

10Gb/ 40K SFP+ 1550 T a RTXM228-410

The RTXM228-410 transceivers are designed to transmit and receive serial optical data over 40km single mode optical fiber.

They are compliant with SFF-8431, SFF-8432, 10GFC and 10GBASE-ER/EW. The transmitter converts serial CML electrical data into serial optical data compliant with the IEEE 802.3ae standard. The receiver converts serial optical data into serial CML electrical data. Digital diagnostics functions are available via a 2-wire serial interface, as specified in SFF-8472.

Specifications

(Tc=-5 °C to 70 °C and Vcc= 3.14 to 3.46V)

Pa a	S b	U	M	T	Ma	N
Transmitter						
Nominal Wavelength	λ	nm	1530		1565	

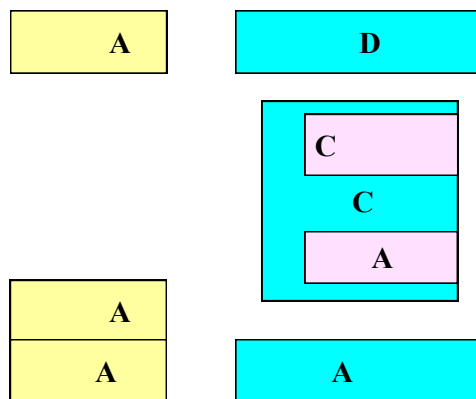


10Gb/ 40K SFP+ 1550 T a RTXM228-410

O I a !

Part No.	Specifications									Application
	Package	Data rate	Laser	Optical Power	Detector	Sensitivity	Temp	Reach	Other	
RTXM228-410	SFP+	1.25 to 11.3G	1550nm EML	-4.7 ~+4dBm	PIN	< -15.8dBm	-5~70℃	40km	DDM	10GBASE-ER/EW 10G Fiber Channel

"#\$%&!'-()*+, !



10Gb/ 40K SFP+ 1550 T a RTXM228-410

E P D

Parameter	Symbol	Unit	Min	Typ	Max	Note
Supply Voltage	V_{CC}	V	3.14	3.3	3.46	
Power Consumption	P	W			1.5	
Transmitter						
Input Differential Impedance	R_{IN}	Ω	80	100	120	
Differential Data Input	V_{IN}	mVp-p	180		700	
Transmit Disable Voltage	V_{DIS}	V	2		V_{CCHOST}	
Transmit Enable Voltage	V_{EN}	V	V_{EE}		$V_{EE}+0.8$	
Transmit Fault Assert Voltage	V_{FA}	V	2		V_{CCHOST}	
Transmit Fault De-Assert Voltage	V_{FDA}	V	V_{EE}		$V_{EE}+0.4$	
Receiver						
Differential Data Output	V_{OD}	mVp-p	300		850	
Output Rise Time	t_{RISE}	pS	28			
Output Fall Time	t_{FALL}	pS	28			
LOS Fault	V_{LOSFT}	V	2		V_{CCHOST}	
LOS Normal	V_{LOSNR}	V	V_{EE}		$V_{EE}+0.4$	

-(. !/O. %1(\$. !' 2/ (. (1(\$. 3!

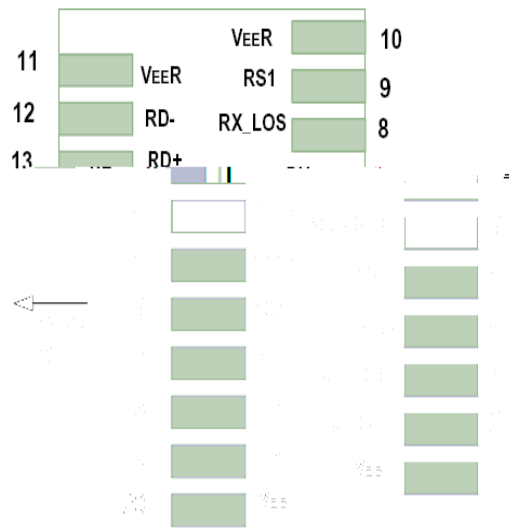


Fig e2.Pi f ci defi ii

Table 1: Transceiver pin descriptions

P	S	N	De
1,17,20	VeeT	T a i e Sig a G d	The e i h d be c ec ed ig a g d he h b a d.

10Gb/ 40K SFP+ 1550 T a

RTXM228-410

2	TXFa	Ta i e Fa O (OC)	Logic 1 O = La e Fa (La e ffbef e_fa) Logic 0 O =N a O e a i Thi i i e c ec c a i b e, a d h d be ed H Vcc i h a 10 Ω e i .
3	TX Di ab e	Ta i e Di ab e I (LVTTTL)	Logic "1" Input (or no connection) = Laser off Logic "0" Input = Laser on Thi i i i e a ed VccT i h a 10 Ω e i .
4	SDA		Se ia ID i h SFF 8472 Diag ic
5	SCL	M d e Defi i i Ide ifie	M d e Defi i i i h d be ed H Vcc i h 10 Ω e i .
6	MOD-ABS		
7	RS0	Recei e Ra e Se ec (LVTTTL)	The e i h a e a i e a 30 Ω -d g d. A
9	RS1	Ta i e Ra e Se ec (LVTTTL)	ig a ei h e f h e e i i affec d e e f a ce.
8	LOS	L f Sig a O (OC)	S fficie ica ig a f e ia BER < 1 10 ⁻¹² = L gic 0 I fficie ica ig a f e ia BER < 1 10 ⁻¹² = L gic 1 Thi i i e c ec c a i b e, a d h d be ed H Vcc i h a 10 Ω e i .
10,11,14	VeeR	Recei e Sig a G d	The e i h d be c ec ed ig a g d h e h b a d.
12	RD-	Recei e Nega i e DATA O (CML)	Ligh = L gic 0 O Recei e DATA i i e a AC c ed a d e i e e i a ed i h a 50Ω e i .
13	RD+	Recei e P i i e DATA O (CML)	Ligh = L gic 1 O Recei e DATA i i e a AC c ed a d e i e e i a ed i h a 50Ω e i .
15	VccR	Recei e P e S	Thi i h d be c ec ed a fi e ed +3.3V e h e h b a d. See Fig e 3. Rec e ded e fi e
16	VccT	Ta i e P e S	Thi i h d be c ec ed a fi e ed +3.3V e h e h b a d. See Fig e 3. Rec e ded e fi e
18	TD+	Ta i e P i i e DATA I (CML)	L gic 1 I = Ligh Ta i e DATA i a e i e a AC c ed a d e i a ed i h a diffe e ia 100Ω e i .
19	TD-	Ta i e Nega i e DATA I (CML)	L gic 0 I = Ligh Ta i e DATA i a e i e a AC c ed a d e i a ed i h a diffe e ia 100Ω e i .

10Gb/ 40K SFP+ 1550 T a RTXM228-410

R a C a

Fea e	Te Me d	Pe f a ce
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883C Method 3015.4	Class1 (>1KV) for high speed I/O pins Class 1 (> 2KV) for all other pins
Electrostatic Discharge (ESD) to the Duplex LC Receptacle	Variation of IEC 61000-4-2	The SFP+ modules meet ESD requirements given in EN61000-4-2, criterion B test specification such that units are subjected to 15kV air discharges during operation and 8kV direct contact discharges to the case.
Electromagnetic Interference (EMI)	CISPR22 ITE Class B EN55022 Class B	Compliant with standards
EMC		FCC Class B/CE Class B

Immunity

IEC61000-4-3 Class 2
EN55024

Typically show no measurable effect from a 3V/m field swept from 80 to 1000MHz applied to the transceiver without a chassis enclosure.