OSFP Host Hardware Manual

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1. ML4064 test board key features

- ✓ Supports 8x50G interfaces
- ✓ I2C master driven from either on-board microcontroller or external pin headers
- ✓ 40 GHz 2.92mm or 2.4mm K Connectors
- ✓ Current Sense
- ✓ Matched differential trace length across all channels
- ✓ High performance signal integrity traces from K connectors to OSFP host connector.
- ✓ On-board LEDs display MSA output alarm states
- ✓ Built with RO3003 PCB Material
- ✓ On-board buttons/jumpers for MSA input control signals
- ✓ User friendly GUI for I2C R/W commands and loading custom MSA memory maps
- ✓ Four corner testing capability
- ✓ USB interface

2. Power up

To operate the OSFP host, follow the following steps:

- Place the host as to see the Multilane logo on top.

- Plug the host to a 3.3 V power supply using banana plugs.

- Plug the host to your computer using the USB plug.

3. Operating conditions

Parameter	Symbol	Conditions	Min	Typical	Max	Unit
+3.3V power supply	Vcc	Main Supply voltage	3	3.3	3.6	V
I/O Load resistance	RI	AC-Coupled, Differential	90	100	110	Ω

4. LED indicators

The LED D11 indicates whether a USB cable is plugged or not.

The other two LEDs, D12 and D13, are used for diagnostic purposes.

- o If the green LED, D12, is on: USB is locked and device is recognized by the USB driver.
- o If the red LED, D13, is on: USB not connected or USB driver not found.
- o If both LEDs are off: Board not powered correctly or firmware is corrupted.

4.1 Bootloader

You can access the bootlaoder to reprogram the microcontroller, to do that, simply:

1. Connect a jumper on (J1) situated between the USB plug and the red power plug.

2. Connect a USB cable between the PC and Board.

3. Power up the board with a +3.3V supply.

4. LEDs (D12, D13) start blinking.

5. Remove jumper.

6. Open the software "Microchip USB HID Bootloader v2.3".

7. Click on "Open Hex File".

8. Choose the new FW to download.

9. Click on "Program/Verify".

10. Once the software finishes programming press on "Reset Device".

11. After reset the Firmware is successfully updated.

5. OSFP HW Signaling Pins

Hardware alarm pins, hardware control pins and I2C pins can be accessed from the software via USB or through on-board LEDs and pin headers.

1. All Hardware Alarm signals of ML4064 MCB can be accessed through the pin headers shown below:
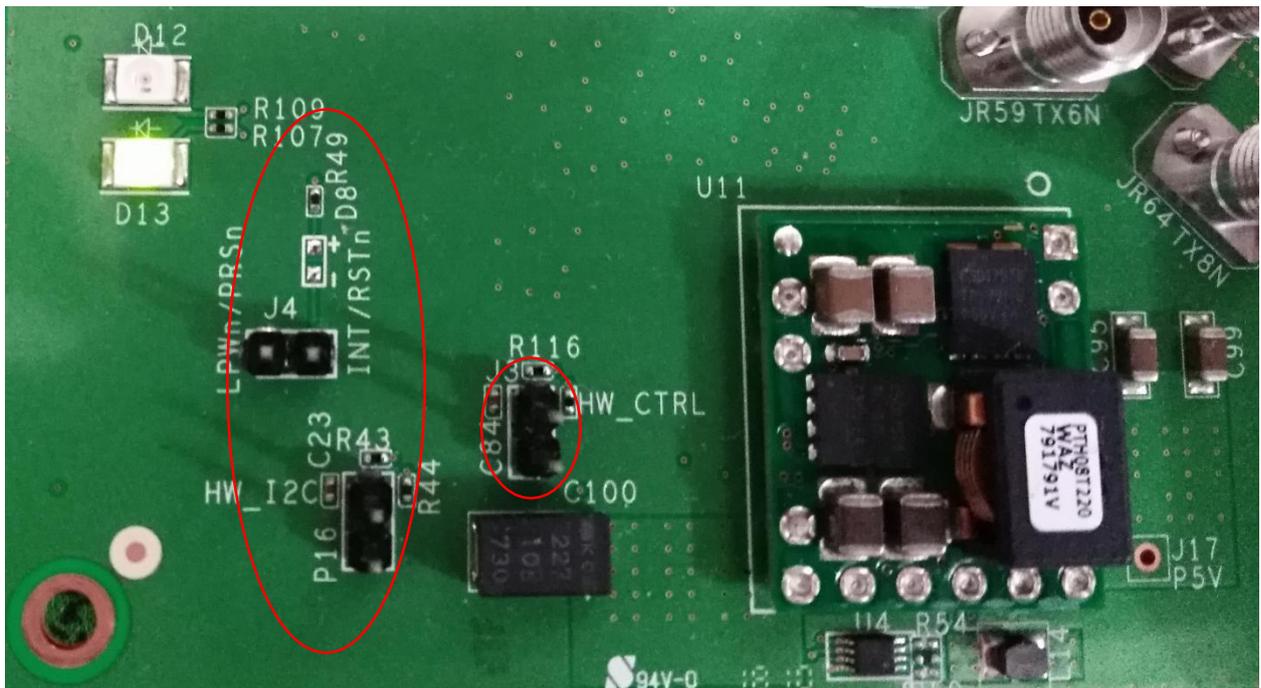
Hardware control signals can be driven through the jumpers. A jumper is placed on **J3** HW_CTRL to be able to control hardware signals from J4.

J4 pin headers provides direct access to LPWn/PRSn and RSTn/INT pins of the OSFP connectors

2. To control I2C, a jumper is placed on **P16** HW_I2C. Then the external I2C is driven through I2C_SCL and I2C_SDA pins shown below.