

# SFP Electrical Loopbacks

(EL-01-02001)



## Applications

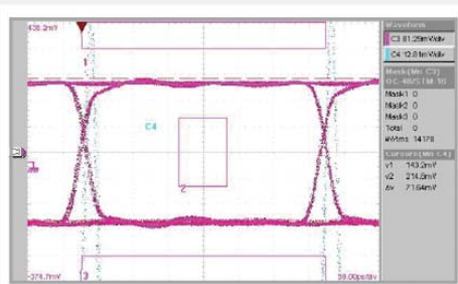
- 1.25 Gbps 1000Base-SX Ethernet
- Dual rate 1.063/2.125 Gbps Fiber Channel
- 2.5 Gbps Ethernet
- Board and System Level Testing
- Test and Measurement

## Features

- Supports up to 2.5 Gbps data rate
- Excellent optical jitter performance
- Serial ID support
- Extended operating temperature range:  
-10°C to +85°C
- Optional front LED power indicator

## Benefits

- Multi Gbps data transfer
- Precision test output
- Electronic device tracking
- Wide operating temperature range



Mask test for eye diagram at 2.5GHz for 0bd @ 8.05mA current draw. Test parameters: 2<sup>7</sup>-1bits (PRBS).

### Supported Standards

- Gigabit Ethernet
- Fiber Channel
- Infiniband
- Multi-rate OC-3 to OC-48 FEC

## Overview

### SFP electrical loopbacks for test and measurement.

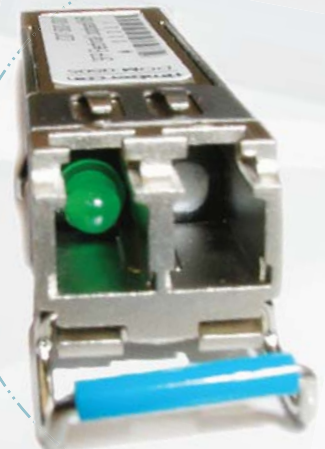
SFP electrical loopbacks provide a method for port operations testing in board, hub, system and other applications.

The SFP Loopback supports Fiber Channel, Gigabit Ethernet, and Infiniband protocols, and is capable of achieving up to 2.5 Gbps data transfer rate. An optional integrated LED indicator light ensures the loopback is properly seated and powered.

SFP Loopbacks are hot swappable, and die cast for EMI performance. They are compliant with the industry standard SFP MSA (Multi-Source Agreement). Available in nominal and attenuated versions from 0 to 20dB.

In addition to the electrical loopback function, the EL-01-02001 provides a MSA standard 2-wire serial communication interface to digital diagnostics. This provides information about the present operating conditions, as well as the pre-loaded EEPROM memory map. Both standard and custom memory maps are available.

The Timbercon EL-01-02001 contains two LED indicators to display the operating status of the device. The green LED illuminates when the loopback is fully plugged in and blinks when the temperature is beyond the allowable range. The red LED illuminates for a power down status and blinks when the loopback shuts down due to extreme temperature.



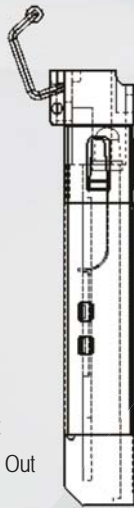
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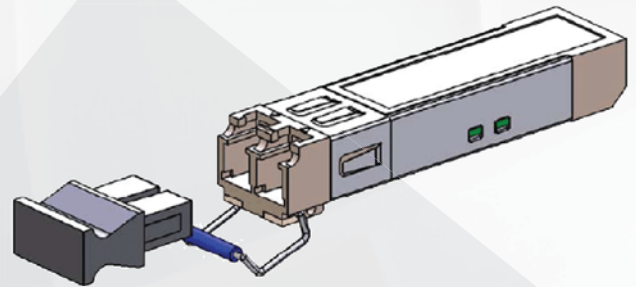
## SFP 20 PIN SPECIFICATION

PIN	Name	Function
1	VeeT	Transmitter Ground
2	TX_Fault	TX Fault Indicator (LOW)
3	TX_Disable	Transmitter Disable (NC)
4	MOD_DEF (2)	Module Definition 2
5	MOD_DEF (1)	Module Definition 1
6	MOD_DEF (0)	Module Definition 0
7	RATE SELECT	Not Connected
8	LOS	Loss of Signal (LOW)
9	VeeR	Receiver Ground
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inverted Received Data Out
13	RD+	Non-Inverted Received Data Out
14	VeeR	Receiver Ground
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	VeeT	Transmitter Ground
18	TD+	Non-inverted Data In
19	TD-	Inverted Data In
20	VeeT	Transmitter Ground



## Specifications

Parameter	Symbol	Min	Typical	Max	Units	Notes
Supply Voltage	VddT, VddR	0	3.33	3.6	VDC	±5%
Baud Rate	BRate	-	-	2.5	GBaud	
Signal/Input Voltage	Vin	-	-	2.4	V	
Attenuation	dB	0	-	20	dB	±10%



## 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](http://www.timbercon.com).

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