Product Change Notice

PCN 001

NetBurner Part Numbers: MOD5441X-100IR, MOD5441X-200IR
Implementation Date: July 19, 2013
Revision Number: 1.7

Description

J2 connector pin-out change to expose USB signals

Hardware Effectively

The USB D+ and D- signals were not routed to the J2 50-pin header. To provide access to the USB signals, the third I2C port signals on J2-17 and J2-18 have been replaced with the USB D- (J2-17) and D+ (J2-18) signals. Selection of USB Host versus USB On the Go can be accomplished with resistor selection on the module. The default mode will be USB On the Go.

USB operation also requires an exact 60MHz clock. This can be provided 2 ways:

1. The USB_CLKIN input is shared with IRQ6 on pin J2-47, which will can be attached to a 60MHz oscillator.
2. The processor core can be slowed from 250MHz to 150MHz, which enables the processor PLL to divide evenly into 60MHz.

Signal Selection with Zero Ohm Resistors, Revision 1.9 and Later

Revision 1.9 and later assemblies include 3 pairs of zero ohm resistors to select between USB Hose, USB Device and the earlier revision I2C2 signals.

J2.17 and J2.18 pin options. The net label for J2.17 is USB_N, and J2.18 is USB_P.

1. Default, USB Device, MOD54415-100IR, MOD54415-200IR
   J2.17 = USBO_N (A14)
   J2.18 = USBO_P (B14)
   Do not install: R37, R38, R80, R81
   Install: R35, R36

2. USB Host, MOD54415-100IR-USBH
   J2.17 = USBH_N (A15)
   J2.18 = USBH_P (B15)
   Do not install: R35, R36, R80, R81
   Install: R37, R38

3. I2C2, MOD54415-100IR-I2C2 (Compatible with PCB revision 1.6 configuration)
   J2.17 = SSIO_RXD/I2C2_SDA (C12)
   J2.18 = SSIO_TXD/I2C2SCL (C13)
   Do not install: R35, R36, R37, R38
   Install: R80, R81

Software Effectively

Any application using the third I2C port will need to be modified to use a different I2C port.

Product Change Notice

PCN 002

NetBurner Part Numbers: MOD5441X-100IR, MOD5441X-200IR
Implementation Date: August 7, 2013
Revision Number: 1.8

Description

Byte write steering signals *BE2 J1.9, and *BE3 J1.10 are incorrect when the external data bus is configured for 16-bits and 8-bit writes are attempted. Pin J1.9 has been changed from *BE2 to *BE1, and pin J1.10 has been changed from *BE3 to *BE0.

Note: On all other Freescale ColdFire platforms the correct byte steering signals for a 16 bit bus are *BE2 and *BE3. The MCF54415 processor is the first design with the signals reversed.

Description from the Freescale manual: *FB_BWE[3..0]: Byte Write Enable Signals

20.2.3 Byte Enables/Byte Write Enables (FB_BE/BWE[3:0])
When driven low, the byte enable (FB_BE/BWE[3:0]) outputs indicate data is to be latched or driven ontoa byte of the data bus. FB_BE/BWEn signals are asserted only to the memory bytes used during write accesses. A configuration option is provided to assert these signals on reads and writes (byte enable)or writes only (byte-write enable).

The FB_BE/BWEn signals are asserted during accesses to on-chip peripherals but not to on-chip SRAM or cache. For external SRAM or flash devices, the FB_BE/BWEn outputs must be connected to individual byte strobe signals.

Hardware Effectively

Revision 1.8 or later modules are required for any designs using a 16-bit external bus that need to perform upper or low 8-bit writes.

Software Effectively

None.

Product Change Notice

PCN 003

NetBurner Part Numbers: MOD54417-100IR, MOD54417-200IR

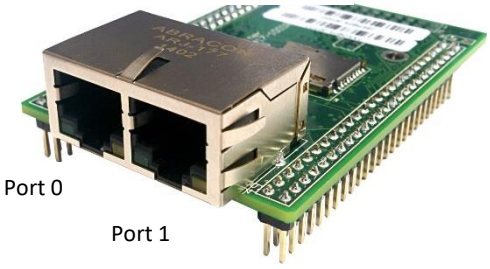
Note that this does not apply to the MOD54415

Implementation Date: February 26, 2015
Effected Revision Number: 1.1
Modified Revision Number: 1.2

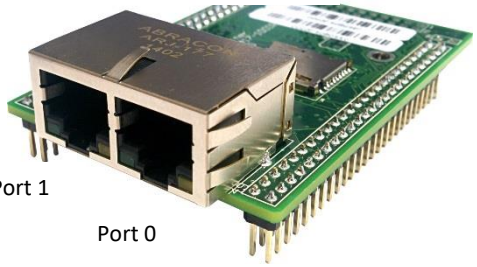
Description

Ethernet interface independent mode port number change

Rev 1.1



Rev 1.2



Note: above images show the -100 version with the Ethernet jacks installed. This change effects the -200 version in the same manor.

Reason for modification: Ethernet port number compatibility between Mod54415 and Mod54417 to enable them to be physically interchangeable in Customer product designs intended to support both single and dual Ethernet options.

Effectively

- No effect when ports are operated in network switch mode.
- No effect when ports use IP routing to determine which port to use (independent mode)
- We expect nearly all applications to fall under the above “no effect” categories. However, it will effect applications that care which physical port location is connected to a specific network and use function calls such as ConnectVia() that require a specific logical port number parameter. Also effects applications that use the interface number option for the web server interface. The application source code would need to be changed to specify the modified port numbers in revision 1.2: change port 0 to port 1 and port 1 to port 0.

Product Change Notice

PCN 004

NetBurner Part Numbers: MOD54415-100IR, MOD54415-200IR
Note that this does not apply to the MOD54417

Implementation Date: May 1, 2018
Revision Number: 2.1

Description

1. Previous revisions used a single 25MHz oscillator for both the CPU clock and the Ethernet PHY clock. To reduce emissions and make agency approval easier, the design was modified to use a 25MHz spread spectrum oscillator for the CPU, and a separate 25MHz oscillator for the Ethernet PHY.
2. Addition of decoupling capacitors to reduce emissions.
3. Added PCB footprint on module for optional USB 60MHz clock.

Hardware Effectively

None, other than reduced emissions.

Software Effectively

None.

Product Change Notice

PCN 006

NetBurner Part Numbers: MOD5441X-100IR, MOD5441X-200IR
Implementation Date: September 23, 2019
Revision Number: 2.2

Description

Replaced the CPU and Ethernet PHY oscillators with the Microchip DSC6331JI2KB-025.0000, providing an option to enable spread spectrum mode for the CPU clock. The default mode is spread spectrum disabled.

To enable spread spectrum an application uses the following function:
void SpreadSpectrumOscillator(bool enable)

Parameters are true or false. Requires NetBurner tools release 2.9.3 or later.

Hardware Effectively

None. The oscillator is the same 25MHz frequency, and the default mode is disabled.

Software Effectively

None. Existing applications will run exactly as before since the default mode is disabled.