

Product Specification

10Gbps BiDi SFP+ Transceiver

AT- SFPP10GBD2740D

Product Features

- Up to 10Gbps data links
- 40Km with 9/125µm SMF *1
- WDM TX1270/RX1330nm DFB/PIN laser
- **Simplex LC Connector**
- Hot-pluggable SFP+ footprint
- Single 3.3V power supply
- Operating temperature: 0°C to 70°C
- RoHS
- Digital Diagnostic Monitor (DDM)



Applications

- √ 10GBase Ethernet
- √ 10G FC

*1 Notice

PART NUMBER	DISTANCE	LASER
AT- SFPP10GBD2740D	40Km	DFB/PIN

1. Product Description

The AT- SFPP10GBD2740D is a 10Gbps enhanced small form factor pluggable SFP+ transceiver compatible with 10GBASE Ethernet and 10G Fiber Channel. It is suitable for single-mode fiber (SMF) communications in 10Gbps Ethernet and 10G Fiber Channel by single fiber.

PART NUMBER	AT- ASP COLOR
AT- SFPP10GBD2740D	BLUE

2. Regulatory Compliance

ANDA TELECOM transceivers are AT- ass 1 Laser Products comply with FDA regulations. Meet AT- ass 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	0	70	°C

4. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	T_c	0		70	$^{\circ}\text{C}$
Power Supply Voltage	V_{cc}	3.15	3.3	3.45	V
Power Supply Current	I_{cc}			300	mA
Data Rate			10		GBps
Max Link Length on 9/125 μm SMF	L_{max}			40	km

5. Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Centre Wavelength	λ_c	1260	1270	1280	nm
Spectral Width (-20dB)	σ			1	nm
Average Output Power	P_{out}	-1		5	dBm
Extinction Ratio	ER	3.5			dB
Average Launch Power of Off Transmitter	P_{off}			-30	dBm
Receiver					
Centre Wavelength	λ_c	1320	1330	1340	nm
Receiver Sensitivity	P_{IN}			-16	dBm
Receiver Overload	P_{max}	3			dBm

LOS De-Assert	LOS _D			-19	dBm
LOS Assert	LOS _A	-21			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

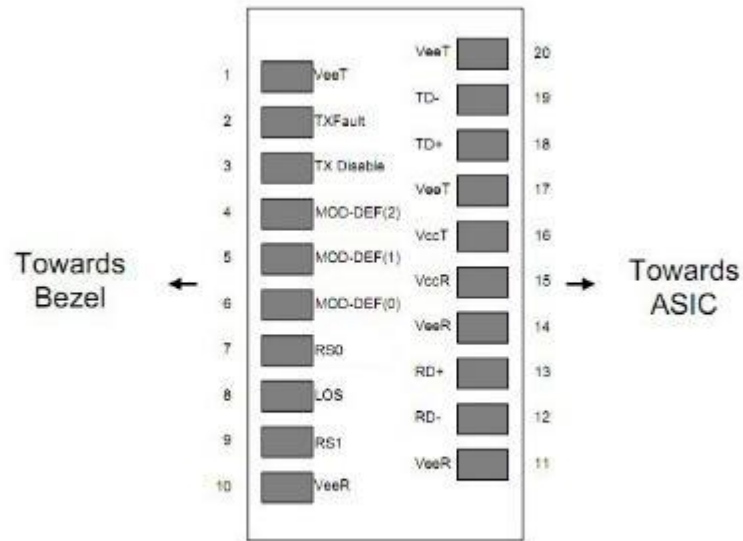


Diagram of Host Board Connector Block Pin Numbers and Names

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. AT- ock 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<4.25GBd	
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)

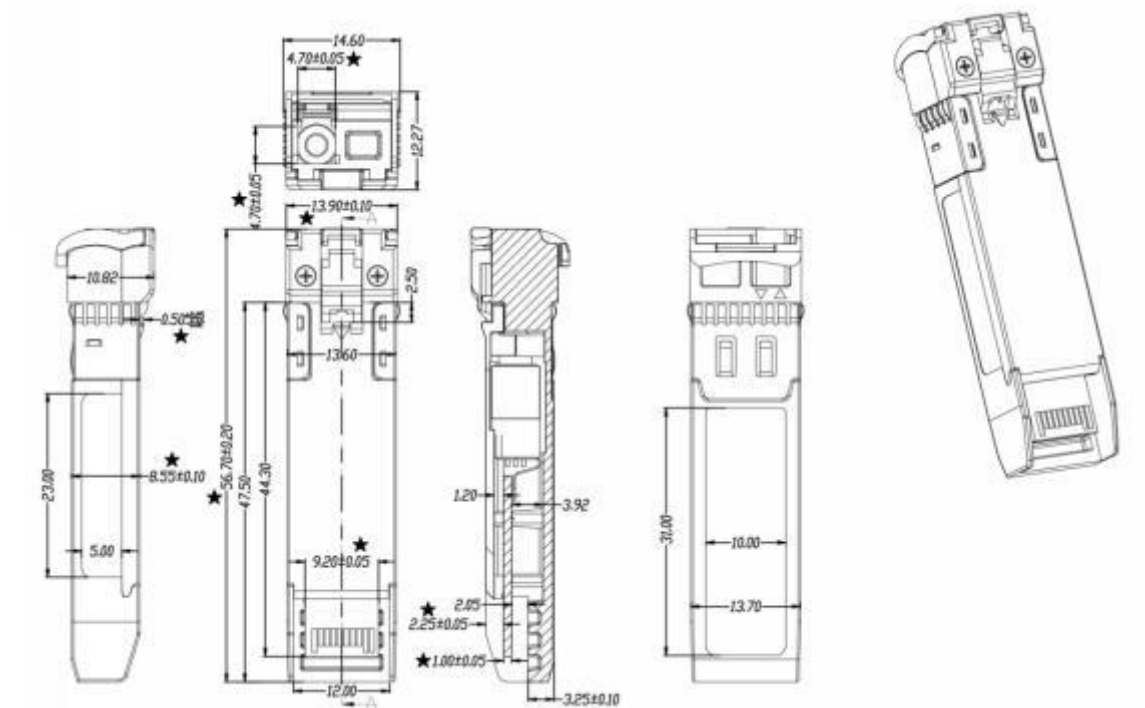
EEPROM Serial ID Memory Contents

8.1 DDM THRESHOLD

AT- SFPP10GBD2740D

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	-5°C	0°C	70°C	75°C
Voltage	3V	3.1V	3.6V	3.7V
Tx Bias	15mA	20mA	75mA	85mA
Tx Power	-8dBm	-7dBm	5dBm	6dBm
Rx Power	-20dBm	-18dBm	0.5dBm	1.5dBm

9. Mechanical Specifications



10. LABEL

ANDA TELECOM offers label OEM design and print.

Label barcode supports code128 and 2D barcode

SIZE: 30mm*10mm

Ordering Information

Part No.	Data Rate	DDM	TX/RX	Fiber Type	Dist.	Temp.	Optical Interface
AT-	10Gbps	yes	1270nm/	SMF	40km	0~70°C	BiDi LC

SFPP10GBD2740D			1330nm				
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VERSION UPDATE:

VERSION NO.	DATE	UPDATED INFORMATION
V20161010	20161010	1. NEW PUBLISHED

NOTICE:

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