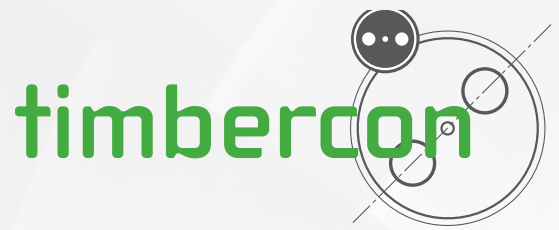


QSFP28 Passive Electrical Loopbacks (EL-13-08002)



Applications

- QSFP port/system testing
- Ethernet IEEE 802.3 (Gigabit, 10 Gigabit, 40 Gigabit, and 100 Gigabit Ethernet)
- SDR, DDR and QDR Infiniband Transmission
- SONET, SDH, GBE, Fibre Channel Support

Features

- Customizable power consumption
- Dual LED indicator
- Custom memory maps available
- Built in diagnostic functions
- Supports 100Gbps total data rate
- Host-pluggable MSA footprint
- Full SFF-8665 MSA compliant
- Temperature range from 0° to 80°C
- No reference clock required
- Compliant with SONET, SDH, GBE, Fibre Channel
- MSA Compliant EEPROM
- Power Classes 1 through 7 are available

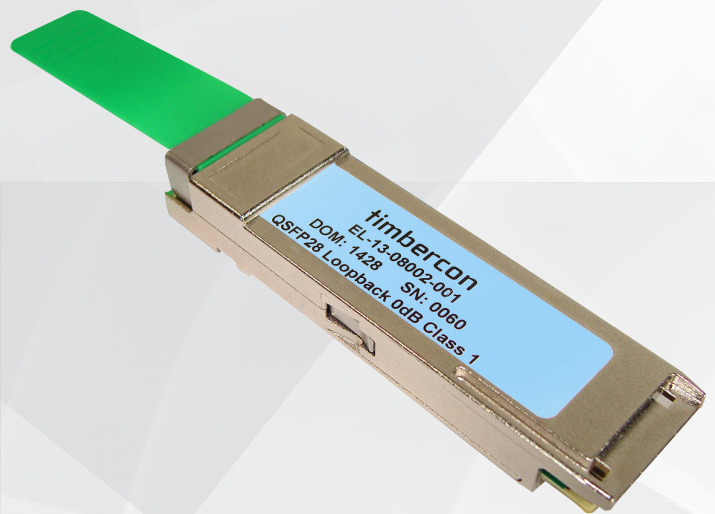
Benefits

- Economical and flexible 100Gbps QSFP28 port testing
- Board level system testing
- Power on validation
- Excellent signal integrity

Overview

The Timbercon EL-13-08002 QSFP28 passive electrical loopback is used for testing QSFP28 transceiver ports in board level test. By substituting for a full-featured QSFP28 transceiver, the electrical loopback provides a cost effective low loss method for QSFP28 port testing.

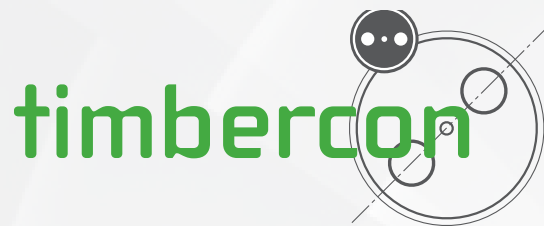
The EL-13-08002 is packaged in a standard MSA housing compatible with all QSFP28 ports. Transmit data from the host is electrically routed (internal to the loopback module) to the receive data outputs and back to the host. Since the loopback module does not contain laser diodes, photodiodes, laser driver or transimpedance amplifier chips, etc., it provides an economical way to exercise QSFP28 ports during R&D validation, production testing and field testing. The EL-13-08002 provides QSFP28 power Class 1, 2, 3, or 4 loading using a customer supplied +3.3V voltage supply. Power Classes 5, 6 and 7 are available upon request.



About Timbercon

Timbercon, Inc., founded in 1997 is a fiber optic product and solution manufacturing company providing a variety of connectivity solutions to the defense, aerospace, medical, data storage, telecommunications and industrial industries. In addition to standard fiber optic assemblies and attenuated loopbacks, Timbercon has pioneered many proprietary products. Additional company information can be found at www.timbercon.com.

QSFP28 Passive Electrical Loopbacks (EL-13-08002)



Recommended Operating Conditions

Parameter	Symbol	Notes/Conditions	Min	Typ	Max	Units
Operating Temperature	T_A	Note 1*	0		80	°C
+3.3V Supply Voltage	VCC	Main Supply Voltage	3.00	3.3	3.60	V
Data Rate per Lane	R_b	Min 28Gbps	28			Gbps
Maximum Aggregate Data Rate					112	Gbps
Input/Output Load Resistance	R_l	AC-Coupled, Differential	90	100	110	Ω
Jitter		Note 2*		33mA		
Power Consumption		Class 1, 2, 3, or 4 available. All modules include power dissipation feature. Custom power dissipation options available. Note 4*			3.5	W

*Note 1. Ambient temperature with a minimum of 100 linear feet per minute of air flow

*Note 2. Measured with ML4039 30GBERT and Timbercon QSFP28 ML4041K Host Test Board

*Note 3. All units undergo 100% AC testing.

*Note 4. Power Classes 5, 6 and 7 available upon request.

LED Indicators

Amber (Solid)—Signifies the module is fully plugged in and operating in low power mode as defined by the QSFP28 MSA.

Green (Solid)—Signifies the module is fully plugged in and operating in high power mode as defined by the QSFP28 MSA.

Green/Amber (Blinking)—Signifies the module is de-selected by the host. The module will not respond to host commands in this host selected state.

Memory Map

In addition to the electrical loopback function, the EL-13-08002 provides an MSA standard 2-wire serial communication interface to digital diagnostics and pre-loaded EEPROM memory maps; both standard and custom memory maps are available.