AVR-P40-USB-8535 PROTOTYPE BOARD
FOR AT90S8535 PIN COMPATIBLE MICROCONTROLLERS

Features:

- ICSP 5x2 pin connector for in-circuit programming with AVR-PG1B or AVR-PG2B
- JTAG port 5x2 for in-circuit debugging/programming with AVR-JTAG (ATJTAGICE)
- USB to RS232 FT232 converter
- I2C EEPROM socket
- takes power from USB no need for external adapter
- power supply filtering capacitors
- Quartz crystall oscilator circuit 8Mhz
- reset IC ZM33064
- reset button
- general purpose push button
- status LED connected to PB0 via removable jumper
- DIL40 microcontroller socket
- extension pin headers for each uC pin
- four mounting holes 3.3 mm (0.13")
- Grid 100 mils
- GND bus
- Vcc bus
- FR-4, 1.5 mm (0,062"), green soldermask, white silkscreen component print
- dimensions 100x80 mm (3.9x3.15")

Supported devices:

Supports all devices which are pin to pin compatible with AT90S8535 AVR microcontrollers.

Power supply:

Power supply is taken from USB port, so no need for external adapter

RESET:

Reset circuit is made by ZM33064 reset IC. There is possibility to apply external RESET by rest Button.

Oscillator:

8 Mhz crystal for maximum operating frequency connected to XTAL1 and XTAL2.

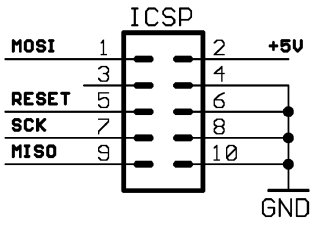
ICPS programming:

There are two ways to program AVR-P40-USB: with ICSP port and with JTAG port.
To program via ICSP port you need serial port or parallel port AVR-ICSP programmer dongle (Olimex part # AVR-PG1B or AVR-PG2B).
The serial port ICSP programmer (AVR-PG1B) works with PonyProg software by from Claudio Lanconelli and the latest release may be download for free from **http://www.lancos.com**
The parallel port ICSP programmer (AVR-PG2B) works with AVR ISP from Atmel and may be download for free from Atmel's web site.

ICSP interface:

The ICSP connector is 2x5 pin with 0,1" step and Atmel STKxxx compatible layout. The PIN.1 is marked with square pad on bottom and arrow on top. ICSP signals are: 1- MOSI, 2- VCC, 3- NC, 4- GND, 5- RST, 6- GND, 7- SCK, 8- GND, 9- MISO, 10- GND

TOP view PCB board layout:



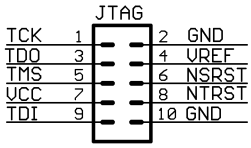
JTAG programming/debugging:

AVR-JTAG (complete analog of ATMEL's AVR JTAG ICE) is development tool for programming, real time emulation and debugging for AVR microcontrollers JTAG interface (ATmega16, ATmega32, ATMega323, ATmega162, ATmega169, ATmega128). AVR-JTAG have: JTAG 10 pin connector (Atmel layout), status LED, RS232 connector. AVR-JTAG allows access to all the powerful features of the AVR microcontroller. All AVR resources can be monitored: Flash memory, EEPROM memory, SRAM memory, Register File, Program Counter, Fuse and Lock Bits, and all I/O modules. AVR-JTAG also offers extensive On-chip Debug support for break conditions, including break on change of Program memory flow, Program memory Break Points on single address or address range, and Data memory Break Points on single address or address range.

JTAG interface:

The JTAG connector is 2x5 pin with 0,1" step and Atmel's compatible layout. The PIN.1 is marked with square pad on bottom and arrow on top. JTAG signals are: 1- TCK, 2- GND, 3- TDO, 4- VREF, 5- TMS, 6- NSRST, 7- VCC, 8- NTRST, 9- TDI, 10- GND.

JTAG TOP view PCB board layout:



RS232 interface:

RS232 interface is designed around USB to RS232 convertor IC FT232. More information about this IC you can found from manufacturer's web site **http://www.ftdi.com**. You should also download the proper drivers for your OS from the same internet site. All RS232 modem signals are available around FT232 IC for connection. RS232 Rx signal is connected directly to PD1 (AVR Tx) and RS232 Tx signal is connected directly to PD0 (AVR Rx)

I2C EEPROM:

On board is installed DIL8 socket for I2C EEPROM memory with SDA pullup and direct connection to AVR microcontroller: SDA = PC1, SCL = PC0

Status LED:

Connected to PB0 via removable jumper.

Button:

Pushbutton with active low level and pull-up resistor connected to PB4.

Ordering codes:

AVR-P40-USB-8535-8Mhz - assembled and tested with 8Mhz crystal