MCS7840

USB-2.0 to Quad -Serial Port

Application Note for PCI based 16 Serial port design using MCS7840 and USB2.0 Host Controller

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Revision History

Name	Date	Reason for update	Version
M.Ramkumar	7th Aug 2006	Initial Draft	1.0
AJN	8th Aug 2006	Additional content + Aesthetic changes	1.1

Introduction & Overview

The MCS7840 is a USB-2.0 to Quad Serial Port device. It has been developed to connect a wide range of standard serial devices to a USB host.

This document explains potential usage of MCS7840 in PCI based Multi Serial Port designs & applications.

MCS7840 complies with *Universal Serial Bus Specification Rev.2.0*, which supports data transfer at Low-speed (1.5Mbit/s), Full-speed (12Mbit/s) and High-speed (480Mbit/s).

USB2.0 host controller parts of either NEC or ViA or any other make can be used in arriving at such a multi port serial system design. NEC2.0 Host controller part indicated in rest of this document.

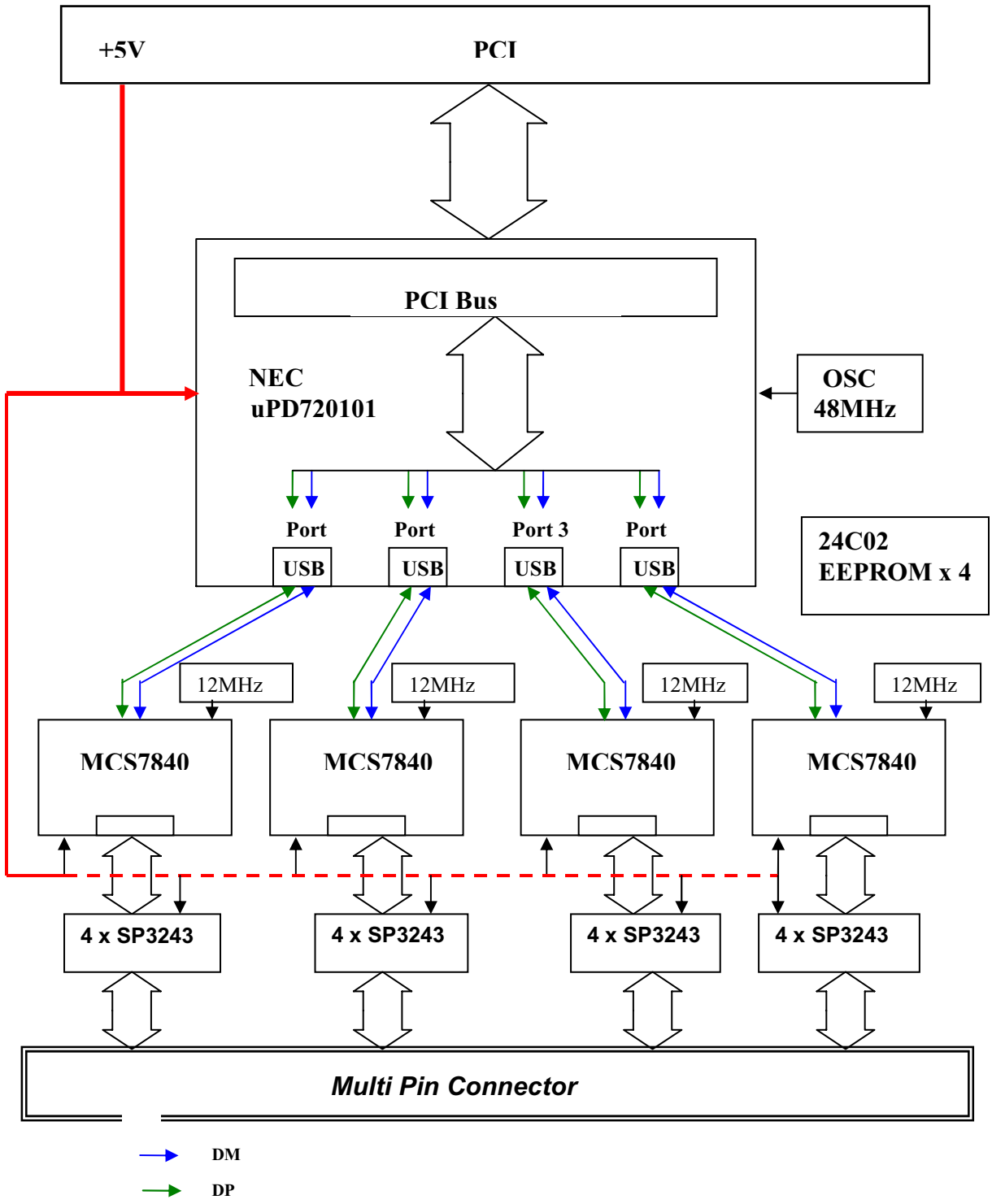
Software support : MCS7840 has driver support for following OS's

- Windows 32bit OS – 98SE/ ME/ 2000/ XP/ 2003 Server
- Windows 64bit OS – XP/2003 Server
- Linux 2.6.11 Kernel
- MAC 10.2 & Above

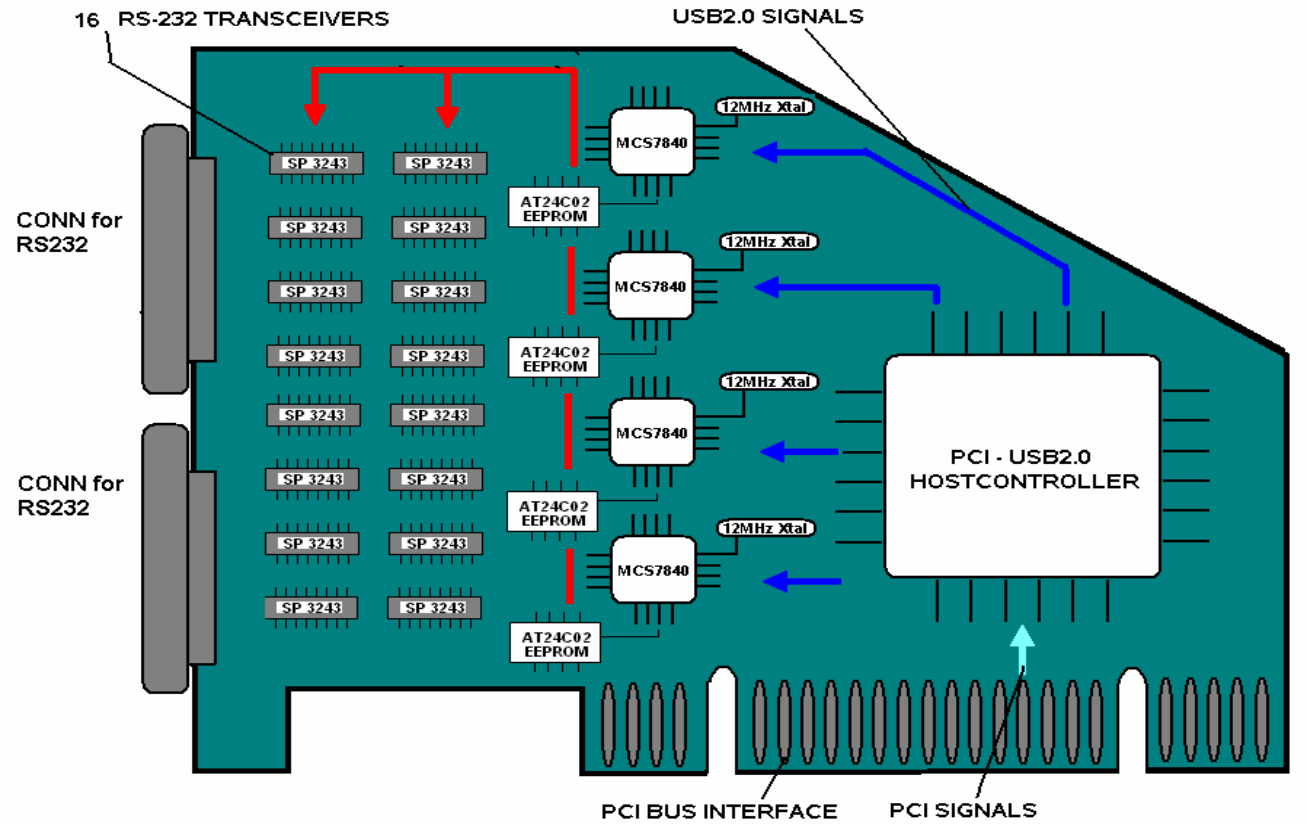
Key features of MCS7840

- USB2.0 Device controller
- Built-in USB2.0 Phy
- On-chip voltage regulators
- Four 16C450 / 16C550 Compatible UART's
- Supports RS232, 422, 485 & Slow IrDA on any / both ports
- 5,6,7,& 8-bit Serial data support
- Hardware & Software flow control
- Serial Port speeds from 50 bps to 6 Mbps
- Custom baud rate support
- On-Chip 512 byte FIFO's
- Supports Remote wakeup & Power management features
- Serial Transceiver shutdown support
- I2C Interface from External EEprom (Read / Write supported)
- ISerial feature through EEprom

System block diagram - PCI to 16S with MCS7840



Example PCI Based 16S System model :



Card Interface & Card type

- Universal PCI edge connector through pcb
- Two Male connectors each housing the RS232 signals of 8 Serial ports
- 32bit, 33Mhz Universal PCI card

Power available through PCI bus

- 3.3V
- 5V

Applications of Multi Serial PCI Card:

- Serial debug or console Port
- Bar code readers
- Industrial process applications

Typical BOM of PCI to 16 Serial card with MCS7840

- RS232 Connectors ….. 2 Unit
- MCS7840 …….. 4 Unit
- NEC uPD720101 … 1 Unit
- 12Mhz Crystal …… 4 Unit
- 48Mhz oscillator …… 1 Unit
- 24c02 EEPROM …… 4 Unit
- Serial Line drivers ……16 Unit
- Resistors & Capacitors
- Metal bracket for PCI card … 1 Unit
- Bare pcb ….. 1 Unit

For Additional information:

Contact sales@moschip.com for commercial details. techsupport@moschip.com can be contacted for technical details.

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