

AVR Embedded Web Server



AVR Embedded Webserver using ATmega32 & ENC28J60

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1. About Embedded Web Server

The web servers are computers with some specific software installed. Any Computer can be converted into a web server with softwares like IIS or Apache. The PCs are bulky and designed for multipurpose usage.

What if we need dedicated task to be performed at lowest possible form-factor and cost?

The answer is, use microcontroller based Web server.

The required firmware to convert any microcontroller to a web server is called as TCP/IP stack.

The microcontroller is not just enough to act as web server, but it requires Ethernet interface ICs like ENC28J60 or RTL8019 along with Ethernet RJ45 connector with magnetic.

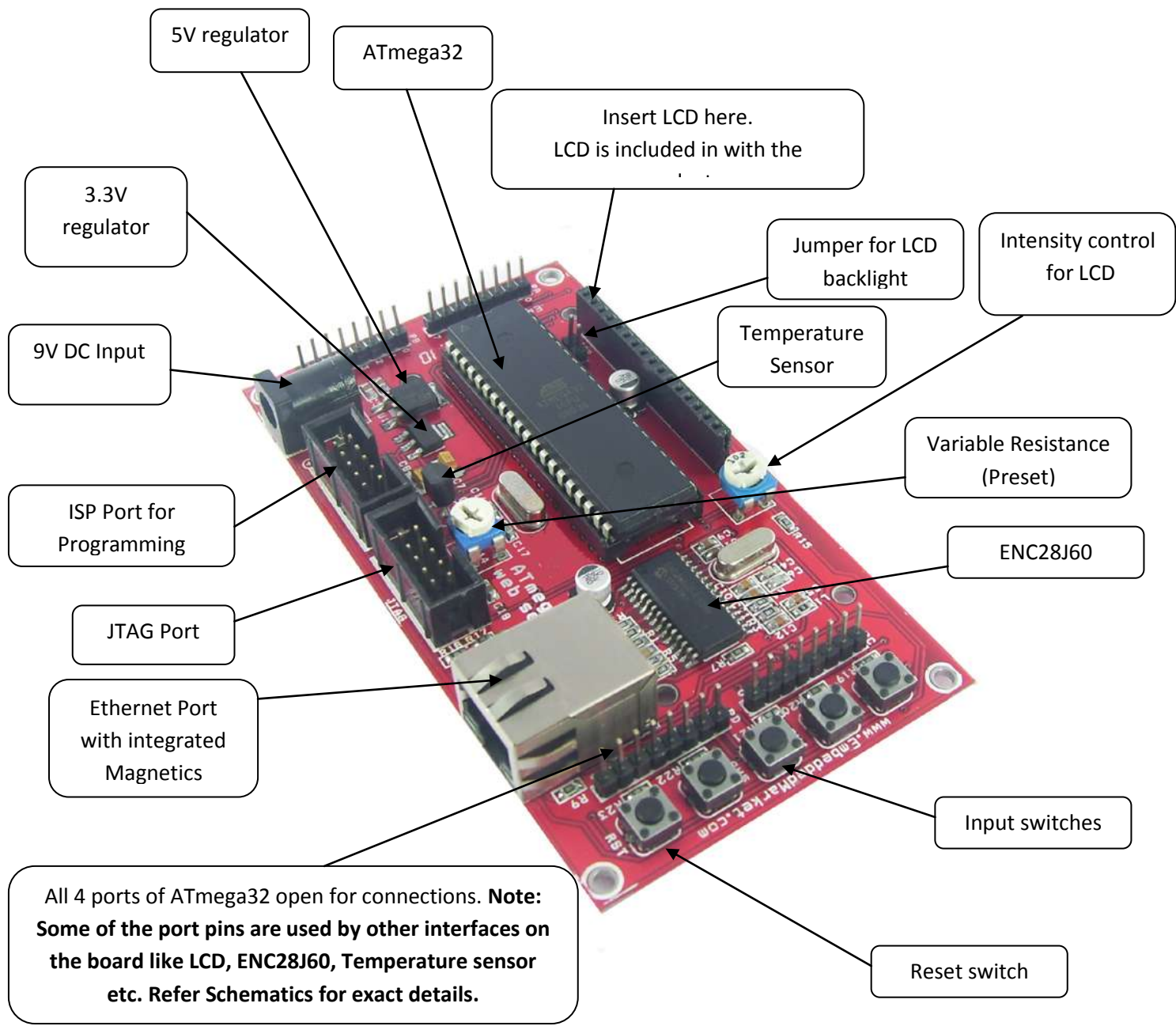
The product you are browsing is ready to use web server hardware loaded with required TCP/IP stack.

The firmware source code can be downloaded from the product's webpage.

Firmware credits to: avrportal.com

2.

AVR Web Server Hardware Details



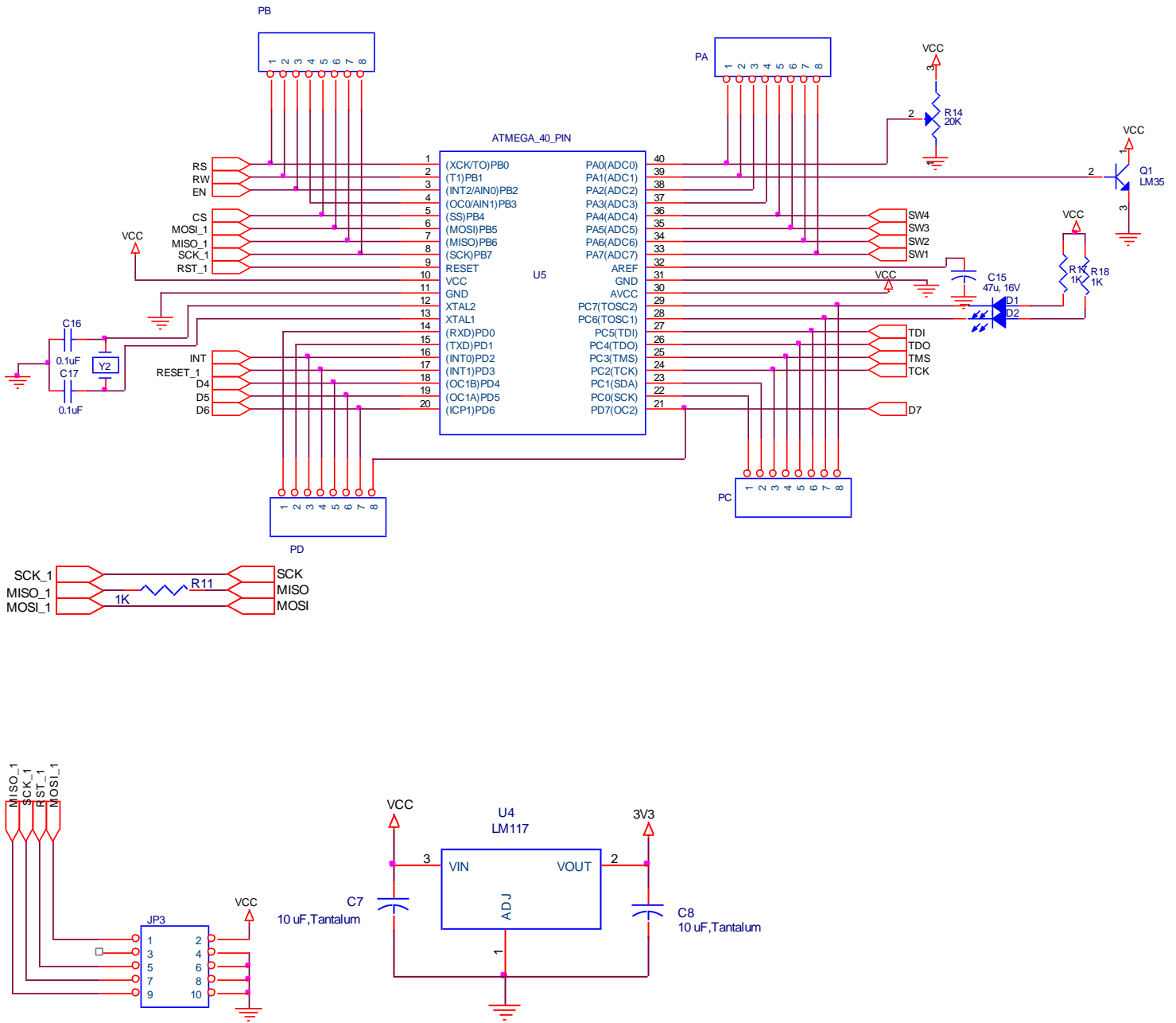
Pre-configured IP Address of the AVR web-server (This product) is 192.168.1.3

Pre-configured IP address of the PC / Laptop accessing this Product via Ethernet cable is 192.168.1.22

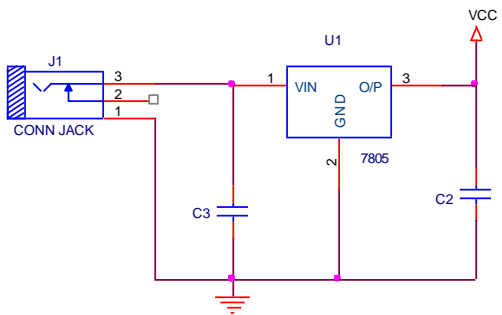
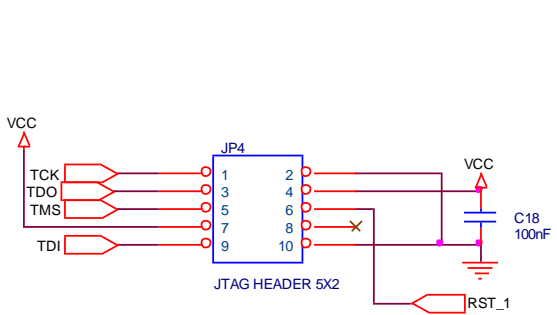
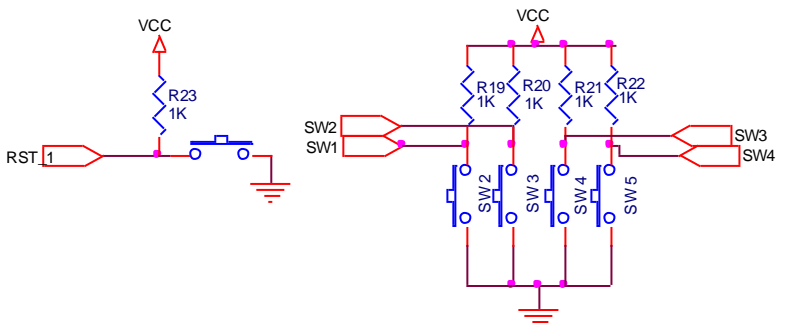
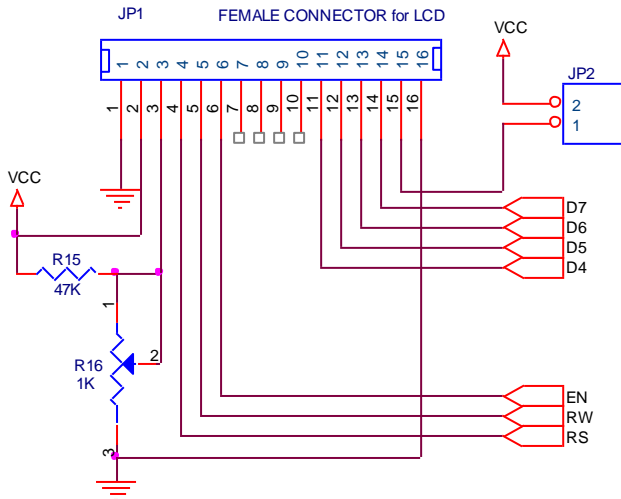
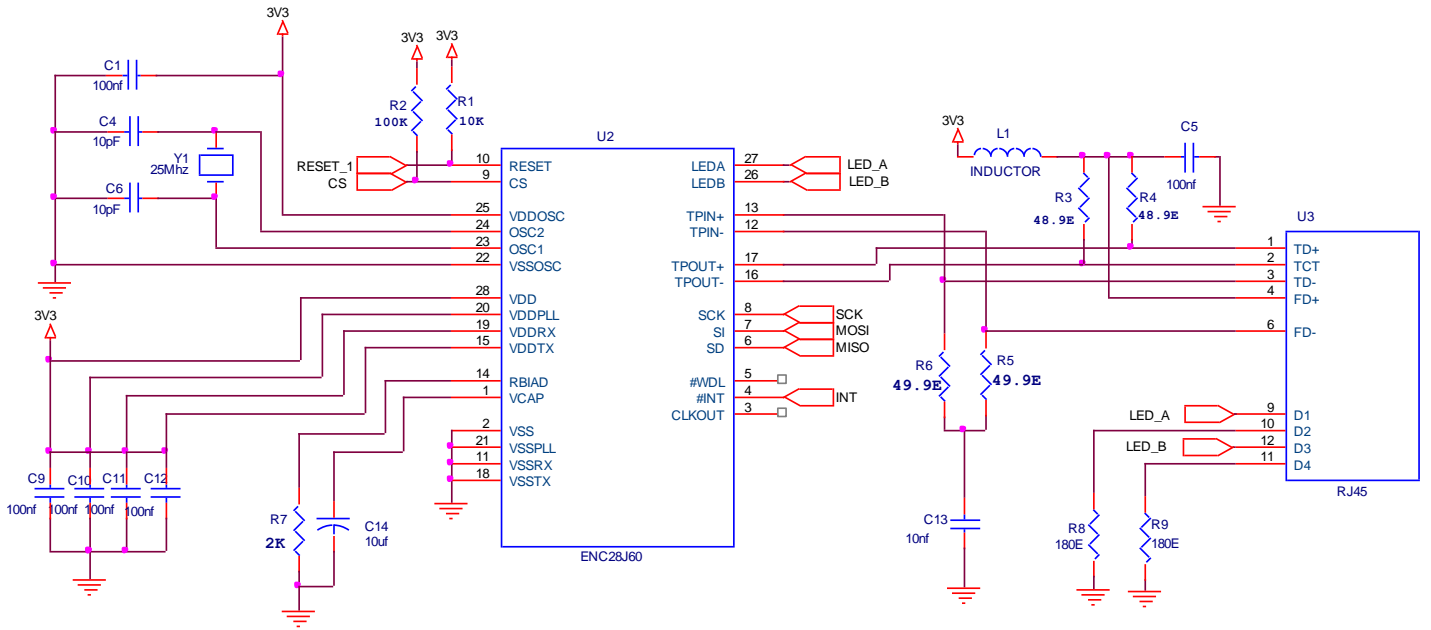
(Change IP of your PC or edit above IP using input switches)

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Hardware Schematic:



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I/O Lines used by on board interfaces:

ATmega32 Port Pin	Interface Name & Pin
PB0	LCD – RS
PB1	LCD - RW
PB2	LCD - EN
PB4	ENC28J60 – CS
PB5	ENC28J60 – SI & ISP Port – MOSI
PB6	ENC28J60 – SO & ISP Port – MISO
PB7	ENC28J60 – SCK & ISP Port – SCK
PD2	ENC28J60 – INT
PD3	ENC28J60 – RESET
PD4	LCD – D4
PD5	LCD – D5
PD6	LCD – D6
PD7	LCD – D7
PC6	LED marked on the board as D2
PC7	LED marked on the board as D1
PA7	Switch marked on the board as SW2
PA6	Switch marked on the board as SW3
PA5	Switch marked on the board as SW4
PA4	Switch marked on the board as SW5
PA1	Temperature Sensor LM35
PA0	Variable resistance (Preset) located near the JTAG port on the board

Firmware: Available for download from the product's webpage

Firmware credit: www.avrportal.com/?page=avrnet

Usage:

1. Connect the “Cross” Type LAN cable between the Web server board and your PC/Laptop
2. Connect 9V DC Power to the board
3. The LCD shows IP address 192.168.1.3 This IP address is pre-configured for the AVR web-server
4. On your client (PC / Laptop), open any browser and type above IP address in the address bar, press enter
5. A web page will appear. This webpage is served by the AVR web-server.
6. If you have difficulty in understanding the client, web page and web server terminology then you are requested to learn basics of client-server web technology before working with this product.

4. Important information

1. The “AVR Embedded Web Server” product is designed for experiments and is not suitable to be used in life support and mission critical products.
2. “AVR Embedded Web Server” requires 9VDC power source with 1 Amp current sourcing capacity.
3. Always request support over email as it allows the technical team to answer it in more detail which is not possible over phone.
4. Manufactured by:

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