

# SFP+ Electrical Loopbacks

(EL-11-07001)



## Applications

- Board and System Level Testing
- Test and Measurement
- Switch and Router Chamber Testing
- 100Mb/s to 10.7Gbps

## Features

- SFP+ MSA Compliant
- Hot-Pluggable MSA Footprint
- Dual LED Indicator to Display Module Status
- No Reference Clock Required
- Compliant With SONET, SDH, GBE, FC
- One(1) Watt Power Consumption
- Case Temperature Range from -40° C to +85° C
- Automatic Shut Down & Self-Protection
- Custom Memory Map Capability

## Benefits

- Economical SFP+ Port Testing
- Power on Validation
- Temperature Sensing

## Premium Solutions

### SFP+ Electrical Loopbacks for Testing and Measurement

The Timbercon EL-11-07001 SFP+ electrical loopback is used for testing SFP+ transceiver ports in host/system boards. By substituting a full-featured SFP+ transceiver, the electrical loopback provides a cost effective method for SFP+ port testing.

The EL-11-07001 is packaged in an MSA compliant housing offering excellent heat dissipation, compatible with all SFP+ ports. Transmit data from the host is electrically routed, (in R&D validation, production testing and field analysis.

## About

Founded in 1997, Timbercon, Inc. is a fiber optic product and solution manufacturing company providing a vast array of connectivity solutions to the data storage, telecommunications, military, industrial, harsh environment, medical, broadcast and networking industries. In addition to standard fiber optic patch cords and attenuated test cables, Timbercon has pioneered proprietary products, many of which are now considered to be an industry benchmark.



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## Memory Location Descriptions

| 2 Wire address<br>1010000X (A0h)                | 2 Wire address<br>101000X (A2h)                   |
|---|---|
| 0<br>Serial ID Defined by<br>SFP MSA (96 bytes) | 0<br>Alarm and Warning<br>Thresholds (56 bytes)   |
| 95<br>Vendor Specific<br>(32 bytes)             | 55<br>Cal Constants<br>(40 bytes)                 |
| 127<br>Reserved<br>(128 bytes)                  | 95<br>Real Time Diagnostic<br>Interface(24 bytes) |
|   | 119<br>Vendor Specific (8 bytes)                  |
|   | 127<br>User Writable<br>EEPROM (120 bytes)        |
|   | 247<br>Vendor Specific (8 bytes)                  |
| 255   | 255   |

## Recommended Operating Conditions

| Parameter                  | Symbol | Notes | Min  | Max      | Unit |
|----------------------------|--------|-------|------|----------|------|
| Maximum Supply Voltage     | Vcc    |       | -0.5 | 4.0      | V    |
| Storage Temperature        | Ts     |       | -40  | 85       | C    |
| Case Operating Temperature | Top    |       | -40  | 85       | C    |
| Supply Voltage             | Vcc    |       | 3.15 | 3.45     | V    |
| Supply Current             | Icc    | 1     |      | 300      | mA   |
| Supply Current Power-Down  | Iccd   | 1     |      | 200      | mA   |
| Module Total Power-Down    | P      | 1     |      | 1        | W    |
| Bit Rate                   | BR     |       | 100M | 10.7G    | Bps  |
| Bit Error Ratio            | BER    | 2     |      | 1.00E-12 |      |

## Memory Map

In addition to the electrical loopback function, the EL-11-07001 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.

## LED Indicators

The Timbercon EL-11-07001 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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