

## CFP4 API Documentation

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## CFP4 API Documentation

### 1. Introduction

This document describes the various API functions for the Multilane CFP4 host boards (ML4027, ML4027-ACO and ML4042). Each function is described with its parameters and return values.

#### 1.1. Acronyms and abbreviations

API	Application Programming Interface
DLL	Dynamic Link Library (.dll file)
USB	Universal Serial Bus
MDIO	Management Data Input Output

### 2. APIs

#### 2.1. General Functions

##### 2.1.1. USB Connection

###### A. ConnectToHost

<b>Description</b>	Opens a USB connection to CFP4 Host
<b>Call</b>	bool __stdcall ConnectToHost(UInt16 Instance)
<b>Parameters</b>	UInt16 Instance: USB instance of plugged host
<b>Returns</b>	True or False

###### B. Disconnect

<b>Description</b>	Disconnects from CFP4 Host and close open USB connection
<b>Call</b>	bool __stdcall Disconnect(UInt16 Instance)
<b>Parameters</b>	UInt16 Instance: USB instance of plugged host
<b>Returns</b>	True or False

###### C. GetDeviceCount

<b>Description</b>	Gets the number of devices attached
<b>Call</b>	UInt32 __stdcall GetDeviceCount(void)
<b>Parameters</b>	None
<b>Returns</b>	Number of connected devices

##### 2.1.2. Monitoring

###### A. P3V3\_Current\_Monitor

<b>Description</b>	Measures current value on the 3.3V line
<b>Call</b>	bool __stdcall P3V3_Current_Monitor(UInt16 Instance, UInt16* data)
<b>Parameters</b>	UInt16 Instance: USB instance UInt16* data: Current value in mA
<b>Returns</b>	True or False

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### 2.2. CFP4 MSA functions

#### 2.2.1. MDIO access

##### A. Read\_Mdio

<b>Description</b>	Reads MDIO
<b>Call</b>	bool __stdcall Read_Mdio(UInt16 Instance, UInt8 DeviceAddress, UInt16 RegisterAddress, UInt16* data)
<b>Parameters</b>	UInt16 Instance: USB instance UInt8 DeviceAddress: Device address UInt16 RegisterAddress: Register address UInt16* data: Pointer to the value to be read
<b>Returns</b>	True or False

##### B. Write\_Mdio

<b>Description</b>	Writes MDIO
<b>Call</b>	bool __stdcall Write_Mdio(UInt16 Instance, UInt8 DeviceAddress, UInt16 RegisterAddress, UInt16 data)
<b>Parameters</b>	UInt16 Instance: USB instance UInt8 DeviceAddress: Device address UInt16 RegisterAddress: Register address UInt16 data: Value to be written
<b>Returns</b>	True or False

#### 2.2.2. Alarms and controls signals

##### A. MOD\_ABS

<b>Description</b>	Reads Module Absent CFP4 pin to check if the CFP4 module is inserted in the Host
<b>Call</b>	bool __stdcall MOD_ABS(UInt16 Instance, bool* status)
<b>Parameters</b>	UInt16 Instance: USB instance bool* status: True if module is absent False if module is present
<b>Returns</b>	True or False

##### B. RX\_LOS

<b>Description</b>	Receiver Loss Of Signal pin status
<b>Call</b>	bool __stdcall RX_LOS (UInt16 Instance, bool* status)
<b>Parameters</b>	UInt16 Instance: USB instance bool* status: True if RX_LOS is High False if RX_LOS is Low
<b>Returns</b>	True or False

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### C. GLB\_ALRM

<b>Description</b>	Global alarm state (inverse of GLB_ALRMn pin)
<b>Call</b>	bool __stdcall GLB_ALRM(UInt16 Instance, bool* status)
<b>Parameters</b>	UInt16 Instance: USB instance bool* status: True if GLB_ALRM asserted False if GLB_ALRMn is deasserted
<b>Returns</b>	True or False

### D. PRG\_ALRM1

<b>Description</b>	Programmable Alarm 1 pin status
<b>Call</b>	bool __stdcall PRG_ALRM1(UInt16 Instance, bool* status)
<b>Parameters</b>	UInt16 Instance: USB instance bool* status: True if PRG_ALRM1 asserted False if PRG_ALRM1 is deasserted
<b>Returns</b>	True or False

### E. PRG\_ALRM2

<b>Description</b>	Programmable Alarm 2 pin status
<b>Call</b>	bool __stdcall PRG_ALRM2(UInt16 Instance, bool* status)
<b>Parameters</b>	UInt16 Instance: USB instance bool* status: True if PRG_ALRM2 asserted False if PRG_ALRM2 is deasserted
<b>Returns</b>	True or False

### F. PRG\_ALRM3

<b>Description</b>	Programmable Alarm 3 pin status
<b>Call</b>	bool __stdcall PRG_ALRM3(UInt16 Instance, bool* status)
<b>Parameters</b>	UInt16 Instance: USB instance bool* status: True if PRG_ALRM3 asserted False if PRG_ALRM3 is deasserted
<b>Returns</b>	True or False

### G. TX\_DIS

<b>Description</b>	Asserts/Deasserts TX_DIS
<b>Call</b>	bool __stdcall TX_DIS(UInt16 Instance, bool asserted)
<b>Parameters</b>	UInt16 Instance: USB instance bool asserted: True to assert TX_DIS False to deassert TX_DIS
<b>Returns</b>	True or False

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### H. MOD\_LOPWR

<b>Description</b>	Asserts/Deasserts MOD_LOPWR
<b>Call</b>	bool __stdcall MOD_LOPWR(UInt16 Instance, bool asserted)
<b>Parameters</b>	UInt16 Instance: USB instance bool asserted: True to assert MOD_LOPWR False to deassert MOD_LOPWR
<b>Returns</b>	True or False

### I. MOD\_RST

<b>Description</b>	Asserts/Deasserts MOD_RSTs (inverse of MOD_RSTn pin)
<b>Call</b>	bool __stdcall MOD_RST(UInt16 Instance, bool asserted)
<b>Parameters</b>	UInt16 Instance: USB instance bool asserted: True to assert MOD_RSTn pin (Reset state is asserted) False to deassert MOD_RSTn pin (Reset state is deasserted)
<b>Returns</b>	True or False

### J. PRG\_CNTL1

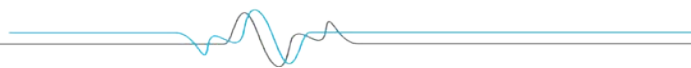
<b>Description</b>	Asserts/Deasserts PRG_CNTL1
<b>Call</b>	bool __stdcall PRG_CNTL1(UInt16 Instance, bool asserted)
<b>Parameters</b>	UInt16 Instance: USB instance bool asserted: True to assert PRG_CNTL1 False to deassert PRG_CNTL1
<b>Returns</b>	True or False

### K. PRG\_CNTL2

<b>Description</b>	Assert/Deassert PRG_CNTL2
<b>Call</b>	bool __stdcall PRG_CNTL2(UInt16 Instance, bool asserted)
<b>Parameters</b>	UInt16 Instance: USB instance bool asserted: True to assert PRG_CNTL2 False to deassert PRG_CNTL2
<b>Returns</b>	True or False

### L. PRG\_CNTL3

<b>Description</b>	Assert/Deassert PRG_CNTL3
<b>Call</b>	bool __stdcall PRG_CNTL3(UInt16 Instance, bool asserted)
<b>Parameters</b>	UInt16 Instance: USB instance bool asserted: True to assert PRG_CNTL3 False to deassert PRG_CNTL3
<b>Returns</b>	True or False



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### M. Set\_PRTADR

<b>Description</b>	Sets MDIO Physical Port Address
<b>Call</b>	bool __stdcall Set_PRTADR(UInt16 Instance, UInt8 value)
<b>Parameters</b>	UInt16 Instance: USB instance UInt8 value: Desired port address value
<b>Returns</b>	True or False

### 3. Document information

Revision number	Author	Date
1.0	Mary Daou	4/30/2015