# EvaBoard evolved – Bill of Materials

Please read the guide book before ordering. The table below lists the codes for ordering the components from Reichelt.

| Reference | Part | Value | Quantity | Reichelt# |
|---|---|---|---|---|
| B1 | Bridge Rectifier | 70V, 1.5A | 1 | B70C1500RUND |
| C1..C6, C9, C14 | Ceramic Capacitor | 100nF | 8 | X7R-5 100N |
| C7 | Electrolytic Capacitor | 10µF, 35V, axial | 1 | AX 10/35 |
| C8 | Electrolytic Capacitor | 220µF, 63V, radial | 1 | RAD 220/63 |
| C10..C13 | Electrolytic Capacitor | 1µF, 63V, radial | 4 | RAD 1/63 |
| D1 | Diode | 1N4001 | 1 | 1N 4001 |
| J1 | Screw Terminal | 5.08mm | 1 | CTB0509-2 |
| J2 | Barrel Jack | 5.5mm x 2.1mm | 1 | DC BU21 90[1] |
| J3, J11, J13, SPARE, JP4 | Pin Header | 2.54mm, 2 rows, 34 total | 1 | SL 2X36G 2,54 |
| J4..J7, J12, J14, J15, SPARE, JP1..JP3 | Pin Header | 2.54mm, 1 row, 49 total | 1 | SL 1X50G 2,54 |
| J8, J9 | Box Header | 2.54mm, 2x5 | 2 | WSL 10G |
| J10 | D-SUB connector | 9 pole, female | 1 | D-SUB BU 09EU |
| J16 | LCD module | 2x16 characters | 1 | LCD-PM 2X16-6 E[2] |
| | Pin header | 2.54mm, 1x16 | 1 | SL 1X36G 2,54 |
| | Pin socket | 2.54mm, 1x16[3] | 1 | BL 1X16G7 2,54 |
| LED1, LEDC7, LEDC8 | LED | 3mm, green | 3 | LED 3MM GN |
| LEDA1..LEDA8, LEDC3..LEDC6 | LED | 3mm, red | 12 | LED 3MM RT |
| LEDC1, LEDC2 | LED | 3mm, yellow | 2 | LED 3MM GE |
| R1 | Resistor | 100Ω | 1 | METALL 100 |
| R5 | Resistor | 5.1Ω | 1 | METALL 5,10 |
| R6 | Resistor | 1.5kΩ | 1 | METALL 1,50K |
| R9 | Potentiometer | 10kΩ | 1 | 76-10 10K |
| R17..R20, R22..R25 | Resistor | 10kΩ | 8 | METALL 10,0K |
| R26..R29 | Resistor | 3.3kΩ | 4 | METALL 3,30K |
| R30, R31 | Resistor | 100kΩ | 2 | METALL 100K |
| RN1, RN2 | Resistor network | 8x 1.5kΩ | 2 | SIL 9-8 1,5K |

[1] The original board required specifically a Lumberg 1613-18 which has an unorthodox pin layout. This board can still fit that type but also more common ones like the one linked here.

[2] The original board required specifically this LCD which has an unorthodox pin layout. This board provides two PIN options for the LCD module, marked on the PCB. Any HD44780-compatible 2x16 LCD should normally do. Just make sure not to get one with an "extended temperature range" – those require a negative V0 voltage which this board cannot provide.

[3] If you want to alternate between both kinds of LCD, use a 1x18 pin socket. Otherwise just solder the 1x16 pin socket into the right place that works for your LCD and leave the remaining two pins unpopulated.

| | | | | |
|---|---|---|---|---|
| SW1..SW5 | Pushbutton switch | SPST | 5 | TASTER 9308 |
| U1 | Microcontroller | ATmega644-20PU[4] | 1 | ATMEGA 644-20 PU |
| | IC Socket | 2x20, 15.24mm | 1 | GS 40P |
| U2 | RS-232 transceiver | MAX232 | 1 | TS232CPE |
| | IC Socket | 2x8, 7.62mm | 1 | GS 16P |
| U3 | Voltage regulator | 7805 | 1 | µA 7805 |
| Y1 | Crystal oscillator | 20MHz | 1 | OSZI 20,000000 |
| | IC Socket | 2x7, 7.62mm | 1 | GS 14P |
| Y2 | Watch crystal | 32.768kHz | 1 | IQD LFXTAL014219 |
| | Jumper | 2.54mm | 5..21[5] | JUMPER 2,54 SW |
| | Jumper cables | 2.54mm, f/f | 1 | DEBO KABELSET12[6] |

Optional extras:

- Screws (M2), nuts, washers (plastic), and spacers (Reichelt# DK 10MM) for a more durable attachment of the LCD
- Rubber feet to glue or screw on

[4] ATmega644**A**-20PU works as well.

[5] You need 5 for JP1..JP4 and 16 more if you want to connect Ports A and C to the LEDs without having to use jumper cables.

[6] This comes with 40 single jumper cables which should be more than enough for anything you do with this board. If you want a more convenient method for connecting a whole port at once, you can get cables with a single 8x plug on each side. These are more expensive though, and you will still need the single ones.