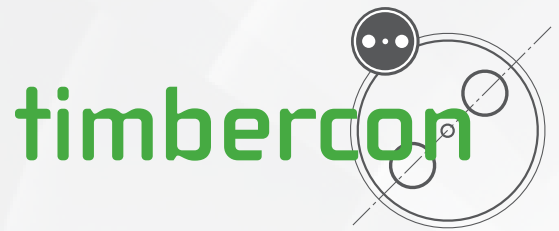


QSFP/QSFP+ Passive Electrical Loopbacks (EL-12-07002)



Applications

- QSFP Port/System Testing
- ITU-T Recommendation G.957 (STM-1, 4 & 16)
- Ethernet IEEE 802.3 (Gigabit, 10 Gigabit and 40 Gigabit Ethernet)
- SDR, DDR and QDR
- SONET, SDH, GBE, FC Support, Infiniband

Features

- Customizable power consumption
- Dual LED indicator
- Custom memory maps
- Built in diagnostic functions
- Supports 40Gbps total data rate
- Host-pluggable MSA footprint
- Full SFF-8436 MSA compliant
- Temperature range from 0° to 80°C
- No reference clock required
- Compliant with SONET, SDH, GBE, FC
- MSA Compliant EEPROM

Benefits

- Economical QSFP/QSFP+ port testing
- Custom memory maps
- Board level system testing
- Power on validation
- Excellent signal integrity with 26mm average loopback trace length of standard FR4

Overview

QSFP/QSFP+ Electrical Loopbacks

The Timbercon EL-12-07002 QSFP/QSFP+ passive electrical loopback is used for testing QSFP/QSFP+ transceiver ports in board level test. By substituting for a full-featured QSFP/QSFP+ transceiver, the electrical loopback provides a cost effective low loss method for QSFP/QSFP+ port testing.

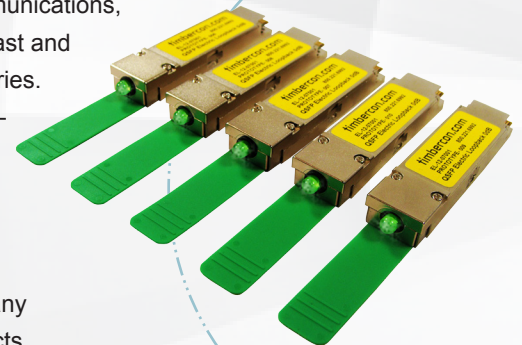
The EL-12-07002 is packaged in a standard MSA housing compatible with all QSFP/QSFP+ ports. Transmit data from the host is electrically routed (internal to the loopback module) to the receive data outputs and back to the host. Since the loopback module does not contain laser diodes, photodiodes, laser driver or transimpedance amplifier chips, etc., it provides an economical way to exercise QSFP/QSFP+ ports during R&D validation, production testing and field testing. The EL-12-07001 provides QSFP/QSFP+ power Class 1, 2, 3 or 4 loading using a customer supplied +3.3V voltage supply.

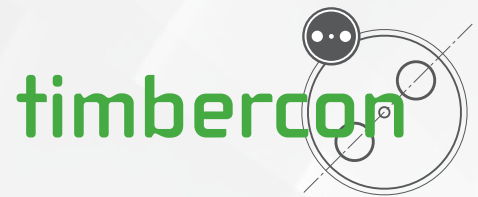
About Timbercon

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, industrial, broadcast and networking 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.





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	R_b		0		40	Gbps
Input/Output Load Resistance	R_i	AC-Coupled, Differential	90	100	110	Ω
Eye Height		Note 2*		140mA		
Jitter		Note 2*		33mA		
Power Consumption		Class 1, 2, 3 or 4 available. All modules include power dissipation feature			3.5	W

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

*Note 2. Pattern generator (VSC8248) 10.3125 Gbps, 156.25 MHz differential signaling

LED Indicators

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

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

Green/Amber (Blinking)—Signifies the module is deselected 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-12-07002 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.