



Product Specification

8Gbps 10~40KM SFP+ Transceiver

PLSFPP138GLW

PLSFPP138GLW20

PLSFPP138GLW40

V20140818

Product Features

- | Up to 8Gbps data links
- | 10km 20km 40km with 9/125μm SMF
- | 1310nm DFB laser
- | Duplex LC Connector
- | Hot-pluggable SFP+ footprint
- | Single 3.3V power supply
- | Operating temperature: -5°C to 75°C
- | RoHS
- | Digital Diagnostic Monitor (DDM)

Applications

√ 8G FC LW

1. Product Description

The PLSFPP138GLW/ PLSFPP138GLW20/ PLSFPP138GLW40 is a 8Gbps enhanced small form factor pluggable SFP+ transceiver compatible with 8G FC LW. It is suitable for single-mode fiber (SMF) communications in 8G Fiber Channel.



2. Regulatory Compliance

TINOUT transceivers are Class 1 Laser Products comply with FDA regulations. Meet Class 1 eye safety requirements of EN 60825 and the electrical safety requirements of EN 60950.

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	V _{CC}	-0.5	4	V
Storage Temperature	T _s	-40	85	°C
Operating Case Temperature	T _c	-5	75	°C

4. Recommended Operating Conditions

Parameter		Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature		T _c	-5		75	°C
Power Supply Voltage		V _{CC}	3.15	3.3	3.45	V
Power Supply Current		I _{CC}			300	mA
Data Rate				8		GBps
Max Link Length on 9/125μm SMF	PLSFPP138GLW	L _{max}			10	km
	PLSFPP138GLW20				20	
	PLSFPP138GLW40				40	



5. Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Centre Wavelength	λ_c	1260	1310	1360	nm
Spectral Width (RMS)	σ			3	nm
Average Output Power	P _{out}	-5		4	dBm
Extinction Ratio	ER	3.5			dB
Average Launch Power of Off Transmitter	P _{off}			-30	dBm
Receiver					
Centre Wavelength	λ_c	1200	1310	1600	nm
Receiver Sensitivity	P _{IN}			-16	dBm
Receiver Overload	P _{max}	0.5			dBm
LOS De-Assert	LOS _D			-23	dBm
LOS Assert	LOS _A	-30			dBm
LOS Hysteresis		0.5		4.5	dB

6. Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Input Differential Impedance	Z _{in}	90	100	110	Ω
Data Input Swing Differential	V _{in}	250		1200	mV
Tx-Dis Disable	V _d	2.0		V _{cc}	V
Tx-Dis Enable	V _{en}	0		0.8	V
Receiver					
Data Output Swing Differential	V _{out}	250		800	mV
Rx-Los Fault	V _{lf}	2.0		V _{ccHOST}	V
Rx-Los Normal	V _{ln}	0		0+0.8	V
Output rise and fall time	Tr, Tf	30			ps

7. Pin Descriptions

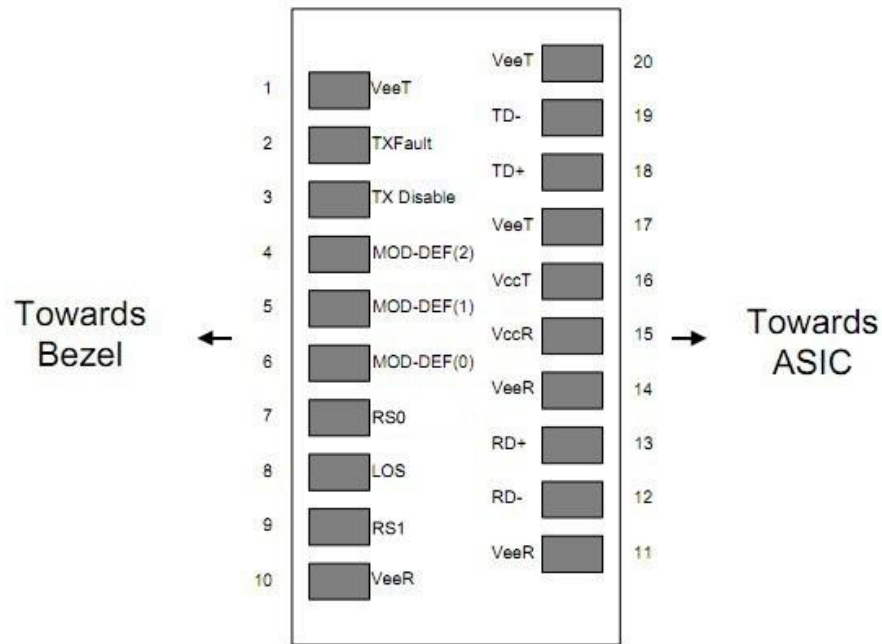


Diagram of Host Board Connector Block Pin Numbers and Names

Pin	Symbol	Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	7.1
2	TFAULT	Transmitter Fault. Not supported.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	7.2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	7.3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	7.3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	7.3
7	RS0	Rate Select0, optionally controls SFP+ module receiver. When high input signaling rate > 4.25 GBd and when low input signaling rate < 4.25 GBd	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	7.4
9	RS1	Rate Select1, optionally controls SFP+ module receiver. When high input signaling rate > 4.25 GBd and when low input signaling rate < 4.25 GBd	
10	VEER	Receiver Ground (Common with Transmitter Ground)	7.1
11	VEER	Receiver Ground (Common with Transmitter Ground)	7.1
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	VEER	Receiver Ground (Common with Transmitter Ground)	7.1
15	VCCR	Receiver Power Supply	



16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	7.1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	7.1

Notes:

7.1 Circuit ground is internally isolated from chassis ground.

7.2 Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.

7.3 Should be pulled up with 4.7k - 10kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.

7.4 LOS is open collector output. Should be pulled up with 4.7k -10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

8. EEPROM & DDM THRESHOLD

8.1 EEPROM

2 wire address 1010000X (A0h)

0~95	Serial ID Defined by SFP MSA (96 bytes)
96~127	Vendor Specific (32 bytes)
128~255	Reserved (128 bytes)

EEPROM Serial ID Memory Contents

Add.	Size (Bytes)	Name of Field	Hex	Description
BASE ID FIELDS				
0	1	Identifier	03	SFP
1	1	Ext. Identifier	04	SFP function is defined by serial ID only
2	1	Connector	07	LC



3-10	8	Transceiver	00 00 00 00 12 00 01 54	Transmitter Code
11	1	Encoding	01	8B/10B
12	1	BR, Nominal	55	8500Mbps
13	1	Reserved	03	
14	1	Length (9um) km	xx	10km/20km/40km
15	1	Length (9um) km	xx	
16	1	OM2 Length (50um) m	00	
17	1	OM1 Length (62.5um) m	00	
18	1	Length (Copper)	00	
19	1	OM3 Length (50um) m	00	
20-35	16	Vendor Name	43 2D 4C 49 47 48 54 20 20 20 20 20 20 20 20 20	TINOUT * OEM available
36	1	Reserved	00	
37-39	3	Vendor OUI	00 00 00	* OEM available
40-55	16	Vendor PN	xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx	* OEM available
56-59	4	Vendor Rev	30 31 20 20	01
60-61	2	Wavelength	05 1E	1310nm
62	1	Reserved	00	
63	1	CC_BASE	xx	Check Code for Base ID Field
EXTENDED ID FIELDS				
64-65	2	Options	00 3A	Loss/ TX_Fault/ TX_Disable
66	1	BR, Max	00	
67	1	BR, Min	00	
68-83	16	Vendor SN	43 4C xx xx xx xx xx xx xx xx xx 20 20 20 20 20	SN of Transceiver (ASCII). Exp. "CLXXXXXXXXXX"
84-91	8	Date Code	xx xx xx xx xx xx 20 20	YY/MM/DD Exp. 120727
92	1	Diagnostic Monitoring	68	
93	1	Enhanced Options	FA	
94	1	SFF_8472 Compliance	03	
95	1	CC_EXT	checksum	Checksum for Extended ID
VENDOR SPECIFIC ID FIELDS				
96-127	32	Vendor Specific	20 20 20.....	Depends on Customer Info
128-255	128	Reserved	FF FF FF.....	Depends on Customer Info

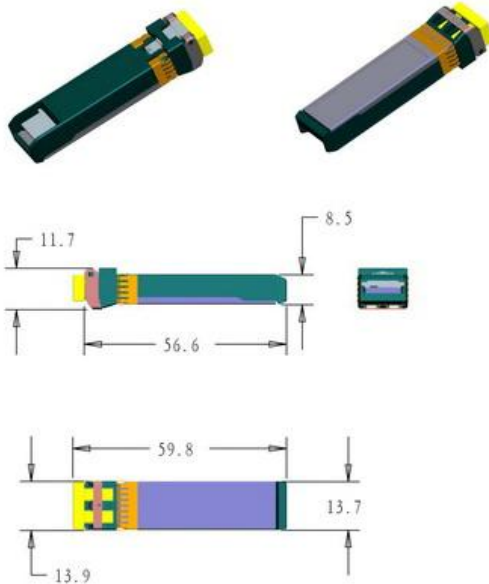
8.1 DDM THRESHOLD

	Low Alarm	Low Warn	High Warn	High Alarm
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Temperature	-13℃	-8℃	85℃	88℃
Voltage	2.9V	3V	3.6V	3.7V
Tx Bias	15mA	20mA	80mA	85mA
Tx Power	-8dBm	-7dBm	4dBm	5dBm
Rx Power	-20dBm	-18dBm	4dBm	5dBm

9. Mechanical Specifications



10. LABEL

TINOUT offers label OEM design and print.

Label barcode supports code128 and 2D barcode

SIZE: 1) Front 35mm*10.5mm 2)Back 26mm*10.5mm



Ordering Information



Part No.	Data Rate	DDM	Wave	Fiber Type	Dist.	Temp.	Optical Interface
PLSFPP138GLW	8Gbps	yes	1310nm	SMF	10km	-5~75°C	LC
PLSFPP138GLW20	8Gbps	yes	1310nm	SMF	20km	-5~75°C	LC
PLSFPP138GLW40	8Gbps	yes	1310nm	SMF	40km	-5~75°C	LC

VERSION UPDATE:

VERSION NO.	DATE	UPDATED INFORMATION
V20140818	20140818	<ol style="list-style-type: none">EEPROM& DDM Threshold updated“LABEL” addedOrdering information updatedProduct picture updated

NOTICE:

TINOUT reserves the right to make changes to this product in this specification without notice, in order to improve product performance.

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