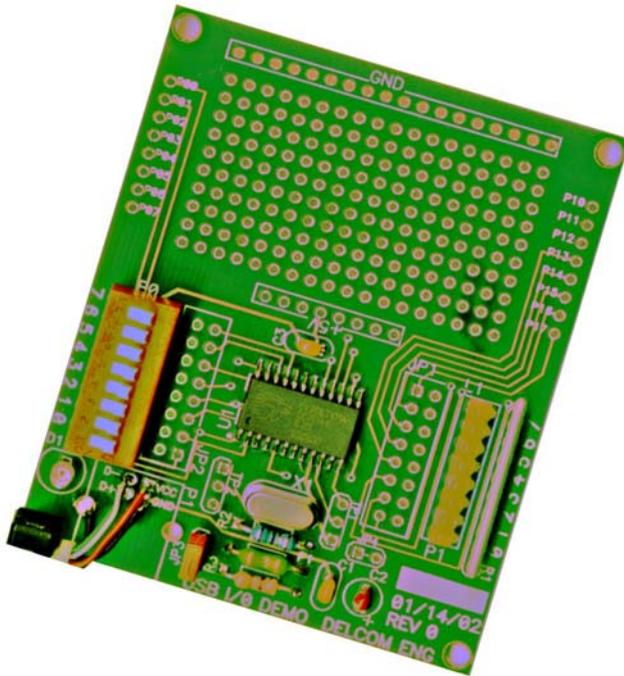




USB I/O Development Board Manual



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1.0 Introduction

The USB I/O Development Board is designed to get you up and running in the minimum amount of time. You can use this board and the demo software applications to develop your products quickly. You can either add your circuit to the development area provided or jump the signals to you board via jumpers or headers.

2.0 Quick Start Up Guide

To start using the development board, simply plug it in to an available USB port on your computer. All USB devices are “hot plug-able” so you can plug it in with the computer on or off. Windows™ will automatically detect the new device and search for the required driver. If the driver is not already installed on your computer Windows™ will display “New hardware Found” and prompt you to enter the location of the USB driver. Place the USB driver disk in the floppy drive and select that drive to install the driver. The loading of the driver is only required once. Once the driver is loaded you can use one of the sample applications to control the development board.

If you have problems installing the driver please refer to “Loading Windows™ USB Drivers” applications note on the web site.

For the latest driver and updates refer to the web site.

3.0 Specifications

3.1 USBIODS Data Sheet

For the USB chip specifications please see the USB I/O Datasheet, USBIODS.PDF.

4.0 Board Description

4.1 Board Lay Out – Top View

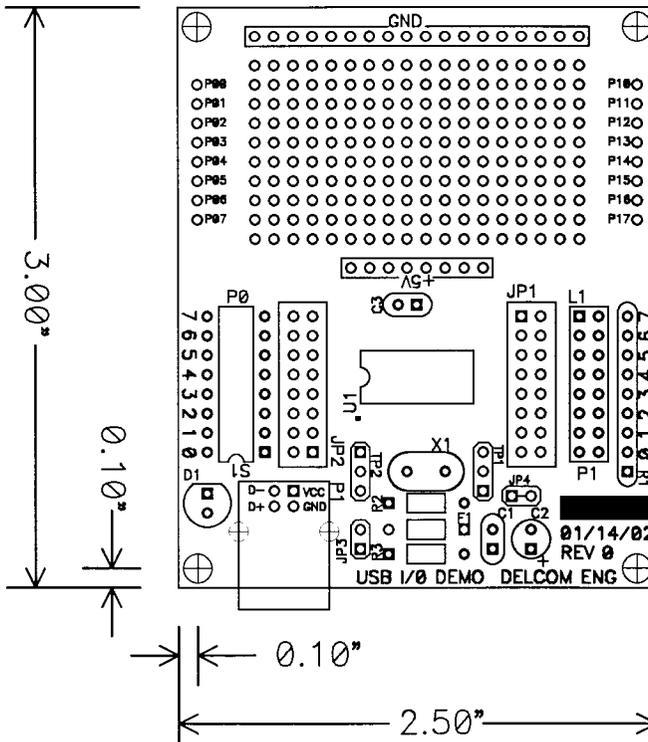


Figure 3.1

4.2 Power Led

The power led (D1) will light when power is supplied to the board. It is only an indication that power is present. It does not indicate that the device has been enumerated or is ready to receive commands.

4.3 Power Jumper

The power jumper (JP3) can be used as an on/off switch.

4.4 Port 0 Dipswitches

Port 0 is connected to the eight dipswitches (S1). Reading port 0 will indicate the dipswitch positions. Setting the dipswitch to on or close will connect the port pin to ground, indicating a zero or low on the port pin. Setting the dipswitch to off or open will open the connection. Allowing the pin to go high due to the internal pull resistor of 16K. Writing to port 0 while the dipswitches are closed or on will not harm the chip, because all I/O pins are open collector.

4.5 Port 1 LEDs

Port 1 is connected to eight LEDs. Writing a low or zero to port1 will turn on the LEDs. If you add your own circuit you may want to remove these LEDs from the circuit, to do so cut the traces under JP1.

4.6 Headers Pads

All the header pads are intended for use by the user to jumper the signals over to the user's circuit. The user's circuit can be added in the development area or placed on top of the development board using the headers to make the connection. All header pads are placed on a 0.05" grid.

4.7 Power

The board is self-powered from the USB cable. Each USB port can supply 500mA, the USB chips consume ~25mA. Therefore there is around 450mA left for the user, see Cable note below. There is a one amp fuse in case of a short or excessive current draw. See the USBIODS.pdf data sheet for more information.

4.8 Cable

The cable supplied with the development board has a lower than standard gauge on the power supply wires. The standard gauge is 28AWG and the cable supplied with the development board has 26AWG. The designer must be aware of the voltage drop caused by the cable and the current used. The voltage drop could be significant and cause the voltage at the device to be below acceptable levels. The USB chip requires at least 4 volts to operate. P1 on the printed circuit board has a standard USB series B right angle connector footprint. The user may change the cable and install a standard USB series B connector.

5.0 Schematic

5.1 Figure 5.1 Schematic

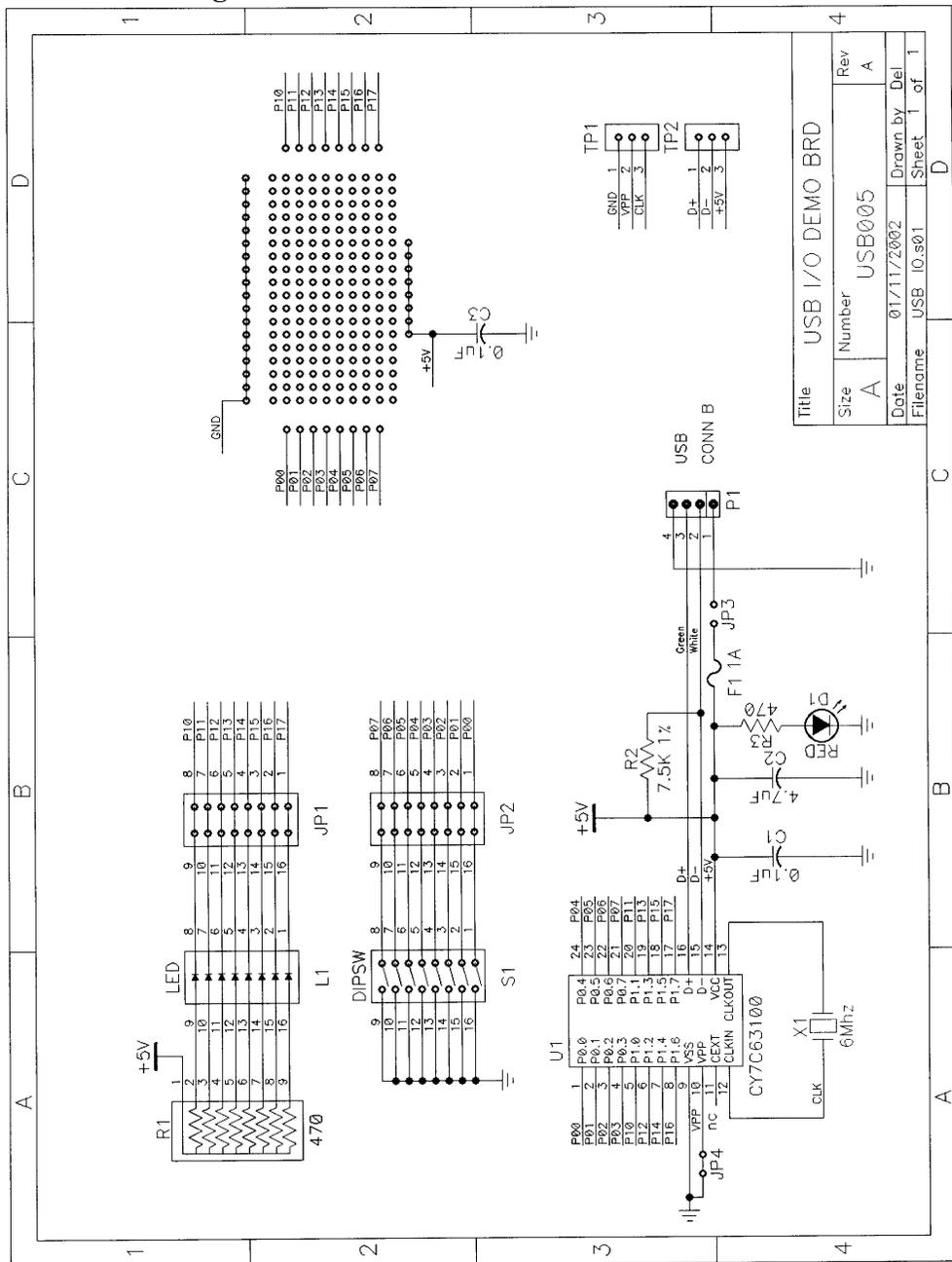


Figure 5.1

6.0 Bill of Materials

Ref	Description	Qty	Value
C1,3	Cap Radial Ceramic	2	0.1uF
C2	Electro Elt. Polar Radial	1	4.7uF
X1	6.00MHz Crystal	1	6.0M
U5	CY763101ASC Cypress™ USB chip	1	SOIC24
D1	LED Red	1	Red
L1	LED Yellow	8	Yellow
R1	Resistor Sip 8pos	1	470ohms
R2	Resistor 1/8Watt 1%	1	7.5K
R3	Resistor 1/8Watt 5%	1	470ohms
S1	DipSwitch 8 Pos	1	DIP16
F1	Fuse 1amp Fast Acting	1	1A
PCB	Printed Circuit Board	1	
CB	USB 2 Meter Cable	1	

7.0 Disk Contents

[Root- Directory]

USBIODS.INF - The installation file for USB Driver

USBIODS.SYS - The USB Driver

[Documents- Directory]

USBIODS.pdf – USB I/O Chip Data Sheet

USBIODEV.pdf – USB I/O Development Board Manual

AN201.pdf – USB Windows™ Installation

USBWINPRG.pdf – USB Windows™ Programming Manual

[CVI-Code – Directory]

CVI Code Applications. Requires CVI RTE on the website.

[VBCode – Directory]

VB Code Applications and Sample Code

[DosCode – Directory]

Dos Utility Applications and Sample Code