PI7C9X7954/PI7C9X7952-ie
PCI Express Quad/Dual UART Evaluation Board User's Manual

Version 0.1
June 2008

3545 North 1ST Street, San Jose, CA 95134
Telephone: 1-800-435-2336
FAX: 408-435-1100
Website: http://www.pericom.com

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Table of Contents

Tables

Figures

REVISION HISTORY

Date	Revision Number	Description
6/12/2008	0.1	Preliminary User's Manual

1. General Information

The PI7C9X7954/ PI7C9X7952-ie Evaluation Board is built on the PI7C9X7954/ PI7C9X7952, a PCI Express Quad/Dual UART. The evaluation board is a rapid and complete solution for software and hardware development with low risk and fast time-to-market. The evaluation board allows the upstream port of the PI7C9X7954/PI7C9X7952 UART to be directly plugged into a x1 PCI Express slot on a system board. The downstream port of the evaluation board allows serial connections to other devices.

1.1. PI7C9X7954/PI7C9X7952 Features

- x1 PCI Express link host interface
- Four (PI7C9X7954), and two (PI7C9X7952) high performance 950-class UARTs
- Compliant with PCI Express Base Specification 1.1
- Compliant with PCI Express CEM Specification 1.1
- Compliant with PCI Power Management 1.2
- Fully 16C550 software compatible UARTs
- 128-byte FIFO for each transmitter and receiver
- Baud rate up to 15 Mbps in asynchronous mode and 62.5Mbps in synchronous mode
- Flexible clock prescaler from 4 to 46
- Automated in-band flow control using programmable Xon/Xoff in both directions
- Automated out-of-band flow control using CTS#/RTS# and/or DSR#/DTR#
- Arbitrary trigger levels for receiver and transmitter FIFO interrupts and automatic in-band and out-of-band flow control
- Global Interrupt Status and readable FIFO levels to facilitate implementation of efficient device drivers
- Detection of bad data in the receiver FIFO
- Data framing size including 5, 6, 7, 8 and 9 bits
- Hardware reconfiguration through Microwire compatible EEPROM
- Operations via I/O or memory mapping
- Dual power operation (1.8V for PCIe I/O and core, 3.3V for UART I/O)
- PI7C9X7954/PI7C9X7952 in 128-pin LQFP package

1.2. PI7C9X7954/PI7C9X7952-ie Evaluation Board Features

- Supports one x1 upstream PCI Express port
- Two DB-9 connectors and two jumper connectors for serial devices

1.3. Evaluation Board Front View

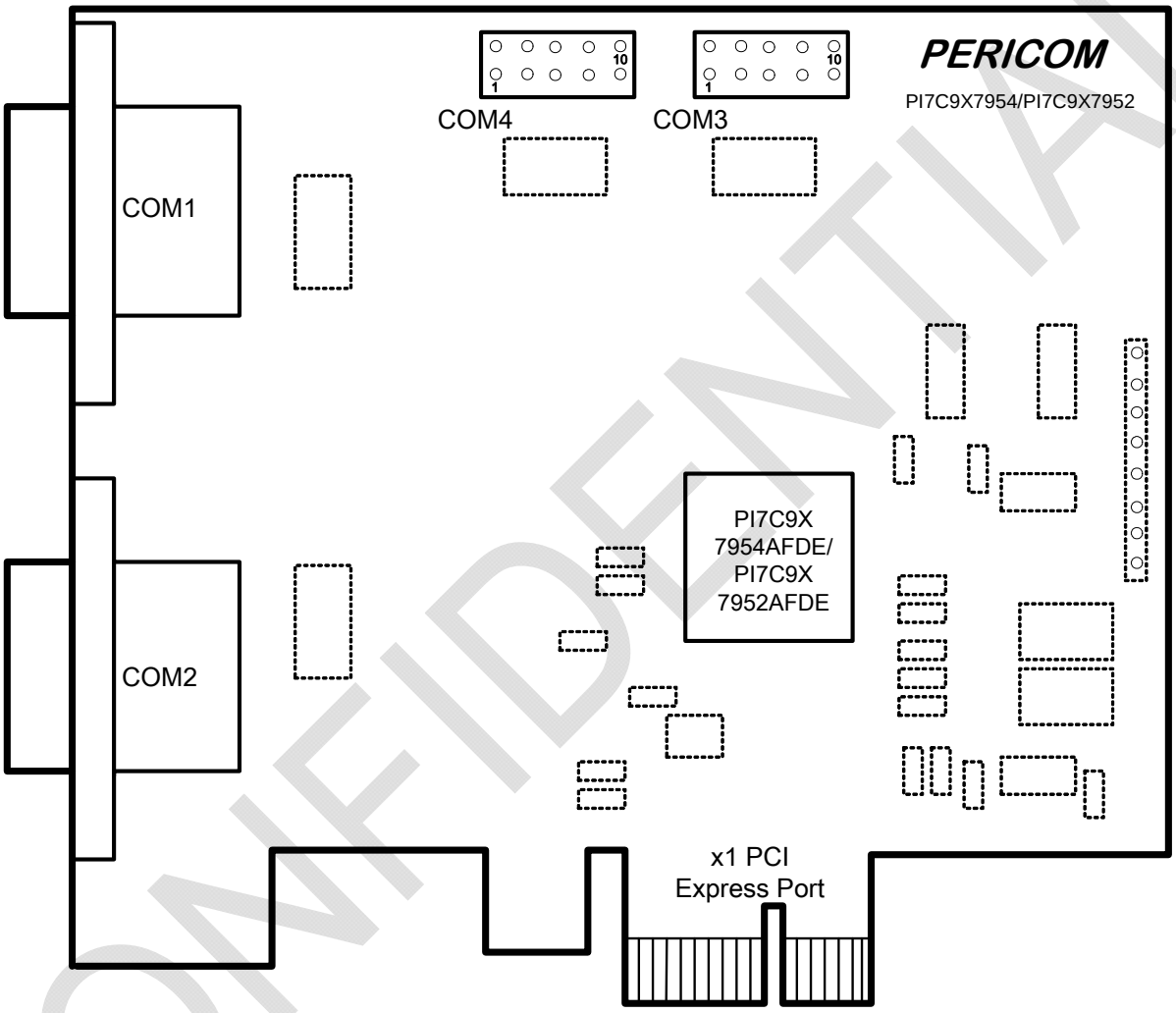


Figure 1-1 PI7C9X7954/PI7C9X7952-ie Evaluation Board Front View

2. On-Board Connectors, Jumpers

2.1. Connector Ports

Table 2-1 Connector Port Function

Port	Function
x1 PCI Express Port	Upstream PCI Express ports. Connects to the Root Complex
COM1 DB-9 Connector	Connects to a serial device. COM1 corresponds to Port0 of the PI7C9X7954 I/O Bridge.
COM2 DB-9 Connector	Connects to a serial device. COM2 corresponds to Port1 of the PI7C9X7954 I/O Bridge.
COM3 Jumper J1	User can use a Jumper Port to DB-9 Cable to connect to a serial device. COM3 corresponds to Port2 of the PI7C9X7954 I/O Bridge.
COM4 Jumper J2	User can use a Jumper Port to DB-9 Cable to connect to a serial device. COM4 corresponds to Port7 of the PI7C9X7954 I/O Bridge.

Table 2-2 DB-9 Connector Pin Assignment (COM1 and COM2)

COM1

Pin	Function
1	DCD[0]
2	SIN[0]
3	SOUT[1]
4	DTR[1]
5	GND
6	DSR[2]
7	RTS[2]
8	CTS[3]
9	RI[3]

COM2

Pin	Function
1	DCD[1]
2	SIN[1]
3	SOUT[1]
4	DTR[1]
5	GND
6	DSR[1]
7	RTS[1]
8	CTS[1]
9	NC

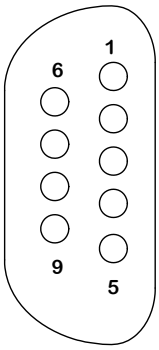


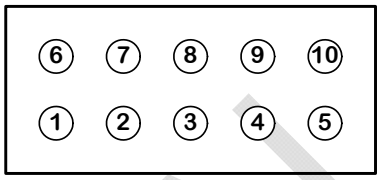
Table 2-3 Jumper Connector Pin Assignment (COM3 and COM4)

COM3

Pin	Function
1	DCD[2]
2	SIN[2]
3	SOUT[2]
4	DTR[2]
5	GND
6	DSR[2]
7	RTS[2]
8	CTS[2]
9	NC
10	NC

COM4

Pin	Function
1	DCD[3]
2	SIN[3]
3	SOUT[3]
4	DTR[3]
5	GND
6	DSR[3]
7	RTS[3]
8	CTS[3]
9	NC
10	NC



3. Other Settings

3.1. EEPROM

The PI7C9X7954/PI7C9X7952-ie Evaluation Board does not provide built-in EEPROM. However, space on the board is reserved if user wishes to use EEPROM. The 93C56 EEPROM can be mounted on U16, resistor R6 should be removed, and a 5.1K ohm resistor should be mounted on R9.

3.2. Wake-Up Function

The wake-up function of the Port 0 of the PI7C9X7954/PI7C9X7952-ie I/O Bridge is enabled by default on the evaluation board. When the system is powered off, 3.3VAUX power is still supplied to the I/O Bridge to support to the wake-up function.

If the user wishes to disable the wale-up function, resistor R15 should be removed, and a 0 ohm resistor should be mounted on R14.