ASCII Keyboard Tester Tiny
Bill of Materials
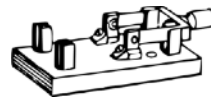
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Part	Value	Remarks	Qty	Reference	Provided
Standoffs	M3	nylon stands 10mm	**4**		
	M3	nylon nuts	**4**		
	M3	rubber end cap 3 mm [1]	**3**		
Pin header	1 x 4 pin	male horizontal	**1**	J1	
	8 pin	female in-line machined pin socket *(back side)*	**4**	J5-J8	
Socket	14 pins	machined pin	**1**	U2	
	16 pins	machined pin	**1**	U3	
	16 pins	double spring contact, for easy insertion	**2**	J2, J3	
	16 pin	male-male DIP IC adapter rounded pins	**1**	J5-J8	
	20 pins	machined pin	**1**	U1	
Resistor [2]	82 kΩ	1/4 W - grey, red, black, red, brown	**2**	R1, R2	
Resistor Net	330 Ω	5x resistor, 6 legs	**2**	RN1, RN2	
	2,2 kΩ	5x resistor, 10 legs	**1**	RN3	
Capacitor	100 nF	marked with '104'	**1**	C1	
	10 µF	elco radial	**2**	C2, C3	
IC	74LS00	Quad 2-Input NAND Gate [3]	**1**	U2	
	74LS123	Retriggerable Monostable Multivibrator	**1**	U3	
	74LS374	Octal D-Type Edge Triggered Flip-Flops 3-State	**1**	U1	

Notes:

1) When mounted on top of an Apple-1 or Apple][: screw (turn clockwise) and push the rubber end caps in the bottom side of the stands. This to protect the Apple computer mainboard. The fourth standoff at the bottom-left corner can be left out.

2) Some provided resistor-values could differ slightly, as could their band colors, this has no effect on the working of the board.

3) This IC has 4 NAND gates, 1 of them is unused and can be used as a spare.

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Part	Value	Remarks	Qty	Reference	Provided
Switch	SPST	2x DIP Switch ON-OFF for settings	**1**	SW1	
LED [4]	red	5 mm, round	**8**	D1-D8	
	white	5 mm, round	**2**	D9, D10	
	yellow	5 mm, round	**1**	D12	
	orange	5 mm, round	**1**	D11	
Misc	adhesive felt	affix on the backside, see markings on PCB	**1**		
		Parts	**47**		
		Types	**24**		

Notes:

4)   When preferred, other LED colors can be used. Make sure to check if the values of the resistor networks RN1-RN3 are correct for the LEDs used.

<u>**Important:**</u>

-   Use the 16 pin male-male DIP IC adapter as a guide to solder the 8 x 8 pin female in-line machined pin socket perfectly right-angled (at positions J5-J8).

-   Before applying power, check J2-J8 for shorts between all side to side pins using a multimeter in continuity mode.

-   **Affix the adhesive felt** on the solder side of the board, as indicated by the dotted rectangle. Otherwise soldered pins can come in contact with the ICs of the Apple computer.