

## USB Serial Development Kit USB-SDK



Lab-Quality USB to RS-232,  
RS-485, RS-422, SPI, I2C  
Communications

### 1.0 USB-SDK Overview

The USB-SDK provides a lab-quality interface between USB and other serial interfaces.

- No external power is required. The USB-SDK is powered from your PC through the USB cable.
- 2" x 2" PC board
- Five easy steps to use:
  1. Configure the USB-SDK for the selected serial interface using the [USB-SDK Toolkit](#)
  2. Install the communications driver which makes the USB-SDK look like a standard RS-232 COM port.
  3. Configure your PC application to use the USB COM port.
  4. Connect your hardware to the USB-SDK.
  5. Talk between your PC and your hardware.

Custom designs are available. For example, the USB-SDK could be redesigned as a port between RS-232 and RS-485, or RS-232 and SPI. Other custom serial (and parallel) interfaces are possible. Please contact [Technical Support](#).

### 2.0 USB to RS-232

2400, 4800, 9600, 19200, 38400, 57600  
or 115200 BAUD

8 data bits, 1 stop bit

DB-9F (Mating connector: DB9-M)

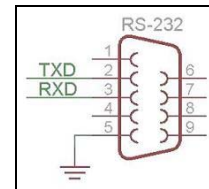


Figure 1 RS-232 Pinouts

### 3.0 USB to RS-485, RS-422<sup>1</sup>

2400, 4800, 9600, 19200, 38400, 57600  
or 115200 BAUD

8 data bits, 1 stop bit

Header, 3x2, 0.1" (Mating connector: FCI 71600-004LF)

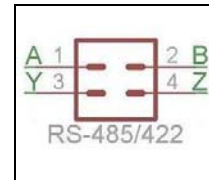


Figure 2 RS-485 Pinouts

<sup>1</sup> Refer to the Maxim [MAX3089 data sheet](#) for details on using RS-485 and RS-422 modes.

## USB Serial Development Kit USB-SDK

USB-SDK	Transceiver 2
3 (Y)	A
4 (Z)	B
1 (A)	Y
2 (B)	Z

**Figure 3 Typical RS-485 Connections, Full Duplex**

USB-SDK <sup>1</sup>	Transceiver 2
1 (A) / 3 (Y)	A
2 (B) / 4 (Z)	B

**Figure 4 Typical RS-485 Connections, Half-Duplex**

### 4.0 USB to SPI

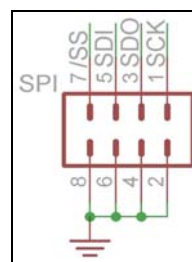
All SPI signals are 5 volt compliant.  
Header, 4x2, 0.1" (Mating connector: FCI 71600-008LF)

#### 4.1 SPI Master

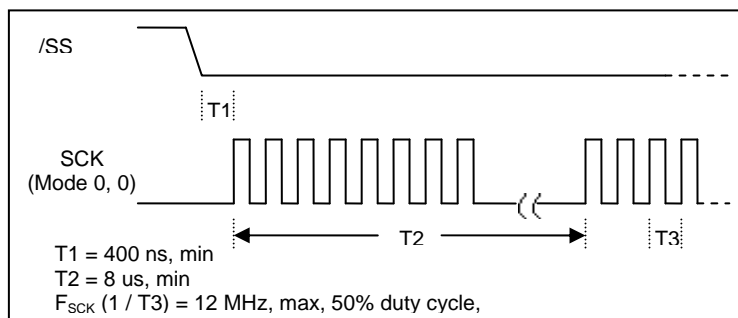
12 MHz, 3 MHz or 750 KHz  
Mode 0,0, 0,1, 1,0 or 1,1  
Slave select (/SS) output (can be left un-terminated)

#### 4.2 SPI Slave

Clock rates up to 12 MHz  
Mode 0,0, 0,1, 1,0 or 1,1  
Slave select (/SS) input (must be tied low if not used)



**Figure 5 SPI Pinouts**



**Figure 6 SPI Timing Diagram**

### 5.0 USB to I<sup>2</sup>C (Future)

All I<sup>2</sup>C signals are 5 volt compliant.

#### 5.1 I<sup>2</sup>C Master

#### 5.2 I<sup>2</sup>C Slave

### 6.0 Technical Support

Please contact [Technical Support](#).

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