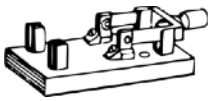
8-bit Workbench
Bill of Materials



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Part	Value	Remarks	Qty	Reference	Provided
Standoffs	M3	nylon stands 8mm	**4**		
	M3	nylon nuts	**4**		
Pin header	1 x 2 pin	male horizontal *(backside)*	**2**	JP6, J2	
	1 x 2 pin	male vertical	**1**	JP10	
	1 x 3 pin	male vertical	**2**	JP8-JP9	
	2 x 2 pin	male horizontal	**1**	J1	
Jumper	1 x 2 pin	jumper	**1**	JP6	
	1 x 2 pin	jumper with pull-tab	**3**	JP8-JP10	
Connector	USB	5 pin Mini-B USB connector	**1**	J5	
Socket	1 x 8 pin	female horizontal bus *(backside)*	**1**	J7	
	2 x 2 pin	female horizontal bus *(backside)*	**2**	J6, J8	
	2 x 5 pin	female horizontal bus *(backside)*	**1**	J9	
	14 pins	machined pin	**2**	U3, U7	
	16 pins	machined pin	**5**	U1, U2, U4-U6	
Resistor [1]	100 Ω	1/4 W - brown, black, black, black, brown	**1**	R2	
	330 Ω	1/4 W - orange, orange, black, black, brown	**2**	R1, R3	
	2 kΩ	1/4 W - red, black, black, brown, brown	**1**	R4	
	4,7 kΩ	1/4 W - yellow, violet, red, brown, brown	**2**	R5, R6	
Resistor Net	330 Ω [2]	8x resistor, 9 legs	**1**	RN1	
	1 kΩ	4x resistor, 5 legs	**1**	RN2	
Capacitor	100 nF	marked with ‘104’	**7**	C1-C7	
	47 µF	elco radial	**1**	C8	

Notes:

1) Some provided resistor-values could differ slightly, as could their band colors, this has no effect on the working of the board. R1 is marked as 1k on the PCB, a 330 Ω should be used instead.

2) RN1 is marked as 120 Ω on the PCB, a 330 Ω should be used instead.

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Part	Value	Remarks	Qty	Reference	Provided
Transistor	BC547	Bipolar NPN	**1**	Q1	
IC	74LS00	Quad 2-input NAND gate	**1**	U7	
	74LS08	AND-gate	**1**	U3	
	74LS75	Quad latch	**2**	U1, U2	
	74LS157	Quad 2-line to 1-line multiplexer	**1**	U4	
	DM9368	7-Segment decoder / driver / latch	**2**	U5, U6	
Switch	SPDT	Digitast key switch	**1**	SW1	
	SPST	3x DIP Switch ON-OFF for settings	**2**	SW2, SW3	
LED [3]	red	5 mm, round	**8**	D1-D8	
	white	3 mm, round	**1**	D9	
	green	3 mm, round	**1**	D10	
Display	7-segment	For example, Kingbright SC56 11EWA	**2**	AFF1, AFF2	
		Parts	**69**		
		Types	**34**		

Notes:

3) When preferred, other LED colors can be used. Make sure to check if the values of the resistor network RN1 and resistors R3-R4 are correct for the LEDs used.

Important:

- Leave out all ICs. Then check J1, J2, J5-J9 for shorts between all side to side pins using a multimeter in continuity mode. Also check for shorts between +5V, +12V, -12V and GND rails. Apply power using the USB connector, check if the power LED D10 lights up. Proceed with inserting the ICs. *See* the Manual for more details.