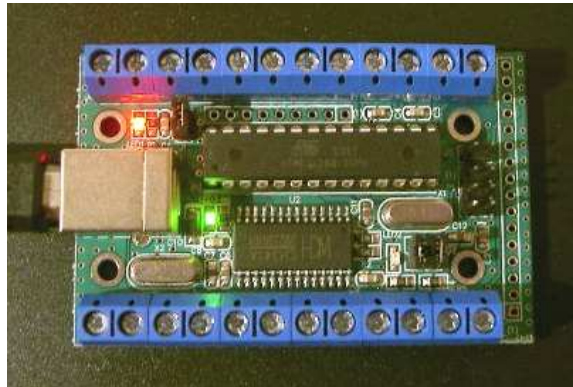# USB-µPIO

USB AVR board

- Compact AVR board with Atmel ATmega168-20
- High speed clock frequency 18.432000 MHz
- 100% error free High baud rates
- Screw terminal and pin connections
- 6 pin ISP connector
- Power supply (+5V) via USB or external
- 3 LED: USB power, COM (RxD) , USER (Port B.5; can be disabled)
- SOFT-RESET via DTR signal (can be disabled)
- USB-B connector
- USB chipset: CH341A
- Virtual (RS232-)-COM driver (VCP)
- System requirements: XP, 2000, Vista, WIN 7, 32/64 Bit
- Dimensions: approx. 70 x 45 x 15 mm

Download

http://www.abacom-online.de/div/setup_usb_µPIO.exe

Screw terminals, LED and Jumper
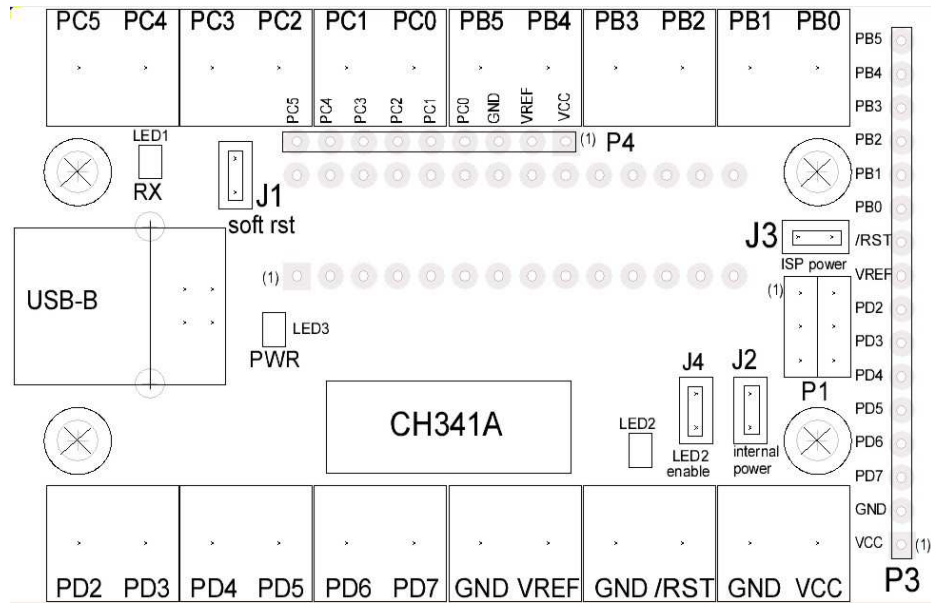
P1 – ISP connector for programmer
P2 – USB-B connector
P3 – Pin strip for Port B, Port D, VREF, RST, VCC, GND (Digital port)
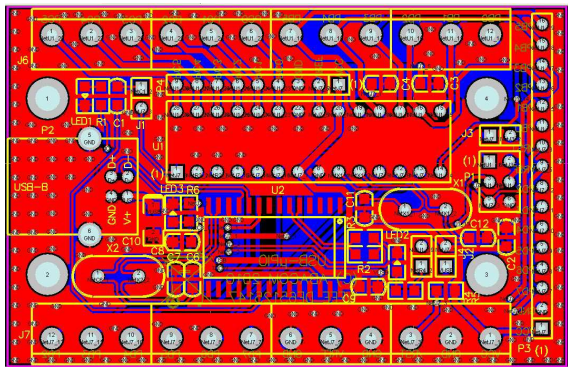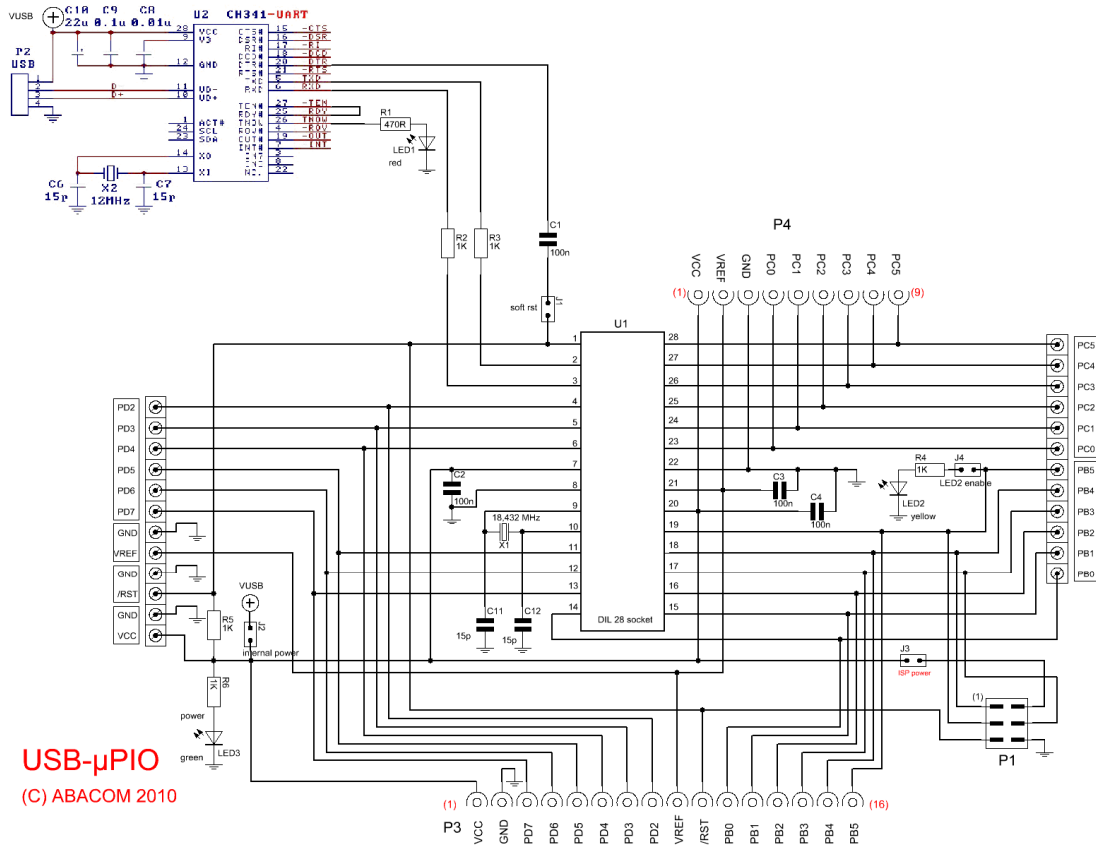P4 – Pin strip Port C, VREF, VCC, GND (Digital port und ADC port)

J1 – Jumper SOFT RST connects RESET(PC6) with DTR signal from CH341A
J2 – Jumper INTERNAL POWER connects VCC with USB supply voltage
J3 – Jumper ISP POWER connects VCC to ISP
J4 – Jumper LED2 ENABLE connects LED2 with PB5

LED1 – RX indicator (red; Data received from PC)
LED2 – LED at PB5 (yellow; for user purpose)
LED3 – USB-Power (green; USB power supplied)

Screw terminals for Port B, Port C and Port D
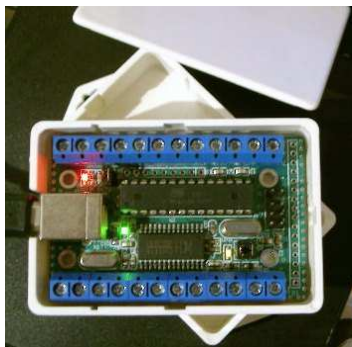
Terminal names refer to ATmega168 pin names

USB-µPIO

(C) ABACOM 2010

Dimensions approx. 70 x 45 x 15 mm

Available accessories:
- Enclosure (unfinished)
- USB ISP programmer with ISP cable

Firmware

Terminal use depends on the firmware and is described in the firmware datasheeds. The protocol description can be found there as well.

We deliver the board ready-made with one of the following firmware options:

/ GPIO18 (http://www.abacom-online.de/div/FirmwareDocs/UK/Firmware_GPIO18.pdf)
I/O interface with 18 general purpose digital I/O lines
Use the board as general purpose digital IO. Compatible with ProfiLab Expert or make a software of your own.

/ PWMIO18 (http://www.abacom-online.de/div/FirmwareDocs/UK/Firmware_PWMIO18.pdf)
Comfortable interface with 18 general purpose digital I/O lines
Digital I/O board with additional functions, like PWM, servo, blink / pulse.
Compatible with ProfiLab Expert or make a software of your own.

/ FREQ (http://www.abacom-online.de/div/FirmwareDocs/UK/Firmware_FREQ.pdf)
9 MHz frequency counter / generator
A powerful firmware with application software included.
Compatible with ProfiLab Expert

/ INCR3 (http://www.abacom-online.de/div/FirmwareDocs/UK/Firmware_INCR3.pdf)
Three incremental encode inputs
Reads the position of up to three increment encoders.
Compatible with ProfiLab Expert.

/TEMP12 (http://www.abacom-online.de/div/FirmwareDocs/UK/Firmware_TEMP12.pdf)
Temperature system for Dallas DS18B20 sensors
For use with up to 12x Dallas DS18B20 sensors.

/ABADUINO (http://www.abacom-online.de/div/FirmwareDocs/UK/Firmware_ABADUINO.pdf)
BOOTLOADER for Arduino software (http://www.arduino.cc/)
The board is similar to the Arduino USB schematics in parts. The bootloader was modified according to the 18.432 MHz clock frequency. The bootloader source is published and included in the software download. It can be found in the SOFTWARE/ABADUINO folder together with the install instructions.

/MCS (http://www.abacom-online.de/div/FirmwareDocs/UK/Firmware_MCS.pdf)
MCS BOOTLOADER (BASCOM AVR)
BASCOM AVR is your favorite AVR programming language. We equip the board with the MCS bootloader. A ISP programmer is not required as you can upload your programs directly from the BASCOM IDE via USB.

/CLEAR (http://www.abacom-online.de/div/FirmwareDocs/UK/Firmware_CLEAR.pdf)
not programmed *
* ISP programmer necessary
You are experienced in AVR programming and like to flash the chip yourself with your own application.