



# **MosChip Security Processor MCS1000**

## **USB Application Note**

**Version 1.0**

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### Introduction

This application note is a continuation from the MCS1000 VPN Application Note. It consists of a schematic and bill of materials that have been modified to replace the RS-232 driver chip with a USB to serial chip (MCS7710) and replace the switching regulators with low-cost low drop-out linear regulators.

### General

In addition to the MCS1000 security processor MosChip offers PCI and USB networking and connectivity devices. One of these devices is the MCS7710 which is a single UART serial port to a USB1.1 device interface. The MCS7710 can be connected directly to the serial port on the MCS1000 and the USB1.1 interface on the 7710 can be connected directly to a USB 1.1 or USB2.0 host port (PC).

The attached schematic details the connection between the MCS1000 and the MCS7710 along with the use of the low drop-out regulators. Full datasheets for the MCS1000 and MCS7710 are available on the MosChip Website <http://www.moschip.com/Products.html>.

### MCS1000 Serial Port Speed

The default speed of the MCS1000 serial port is 115,200 BAUD, but can easily be increased to 230,400 or 460,800 BAUD with a change to the Divisor Latch. See section 3.2.6 of the MCS1000 Hardware Reference Manual for more information. The actual BAUD rates that correspond to 230,400 or 460,800 are 223,214.29 and 446,428.57 which are both 3.1188 percent off of the ideal. See table below. The MCS7710 can easily tolerate these errors of less than 5%.

MCS1000 Serial Port BAUD Rate Table				
BAUD Rate	Divisor (Ideal)	Divisor (Actual)	Actual BAUD Rate	BAUD Error
9600	325.521	326	9,585.89	-0.1470%
19200	162.760	163	19,171.78	-0.1470%
38400	81.380	81	38,580.25	0.4694%
56000	55.804	56	55,803.57	-0.3508%
115200	27.127	27	115,740.74	0.4694%
230400	13.563	14	223,214.29	-3.1188%
460800	6.782	7	446,428.57	-3.1188%

### Development Boards

Development boards for the MCS1000 and the MCS7710 are available now from MosChip.

### Contact Information

If you have any questions regarding the MCS1000 or MosChip Semiconductor, please contact the MosChip Technical Marketing Group at (408) 737-7141 x124 or e-mail [info@moschip.com](mailto:info@moschip.com).

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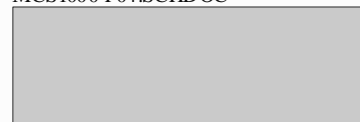
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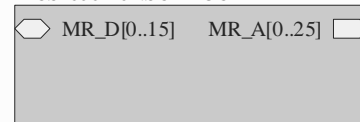
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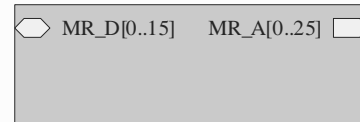
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Title **MCS1000-USB**

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