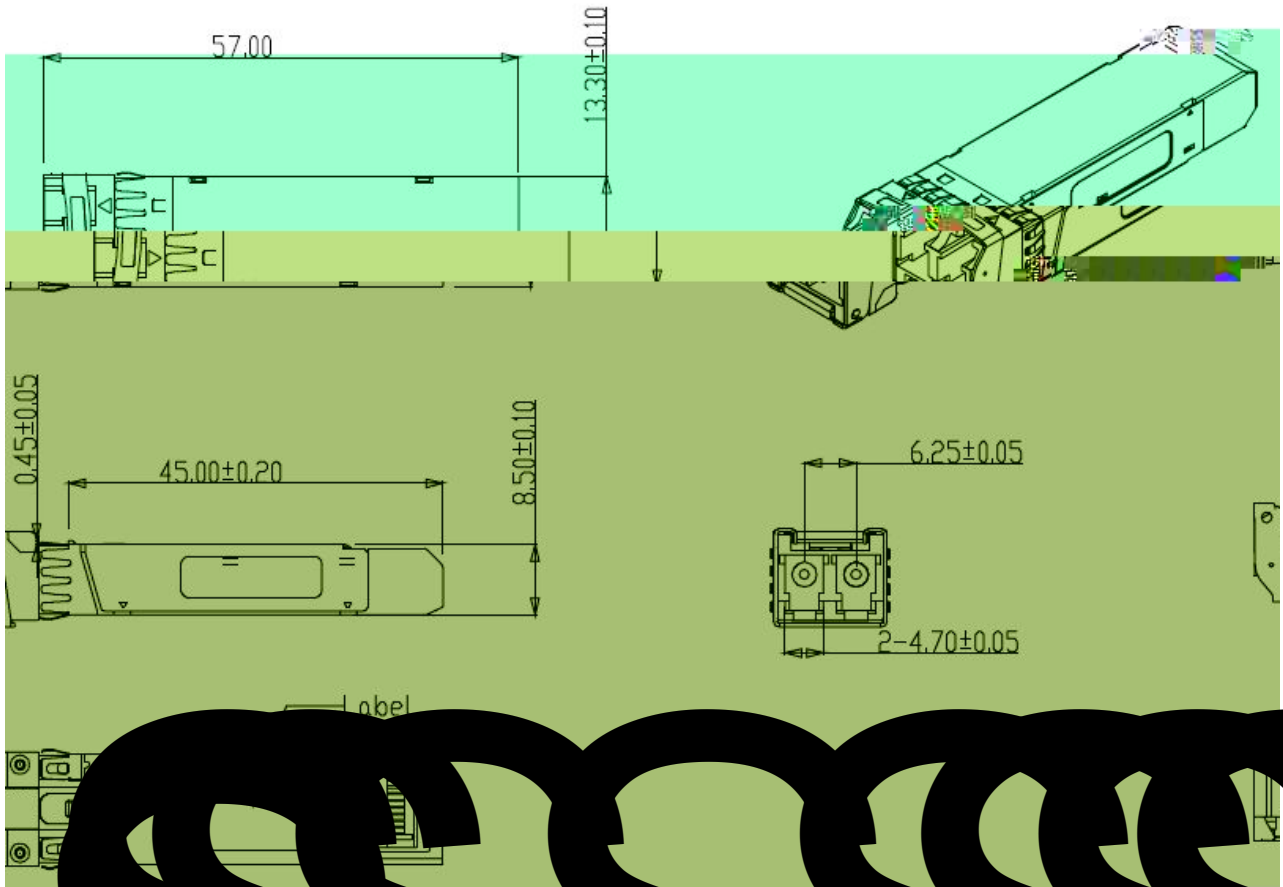
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Reg

Feature	Agency	Standard



## Ordering information

Part Number	Product Description

## References



## Important Notice

