25G SFP28 to SFP28 Direct Attach Cable Specification
HTDC-S28X1-**01MB

Feature

- SFF-8431 and SFF-8432 compliant
- Hot-pluggable SFP 20 PIN footprint
- Up to 25.78125Gbps data rate
- Improved Pluggable Form Factor(IPF)
- compliant for enhanced EMI/EMC performance
- Up to 5m transmission
- Operating case temperature range: 0~70°C
- RoHS compliant
- Low power consumption <1 W

Applications

- 25G Ethernet

Standards

- SFF-8431 SFF-8432

Description

The Hirundo’s HTDC-S28X1-**01MB SFP+ Direct Attach Cables are designed for use in 25Gigabit Ethernet links. They are electrically compliant with the SFF-8431, and the mechanical SFP+ plug is compatible with SFF-8432. Various choices of wire gauge are available from 30 to 24 AWG with various choices of cable length (up to 5m).

1. Ordering Information

Table 1.1 Ordering Information

Part No.	Specifications						Application
	Package	Data rate	Wire gauge	Cable lengthr	Temp	Others	
HTDC-S28X1-**01MB[1]	SFP28	25.78Gbps	30 to 26 AWG	up to 5m	0~70 ℃	LSZH	25G Base CR
PN	HTDC-S28X1-**01MB[1]						
Description	25G SFP28 to SFP28 Direct Attach Cables,30 to 26 AWG, up to 5m, 0-70℃						
SAP No	-						
Customer PN	-						

Notes:

1. Refer to Chapter 7 Ordering Information

2. Revision History

Table 2.1 Revision History

Version	Initiated	Reviewed	Approved	Date
V1.0	Leo	Virgil	LiuSJ	2020-11-20

3. Absolute Maximum Ratings

Table 3.1 Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	°C	-40	+85
Power Supply Voltage	Vcc	V	-0.5	4.0
Case Operating Temperature	T_A	°C	0	70
Bit Rate	BR	Gbps		25.78125

4. Electrical Characteristics

Table 4.1 Electrical Specifications

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Supply Voltage	VCC	V	3.14		3.46	
Supply Current	ICC	A			0.31	
Power Consumption	Pc	W			1	
Transmitter						
Signaling rate per lane		Gbps		25.78125		
Input Differential Impedance	R_{IN}	Ω		100		
Differential data input swing	V_{IN}	mVp-p	180		700	
Transmit Disable Voltage	V_D	V	2		Vcc	
Transmit Enable Voltage	V_{EN}	V	Vee		Vee+ 0.8	
Receiver						
Differential data output swing	V_{OUT}	mVp-p	300		850	
Data output rise time, fall time	t_r	ps			28	
LOS Fault	$V_{LOS\ fault}$	V	2		Vcc_{HOST}	
LOS Normal	$V_{LOS\ normal}$	V	Vee		Vee+0.8	
Power Supply Noise Tolerance	VccT/VccR	mVpp	Per SFF-8431 Rev 4.1			
IIC communication						
IIC Clock frequency	-	KHZ	100		400	

5. Pin Assignment and Pin Description

5.1 SFP28 Pin Assignment

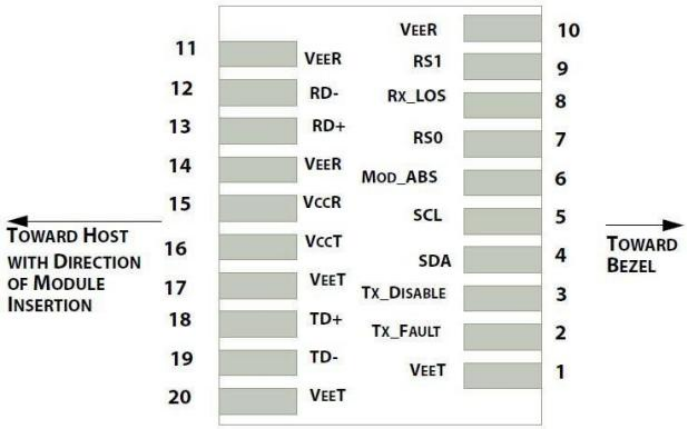

Figure 1 Electrical Pin-out Details

5.2 SFP28 Pin Description

Table 5.1 Pin Description

PIN #	Name	Function	Notes
1	VeeT	Module transmitter ground	1
2	Tx Fault	Module transmitter fault	2
3	Tx Disable	Transmitter Disable; Turns off transmitter laser output	3
4	SDL	2 wire serial interface data input/output (SDA)	4
5	SCL	2 wire serial interface clock input (SCL)	4
6	MOD-ABS	Module Absent, connect to VeeR or VeeT in the module	2
7	RS0	Rate select0: module inputs and are pulled low to VeeT with > 30 kΩ resistorsin the module	
8	LOS	Receiver Loss of Signal Indication	
9	RS1	Rate select1: module inputs and are pulled low to VeeT with > 30 kΩ resistorsin the module.	
10	VeeR	Module receiver ground	1
11	VeeR	Module receiver ground	1
12	RD-	Receiver inverted data out put	
13	RD+	Receiver non-inverted data out put	
14	VeeR	Module receiver ground	1
15	VccR	Module receiver 3.3V supply	
16	VccT	Module transmitter 3.3V supply	
17	VeeT	Module transmitter ground	1
18	TD+	Transmitter non-inverted data out put	
19	TD-	Transmitter inverted data out put	
20	VeeT	Module transmitter ground	1

Notes:

1.The module ground pins shall be isolated from the module case.
2.This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohms to Host_Vcc on the host board.
3.This pin shall be pulled up with 4.7K-10Kohms to VccT in the module.
4.This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohms to Host_Vcc on the host board.

6. Mechanical Design Dimensions

The connector is compatible with the SFF-8432 specification.

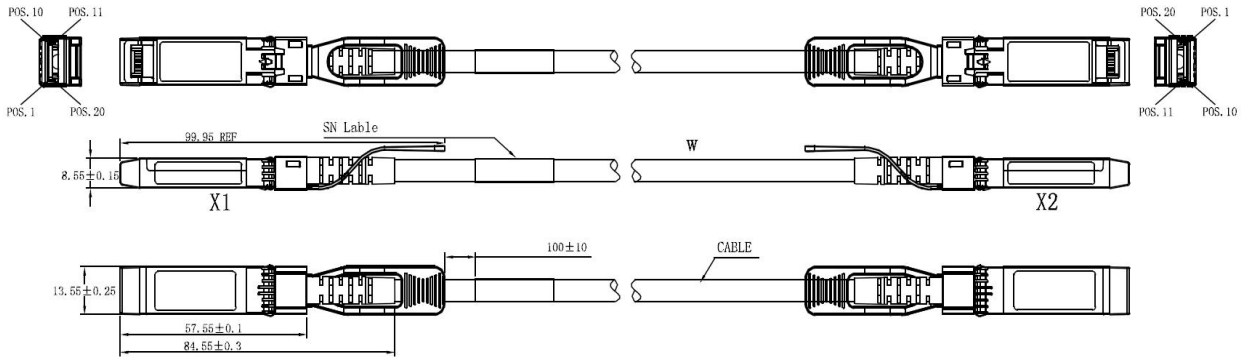

Figure 2 Mechanical Design Dimensions

Table 6.1 Length and related Cable AWG

Length (m)	Cable AWG
1	30
2	30
3	30
4	26
5	26

7. Ordering Information

Table 7.1 Ordering Information

Part Number	Description
HTDC-S28X1-3001MB	25G SFP28 1m 30AWG DAC Cable
HTDC-S28X1-3002MB	25G SFP28 2m 30AWG DAC Cable
HTDC-S28X1-3003MB	25G SFP28 3m 30AWG DAC Cable
HTDC-S28X1-2604MB	25G SFP28 4m 26AWG DAC Cable
HTDC-S28X1-2605MB	25G SFP28 5m 26AWG DAC Cable

8. For More Information

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