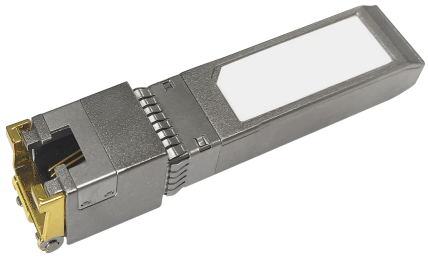
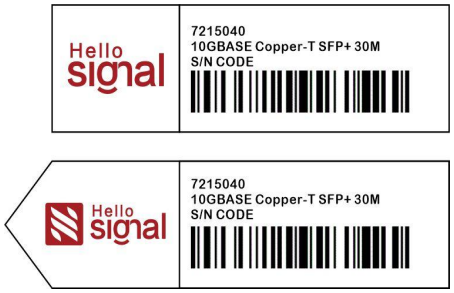
10G SFP+ 30M Copper-T RJ-45 Copper Transceiver





Zion Code and Description

Zion Code	Zion Description
7215040	10G SFP+ 30M Copper-T RJ-45 Copper Transceiver

Applications

- 10Gbase-T / 5Gbase-T / 2.5Gbase-T / 1000base-T

Features

- Up to 10Gb/s bi-directional data links
- Hot-pluggable SFP footprint
- Fully metallic enclosure for low EMI
- Compact RJ-45 connector assembly
- It supports RX_LOS(Loss of Signal) function
- Compatible with IEEE802.3u
- Access to physical layer IC via 2-wire serial bus
- Commercial Temperature range 0°C to 70°C
- RoHS Compliant Part

Description

ZION Communication's 7215040 Copper Small Form Pluggable (SFP)transceivers is high performance, cost effective module compliant with the Gigabit Ethernet and 10G-T standards as specified in IEEE 802. 3-2002 and IEEE 802.3ab, which supporting 10Gbps data- rate up to 30 meters reach over unshielded twisted-pair category 6 cable. The module supports 10Gbps full duplex data-links with 5-level Pulse Amplitude Modulation (PAM) signals.

Main product parameters

Form Factor	SFP+	Vendor Name	Zion Communication
Max Data Rate	10Gbps	Max Cable Distance	30m
Transmission Media	Cate 6/6a	Connector type	RJ-45
DDM	NOT Supported	Operating Temp.	0°C to 70°C (32°F to 158°F)

Regulatory Compliance

Features	Reference	Performance
Electrostatic discharge（ESD）	IEC/EN 61000-4-2	Compatible with standards
Electromagnetic Interference (EMI)	FCC Part 15 Class B EN 55022 Class B (CISPR 22A)	Compatible with standards
Laser Eye Safety	FDA 21CFR 1040.10, 1040.11 IEC/EN 60825-1, 2	Class 1 laser product
Component Recognition	IEC/EN 60950, UL	Compatible with standards
ROHS	2002/95/EC	Compatible with standards
EMC	EN61000-3	Compatible with standards

Zion Communication's Hot Copper transceiver types

Zion Code	Zion Description
7215010	10/100BASE SFP 100M Copper-T RJ-45 Copper Transceiver
7215020	10/100/1000BASE SFP 100M Copper-T RJ-45 Copper Transceiver
7215030	1000BASE SFP 100M Copper-T RJ-45 Copper Transceiver
7215040	10G SFP+ 30M Copper-T RJ-45 Copper Transceiver

Detailed product specifications

1 +3.3V Volt Electrical Power Interface

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Supply Current	Is		700	900	mA	1
Input Voltage	Vcc	3.13	3.3	3.47	V	2
Maximum Voltage	Vmax			4	V	

Note:
1. 1.2W max power over full range of voltage and temperature. See caution note below 2. Referenced to GND

2 Low-speed signals, electronic characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
SFP Output LOW	VOL	0		0.5	V	1
SFP Output HIGH	VOH	-0.5		+ 0.3	V	1
SFP Input LOW	VIL			0.8	V	1
SFP Input HIGH	VIH	2		+ 0.3	V	1

Note:
1. 4.7k to 10k pull-up to host_Vcc, measured at host side of connector

3 High-speed electrical interface, transmission line-SFP

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Line Frequency	fL		125		MHz	1
Tx Output Impedance	Zout,TX		100		Ohm	2
Rx Input Impedance	Zin,RX		100		Ohm	2

Note:
1. 5-level encoding, per IEEE 802.3u 2. Differential, for all Frequencies between 1MHz and 125MHz

4 High-speed electrical interface, host-SFP

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Single Ended data input swing	Vinsing	250		1200	mV	1
Single ended data output swing	Vouting	350		800	mV	1
Rise/Fall Time	Tr.Tf		175		psec	2
Tx Input Impedance	Zin		50		Ohm	1
Rx Output Impedance	Zout		50		Ohm	1

Note:
1. Single-ended 2. 20% - 80%

5 General specifications

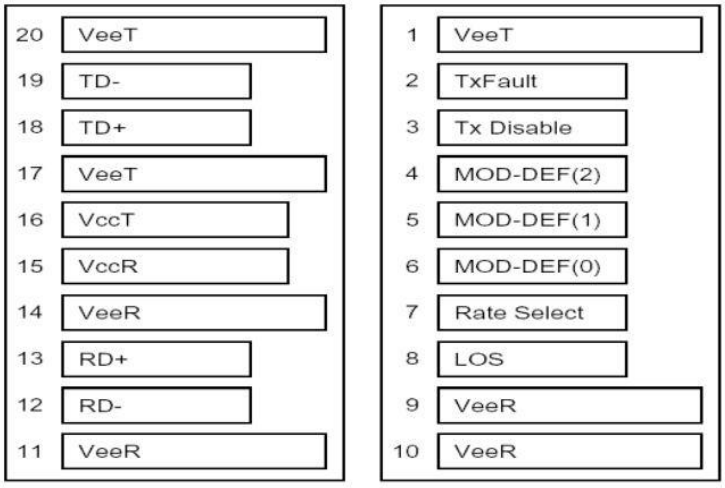
Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Data Rate	BR	10		10	Gb/sec	1
Cable Length	L			30	m	2

Note:
1. IEEE802.3u 2. Category 5 UTP. BER $<10^{-12}$

6 Environmental specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Ref.
Operating Temperature	Top	0		70	℃	
Storage Temperature	Tsto	-40		85	℃	

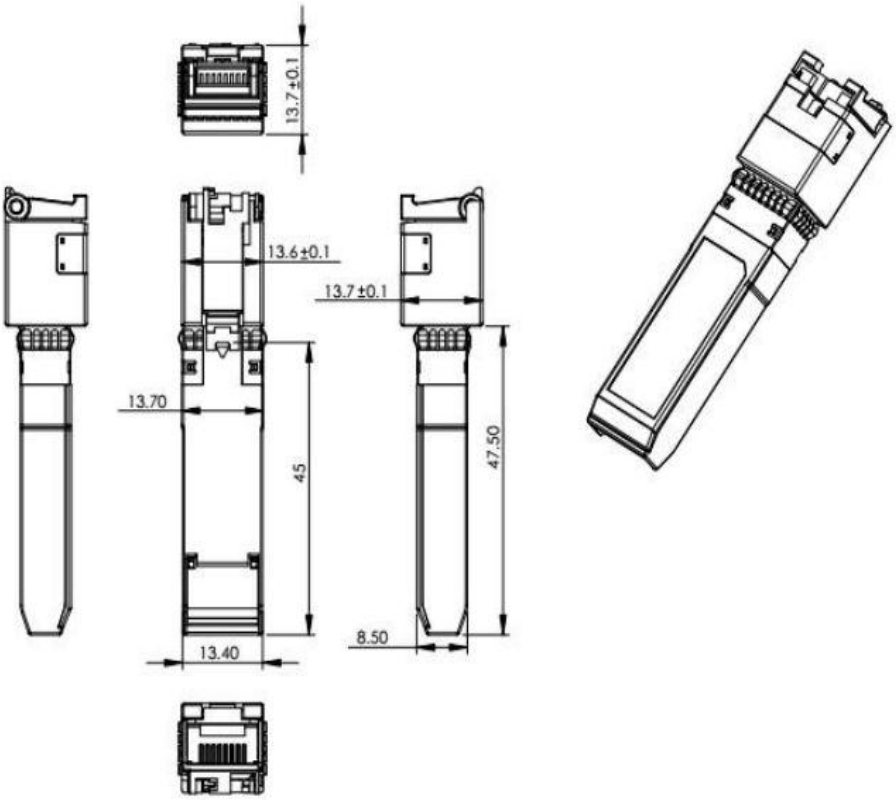
7 Pin Assignment



Top of Board

Bottom of Board (as viewed thru top of board)

Pin	Signal Name	Description	Plug Seq.	Notes
1	V_{EET}	Transmitter Ground	1	
2	TX FAULT	Transmitter Fault Indication	3	1
3	TXDISABLE	NC	3	2
4	MOD_DEF(2)	SDA Serial Data Signal	3	3
5	MOD_DEF(1)	SCL Serial Clock Signal	3	3
6	MOD_DEF(0)	TTL Low	3	3
7	Rate Select	Not Connected	3	
8	LOS	Loss of Signal	3	4
9	V_{EER}	Receiver ground	1	
10	V_{EER}	Receiver ground	1	
11	V_{EER}	Receiver ground	1	5
12	RX-	Inv. Received Data Out	3	5
13	RX+	Received Data Out	3	
14	V_{EER}	Receiver ground	1	
15	V_{CCR}	Receiver Power Supply	2	
16	V_{CCT}	Transmitter Power Supply	2	
17	V_{EET}	Transmitter Ground	1	
18	TX+	Transmit Data In	3	6
19	TX-	Inv. Transmit Data In	3	6
20	V_{EET}	Transmitter Ground	1	

Note:
Plug Seq.: Pin engagement sequence during hot plugging.
1. TX Fault is not supported and is always connected to ground.
2. TX Disable is NC
3. Mod-Def 0,1,2. These are the module definition pins. They should be pulled up with a 4.7K to 10K resistor on the host board.
The pull-up voltage shall be VccT or VccR
Mod-Def 0 is grounded by the module to indicate that the module is present
Mod-Def 1 is the clock line of two wire serial interface for serial ID
Mod-Def 2 is the data line of two wire serial interface for serial ID
4. LOS is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor.
Pull up voltage between 2.0V and Vcc+0.3V. Logic 1 indicates loss of signal; Logic 0 indicates normal operation.
In the low state, the output will be pulled to less than 0.8V.
5. RD-/+: These are the differential receiver outputs. They are AC-coupled, differential lines with 100 differential termination inside the module.
6. TD-/+: These are the differential transmitter inputs. They are AC-coupled, differential lines with 100 differential termination inside the module

8 Diagram Mechnical Drawing