

AEC electronics

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AEC_ISP.EXE

PC Based AT89S ISP (In System Programming) Software

Software Version Information

V3.00 now supports the following devices:

AT89S51

AT89S52

AT89S53

AT89S8252

It also supports the use of LPT2.

Hardware Requirements

By simply connecting a cable between your printer port (LPT1 or LPT2) and your target system, you can download code to the AT89S device.

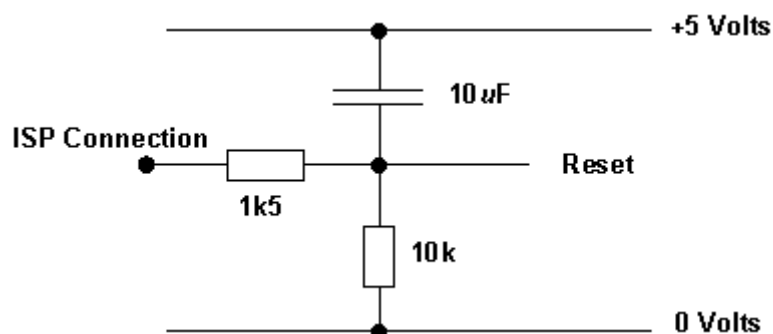
The connections between the PC and microcontroller are shown below. *Note that the specified microcontroller pins are for the 40 pin DIL (Dual In Line) package only.*

Printer Port Pins	Microcontroller pins
6 (D4)	9 Reset
7 (D5)	6 (P1.5 -MOSI)
8 (D6)	8 (P1.7 - SCK)
10 (ACK)	7 (P1.6 - MISO)
18-25 (GND)	20 (GND)

Use a standard male D25 connector to connect to the PC printer Port. **For best results, use twisted pair cable (use 4 pairs), with each signal line paired with a GND line.** Connect all GND lines to the same pin in the D25 connector, but only connect 1 GND line to the target hardware. **Make sure the cable is no longer than 1m.** Select a connector that best matches your hardware.

The Target hardware must provide a 5V supply to the microcontroller, and must provide a 4 -24 MHz clock to the XTAL 1 pin (either from a crystal or some other external drive circuitry). Be aware of (and avoid) differences in ground potential between your hardware and your PC.

An effective way to control the RESET pin of the micro is shown below:



Some PC's can source quite a bit of power from their Printer Ports. If your PC is connected to your target system but there is no power to the AT89S device, the PC will still source current to the system through P1.5 and P1.7 of the micro. To avoid this problem, always disconnect the cable before turning off the target hardware. Also, remember that if there is a fault on your system, you may be supplying unwanted and destructive power to the PC!

If P1.5, P1.6 or P1.7 need to have functions other than for In System Programming, make sure you are very careful about how you use them. You can use these pins as outputs without any problem - but remember that the peripheral circuitry will respond to the programming signals. If you use the surrounding circuitry to provide data to these pins (inputs), make sure it does not create conflicts during programming.

Running the Software

Your code needs to be in Intel Hex format. AEC_ISP will open the file you specify and load it into a buffer. You can specify a default file in the command line; e.g.: To specify TEST.HEX as the default file, start AEC_ISP by typing 'AEC_ISP TEST.HEX'.

As far as using the software goes, it is self-explanatory. If you want to know more about the transfer protocols, read the ATMEL data book.

Legalities

AEC_ISP may be used in any way, for any purpose, at NO COST. It may be distributed by any means, provided that the original files as supplied by the author remain intact and no charge is made.

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