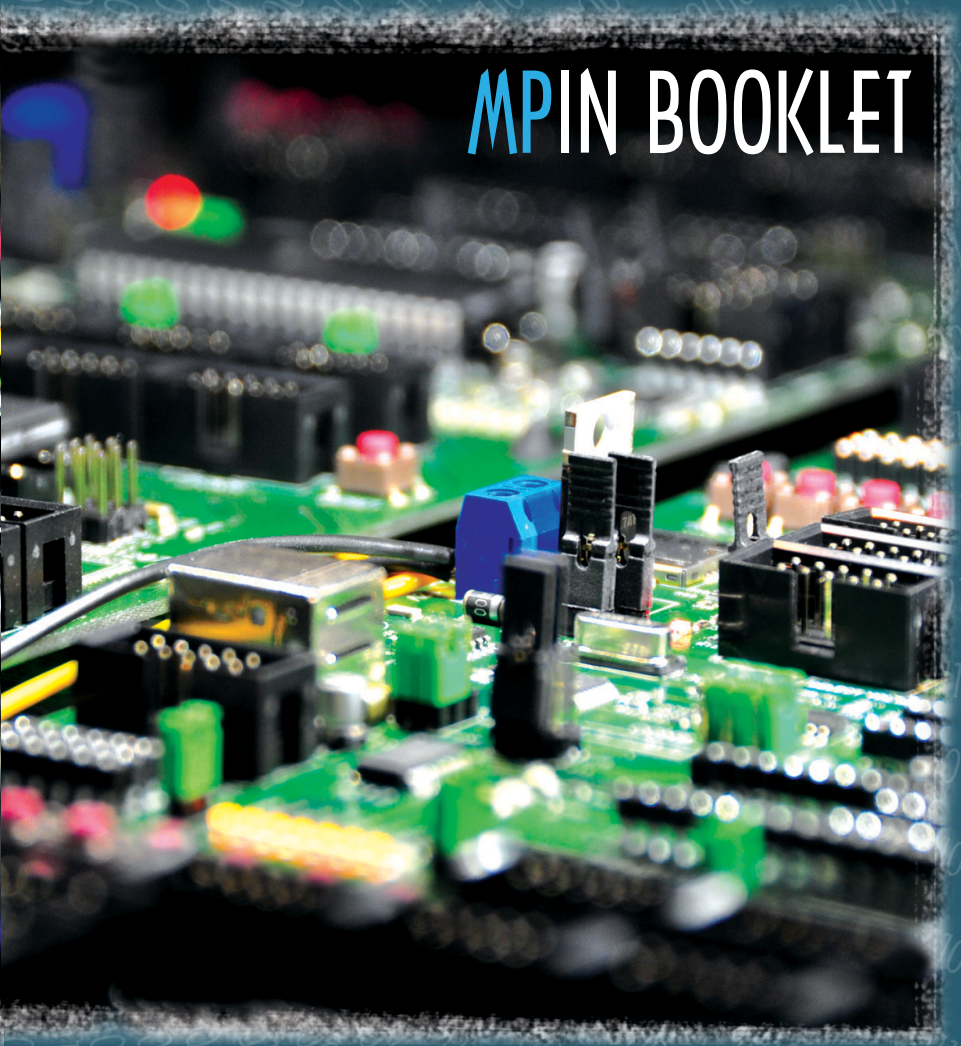
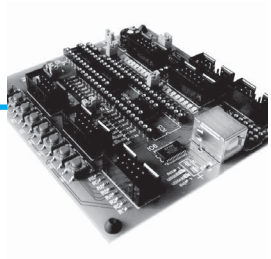
MPIN BOOKLET

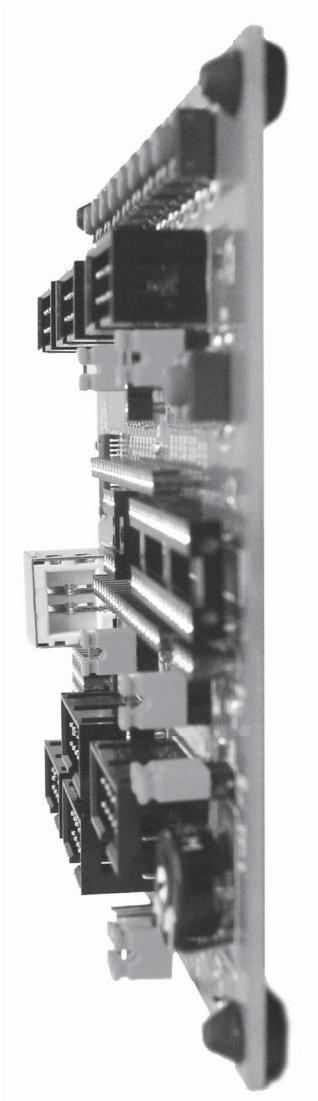


AVR TOOLKIT

ax d.o.o., slovenia

MINIPIN II





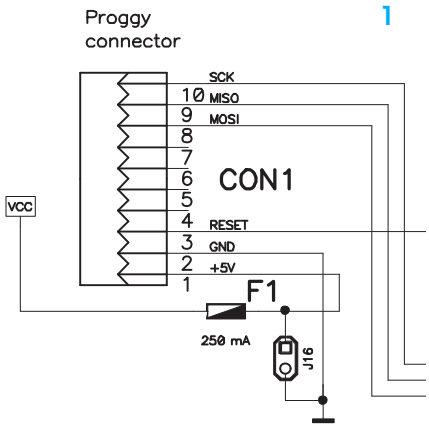
Dear MiniPin II user!

I am proud that you have purchased our MiniPin II development board. I trust that you will be same enthusiastic as myself when using it. When programming micro controllers for more than 15 years I have seen & tested many development boards, but none so far was so user friendly. I hope that you will also find MiniPin II easy to use too. Please read this User manual carefully and explore all possibilities of MiniPin II usage.

AX elektronika
Jurij Mikeln, B.Sc.E.E., owner

First time to plug MiniPin II to your programmer

First time you will connect MiniPin II to your programmer, make sure that you have connected programmer's socket to socket "PROGGY". In case you do not own Proggy programmer make sure that you connect signals to MiniPin II as follows, picture 1.



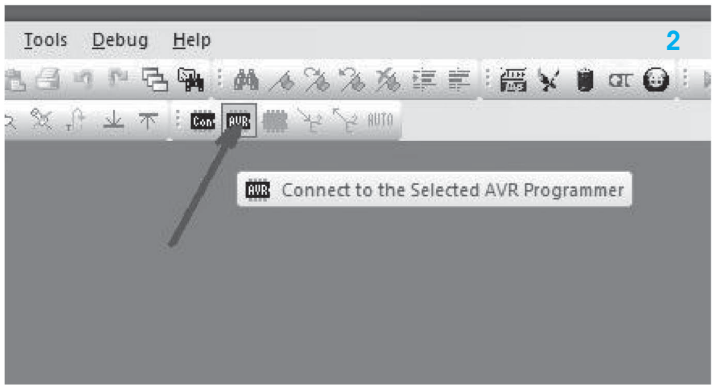
MiniPin II is powered from programmer and it is fused with 250 mA fuse. Fuse will protect USB port on your PC in case you make a short circuit on your MiniPin II board.

Programming AVRs in MiniPin II

MiniPin II can program AVRs in system, means that you put your AVR to suitable socket, connect programmer to MiniPin II and your system is ready for programming.

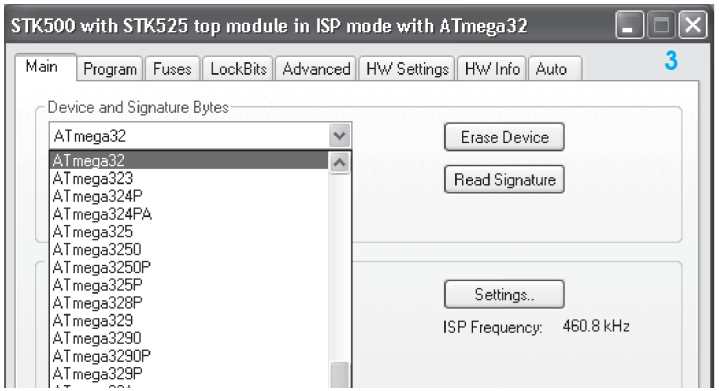
ISP programmer in AVR Studio

Put your AVR micro controller to suitable socket and click AVR button within AVR Studio, picture 2.



In tab Main select micro controller that you want to program, picture 3.

To be sure that communication is OK and that you selected right micro controller press "Read Signature". If signature corresponds to used micro controller then you may proceed with programming. If signature does not correspond select right micro controller from the list.



ISP programmer in Bascom-AVR

Put your AVR micro controller to suitable socket and within Bascom-AVR click Options/ Programmer. You will see window, picture 4.

In window Programmer select STK500 (requires stk500.exe), set COM port to same

LED signalization

MiniPin II features more LEDs:

- Rx/Tx communication (not available in MiniPin II B version!), picture 17,
- Power supply OK, picture 18,
- 4 x 8 LEDs on IO Ports, picture 19.

Communication

MiniPin II supports following communication:

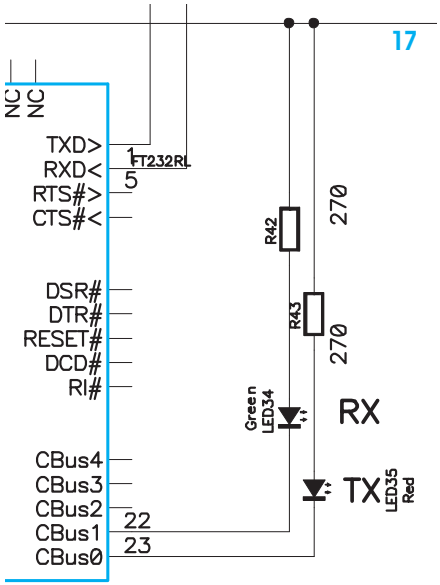
1. serial via FT232RL to USB,
2. 1Wire.

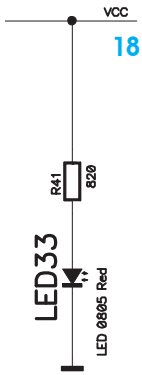
serial bidirectional communication:

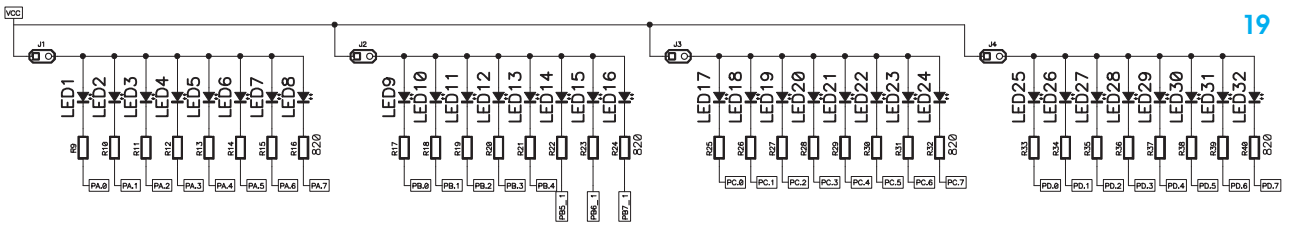
bidirectional communication from USB to FT232RL and target micro-controller (B version of MiniPin II does not support that).

1Wire:

place DS18S20 to any of sockets J10 to J15, connect CON5 with flat cable to any Port connector (CON3, CON4, CON6, CON7). Socket J10 corresponds to PortX.0, J11 corresponds to PortX.1 etc.







Input & Outputs on MiniPin II

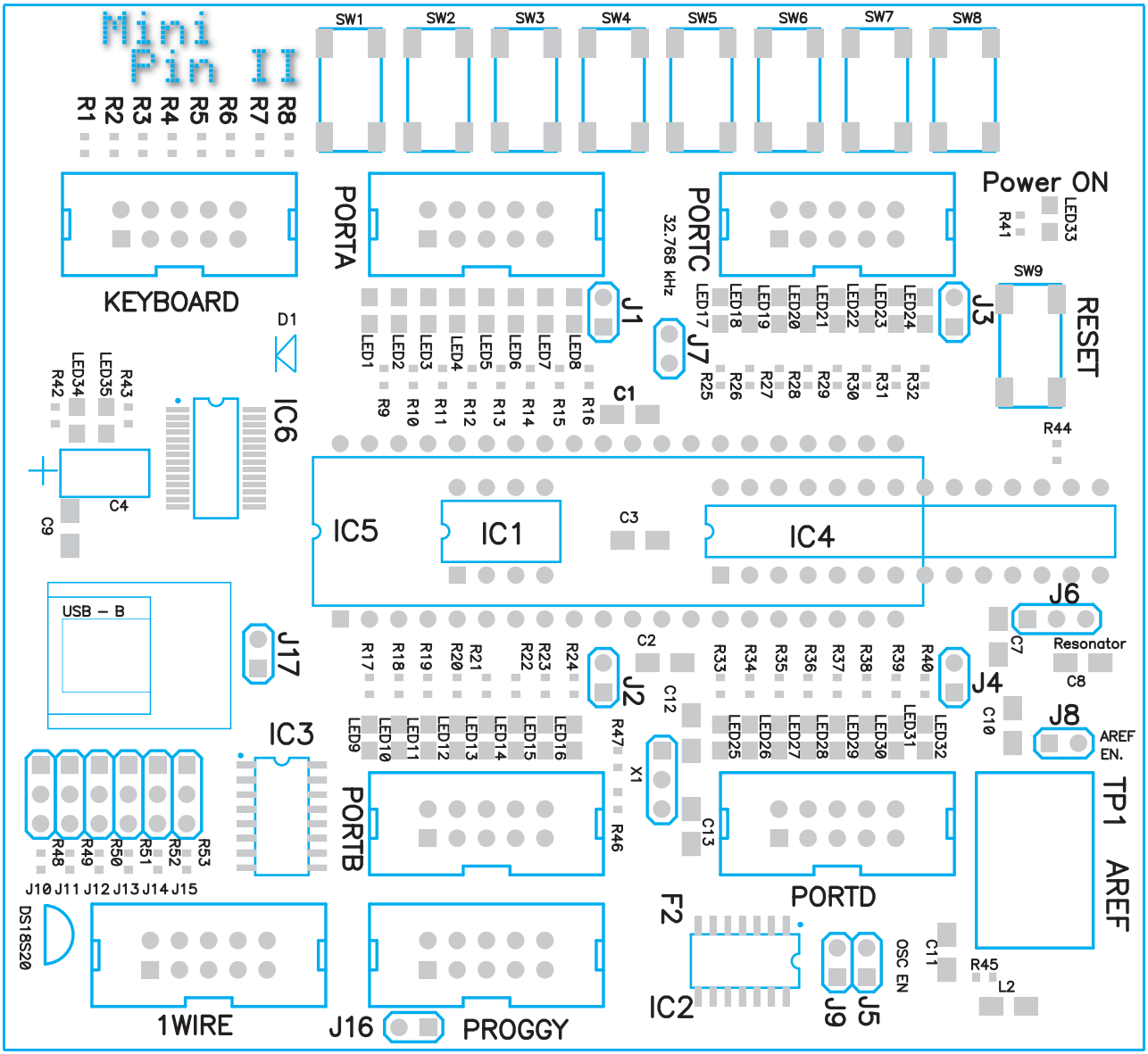
MiniPin II features:

- supports all AVR microcontrollers in 8-pin, 28-pin & 40 pin DIL packages (except ATMega8515, 8535, i.e. older AVRs),
- built in 6 sockets for 1Wire DS18S20 temperature sensors that can be connected to any I/O Port,
- 4x8 LEDs on four I/O ports (PortA, PortB, PortC & PortD),
- 4 I/O connectors on ports: (PortA, PortB, PortC, PortD),
- built in 250 mA fuse to protect USB from short circuit on board,
- built in USB communication to UART (not in MiniPin II B version!)
- built in oscillator circuit to clock micro controller from external quartz crystal,
- built in 3-pin socket for ceramic resonator,
- built in 2-pin socket for 32,768 kHz quartz crystal,
- built in external adjustable reference voltage when using internal ADC in AVR,
- built in keyboard that can be connected to any I/O Port,
- built in Power-ON LED,
- built in indication of serial communication Tx/Rx LEDs.

Bascom-AVR program samples to be used on MiniPin II

We have prepared few sample programs to be used with MiniPin II:
1Wire_1.BAS: single 1Wire sensor on a bus, temperature is displayed on LCD,
1Wire_2.BAS: program displays 1Wire ID of two sensors on the bus,
1Wire_3.BAS: same as 1Wire_2.BAS but ID of sensors are stored in EEPROM,
1Wire_4.BAS: multiple 1Wire sensors, one on each Port,
For_loop.BAS: simple FOR-Next loop for testing LEDs on all ports,
GLCD_1.BAS: use of graphical LCD with table drawn on LCD and 8x8 font,
GLCD_2.BAS: GLCD with fonts that can be placed anywhere on GLCD,
GLCD_3.BAS: GLCD with use of touch panel including simple calibration of touch panel,
GLCD_4.BAS: GLCD with improved calibration for touch panel,
LCD8x2.bas: simple program to display characters on blue 8x2 LCD, including PWM for controlling back-light,
Megaclock.bas: clock with 32,768 kHz XTAL and 8x2 LCD,
Megaclock1.bas: same as Megaclock.bas with simple routines to set date/hour/min,
PWM1.bas: simple PWM using hardware PWM in AVR,
USB-ADC2.bas: acquires analogue voltage and converts it with A/D, then transmits it to USB and to LCD. You can see transmitted voltage value in Hyperterminal within Bascom-AVR.

We wish you successful programming with MiniPin II development board!


Mini Pin 11
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
R1
R2
R3
R4
R5
R6
R7
R8
KEYBOARD
PORTA
PORTC
32.768 kHz
Power ON
LED33
R41
SW9
RESET
R44
J1
J3
J7
D1
IC6
C1
C4
C9
IC5
IC1
C3
IC4
J6
Resonator
C7
C8
USB – B
J17
J2
J4
C2
C10
J8
AREF
EN.
IC3
C12
X1
R47
R46
C13
PORTB
PORTD
TP1
AREF
J10 J11 J12 J13 J14 J15
DS18S20
F2
IC2
J9
J5
OSC EN
C11
R45
L2
1WIRE
J16
PROGGY