How to Use the USB Programmer

Applicable Model: 07302

Use as AVR Programmer

1. Install Driver

   To use this programmer in Windows USBASP driver needs to be installed. The driver can be downloaded at original designer's website http://www.fischl.de/usbasp/ or JYE Tech website www.jyetech.com.

2. Connect

   Connect to PC

   To connect to PC you need an USB cable with a miniUSB 5-pin connector at one end. This is a standard USB cable for many popular digital devices like cell phones and digital cameras.   It can also be purchased at www.jyetech.com (PN: 603-07301) if you can't find one.

   Connect to Target Board

   For connection to target board a 10-conductor ribbon cable is needed (shipped with the product). One end of the cable is to connect to J5 (or J8) of the board. Please pay attention to the alignment when inserting the ribbon cable. Its first conductor (usually painted red) should be connected to pin 1 of J5 (or J8). The other end should connect to compatible programming port on target board. **Please make sure you know the pinout of the connector to be connected to before plugging in the cable! Otherwise you are at risk of burning the programmer or target board. Below shows the pinouts of connectors on 07302.**
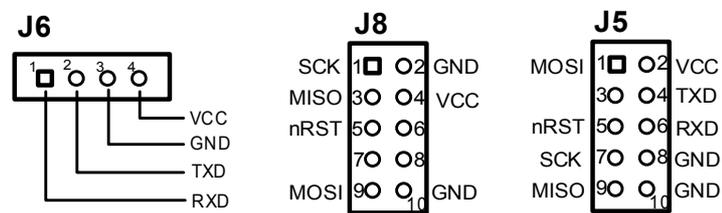
3. Power of Target Board

   Target board can be powered by the programmer. But before doing so users need to have a good estimation of how much current the target board consumes. Because the power of programmer comes actually from USB which has very limited capacity large current could damage the USB. Generally for current greater than 100mA the target board should be powered with a separated source.

   By manipulating jumpers at JP1 of the programmer different power options can be set. Please refer to schematic of the board for details.

4. Verify

   Before any real programming work you should verify that the programmer can talk to supporting software and target chip. To do this you can perform a read operation (read AVR fuses or flash) from supporting software. If the operation is success then that means the programmer can communicate with supporting software and can connect with target board. If it is failed you need to locate the causes.

5. Put into use

   Experience shows that the programmer works much more stable when the "SLOW CLOCK" jumper is shorted.

6. Use with 062 Oscilloscopes

   When programming the old 062 oscilloscope models (06201P, 06201KP, or 06202KP) header J8 should be used. This header's pin-out is compatible with the programming port of the oscilloscopes.

   When programming the new 062 models (06203P, 06203KP, and 06204KP) header J5 should be used.

Use as a General AVR Experiment Board

1. Program the on-board MCU

   To program the on-board MCU either J5 or J8 can be used depending on programmer used. Please remember short the jumper "SELF PROG" when doing so.

2. Using separate power supply

The board can be powered from USB. But it can also be powered from other separate power supply without connecting to USB. To do so simply install a low cost common regulator 78L05 (TO-92 package) at location U2 and power the board from connector J9 (or J7). This way the board can accommodate power supply voltage range as wide as 7 – 20V.

Change the board into USB-UART converter

The board can be easily changed into an USB-UART converter by following steps below.

1. Add the resistor R8 (simply short it if you don't have a 0 ohm resistor handy)
2. Flash the MCU with AVR-CDC firmware (available at http://www.recursion.jp/avrcdc/ or www.jyetech.com)

Revision History

Version	Date	Descriptions
01	2010.03.31	First created
02	2010.10.16	Added descriptions for target board power options. Added explanation for using with new 062 oscilloscope models.
03	2010.12.15	Added connector drawing.