

### FDB-1032-SFP+ Evaluation Board for SFP/SFP+/SFP28

#### OVERVIEW

Finisar's FDB-1032-SFP+ Evaluation Board is designed for testing and evaluating all SFP, SFP+ and SFP28 transceivers as well as SFPwire<sup>®</sup> Active Optical Cables. This is not a module compliance board, but it is compatible with MSA compliant SFP, SFP+ and SFP28 transceivers.

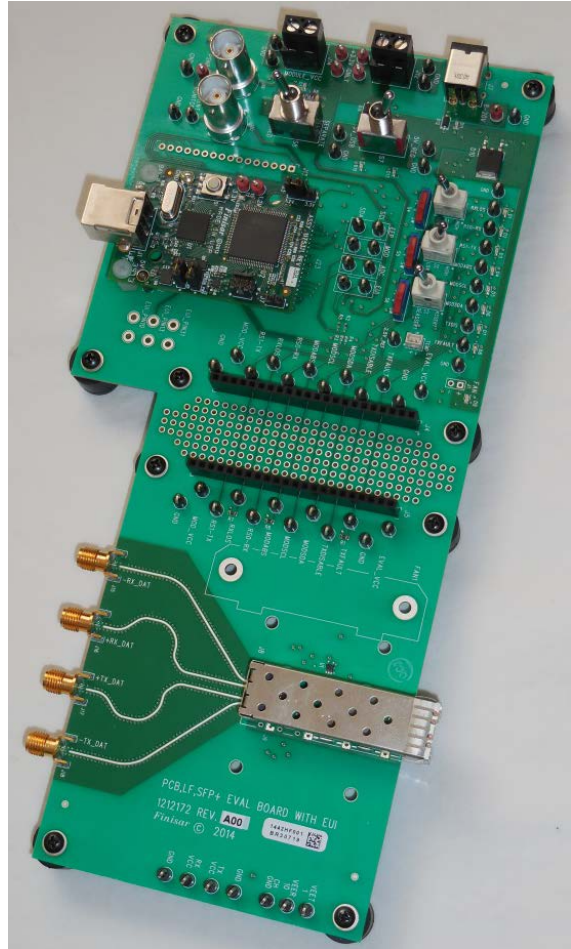
#### CONTENTS

The board consists of a single SFP28 edge connector and SFP28 cage assembly, four 50-ohm SMA female coaxial connectors (J15-J18) for the high-speed differential transmitter input and receiver output signals, and test points for monitoring the following pins:

- Module RX\_LOS
- Module RX Rate Select 0
- Module TX Rate Select 1
- Module Absent
- TWI (Two Wire Interface) SCL and SDA
- TX Disable
- TX Fault
- Eval Board Ground and Vcc
- Module Vcc RX and TX
- Module Ground
- Case Ground

The Evaluation Board has LED's for the:

- RX\_LOS
- RX Rate Select 0
- TX Rate Select 1
- Module Absent
- TWI – SDA and SCL (Low)
- TX Disable
- TX Fault
- Eval Board Power 5V
- Eval Board Power 3.3V



Customized Finisar Software that is specific to this product is available. Please contact your local Finisar Representative for details. The GUI needs to be installed on a Windows<sup>®</sup> XP or 7 Operating System (32bit or 64bit machine) that has an available USB port. The USB (type B) port is on the daughter card (called a FDB-INT-USB3).

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## SPECIFICATIONS

The FDB-1032-SFP+ Evaluation Board has several different power options:

- A laboratory grade power supply with a voltage of 3.3VDC at a maximum of 1.2A at “Eval\_Vcc” (J12); Set S7 to “5V REG”. Set S8 to “COMBINED”. This will use the one power supply to power the Eval board and the SFP. Note that there will be a voltage drop at the SFP due to a diode that protects against accidental reverse voltages. It is recommended to measure the Vcc to the SFP at the “Mod\_Vcc” tap near the SFP cage to make sure it is within operating limits. This power drop can be avoided in this setting by attaching the power supply to Mod\_Vcc (J14), but the voltage protection will also be avoided.
- An 8-20VDC source (e.g. laptop power supply) at J7; Set S7 to “5V REG”. Set S8 to “COMBINED”. This is the recommended configuration. The Eval Board has reverse voltage protection and is fused against shorts, but there is no voltage drop at the SFP connector. The jumper-hook labeled 8-20VDC and the ground pin next to it, may also be used in this configuration.
- A laboratory grade power supply with a voltage of 3.3VDC at a maximum of 1.2A at “Module\_Vcc” (J14); Set S7 to “5V USB”. Set S8 to “SEPARATE”. This will use the power supply to power the SFP alone and have the Eval board powered by the USB. There is no reverse voltage protection diode on this supply input.
- For Class 1 (1W max) SFP/SFP+/SFP28 power applications, power via USB. Set S7 to “5V USB”. Set S8 to “COMBINED”. This will use the USB voltage for the Eval board as well as the SFP. It is recommended to measure the Vcc to the SFP at

“Mod\_Vcc” near the SFP cage to make sure it is within operating limits.

Note that the MSA compliant pi filter will still be used for the SFP port in any of the above configurations.

The high speed lines are designed so there is <1ps skew between each differential pair. The standard SMA connectors used for the high speed differential pairs are female.

### MANUAL MODE OPERATION

If the GUI interface is not used, the Eval Board can still be used in manual mode, where it can serve as a test platform for the SFP, SFP+ or SFP28 module to be mounted. Set slider switches, S4, S5 and S6 to the “SW” position, which is toward the SFP cage.

For the TWI (Two Wire Interface), use the taps that are labeled “MODSDA” and “MODSCL” near the LEDs. The other TWI taps are for internal use only.

### AUTOMATED CONTROL MODE OPERATION

For GUI controlled operation set slider switches S4, S5, and S6 to the “PC” position, away from the SFP cage. Launch the GUI called Transceiver Workbench SFP MSA. This GUI will give you access to the DDM (Digital Diagnostic Monitors) as well as let you see and control masks for the Alarms and Warnings.

### GUI INSTALLATION

Please contact Finisar for the required driver and software GUI. See the datasheet (FDB-INT-USB3) for the installation of the drivers necessary for the USB connection. Once the Eval Board is “seen” by the machine, the GUI can be installed. Copy the folder “Transceiver\_Workbench\_SFP\_Customer\_x.x.xx” to the computer’s hard drive. Find the executable file “Transceiver\_Workbench\_SFP\_MSA.exe” and run this application.

## NOTES

The rest of the connectors, pins, tap points, headers and IC's are for Finisar internal use only.

There is one momentary switch on the daughter card of the Eval Board. This is a manual reset of the TWI.

Figure 1 below shows the locations of important points mentioned in this datasheet.

Figure 2 below shows test points and LEDs.

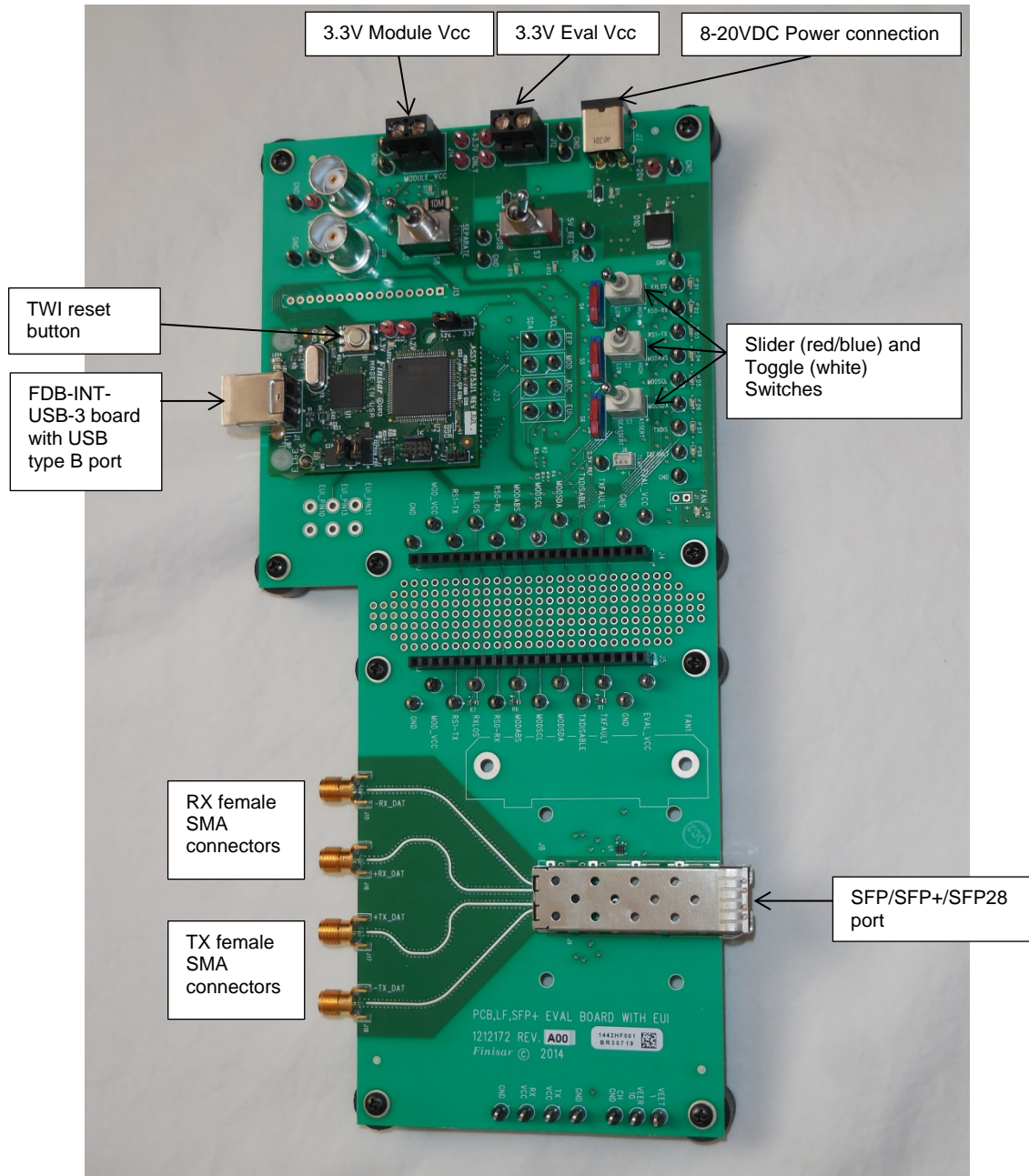


Figure 1. Top view of FDB-1032-SFP+

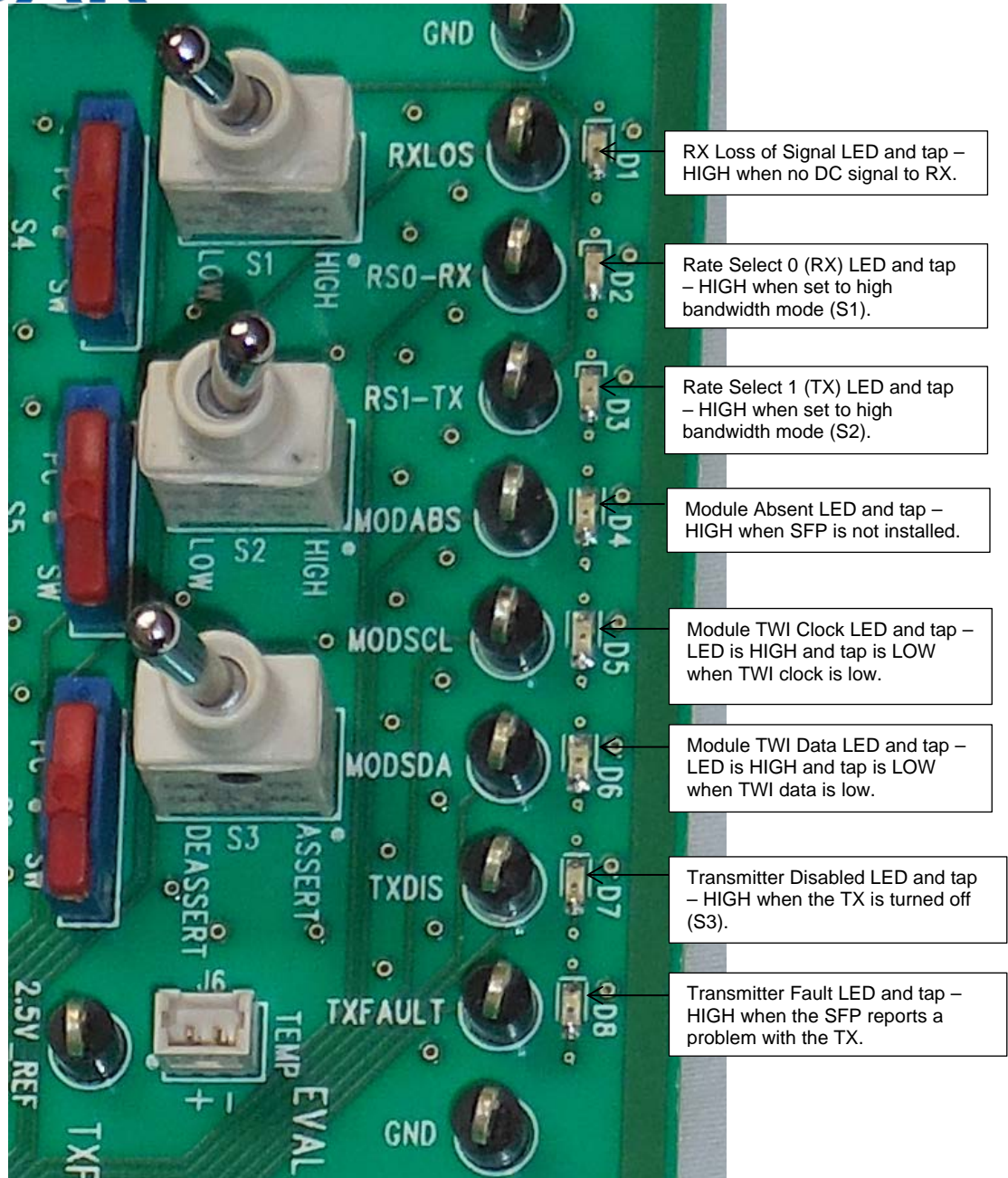


Figure 2. Test Points and LEDs

Finisar Corporation  
 1389 Moffett Park Drive  
 Sunnyvale, CA 94089-1134  
 Tel. 1-408-548-1000  
 Fax 1-408-541-6138  
[sales@finisar.com](mailto:sales@finisar.com)  
[www.finisar.com](http://www.finisar.com)

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