Low cost 4Ch 28Gb/s PPG/ED/CDR Data Sheet

■ EV-L001

PPG/ED/CDR for 100GE component testing

Description

EV-L001 is a 4Ch 28Gb/s PPG/ED/CDR powered by Inphi IN012525-CQ quad channel CDR.

EV-L001 works as USB bus powered device which communicates with PC via Virtual COM Port (VCP) enabled by STM32L433 microprocessor (STMicroelectronics).

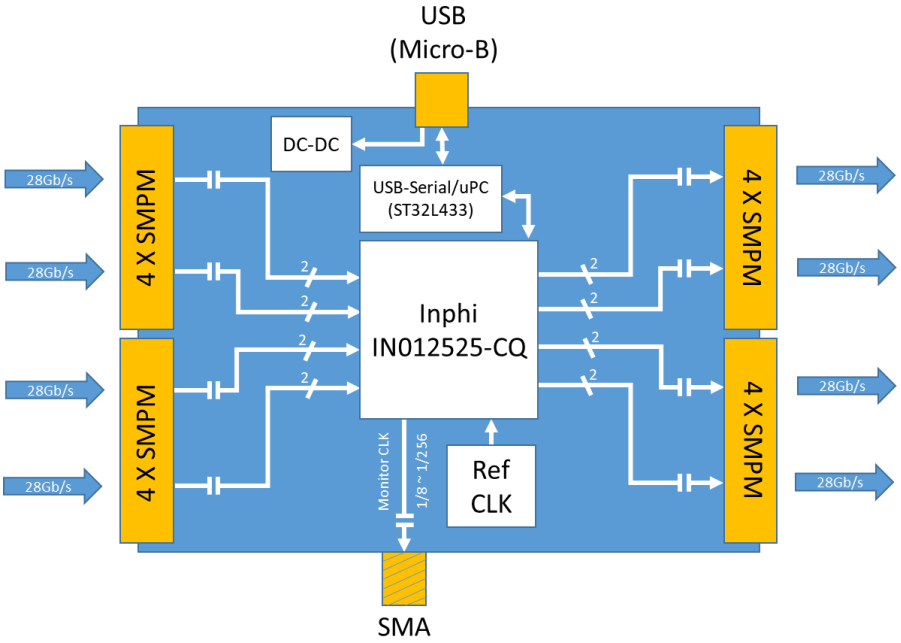
Features

- Inphi IN012525-CQ quad channel 10G/25G/28G CDR is packaged
  - Supports data rates in the range of 9.95-14.025Gb/s and 20-28.2Gb/s
  - PRBS 7/9/15/23/31 are supported for both error checking and pattern generation
  - Independent pattern setting for all 4Ch in PPG mode
- Built in programmable reference clock supports all the bit rates which supported by the CDR
- USB bus powered operation (+5V, Less than 500mA operation)
  - +5V DC adaptor jack for in case USB port does not have enough current capacity
- Serial interface (USB serial) is used to communicate with PC
- Programmable initial setting (power On setting) for built-in application (Only +5V DC power supply is required.)
- 8 ports SMPM connector at each end for 4 high speed differential signals
- One SMA connector for divided clock signal output
- All signals are AC coupled (Internal DC block exists)
- Room temperature operation (+15 degC to +40 degC)
- ***Supported OS: Windows 7, 8.x, 10 (32bit or 64bit), Windows 10 recommended.***

Applications

- PRBS signal source and error checker for 100GE component testing
- Portable ED/PPG for trade show and on site demonstration
- Built-in PRBS source for 100GE optical signal generator

Block Diagram



Absolute Maximum Ratings

(Tc=25degC, unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
DC power supply	Vin		-0.3	---	+5.8	V
Input differential voltage swing	R_Vdiff		---	---	0.9	Vppd
DC voltage level*1	Vdc	Average voltage	-5		+5	V

*1: For all high speed inputs and outputs (signal and clock)

Electrical Characteristics

(Tc=25degC, unless otherwise specified)

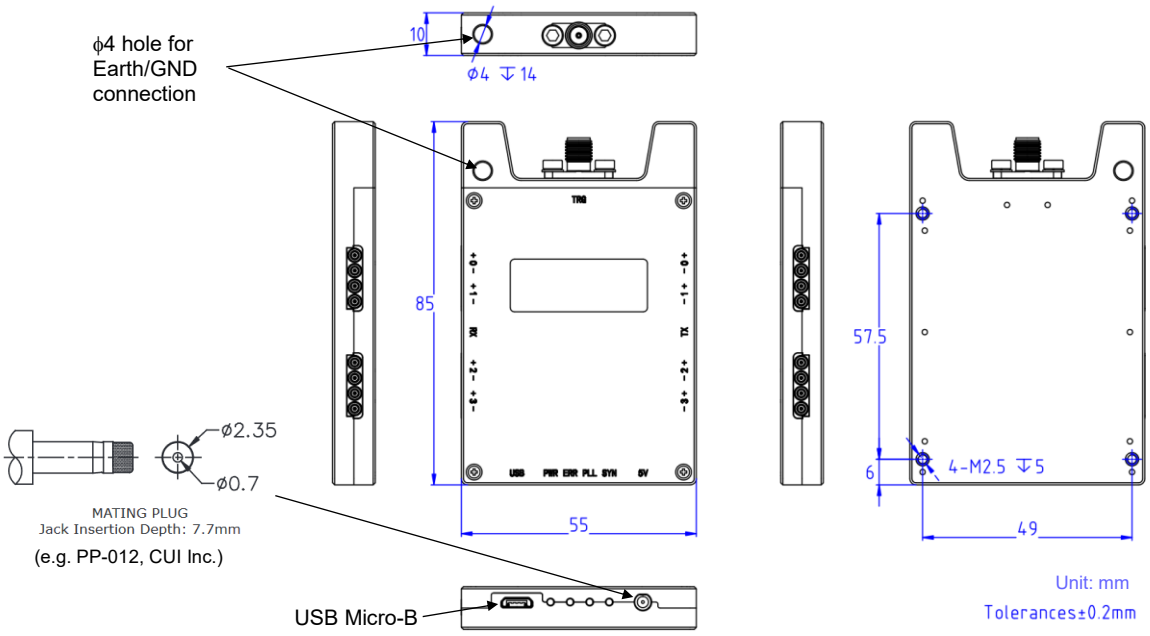
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reference clock stability	---		-100		+100	ppm
Output differential voltage	T_Vdiff		500	---	950	mVppd
Differential resistance	Rd		85	100	115	Ω
Differential input return loss*1	R_SDD11	0.1GHz ~ 20GHz	6			dB
Differential output return loss*1	T_SDD22	0.1GHz ~ 20GHz	6			dB
Monitor clock output	Vmclk			400		mVpp

*1: +5V supplied.

ESD

All high speed signal inputs and outputs (data and clock) must withstand 1000V of ESD using the human body model (HBM) and 250V of ESD using the charged device model (CDM) without damage.

Outline Drawings



Warranty (User registration is required.)

This product is subject of the limited warranty against defects in materials and workmanship under normal use for a period of ONE (1) YEAR from the date of retail purchase by the original end-user purchaser ("Warranty Period"). If a hardware defect arises and valid claim is received within the Warranty Period, OPTOHUB will exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product assumes the remaining warranty of the original product or ninety (90) days from the date of replacement whichever provides longer coverage for you. When a product is exchanged, any replacement item becomes your property and the replaced item becomes OPTOHUB's property.

EXCLUSIONS AND LIMITATIONS

This warranty does not apply: (a) to damage at any of high speed signal input or output (Data and Clock) by any cause (ESD, excess signal power or whatever); (b) to damage any of connector (SMPM, SMA, and USB) by any reason; (c) to damage caused by accident, abuse, misuse, flood, fire, earthquake or other external causes; (c) to damage caused by operating the product outside the permitted or intended uses described by OPTOHUB; (d) to a product or part that has been modified to significantly alter functionality or capability without the written permission of OPTOHUB; or (e) if any OPTOHUB serial number has been removed or defaced.

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