

APTICOM | AXX-773XX
XFP 10G CWDM 70km 0-70°C
Optical Transceivers

Features

- Management interface specifications per INF-8077i
- Supports 9.95-11.3Gbps bit rate
- Class 1 Laser Safety Certified
- CWDM EML Transmitter
- APD Receiver
- Up to 70km on Single Mode Fiber (SMF)
- Operating Temperature 0 to 70°C
- Power dissipation $\leq 3.5W$



Applications

- 10 Gigabit Ethernet (ZR/ZW)
- 10G CWDM Networks

Description

The AXX-773xx series are high-performance transceivers for 9.95 to 11.3Gbps CWDM 70km links over dual single mode fiber. They are compliant with the XFP Multisource Agreement (MSA) and hot pluggable.

The transceiver module is RoHS-6 compliant per Directive 2011/65/EU.

CAUTION! Optical input power in excess of the maximum recommended value could cause irreparable damage to the APD receiver.

CAUTION! The transceiver is a static-sensitive device. Always use an ESD wrist strap or similar individual grounding device when handling transceiver modules or coming into contact with modules.

Order Information

Part Number	Wavelength	Protocol	Tx Output Power	Rx Sensitivity [1]	Reach [2]	Temp.
AXX-773xx	ITU CWDM	10GBASE	0 to 4dBm	$\leq -24dBm$	$\leq 70km$	0-70°C

1. Measured with 9.953Gbps PRBS 2³¹-1, BER $\leq 10^{-12}$ **2.** On standard single-mode fibre (SMF, G.652)

Channel Guide (ITU-T CWDM)

Part Number	Wavelength [nm]	Part Number	Wavelength [nm]
AXX-77338	1471	AXX-77342	1551
AXX-77339	1491	AXX-77343	1571
AXX-77340	1511	AXX-77344	1591
AXX-77341	1531	AXX-77345	1611

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Exposure to absolute maximum ratings for extended periods can affect device reliability.

Parameter	Min	Typ	Max	Unit
Storage Temperature	-40		85	°C
Relative Humidity	5		95	%
Supply Voltage, VCC3	-0.5		4.0	V
Supply Voltage, VCC5	-0.5		6.0	V

Recommended Operating Conditions

Parameter	Min	Typ	Max	Unit
Operating Case Temperature	0		70	°C
Supply Voltage, VCC3	3.135	3.3	3.465	V
Supply Voltage, VCC5	4.75	5.0	5.25	
Data Rate, Optical Lane	9.95		11.3	Gbps

Transceiver Electrical Parameters

EOL, over the full temperature range, VCC3= 3.135 to 3.465V, VCC5= 4.75 to 5.25V.

Parameter	Min	Typ	Max	Unit
Supply Current, ICC3			750	mA
Supply Current, ICC5			500	mA
Power Dissipation			3.5	W
Transmitter				
Input Differential Impedance		100		Ω
Differential Data Input Swing	120		1000	mVpp
Tx_Disable/P_Down/RST	2.0		VCC3+0.3	V
Tx_Disable/P_Down/RST (normal operation)	-0.3		0.8	V
Receiver				
Output Differential Impedance		100		Ω
Differential Output Data Swing [2]	340		850	mVpp
Data Output Rise/Fall Time (20/80%)	24			ps
Rx_LOS/Mod_NR/Interrupt [1]	VCCHOST-0.5		VCCHOST+0.3	V
Rx_LOS/Mod_NR/Interrupt (normal operation) [1]	0		0.4	V

1. Open collector, to be pulled up with 4.7kohm **2.** Internally AC-coupled, to be terminated with 100ohm differential load

Transmitter Optical Specification

EOL, over the full temperature range, VCC3= 3.135 to 3.465V, VCC5= 4.75 to 5.25V.

Parameter	Min	Typ	Max	Unit
Launched Optical Power, Average [1]	0		4	dBm
Centre Wavelength Range	1464.5		1617.5	nm
Centre Wavelength [2]	$\lambda-6.5$	λ	$\lambda+6.5$	nm
Spectral Width (-20dB)			0.3	nm
Extinction Ratio [3]	9			dB
Dispersion Penalty			2	dB

1. Coupled into 9/125um SMF **2.** λ according to ITU-T G.694.2 CWDM 20nm grid **3.** Measured with 9.953Gbps PRBS 2³¹-1

Receiver Optical Specification

EOL, over the full temperature range, VCC3= 3.135 to 3.465V, VCC5= 4.75 to 5.25V

Parameter	Min	Typ	Max	Unit
Operating Wavelength	1460		1620	nm
Receiver Sensitivity, Average Power [1]			-24	dBm
Receiver Overload	-7			dBm

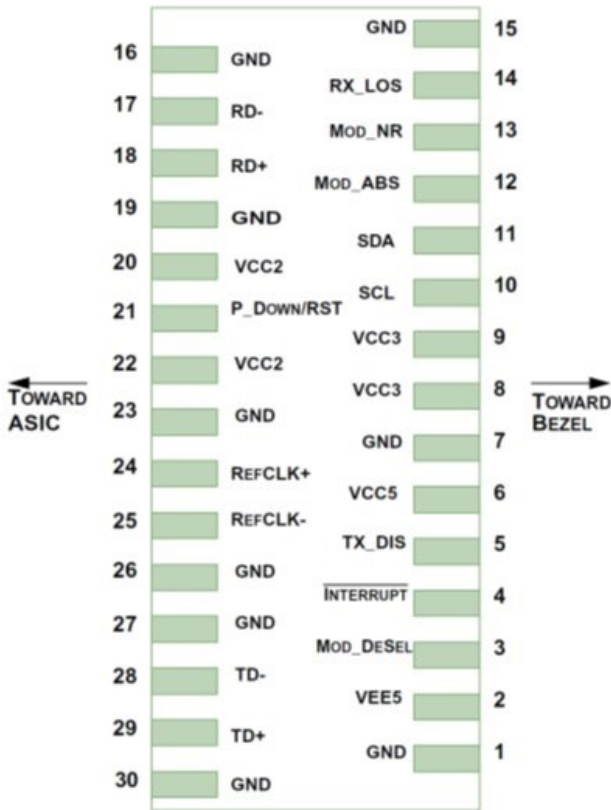
1. Measured with 9.953Gbps PRBS 2³¹-1, BER \leq 10⁻¹²

Transceiver Pins

Pin #	Name	Description	Pin #	Name	Description
1	GND	Module Ground	16	GND	Module Ground
2	VEE5	Not Used	17	RD-	Rx Inverted Data Output
3	Mod_DeSel	Module De-select	18	RD+	Rx Non-Inverted Data Output
4	Interrupt	Interrupt	19	GND	Module Ground
5	TX_DIS	Transmitter Disable	20	VCC2	Not Used
6	VCC5	+5V Power Supply	21	P_Down/RST	Power Down/Reset
7	GND	Module Ground	22	VCC2	Not Used
8	VCC3	+3.3V Power Supply	23	GND	Module Ground
9	VCC3	+3.3V Power Supply	24	RefCLK+	Not Used
10	SCL	2-Wire Serial Interface Clock	25	RefCLK-	Not Used
11	SDA	2-Wire Serial Interface Data Line	26	GND	Module Ground
12	Mod_Abs	Module not Present	27	GND	Module Ground
13	Mod_NR	Module Not Ready	28	TD-	Tx Inverted Data Input
14	RX_LOS	Receiver Loss Of Signal Indicator	29	TD+	Tx Non-Inverted Data Input
15	GND	Module Ground	30	GND	Module Ground

Host Connector Definition

Connector as per INF-8077i.



Regulatory Compliance

The AXX-773xx series of transceivers are Class 1 Laser Products and certified per the following standards:

Item	Agency	Standard
Laser Eye Safety	TÜV	EN 60825-1:2014 EN 60825-2:2004+A1+A2
Electrical Safety	TÜV	EN 60950-1:2006+A11+A1+A12+A2

Revision Information

Revision	Date	Description
A	2023-05-18	Initial release

For more information

APTICOM AB

Skalholtsgatan 10
SE-164 40 Kista
Sweden

info@apticom.com

APTICOM SRL

Rue Santos-Dumont 1
6041 Gosselies
Belgium