

## CFP2-WDM-DET-1HL-AO

Cisco® CFP2-WDM-DET-1HL Compatible TAA 100/200GBase-DCO CFP2 Transceiver (SMF, 1528.77nm to 1568.36nm, 80km, LC)

### Features

- CFP Multi-Source Agreement Compliant
- Supports CAUI-4 for 100GE and CEI-28G-VSR for OTU4 Host Interface
- Hot pluggable CFP2 footprint
- Single-mode Fiber
- Tunable C-band Transmitter
- Proprietary Internal Soft-Decision Forward Error Correction (SD-FEC)
- Coherent Receiver
- Tunable Optical Filter (TOF)
- Operating temperature range 0C to 70C
- Single-mode Fibre
- Power Consumption < 19W



### Applications

- 200GBase Ethernet
- Access and Enterprise

### Product Description

This Cisco® CFP2-WDM-DET-1HL compatible CFP2 transceiver provides 200GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1528.77nm to 1568.36nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Cisco® 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 Cisco®, 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."



## Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS 2.0 directive 2015/863/EU

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature	Ts	-40		85	°C	
Operating Case Temperature	Tc	0		70	°C	
Relative Humidity (non-condensing)	RH			85	%	
Supported Host Signal Types			103.125		Gbps	1
			111.81		Gbps	2

### Note:

1. 100GE as per IEEE 802.3ba. The line format can be selected as OTU4 (G.709 HD-FEC) or with SD-FEC (proprietary)
2. OTU4 as per ITU-T G.709. The line format can be selected as OTU4 (transparent) or with S-DFEC (proprietary)

## Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.2	3.3	3.4	V	
Power Supply Current	Icc			6	A	
Power Dissipation	PD			19	W	

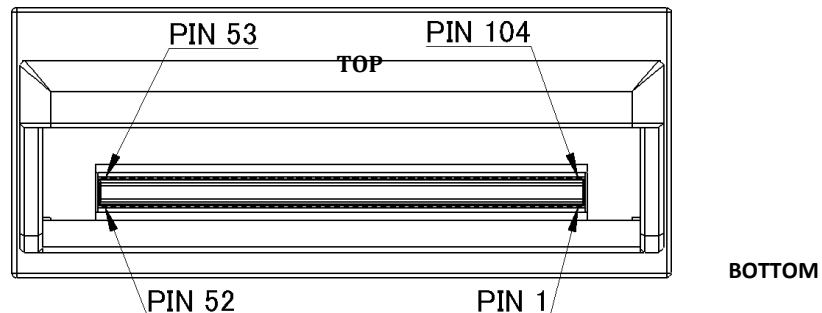
## Optical Characteristics

Parameter	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>					
Average Output Power	-15		1	dBm	1, 2
Output Power Accuracy and Stability	-1		1	dB	2, 3
Centre Wavelength Range	1528.77		1567.54	nm	
Frequency Grid Setting		50		GHz	4
Centre Wavelength	$\lambda_T - 15$	$\lambda_T$	$\lambda_T + 15$	pm	4
<b>Receiver</b>					
Receiver Operating Wavelength	1528.77		1567.54	nm	
Receiver Input Power Range	-18		0	dBm	5
Receiver Sensitivity			-25	dBm	6
OSNR Tolerance		11.5		dB/0.1nm	7, 8
		17		dB/0.1nm	7, 9
		20		dB/0.1nm	7, 10
Chromatic Dispersion Tolerance			40	ns/nm	8
			20	ns/nm	9, 10

### Notes:

1. The output power is settable in steps of 0.1 dB within the specified wavelength range
2. Output power coupled into a 9/125  $\mu\text{m}$  single mode fibre
3. Difference between the set value and actual value
4. Per ITU-T G.694.1 grid definition
5. An input power in this range guarantees optimum OSNR performance
6. Minimum input power needed to achieve post-FEC BER  $\leq 10^{-15}$  (OSNR > 35dB, SD-FEC enabled)
7. Post-FEC BER  $\leq 10^{-15}$ , SD-FEC enabled
8. 100G QPSK, post-FEC BER  $\leq 10^{-15}$ , SD-FEC enabled
9. 200G 8QAM, post-FEC BER  $\leq 10^{-15}$ , SD-FEC enabled
10. 200G 16QAM, post-FEC BER  $\leq 10^{-15}$ , SD-FEC enabled

### Electrical Pad Layout

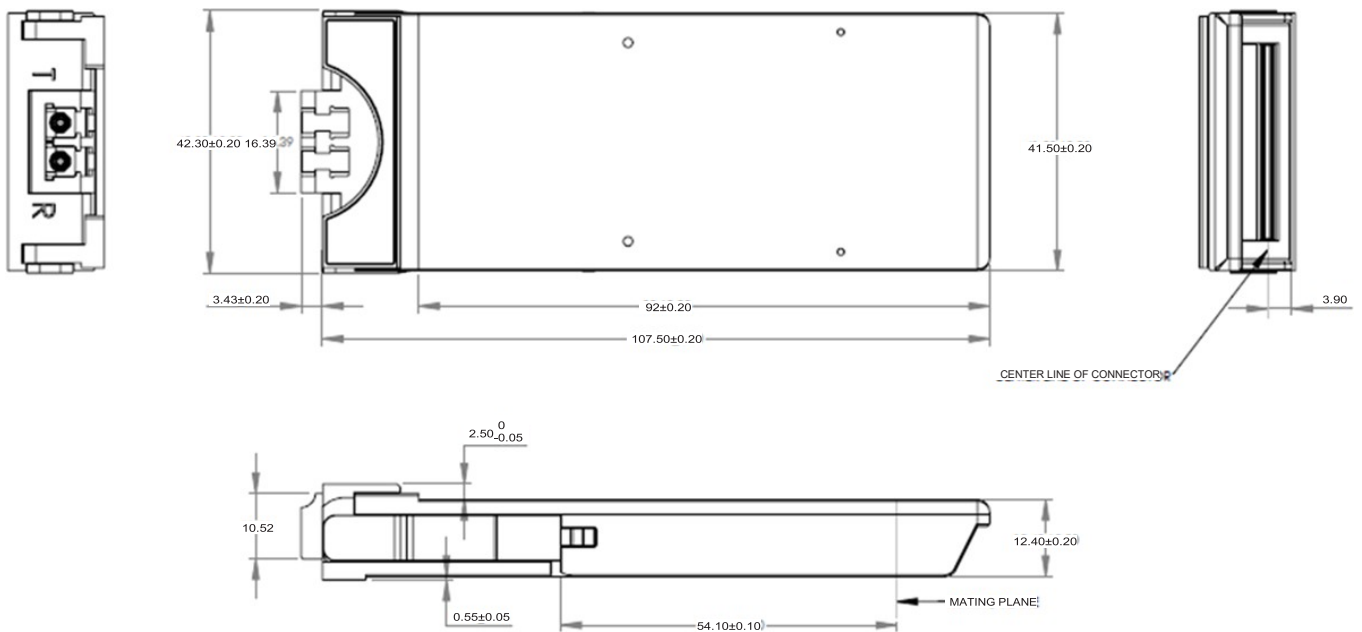


## Pin Descriptions

Pin	Symbol	I/O	Description	Logic	Pin	Symbol	I/O	Description	Logic			
1	GND		Ground		53	GND		Ground				
2	OHIO_RDn	O	Overhead extraction		54	RX7p	O	Ch7 25Gbps Receive Output	CML			
3	OHIO_RDp				55	RX7n						
4	GND		Ground		56	GND		Ground				
5	OHIO_TDn	I	Overhead insertion		57	RX0p	O	Ch0 25Gbps Receive Output	CML			
6	OHIO_TDP				58	RX0n						
7	3.3V_GND		3.3V Power Supply		59	GND		Ground				
8	3.3V_GND				60	RX1p	O			Ch1 25Gbps Receive Output	CML	
9	3.3V				61	RX1n						
10	3.3V				62	GND				Ch6 25Gbps Receive Output	CML	
11	3.3V				63	RX6p	O					
12	3.3V				64	RX6n						
13	3.3V_GND		Ground		65	GND		Ground				
14	3.3V_GND				66	RX5p	O			Ch5 25Gbps Receive Output	CML	
15	VND_IO_A		Do not connect		67	RX5n		Ground				
16	VND_IO_B				68	GND						
17	PRG_CNTL1	I	Programmable Control 1	LVCMOS w/ PUR	69	RX2p	O	Ch2 25Gbps Receive Output	CML			
18	PRG_CNTL2		Programmable Control 2		70	RX2n						
19	PRG_CNTL3		Programmable Control 3		71	GND				Ground		
20	PRG_ALARM1	O	Programmable Alarm 1	LVCMOS	72	RX3p	O	Ch3 25Gbps Receive Output	CML			
21	PRG_ALARM2		Programmable Alarm 2		73	RX3n						
22	PRG_ALARM3		Programmable Alarm 3		74	GND				Ground		
23	GND		Ground		75	RX4p	O	Ch4 25Gbps Receive Output	CML			
24	TX_DIS	I	Transmitter Disable	LVCMOS w/ PUR	76	RX4n						
25	RX_LOS	O	Loss of Optical Input Signal	LVCMOS	77	GND		Ground				
26	MOD_LOPWR	I	Module Low Power Mode	LVCMOS w/ PUR	78	REFCLKp		Not Used				
27	MOD_ABS	O	Module Absent Indicator	GND	79	REFCLKn						
28	MOD_RSTn	I	Module Reset	LVCMOS w/ PDR	80	GND		Ground				
29	GLB_ALARMn	O	Global Alarm	LVCMOS (open drain)	81	TX7p	I	Ch7 25Gbps Transmit Input	CML			
30	GND		Ground		82	TX7n						
31	MDC	I	Management Data Clock	1.2V CMOS	83	GND		Ground				
32	MDIO	I/O	Management bi-dir. Data	1.2V CMOS	84	TX0p	I	Ch0 25Gbps Transmit Input	CML			
33	PRTADR0		MDIO Physical Port addr. bit0	1.2V CMOS	85	TX0n						
34	PRTADR1		MDIO Physical Port addr. bit1		86	GND					Ground	
35	PRTADR2		MDIO Physical Port addr. bit2		87	TX1p				I	Ch1 25Gbps Transmit Input	CML

36	VND_IO_C		Do not connect		88	TX1n			
37	VND_IO_D				89	GND		Ground	
38	VND_IO_E				90	TX6p	I	Ch6 25Gbps Transmit Input	CML
39	3.3V_GND		Ground	91	TX6n				
40	3.3V_GND		Ground		92	GND		Ground	
41	3.3V		3.3V Power Supply		93	TX5p	I	Ch5 25Gbps Transmit Input	CML
42	3.3V				94	TX5n			
43	3.3V				95	GND		Ground	
44	3.3V				96	TX2p	I	Ch2 25Gbps Transmit Input	CML
45	3.3V_GND		Ground	97	TX2n				
46	3.3V_GND				98	GND		Ground	
47	OHIO_REFCLKn	I	Overhead I/O Reference Clock		99	TX3p	I	Ch3 25Gbps Transmit Input	CML
48	OHIO_REFCLKp				100	TX3n			
49	GND		Ground		101	GND		Ground	
50	RX_MCLKn		Not for normal use		102	TX4p	I	Ch4 25Gbps Transmit Input	CML
51	RX_MCLKp				103	TX4n			
52	GND		Ground		104	GND		Ground	

## Mechanical Specifications



## **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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