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This page is a construction design for the Easy-RTP V1.0 board. This is the single sided design for a DS1230 style 28 pin DIP NVSRAM. You can find the eagle design files attached in a zipfile at the end of this thread.

- Brief Explanation
- Parts list:
- Construction:

Brief Explanation

A quick explanation: the "optional components" are only required if you want 27C256 emulation. This is intended for those who do not have an EPROM programmer capable of natively programming their NVSRAM of choice. Most programmers "28C256" setting seem to do the trick nicely, FYI. (Tested with Willem by Calvin and the Batronix by gimpy... Gimpy sez you have to disable the blank check for it to work)

picture of board layout in eagle:
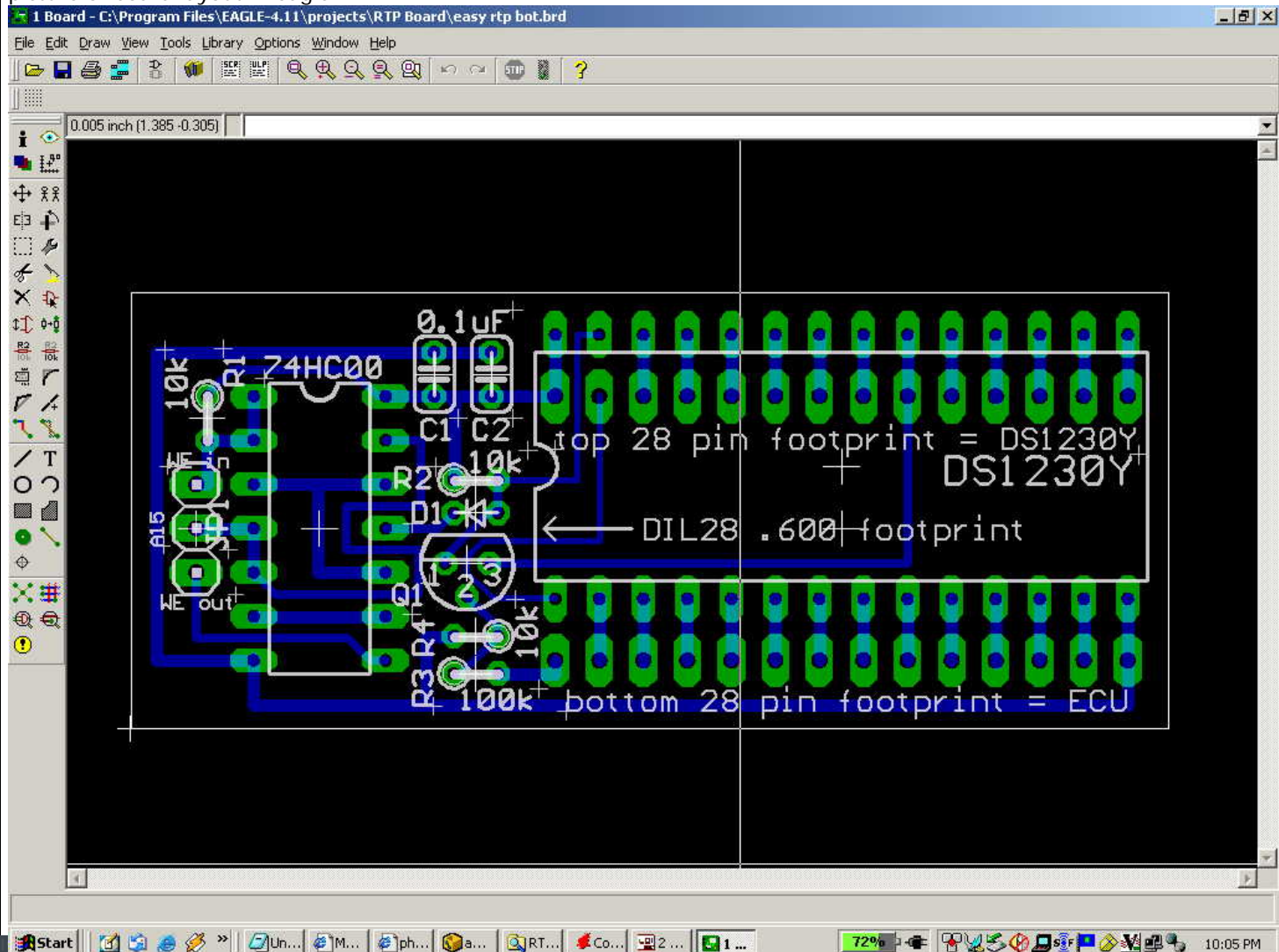
Parts list:

- DS1230Y or similar TI, ST, Simtek, ZMD, ... 32K 28 pin .600" DIP NVSRAM
- 74HC00 DIP package quad NAND gate
- 2x 0.1 uF ceramic caps (decoupling)
- 2x 10K resistors
- 2x 1x14 pin headers or similar contraption to make contact with ECU socket
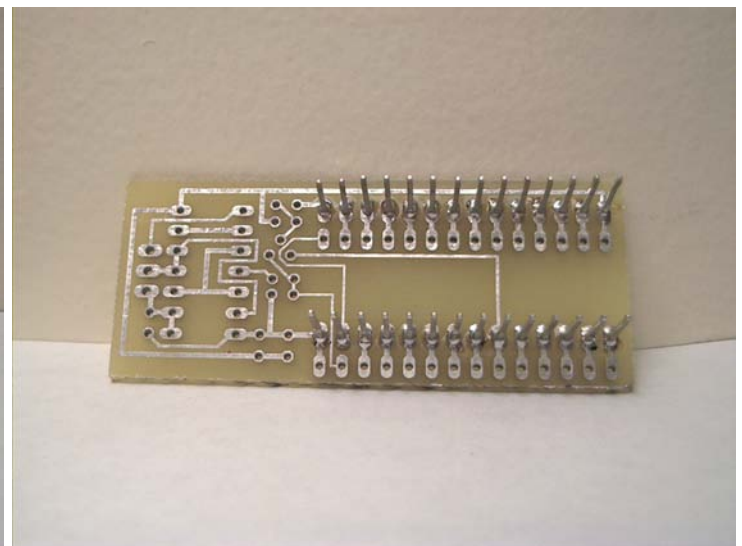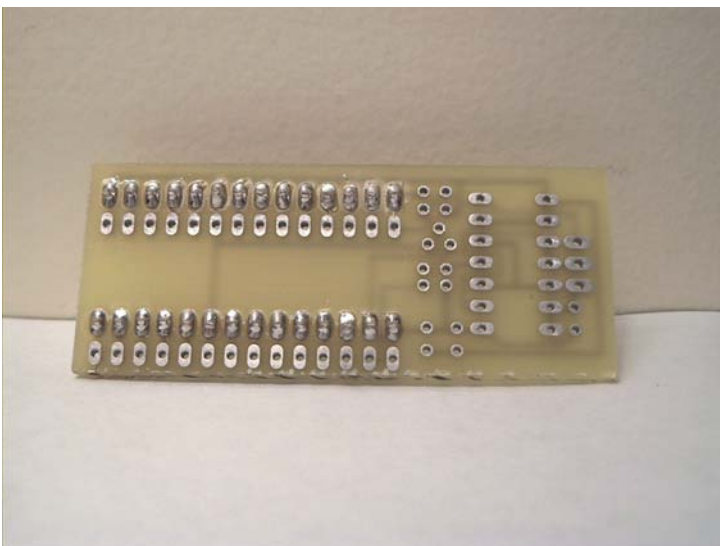
Optional components: (required for 27C256 emulation)

- 1x 10K resistor
- 1x 100k resistor
- 1x generic NPN switching transistor (2N4401 or equivalent)
- 1x switching diode (1n4148, etc... not too picky.)

Construction:
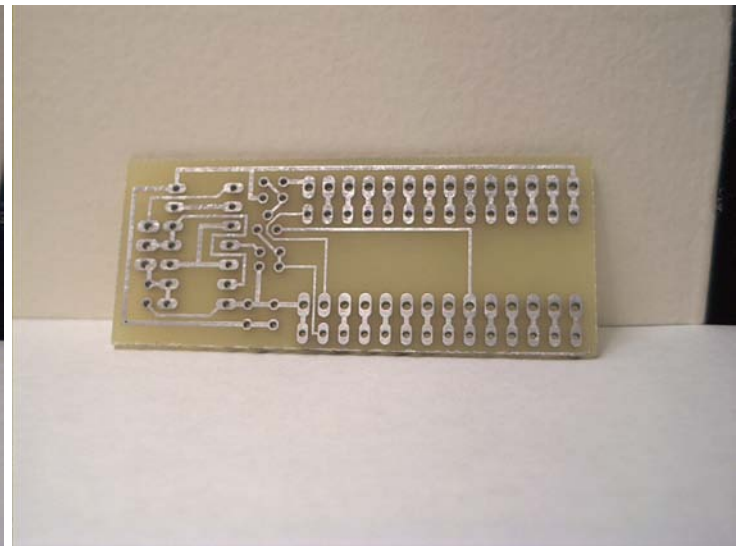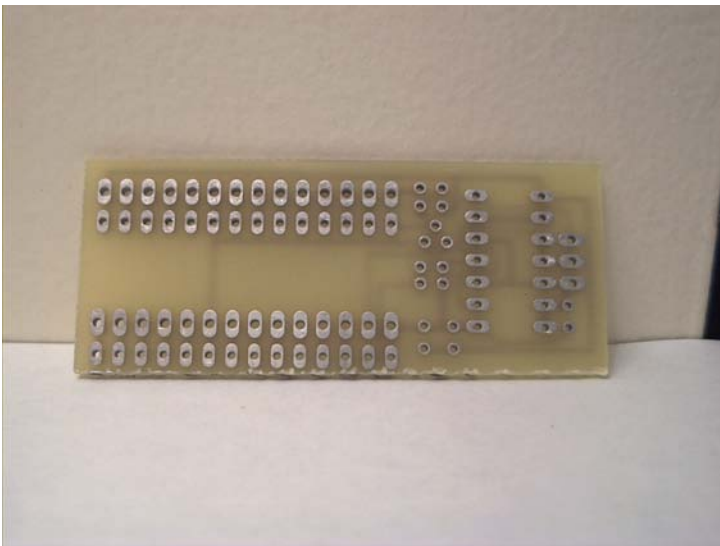
First off, orient your board with the traces facing up. (bottom up)

If you have the two 28 pin footprints facing right, the top set of holes (that are also larger diameter) are the ones to use for the ECU-board connectors. Solder in place the 2 - 1x14 pin headers (I'm ghetto, fuck off.) or whatever other contraption you are using to connect the board to the ECU in place and continue.

- Orient your board with the traces on the BOTTOM. Look at the top of the board (no traces). Orient your board so the 3 pin jumper connector faces left and the double 27C256 face right. This is the orientation in which all the following instructions
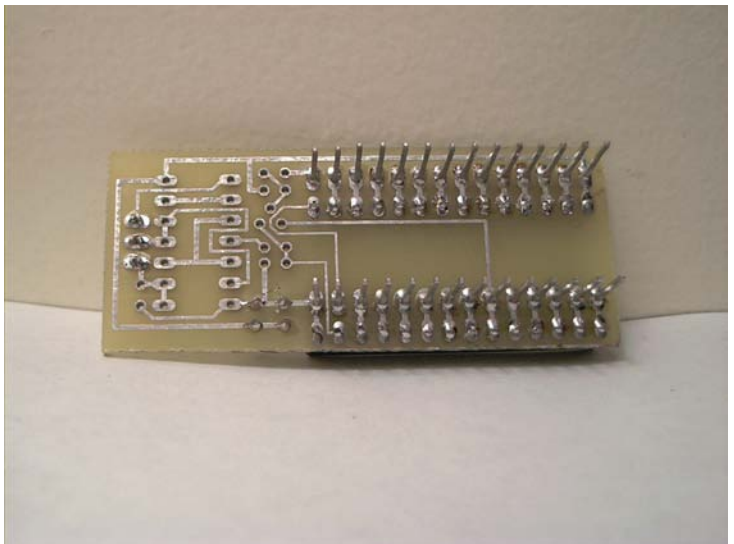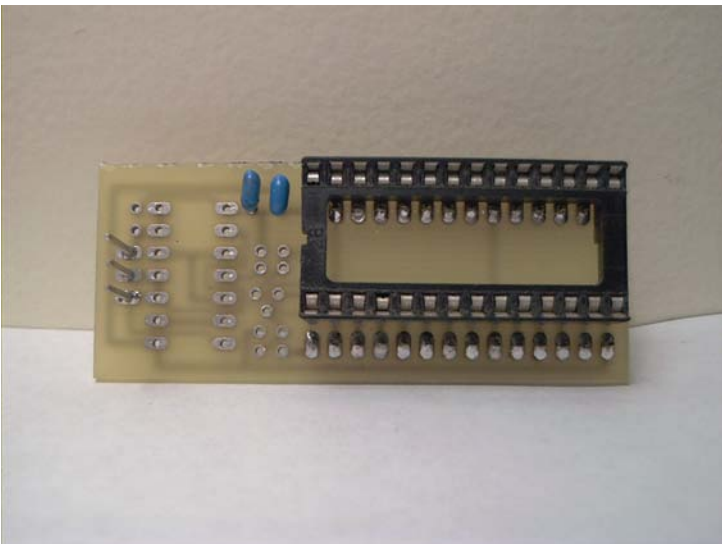
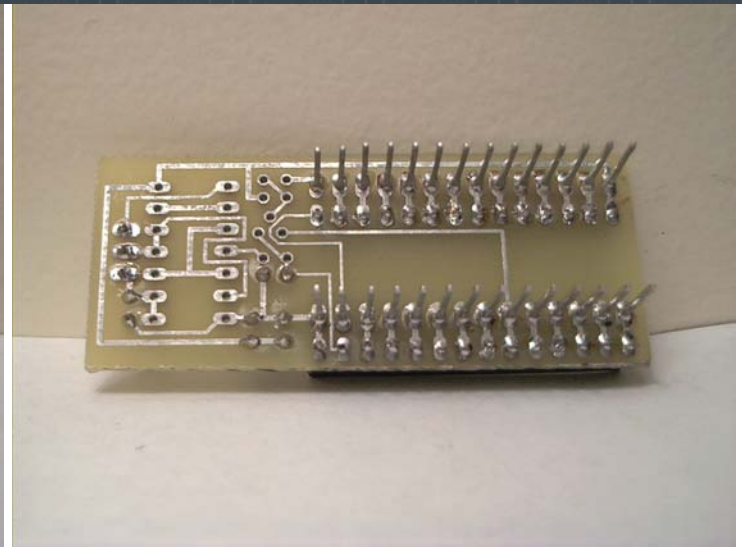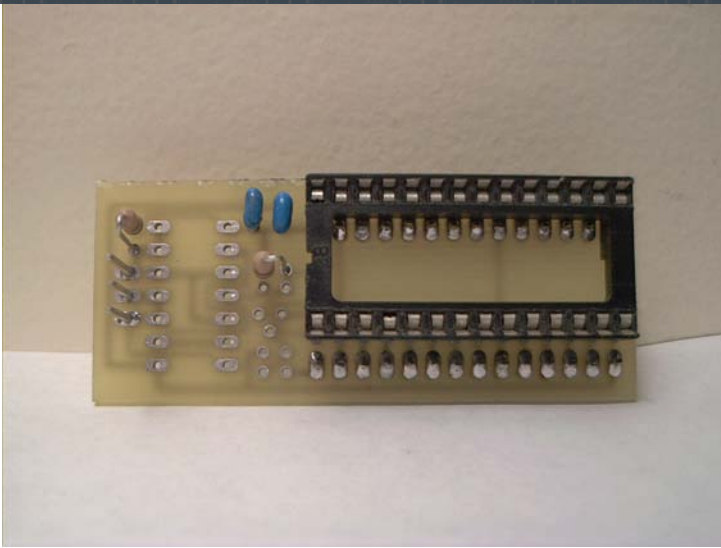will assume you are looking at the board.
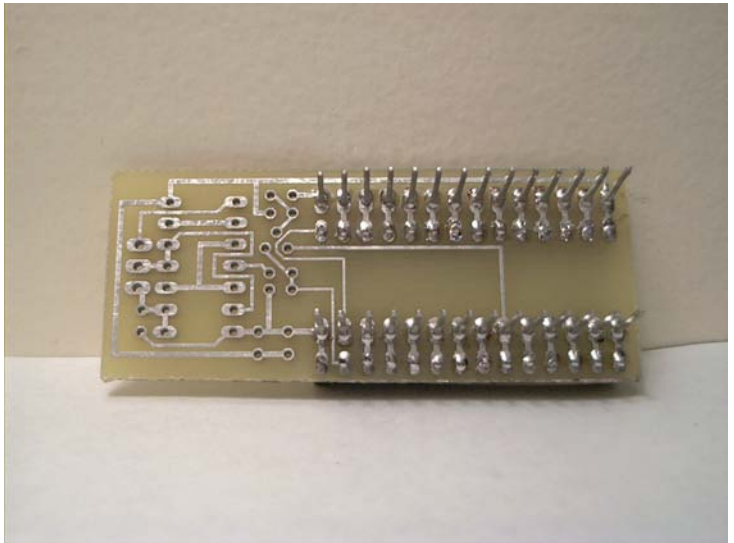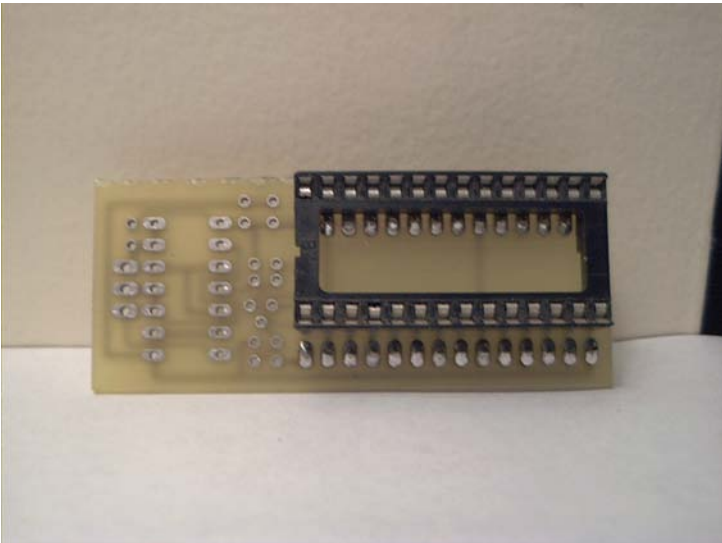
Next, solder in a 28 pin DIP socket for the NVSRAM in the top set of holes. The notch will face left.
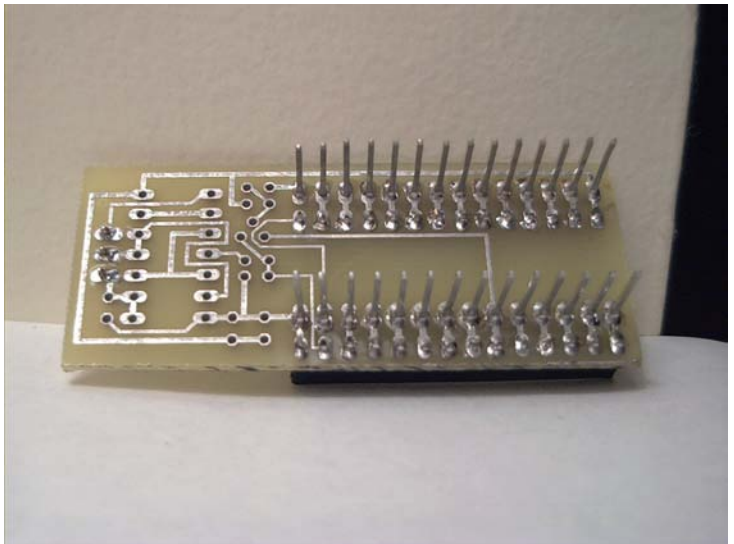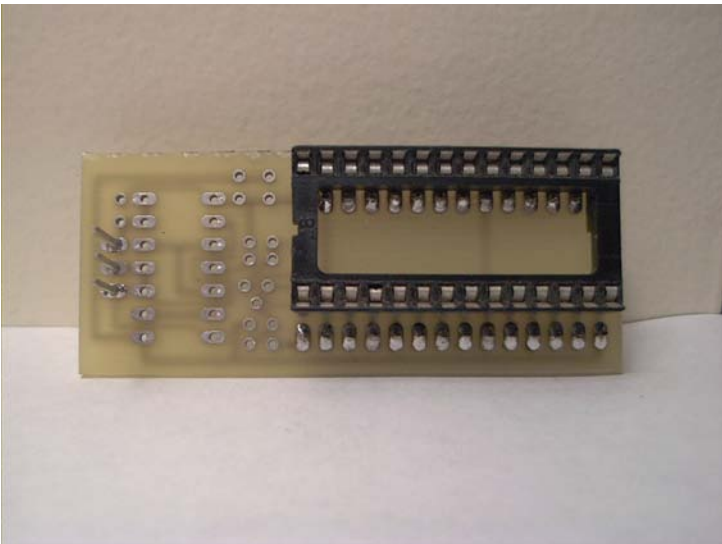
Next, solder in a 3pin - pin header or 3 wires for J1.

Next, solder the two caps C1+C2 in place.

Next, solder in R1 (10k, to the left) and R2 (10K, center).

- Next decide whether you want/need 27C256 emulation.

IF YOU DON'T WANT 27C256 EMULATION:

- Solder in a wire link or 0-ohm resistor for D1
- Skip to **FINAL STEPS**.

IF YOU DO WANT 27C256 EMULATION:

- Solder in the switching diode for D1.
- Solder in the NPN switching transistor Q1.
- Solder in R3 (10k - top resistor)
- Solder in R4 (100k - bottom resistor)
- continue…

FINAL STEPS:

- Solder in the 74HC00 Latch
- Place the NVSRAM in the 28 pin DIP socket
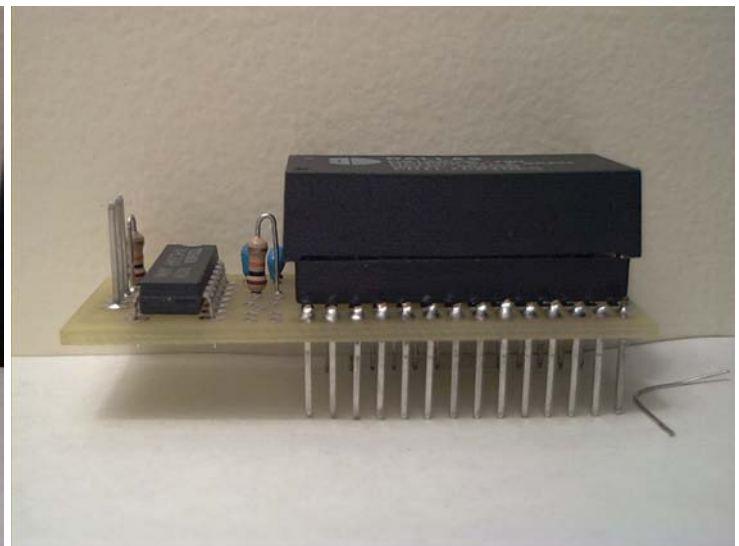
Final board

You can download the design or full size versions of any of the images:

Attachment:	Modify:	Size:	Date:	Who:	Comment:
easyrtpv1-eagle.zip	mod	34574	21 Feb 2004 - 00:24	blundar	The design in eagle format
boardlayout.jpg	mod	115934	21 Feb 2004 - 00:24	blundar	picture of board layout in eagle
IM000495.JPG	mod	278192	21 Feb 2004 - 02:39	the_doc	bottom of rtp board
IM000496.JPG	mod	264482	21 Feb 2004 - 02:44	the_doc	top of rtp board
IM000497.JPG	mod	280526	21 Feb 2004 - 02:58	the_doc	board with pin headers - top
IM000498.JPG	mod	294775	21 Feb 2004 - 02:59	the_doc	board with pin headers - bottom
IM000499.JPG	mod	262052	21 Feb 2004 - 03:04	the_doc	Image of board front with socket
IM000500.JPG	mod	294519	21 Feb 2004 - 03:06	the_doc	Image of board back with socket
IM000501.JPG	mod	275413	21 Feb 2004 - 03:08	the_doc	Image of board front with 3 pin header
IM000502.JPG	mod	313682	21 Feb 2004 - 03:10	the_doc	Image of board back with 3 pin header
IM000503.JPG	mod	275943	21 Feb 2004 - 03:18	the_doc	Image of board front with Capacitors
IM000504.JPG	mod	301233	21 Feb 2004 - 03:19	the_doc	Image of board back with Capacitors
IM000505.JPG	mod	278614	21 Feb 2004 - 03:22	the_doc	Image of board front with resistors
IM000506.JPG	mod	303997	21 Feb 2004 - 03:24	the_doc	Image of board back with resistors
IM000507.JPG	mod	291713	21 Feb 2004 - 03:26	the_doc	Image of board front with 74HC00
IM000508.JPG	mod	312870	21 Feb 2004 - 03:27	the_doc	Image of board back with 74HC00
IM000509.JPG	mod	293858	21 Feb 2004 - 03:36	the_doc	Image of board front with DS1230Y
IM000510.JPG	mod	277072	21 Feb 2004 - 03:38	the_doc	Image of board with DS1230Y

Parents: Web Home > Real Time Programming   **Revision:** r1.5 - 21 Feb 2004 - 04:48 GMT - blundar   { **Edit** | Attach | More }