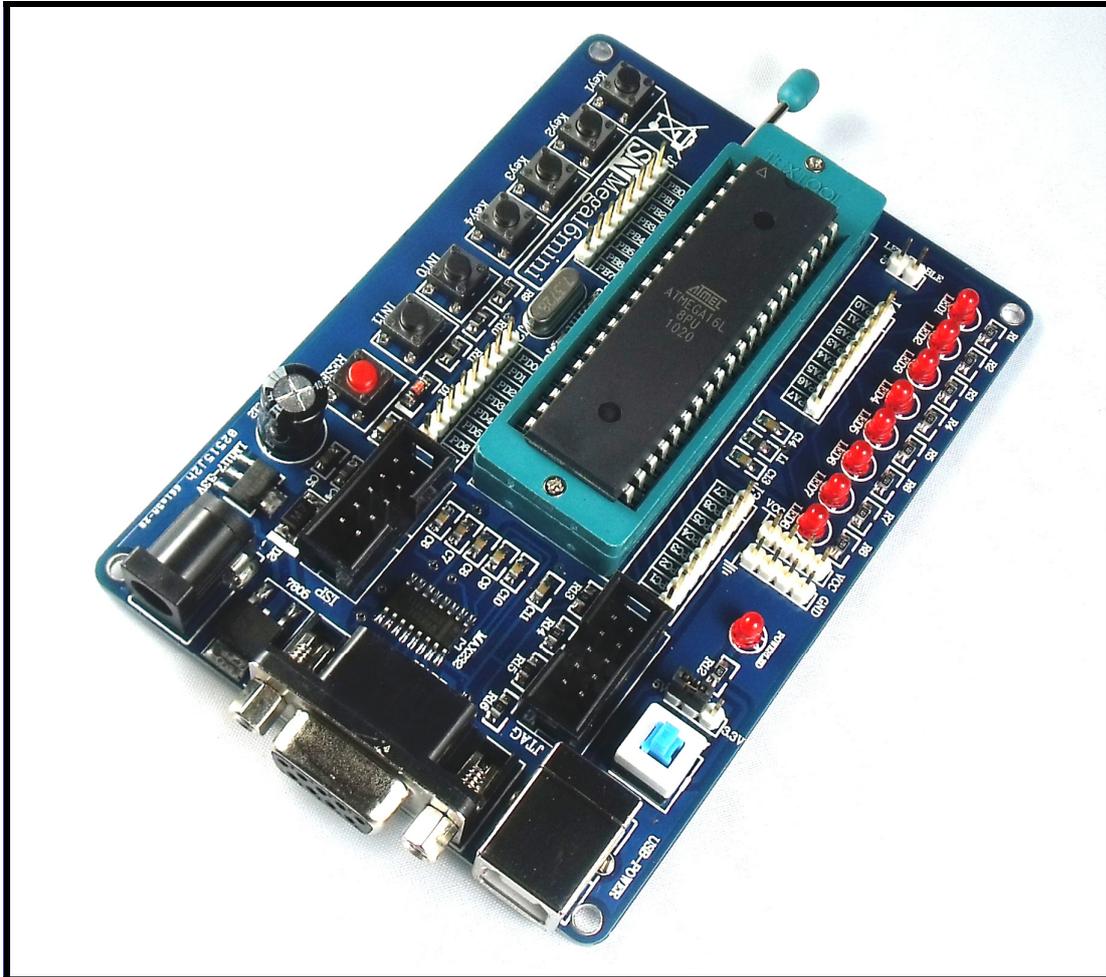


AVR mega16/32 Mini development board Users Manual



Version 1.0

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1. Getting Started

AVR mega16/32 Mini Development Board provides easy way for developing and prototyping with the new mega16/32 high-performance, microcontroller produced by ATMEL. AVR mega16/32 Mini Development Board has ISP and JTAG port for programming and debugging, UART, 8 status Leds, 4 user Buttons,INT0&INT1, and all of the GPIOs are taken out to make them available for further connections.

2. Devices Supported

AVR mega16/32 Mini Development Board is based on the ATMEL high-performance microcontrollers. Residing on this board is the mega16/32 microcontrollers.

3. Tools Requirement

An AVR programmer/debugger is required to download code or debug the mega16/32.

Programmers/Debuggers you can use on this board such as:

- | | | | |
|---------------------|----------------|-----------------|----------------|
| (1)AVR ONE | (2)AVR ISP | (3)AVR ISP MKII | (4)AVR JTAGICE |
| (5)AVR JTAGICE MKII | (6)AVR DREGON | (7)AVR STK200 | (8)AVR STK500 |
| (9)AVR STK600 | (10)AVR USBASP | | |

...

If your Programmers/Debugger can power the board, the board will not need external power supply.

4. Power Requirement

- (1)USB power Cables

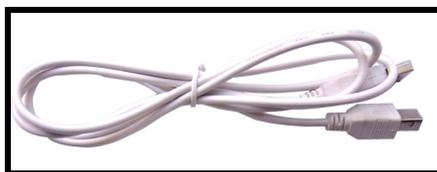


Figure4-1

- (2)External 6—12VDC



Figure4-2

You can select one of them to power your board. If your programmer/debugger can power your board, it is no need to use USB power Cables or External 6—12VDC.

5. Softwares Requirement

- (1). AVR Studio + WinAVR free development IDE, AVRICC or other development IDE.
- (2). Programming software for loading.

6. Board Features

- CPU: mega16/32 microcontroller

- (1)ISP 5x2 pin connector for in-circuit programming with AVR Programmers .
- (2) JTAG 5x2 pin connector for in-circuit programming and Simulating.
- (3) 7805,LM1117 and filtering capacitors.Two kinds of power supply: 6V-12V external power supply and 5.0V USB power supply.
- (4) System power supply selection:5V/3.3V.
- (5) Quartz crystal oscillator circuit 1-16Mhz.
- (6)Reset circuit.
- (7) Status LED connected to I/O PA port via removable jumper.
- (8) RS232 DB-9 female connector.
- (9)MAX232 circuit.
- (10) 4 independent keys
- (11) 2 External Interrupts:int0 and int1
- (12)PCB, 1.6 mm , blue solder mask, white silkscreen component print .
- (13)Dimensions: 77mmx109mm

7. Electrostatic Warning

AVR mega16/32 Mini Development Board is shipped in protective anti-static packaging. The board must

not be subject to high electrostatic potentials. General practice for working with static sensitive devices should be applied when working with this board.

8. Mega16/32 Processor Features

For detailed information of mega16/mega32 microcontroller, please refer to the datasheet named "Atmega16.pdf" or "Atmega32.pdf" included in the Product CD Rom.

9. Board layout, jumpers, ports and main modules description.

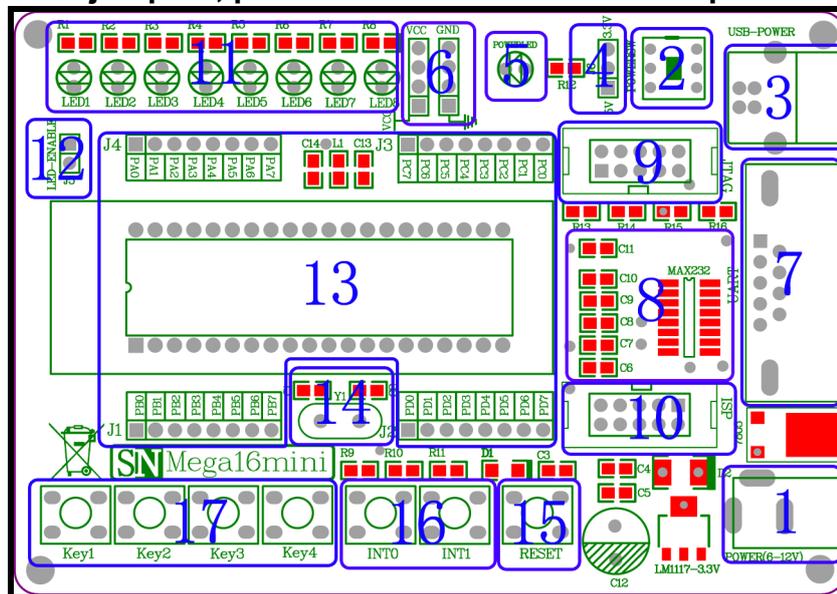


Figure9-1

Area	Description	Area	Description
1	6-12V Power Input	10	ISP Programming Port
2	Power Switch	11	8 LEDs
3	USB Power Input	12	8 LEDs Enable Jumper
4	5V/3.3V Selection Jumper	13	mega16/mega32 core with pinouts
5	Power Led	14	System Clock (External Clock)
6	Power Output	15	System Reset Button
7	UART Port	16	INT0 & INT1 keys
8	MAX232 Circuit	17	4 User keys
9	JTAG Debugging Port	18	

10. Frequently Asked Questions

1) I try to power the board, but the board does not power up, what's wrong?

Make sure that the POWER LED has turned on. If the LED is not on, check to see that the external power supply (DC6-12V) or the USB power is properly connected, check to see that the J6 is properly connected. It is necessary to note that the external power supply (DC6-12V) and the USB power can not be connected simultaneously.

2) How is power supplied to the experimenter's board?

Three supply options exist: USB power Cables, external 6—12VDC and programmer/debugger power supplies are supported. You are only allowed to choose one of them.

3) The Mega16/32 is no longer accessible via programmer/debugger, is something wrong with the device?

- Verify that the target device is powered properly.
- If the target is powered locally, verify your programmer/debugger is connected properly.
- If the programmer/debugger is connected properly, the Mega16/32 is possibly "dead". Well, it's not really dead, it's just that it can't be reprogrammed until the Mega16/32 is unlocked (for detailed method of unlocking an AVR device, please search for solution online).

4) I have loaded the Mega16/32 sample code, but It seem to be working very slowly, what's wrong?

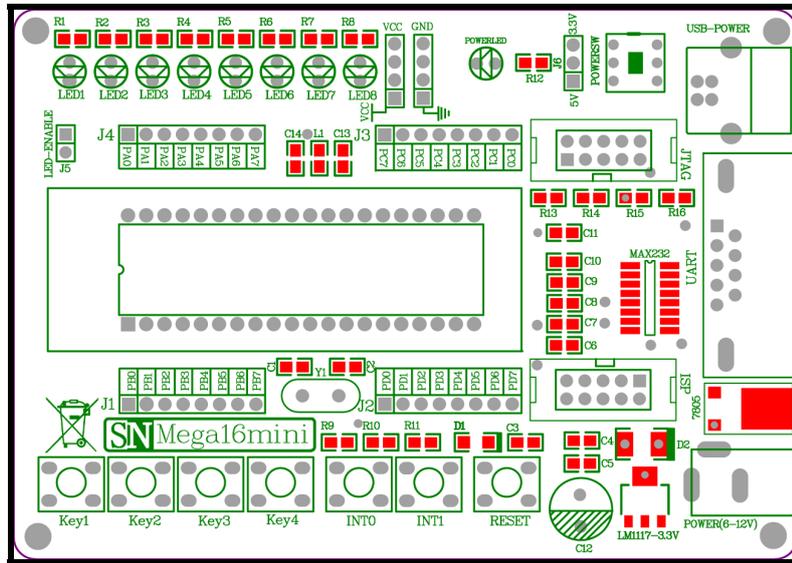
Make sure the system clock had been changed. The AVR mega mega16/mega32 Mini Development Board has a default system of internal RC 8MHz system clock, and the sample codes in product CD-ROM is based on this default system clock. If the system clock had been changed to lower one like 1MHz, the board will work slowly.

Appendix A. Packing List

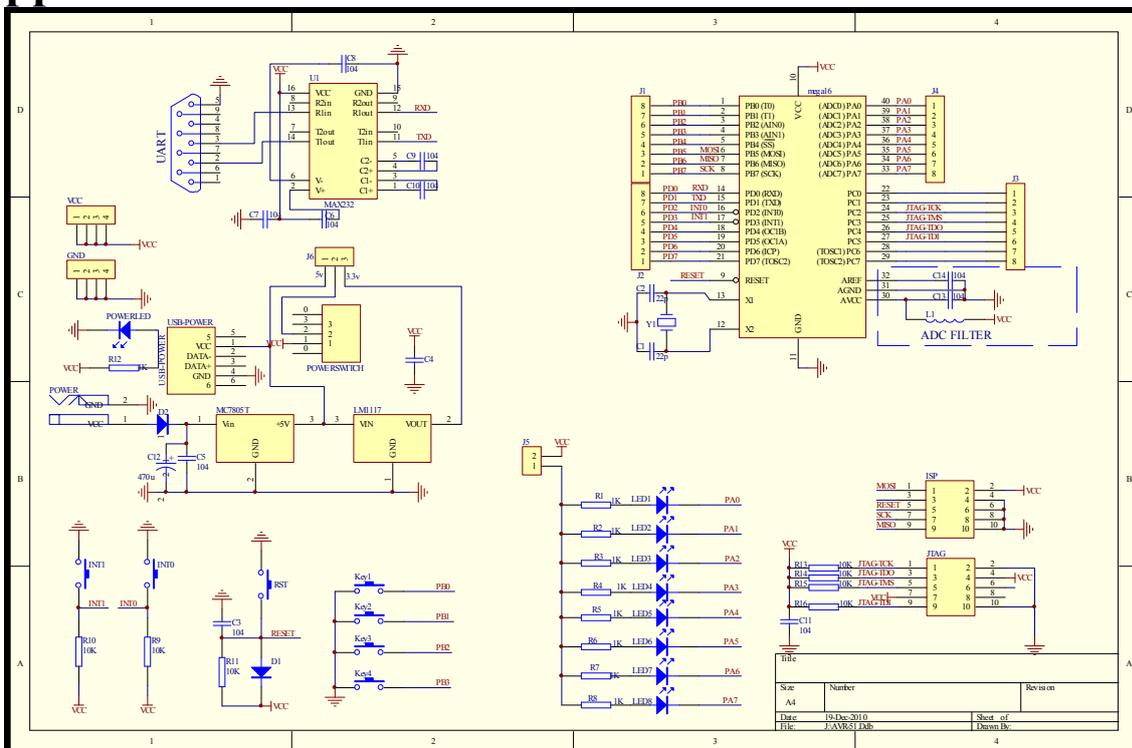
When you receive the products, please check the box to see if all accessories are complete. This product should include the following components:

- AVR mega mega16/mega32 Mini Development Board, 1 pcs;
- USB power supply cable, 1 pcs;
- CD-ROM or DVD-ROM, 1 pcs;

Appendix B. Board PCB



Appendix C. Board Schematic



Appendix D. Contact Us

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