

## 02315204-AO

Huawei® 02315204 Compatible TAA 1000Base-SX SFP Transceiver (MMF, 850nm, 550m, LC, Campus/Data Center Switches)

### Features

- INF-8074 and SFF-8472 Compliance
- VCSEL transmitter and PIN receiver
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Multi-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



### Applications

- 1x Fibre Channel
- 1000Base-SX Ethernet
- Access and Enterprise

### Product Description

Huawei® 02315204 compatible SFP transceiver provides 1000Base-SX throughput up to 550m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Huawei® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. It is built to meet or exceed the specifications of Huawei®, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S.-made or designated country end products."



### Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage	Vcc	-0.5		4.0	V	
Storage Temperature	Tstg	-40		85	°C	
Case Operating Temperature	Tc	0		70	°C	
Operating Humidity	RH	5		95	%	
Data Rate (Gigabit Ethernet)			1.25		Gbps	
Data Rate (Fibre Channel)			1.063		Gbps	
50/125μm MMF	L			550	m	
Power Consumption				0.87	W	

### Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.13	3.30	3.47	V	
Power Supply Current	Icc			250	mA	
Transmitter						
Input Differential Impedance	RIN		100		Ω	1
Single-Ended Data Input Swing	VIN,pp	250		1200	mV	
Tx_Disable - High		Vcc-1.3		Vcc	V	
Tx_Disable - Low		Vee		Vee+0.8	V	
Tx_Fault - High		Vcc-0.5		Vcc	V	
Tx_Fault - Low		Vee		Vee+0.5	V	
Receiver						
Single-Ended Data Output Swing	VOUT,pp	300	400	800	mV	2
Data Output Rise Time	Tr			175	ps	3
Data Output Fall Time	Tf			175	ps	3
LOS - High		Vcc-0.5		Vcc	V	
LOS - Low		Vee		Vee+0.5	V	

### Notes:

1. AC coupled.
2. Into 100Ω differential termination.
3. 20-80%.

## Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Average Output Power	PO	-9		-4	dBm	1
Optical Wavelength	$\lambda$	830	850	860	nm	
Spectral Width	$\sigma$			0.85	nm	
Optical Rise/Fall Time	Tr/Tf			260	ps	2
Total Jitter	TJ			200	ps	
Optical Extinction Ratio	ER	9			dB	
<b>Receiver</b>						
Receiver Sensitivity	RSENS			-18	dBm	3, 4
Maximum Received Power	$RX_{MAX}$	0			dBm	
Center Wavelength	$\lambda_C$	770		860	nm	
LOS De-Assert	LOSD			-26	dBm	
LOS Assert	LOSA	-40			dBm	
LOS Hysteresis		0.5		5	dB	

### Notes:

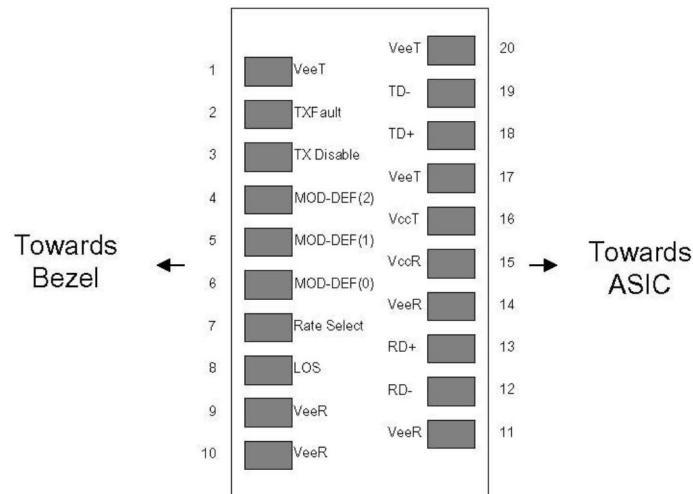
1. Class 1 laser safety.
2. Unfiltered, 20-80%. Complies with GE and 1xFC eye masks when filtered.
3. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
4. Measured with PRBS 2<sup>7</sup>-1 at 10<sup>-10</sup> BER.

## Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault.	
3	Tx_Disable	Transmitter Disable. Laser output disabled on “high” or “open.”	2
4	MOD_DEF(2)	Module Definition 2. Data Line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock Line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No Connection Required.	
8	LOS	Loss of Signal Indication. “Logic 0” indicates normal operation.	4
9	VeeR	Receiver Ground (Common with Transmitter Ground).	1
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	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).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	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).	1

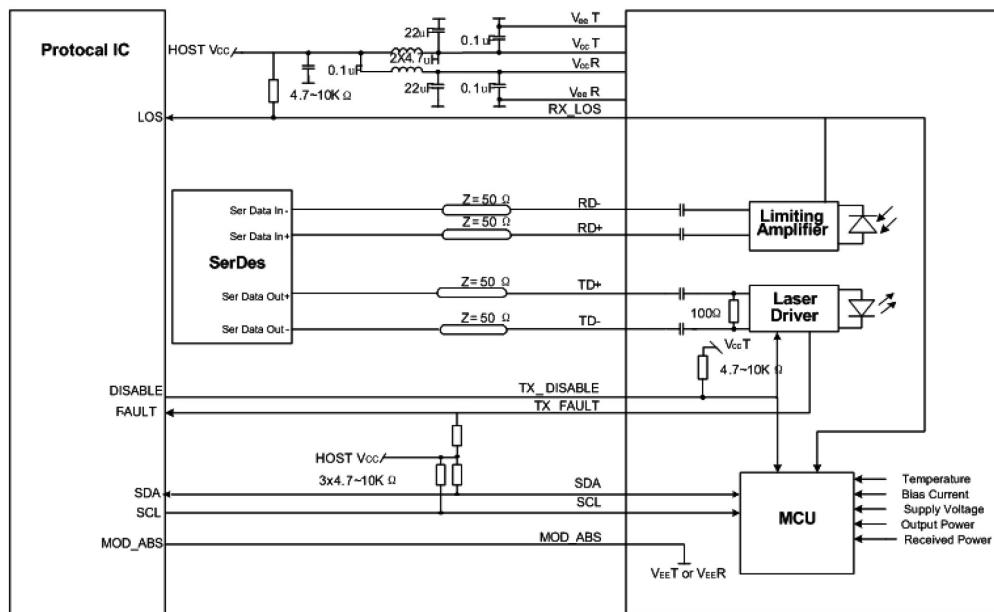
## Notes:

1. The circuit ground is internally isolated from the chassis ground.
2. Laser output is disabled on  $Tx\_Disable > 2.0V$  or open, enabled on  $Tx\_Disable < 0.8V$ .
3. Should be pulled up with  $4.7k\Omega$  to  $10k\Omega$  on the host board to a voltage between 2.0V and 3.6V. MOD\_DEF(0) pulls the line low to indicate that the module is plugged in.
4. LOS is an open collector output. Should be pulled up with  $4.7k\Omega$  to  $10k\Omega$  on the host board to a voltage between 2.0V and 3.6V. “Logic 0” indicates normal operation. “Logic 1” indicates a loss of signal.



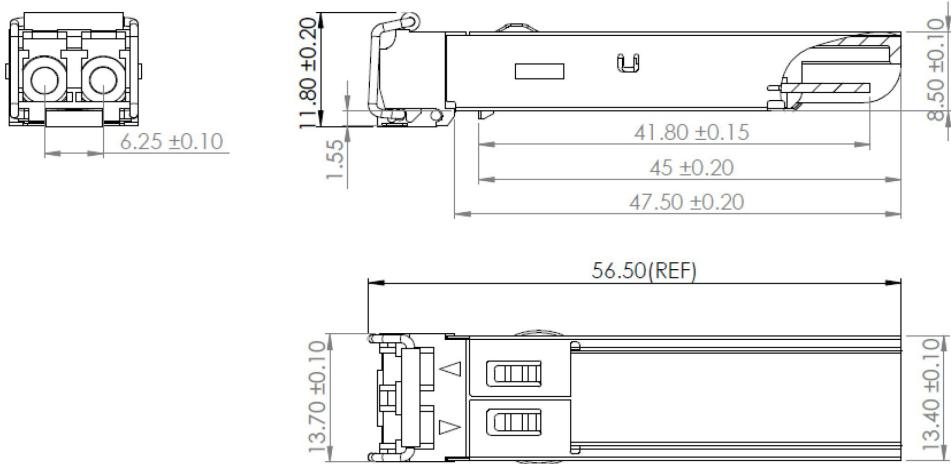
Pin-Out of Connector Block on the Host Board

### Recommended Circuit Schematic



## Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



## EEPROM Information

EEPROM memory map-specific data field description is as below:

2 wire address 1010000X (A0h)		2 wire address 1010001X (A2h)	
0	Serial ID Defined by SFP MSA (96 bytes)	0	Alarm and Warning Thresholds (56 bytes)
95		55	Cal Constants (40 bytes)
95	Vendor Specific (32 bytes)	95	Real Time Diagnostic Interface (24 bytes)
127		119	Vendor Specific (8 bytes)
127	Reserved, SFF8079 (128 bytes)	127	
255		247	User Writable EEPROM (120 bytes)
255		255	Vendor Specific (8 bytes)

## About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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