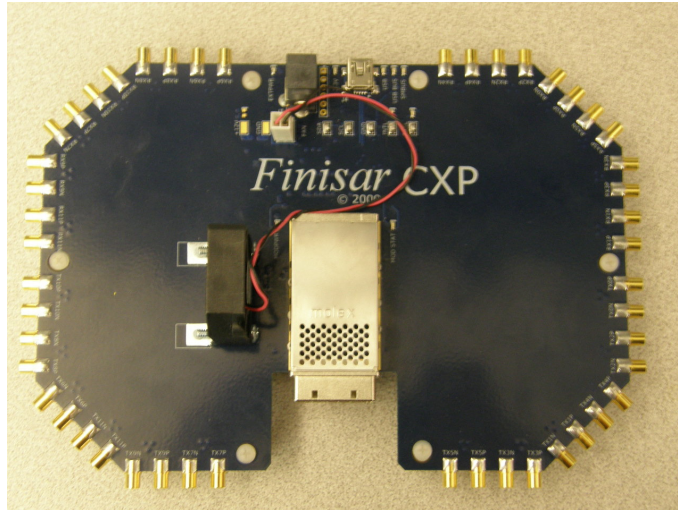# *F i n i s a r*

Product Specification
CXP Evaluation Board
FDB-1043

INTRODUCTION:

Finisar's FDB-1043 CXP Evaluation Board is designed for testing and evaluating the CXP transceiver and CXP Active optical cables. It is compatible with all MSA compliant CXP transceivers.

The board consists of a single 84 pin CXP edge connector and CXP cage assembly. There are forty-eight 50-ohm SMP coaxial connectors (J6 – J53), for the high-speed differential transmitter input, and receiver output signals, and test points with LED's for monitoring the following CXP and Evaluation Board pins:

MOD STAT (Module Status)
MOD PWR (Module Power)
EXTPWR (External Power Supply)
PRSL (Module Present)
INTL (Module Interrupt_L and Reset_L)
3.3 V (Module Power Supply)

The I2C pins (SDA, SCL and GND) have tap points available on top of the Evaluation Board. There are also tap points for PRSL and INTL.
The Evaluation Board has LED's to indicate that the USB port is active.
There is provision for a mini-USB port (J4), so if additional functionality is needed, module functionality can be read over the I2C, using the USB interface.
A Customer Friendly GUI is available and can be requested.

SPECIFICATIONS

The FDB-1043 CXP Evaluation Board is powered by a supply voltage of +6V, at 1.75 A from the 100V-240V AC, 50-60 Hz adaptor (this is included with the purchase of the board).
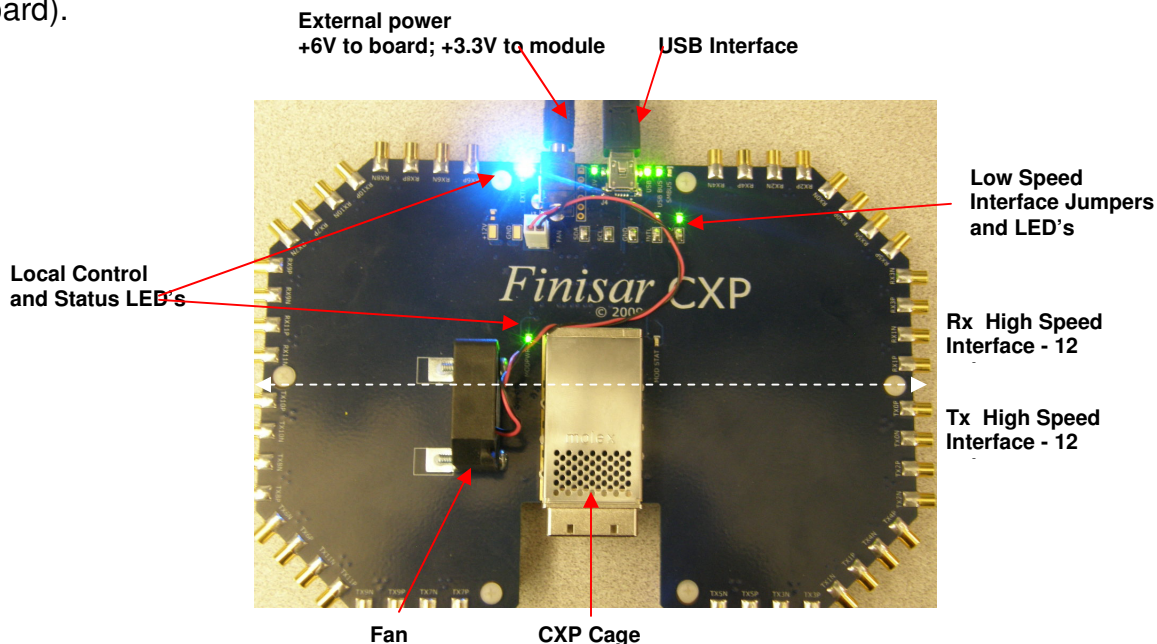
CUSTOMER GUI
A customer GUI is available upon request that can be used in conjunction with the FDB-1043 Evaluation Board.
The GUI functionality is based on the CXP MSA, and is outlined in AN-2077, & AN-2073. Please refer to these Application Notes, for additional details.

INSTALLATION OF THE CUSTOMER GUI
To install the GUI, please follow the instructions below:

1) Ensure Microsoft.NET Framework 2.0 or greater is installed. Check in "C:\WINDOWS\Microsoft.NET\Framework\".

If it is not already installed, run "dotnetfx.exe".

2) Unzip the "Finisar CXP Demo.zip" file

3) Copy the "CXPDemo" folder into Program Files, or any appropriate location.

4) In the USB_DLL_Stuff folder, run the batch file "FNSREvalUSB.bat"

4) Plug the CXP demo in with DC power and the USB cable to the computer

5) WAIT until the PC recognizes the USB device

6) Run the main program "CXPdemo_091014.exe"

FEATURES OF THE CUSTOMER GUI

The GUI provides access to the DOM (Digital Optical Monitoring) module parameters. These parameters monitored, are Device Case Temperature, VCC, TxFault (per channel), RxLOS (per Channel), and Interrupt (for Tx and Rx).
The GUI allows for control and monitoring of Receiver Output, Receiver Pre-emphasis aswell as TxDisable and RxDisable for each of the 12 channels.

Below is an example of a screen capture of the GUI interface.
Please Note: only one CXP evaluation board was used for the purposes of this application note, to highlight the RxLOS and Interrupt features.

In order to validate that both ends of the CXP cable are powered up and have achieved link, then 2 CXP evaluation boards will need to be purchased.
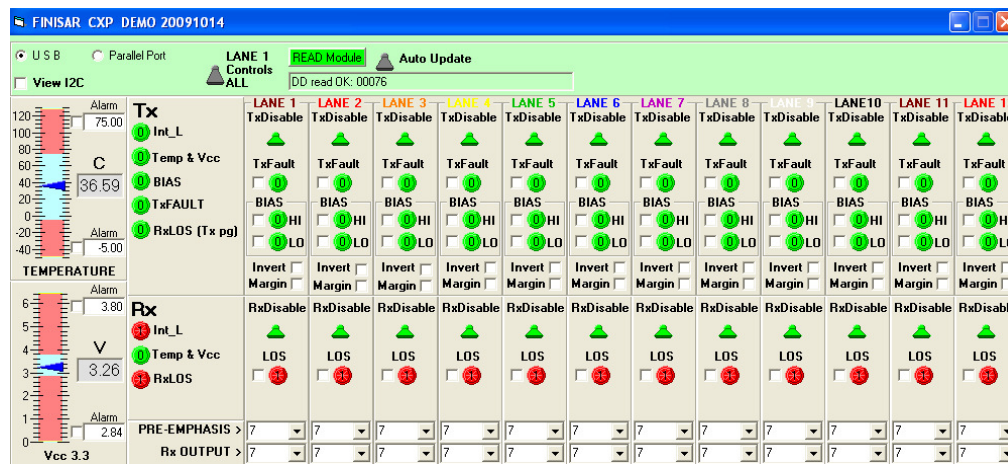
Tx:
On the transmitter side all 12 channels display green LED's, indicating that each of the lanes has the transmitter enabled and no alarms are set.
The host can set TxDisable for any of the 12 channels, if desired, by simply clicking the TxDisable green tab.

The Invert check-box allows the user to invert the polarity of any of the electrical lanes, in the event that the other end of the active cable that is plugged into the host board has a polarity mismatch.

The Margin check-box allows the user to set margining of the DC laser bias.

Rx:
RxDisable tab, allows the host to choose if either of the 12 channels require that the receiver electrical output be squelched. In the above screen capture, all lanes are active indicated by the green tabs.

The INT_L and RxLOS red LED's are flagged red, which indicates that there is no received optical power back at the receiver stage – as expected since the other end of the cable is unpowered.

The Pre-emphasis and Rx Output both display their default setting of 7. This can be adjusted in a range from 0 to 7 and additional details can be found in AN-2073.

There are no controls for the transmitter side pre-emphasis and output amplitude, since this is not required in our CXP module.

For additional details please refer to AN-2073.

SERIAL ID:

The GUI can also display the EEPROM contents by selecting the 'View I2C' tab as shown below. The host can set the Device Address to read from either A0h or A8h.
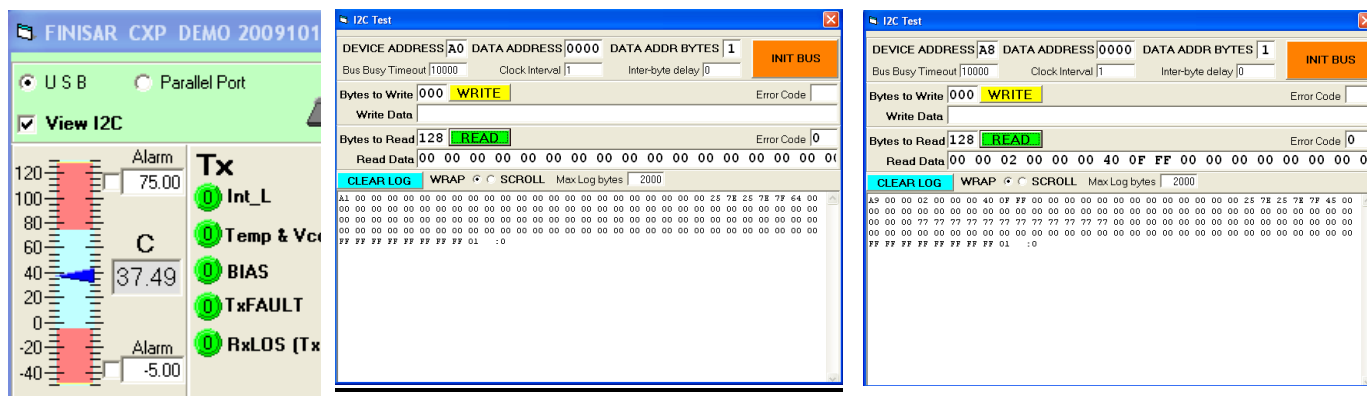
Please note that the EEPROM contents for the CXP, are outlined in Application Note AN-2077

REFERENCE DOCUMENTS

1. Supplement to Infiniband Architecture Specification, Volume 2, Release 1.2.1, Annex A6. "120 GB/s 12x Small Form-Factor Pluggable (CXP) Interface Specification for Cables, Active Cables, & Transceivers", September 2009

2. AN-2077 – C.wire **TM** EEPROM MAP DEFINITION

3.   AN-2073 - C.wire™ Power Dissipation Optimization via EEPROM

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