

CD-4000 Clock Data Recovery

OPTICAL/ELECTRICAL CDR BOX FOR 28/56 GBd PLUS 10 GBd

- Efficient CDR solution for production lines

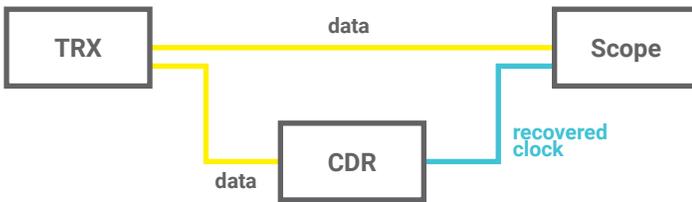


KEY FEATURES

- Dedicated models to support 28/56 GBd and 10 GBd respectively
- Supports NRZ and PAM4 signals
- Integrated O/E with optical splitter (optional)
- Supports singlemode or multimode
- Ultra low random jitter
- Auto-locking
- Can test 400G transceivers

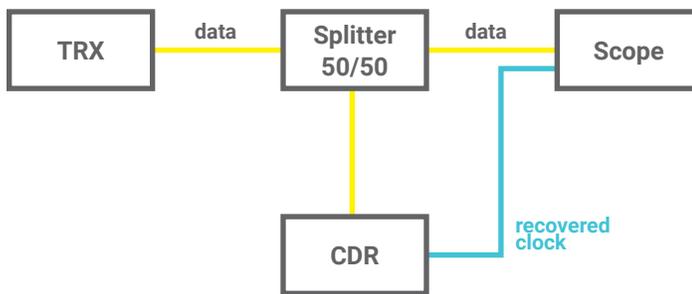
TEST CONFIGURATIONS OF 53G TRANSCEIVER

1 400GBASE-DR4 400GBASE-FR4



Test pattern: PRBS7Q to PRBS16Q and SSPRQ.

2 100GBASE-DR1 100GBASE-FR1



Test pattern: PRBS7Q to PRBS16Q.

Test pattern: limited support for SSPRQ.

SPECIFICATIONS

All specifications are typical at 23 °C ± 2 °C unless otherwise specified.

OPTICAL SPECIFICATIONS		
	Optical singlemode CDR	Optical multimode CDR
Modulation	NRZ and PAM4	NRZ and PAM4
Symbol rate (GBd)	25, 25.78125, 26.5625, 28.05, 28.125, 28.9, 53.125, 57.8	25, 25.78125, 26.5625, 28.05, 28.125, 28.9, 53.125, 57.8
Wavelength (nm)	1250 - 1650 1260 - 1650 (with built-in splitter)	850 - 1350
Return loss (dB)	-30 (at 1310/1550 nm)	-30 (at 850 nm)
Input sensitivity (dBm)	-5 (at 1310/1550 nm)	-5 (at 850 nm)
Damage power (mW)	5	5
Connector type	FC/PC (9/125 μm)	FC/PC (50/125 μm)
Loop bandwidth (MHz)	20	20
Clock output ratio	/8 for 53.125 GBd to 57.8 GBd /4 for 25 GBd to 28.9 GBd	/8 for 53.125 GBd to 57.8 GBd /4 for 25 GBd to 28.9 GBd
Recovered clock random jitter (fs)	< 290 (0 dBm, PRBS16Q at 53 GBd)	< 290 (0 dBm, PRBS16Q at 53 GBd)
Clock output amplitude (mV)	400	400

ELECTRICAL SPECIFICATIONS

Modulation	NRZ and PAM4
Symbol rate (GBd)	25, 25.78125, 26.5625, 28.05, 28.125, 28.9, 53.125, 57.8
Bandwidth (GHz)	25.6 - 31.9
Return loss (dB)	-30
Input amplitude (mV _{ppd})	350 - 550
Connector type	2.92 mm (K)
Loop bandwidth (MHz)	20
Clock output ratio	/8 for 53.125 GBd to 57.8 GBd /4 for 25 GBd to 28.9 GBd
Recovered clock random jitter (fs)	<50

OPTICAL SPECIFICATIONS – 10G CDR

Modulation	NRZ
Symbol rate	155 Mbit/s to 11.3 Gbit/s
Wavelength (nm)	1260 - 1610
Input sensitivity (dBm)	-12
Damage power (dBm)	5
Optical split ratio (nominal)	70 (output) / 30 (CDR)
Connector type	FC/PC (9/125 μm)
Clock output ratio	/8
Clock output amplitude (mV)	540

GENERAL SPECIFICATIONS

Size (H x W x D)	103 mm x 442 mm x 300 mm (4.1 in x 17.4 in x 11.8 in)
Weight	≤10 kg (22 lb)
Temperature	Operating: 5 °C to 40 °C (41 °F to 104 °F) Storage: -20 °C to 70 °C (-4 °F to 158 °F)
Relative humidity	20% to 80%
Power ^a	100/120 Vac (50/60/400 Hz) 220/240 Vac (50/60 Hz) 60 W typical/80 W max.
Access interface	Gigabit Ethernet (RJ45 port)

a. Operate with supply voltage fluctuations up to ±10 % of the nominal voltage.

GENERAL SPECIFICATIONS – 10G CDR

Size (H x W x D)	51 mm x 125 mm x 172 mm (2.0 in x 4.9 in x 6.8 in)	
Weight	≤ 1 kg (2.2 lb)	
Temperature	Operating	5 °C to 40 °C (41 °F to 104 °F)
	Storage	-20 °C to 70 °C (-4 °F to 158 °F)
Relative humidity	20% to 80%	
Power	100 V to 240 V, 50/60 Hz	
Access interface	n/a	



10G CDR front view

ORDERING INFORMATION

CD-4000-XX-XX

Model

- 56-O = 28 GBd/56 GBd optical CDR box
- 56-E = 28 GBd/56 GBd electrical CDR box
- 56-MM = 28 GBd/56 GBd optical multimode CDR box
- 10-O = 10 GBd optical CDR with built-in 70/30 splitter^a

Options

- 50S = Built-in 50/50 splitter (only for 56-O)
- 80S = Built-in 80/20 splitter (only for 56-O)

a. No need to add splitter option for the optical 10G CDR.

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