

OSFP Host User Manual

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1. 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

2. 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.

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

2.1 Bootloader

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

- 1. Connect a jumper on (P15) 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.



3. Graphical User Interface sections

3.1 Communication Window

JSB instance: 0	• •			
Initialize	Refresh	Pause Monitor	About Us	Autolog
				O Module Found
				O Module Not Found
				🔿 ок

Figure 1: Communication Window: Main Interface used for initial communication with host.

The communication window is the first window to appear when you run the GUI.

The Initialize button is the application's main entry point, used to establish a connection with the OSFP Host board and the Module. Once a USB connection is established, the Host checks if a OSFP Module is inserted, and accordingly illuminates the corresponding (Module Found or Module Not Found) LED. If a OSFP Module is inserted, the initialization process proceeds with checking the related Hardware pins to ensure that the module is selected and ready to communicate with host.

You can check the "Autolog" check box for activating the silent logging mode. In this mode, a log file will be automatically generated, and all software steps will be logged during runtime. This is useful for debugging purposes when communicating with Multilane applications engineering support.

Note that multiple boards can be connected via USB. The desired board is selected using *USB Instance* field from the *Communication* window.

Refresh button: Checks for connection status, refresh Hardware Readings and updates GUI. **Pause Monitor** button: Pause/Resume monitoring.

About Us button: Shows program information (name, version) and company information.



3.2 Load/Save tab

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mu	ItiLa	ne	1		e	6	Communication			4
		V	en Max				USB instance:	• 0		
	C	DSFP	Hos	t			Initialize	Refresh	Pause Monitor About Us	Autolog Module Found Module Not Found OK Warning
L	oad/Save	e Read/Write Byt	e DVT							
	F	Refresh Page		Save M	5A to file	Load F	Page00		Delay Settings	
	Write MSA to HW Load MSA from file Save Pr		Save Page	e00 to File						
1		Address	Data(Hex)	Data(Dec.)	Data(Ascii)	MSA Description	<u> </u>			
	•	LowMem 0(00h)	0	0	0	Identifier				
		LowMem 1(01h)	0	0	0					
		LowMem 2(02h)	0	0	0	Status				
		LowMem 3(03h)	0	0	0	Latched Tx/Rx LOS				
		LowMem 4(04h)	0	0	0	Latched Tx Fault				
		LowMem 5(05h)	0	0	0					
		LowMem 6(06h)	0	0	0	Latched Temp Low/High Al	larm/Warning			
		LowMem 7(07h)	0	0	0	Latched Vcc Low/High Alar	rm/Warning			
		LowMem 8(08h)	0	0	0					
		LowMem 9(09h)	0	0	0	Latched Rx1/Rx2 Power Hig	gh/Low Alarn			
		LowMem 10(0Ah)	0	0	0	Latched Rx3/Rx4 Power Lo	w/High Alarm			
		LowMem 11(0Bb)	0	0	0	Latched Tx1/Tx2 Bias Low/	High Alarm/V			
		contrient fr(obit)	-	-						
	_	LowMem 12(0Ch)	0	0	0	Latched Tx3/Tx4 Bias Low/	High Alarm/V			
		LowMem 12(0Ch) LowMem 13(0Dh)	0	0	0	Latched Tx3/Tx4 Bias Low/	′High Alarm/₩			L
		LowMem 12(0Ch) LowMem 13(0Dh) LowMem 14(0Eh)	0 0 0	0 0 0	0 0 0	Latched Tx3/Tx4 Bias Low/	′High Alarm∕V			L



This screen allows user to Load or Save his custom MSA configuration.

Data is displayed in a grid showing: register address, hex value, Decimal Values, ASCII value, MSA description.

- **Refresh Page** button: Read MSA Registers, and refresh values.
- Write MSA to HW button: Write the current MSA configuration to OSFP module.
- Save MSA to file button: saves the current MSA memory to a file using Comma separated values (CSV) format.
- Load MSA from file button: Loads MSA values from file and map it to MSA memory.
- Load Page00 button: same as Load MSA from file, but loads only page 0 data.
- Save Page00 to file button: same as Save MSA to file, but saves only page0 data.



3.3 Read/Write Byte tab

This tab gives access to MSA registers.

- 1. First, the user selects which page in the **Memory Location** he needs to perform a read or write operation on.
- 2. Then, he can use the **Single Byte** window to read/write one byte from the memory.
 - a. Address: The address to read/write from.
 - b. Memory Content: The data value to be read/written to the selected address (in Hex or in Binary)
- 3. Or, the user can use the **Multi-byte Read** to read/write multiple bytes between a Starting Address and an End Address that he specifies.

QSFP	Contract Contract Contract on Annual Strength Contractory Contract	
multiLane	Communication	A
	USB instance:	
OSFP Host	Initialize Refresh Pause Monitor About Us	Autolog Module Found Module Not Found OK Warning
Load/Save Read/Write Byte DVT		
Click to refresh this page Refresh Page	Single Byte	
	Enter ASCII or Hex or Binary	
Memory Location		
Upper Page 00 Upper Page 02(Optional) Upper Page 01(Optional) Upper Page 03 None of the above	Read Write	=
Multi-Byte Read	Password Entry	
Starting Address (Decimal) (Decimal) Address Hex Binary ASCII	MSB LSB Hex Address 123 124 125 126	

Figure 3: Read/Write Byte tab



3.4 DVT tab

This tab allows the user to control/monitor the low speed signals.

C QSFP							
multiLane	Communication						
↓ · · · · · · · · · · · · · · · · · · ·	USB instance:						
	Initialize Refresh Pause Monitor About Us	Autolog					
OSFP Host		O Module Found					
		O Module Not Found					
		O OK O Warning					
		0					
Load/Save Read/Write Byte DVT							
PRSn							
E INT		=					
Get							

Figure 4: DVT tab

- Signals controlled from the host:
 - LPWn: Allows the host to signal Low Power mode. Low Power mode is an active-low signal.
 - RSTn: Allows the host to reset the module. Reset is an active-low signal on the host.

<u>NB:</u> Toggle the relative checkboxes to control these signals.

- Signals read only from module:
 - INT: Allows the module to raise an interrupt to the host.
 - PRSn: Allows the module to indicate Module Present. Module Present is an active-low logic signal on the host.

<u>NB:</u> Get button is clicked to get these signals statuses.

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