CFP2 API Documentation

Table of Contents

CFP2 API Documentation

1. Introduction

This document describes the various API functions for the Multilane CFP2 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

Description	Opens a USB connection to CFP2 Host
Call	bool_stdcall ConnectToHost(UInt16 Instance)
Parameters	UInt16 Instance: USB instance of plugged host
Returns	True or False

B. Disconnect

Description	Disconnects from CFP2 Host and close open USB connection
Call	bool_stdcall Disconnect(UInt16 Instance)
Parameters	UInt16 Instance: USB instance of plugged host
Returns	True or False

C. GetDeviceCount

Description	Gets the number of devices attached
Call	UInt32_stdcall GetDeviceCount(void)
Parameters	None
Returns	Number of connected devices

2.1.2. Monitoring

A. P3V3_Current_Monitor

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

CFP2 API Documentation

2.2. CFP2 MSA functions

2.2.1. MDIO access

A. Read_Mdio

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

B. Write_Mdio

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

2.2.2. Alarms and controls signals

A. MOD_ABS

Description	Reads Module Absent CFP2 pin to check if the CFP2 module is inserted in the Host
Call	bool_stdcall MOD_ABS(UInt16 Instance, bool* status)
Parameters	UInt16 Instance: USB instance bool* status: True if module is absent False if module is present
Returns	True or False

B. RX_LOS

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

CFP2 API Documentation

C. GLB_ALRM

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

D. PRG_ALRM1

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

E. PRG_ALRM2

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

F. PRG_ALRM3

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

G. TX_DIS

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

CFP2 API Documentation

H. MOD_LOPWR

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

I. MOD_RST

Description	Asserts/Deasserts MOD_RSTs (inverse of MOD_RSTn pin)
Call	bool_stdcall MOD_RST(UInt16 Instance, bool asserted)
Parameters	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)
Returns	True or False

J. PRG_CNTL1

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

K. PRG_CNTL2

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

L. PRG_CNTL3

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

CFP2 API Documentation

M. Set_PRTADR

Description	Sets MDIO Physical Port Address
Call	bool_stdcall Set_PRTADR(UInt16 Instance, UInt8 value)
Parameters	UInt16 Instance: USB instance UInt8 value: Desired port address value
Returns	True or False

3. Document information

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