# 100G QSFP28 to 4x25G SFP28 Hybrid Passive DAC
# Part Number: V1C-Q4SyyyC-EA

**V1C-Q4SyyyC-EA** is a high performance and cost-effective solution for SFP28 and QSFP28 equipment interconnects.

## Features

- Supporting 100 Gbps to 4 x 25 Gbps
- Support data rates: 25.78Gb/s (per channel)
- IEEE 802.3bj 100GEBASE-CR4 and P802.3 by compliance
- Compatible with SFP28 MSA and QSFP28 MSA
- Compatible with SFF-8402, SFF-8432, and SFF8665
- High-Density QSFP28 38-PIN and 4x SFP28 20-PIN Connector
- Copper link length up to 3m
- Power Supply: +3.3V
- Low crosstalk
- I2C based two-wire serial interface for EEPROM signature which can be customized
- Operating Temperature: 0~70°C
- RoHS Compliant

## Applications

- 100GE/ 25 Gigabit Ethernet
- Switches, Routers, and HBAs
- Data Centers

## Ordering Information

| Part Number | Link Length |
|---|---|
| V1C-Q4S001C-EA | 1m |
| V1C-Q4S002C-EA | 2m |
| V1C-Q4S003C-EA | 3m |

## Product Overview

Vitex **V1C-Q4SyyyC-EA** is a high performance and cost-effective solution for SFP28 and QSFP28 equipment interconnects. Compliant with SFF-8402 and SFF-8665. Capable of transmitting data at rates up to 25Gb/s, with an aggregate data rate of 100Gb/s, the cable assembly offers low power consumption for short reach interconnect applications.

## Absolute Maximum Ratings

| Parameter | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| Max Supply Voltage | | -0.3 | 3.6 | V |

## Recommended Operating Conditions

| Parameter | Symbol | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Operating Case Temperature | $T_C$ | 0 | | +70 | °C |
| Power Supply Voltage | $V_{CCT, R}$ | +3.13 | 3.3 | +3.47 | V |

## Electrical Specifications

| Parameter | Symbol | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Power Dissipation | P | | | 0.1 | W |
| Characteristic impedance | | 90 | 100 | 110 | Ω |
| Time delay | | --- | --- | 4.5 | ns/m |
| Time delay skew (in the same pair) | | --- | --- | 10 | ps |
| Time delay skew (pair to pair) | | --- | --- | 50 | ps |

## Electrical Pin Definition – QSFP28

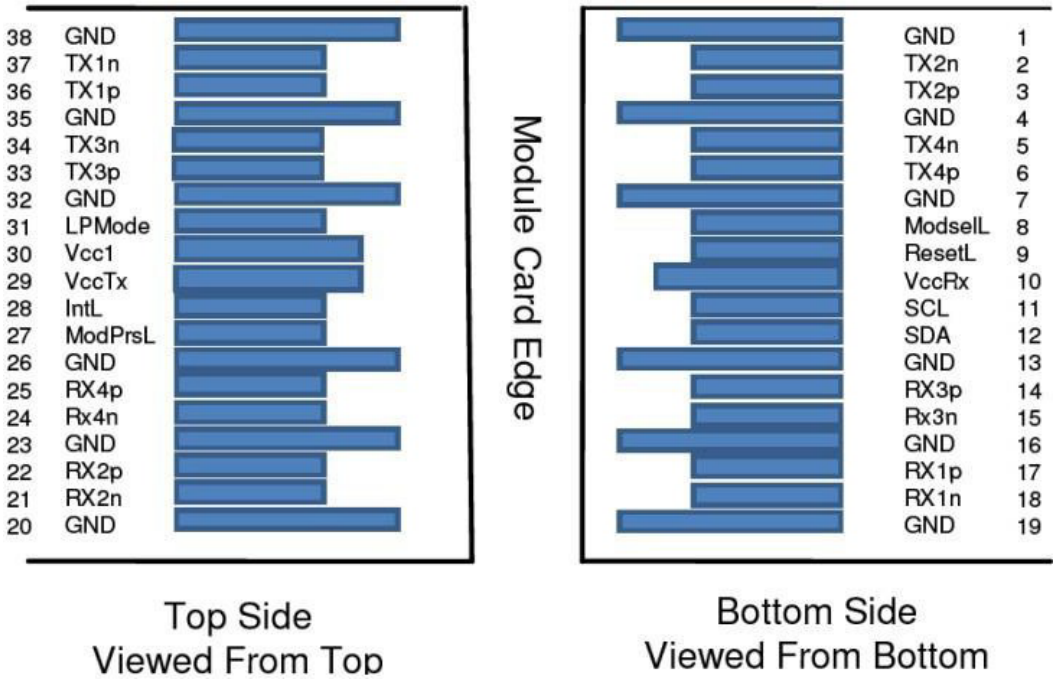
| Pin | Logic. | Symbol | Name/Description | Note |
|---|---|---|---|---|
| 1 | | GND | Ground | 1 |
| 2 | CML-I | Tx2n | Transmitter Inverted Data | |
| 3 | CML-I | Tx2p | Transmitter Non-Inverted | |
| 4 | | GND | Ground | 1 |
| 5 | CML-I | Tx4n | Transmitter Inverted Data | |

| | | | | |
|---|---|---|---|---|
| 6 | CML-I | Tx4p | Transmitter Non-Inverted | |
| 7 | | GND | Ground | 1 |
| 8 | LVTTL-I | ModSelL | Module Select | |
| 9 | LVTTL-I | ResetL | Module Reset | |
| 10 | | Vcc Rx | +3.3V Power Supply | 2 |
| 11 | LVCMOSI/O | SCL | 2-wire serial interface | |
| 12 | LVCMOSI/O | SDA | 2-wire serial interface data | |
| 13 | | GND | Ground | 1 |
| 14 | CML-O | Rx3p | Receiver Non-Inverted | |
| 15 | CML-O | Rx3n | Receiver Inverted Data | |
| 16 | | GND | Ground | 1 |
| 17 | CML-O | Rx1p | Receiver Non-Inverted Data | |
| 18 | CML-O | Rx1n | Receiver Inverted Data | |
| 19 | | GND | Ground | 1 |
| 20 | | GND | Ground | 1 |
| 21 | CML-O | Rx2n | Receiver Inverted Data | |
| 22 | CML-O | Rx2p | Receiver Non-Inverted Data | |
| 23 | | GND | Ground | 1 |
| 24 | CML-O | Rx4n | Receiver Inverted Data | |
| 25 | CML-O | Rx4p | Receiver Non-Inverted Data | |
| 26 | | GND | Ground | 1 |
| 27 | LVTTL-O | ModPrsL | Module Present | |
| 28 | LVTTL-O | IntL | Interrupt | |
| 29 | | Vcc Tx | +3.3V Power supply | 2 |
| 30 | | Vcc1 | +3.3V Power supply | 2 |
| 31 | LVTTL-I | LPMode | Low Power Mode | |
| 32 | | GND | Ground | 1 |
| 33 | CML-I | Tx3p | Transmitter Non-Inverted | |
| 34 | CML-I | Tx3n | Transmitter Inverted Data | |
| 35 | | GND | Ground | 1 |
| 36 | CML-I | Tx1p | Transmitter Non-Inverted | |
| 37 | CML-I | Tx1n | Transmitter Inverted Data | |
| 38 | | GND | Ground | 1 |

**Notes:**

1. GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common within the QSFP+ module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. Vcc Rx, Vcc1 and VccTx are the receiver and transmitter power supplies and shall be applied concurrently. Vcc Rx Vcc1 and VccTx may be internally connected with- in the QSFP+ module in any combination. The connector pins are each rated for a maximum current of 500mA.

## Electrical Connector Layout – QSFP28




## Electrical Pin Definition – SFP28

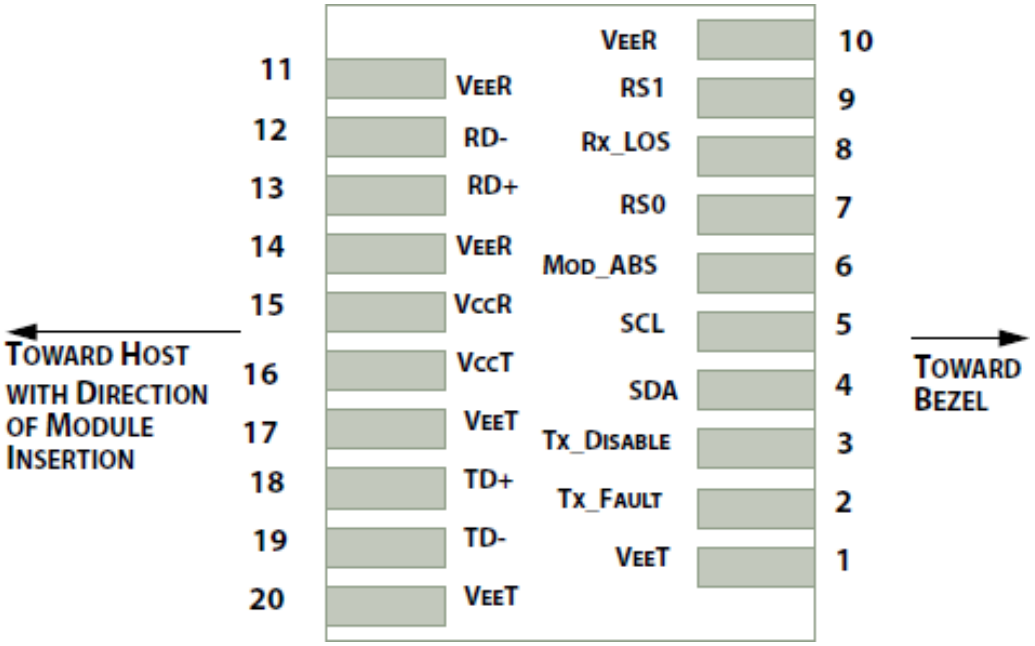
| Pin | Logic. | Symbol | Name/Description | Note |
|---|---|---|---|---|
| 1 | | VeeT | Transmitter Ground | |
| 2 | LV-TTL-O | TX_Fault | N/A | 1 |
| 3 | LV-TTL-I | TX_DIS | Transmitter Disable | 2 |
| 4 | LV-TTL-I/O | SDA | Tow Wire Serial Data | |
| 5 | LV-TTL-I | SCL | Tow Wire Serial Clock | |
| 6 | | MOD_DE | Module present, connect | |
| 7 | LV-TTL-I | RS0 | N/A | 1 |
| 8 | LV-TTL-O | LOS | LOS of Signal | 2 |
| 9 | LV-TTL-I | RS1 | N/A | 1 |
| 10 | | VeeR | Receiver Ground | |
| 11 | | VeeR | Receiver Ground | |
| 12 | CML-O | RD- | Receiver Data Inverted | |
| 13 | CML-O | RD+ | Receiver Data | |
| 14 | | VeeR | Receiver Ground | |
| 15 | | VccR | Receiver Supply 3.3V | |
| 16 | | VccT | Transmitter Supply 3.3V | |

| | | | | |
|---|---|---|---|---|
| 17 | | VeeT | Transmitter Ground | |
| 18 | CML-I | TD+ | Transmitter Data | |
| 19 | CML_I | TD- | Transmitter Data | |
| 20 | | VeeT | Transmitter Ground | |

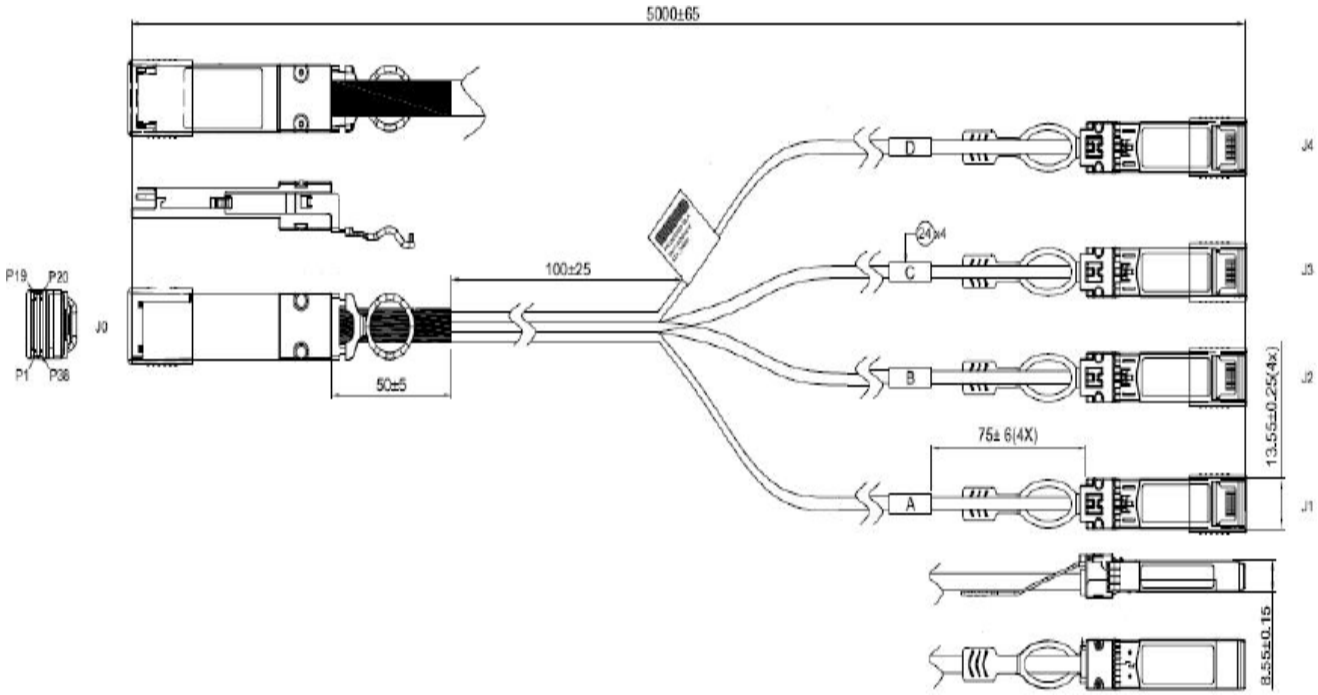
**Notes:**

1. Signals not supported in SFP28 Copper pulled down to VeeT with 30K ohms resistor
2. Passive cable assemblies do not support LOS and TX_DIS

## Electrical Connector Layout – SFP28



## Mechanical Dimensions

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