

## Super Elf Component Notes

The parts include those for the base kit, the high and low address display options, and the memory saver option, except that only the board-mounted parts are included (no speaker, power supply, switch, battery, wiring, etc.)

A few components are in smaller, more modern, packages and may require some forming of leads to match the original board layout hole spacing, in particular, the crystal, and maybe some capacitors. I recommend installing the crystal standing up from the board supported by its leads, approximately 3 mm above the board.

The proper orientation of the HP 7-segment LED displays is with the printed part number away from the keypad. These displays do not have the orientation notches referred to in the original Super Elf manual.

The following part numbers are interchangeable and a different one of these may be supplied with the kit than indicated in the Super Elf manual or on the packing list:

U15	74C175, 74HC175, or 40175
U27, 30	P2101, P5101, or AM9101
U32	82S123, 74S288, or 6331

The resistors are marked with standard color code bands, you can use the following key to identify (the last color band, usually metallic gold, does not matter):

30Ω	Orange, Black, Black
100Ω	Brown, Black, Brown
200Ω	Red, Black, Brown
330Ω	Orange, Orange, Brown
1KΩ	Brown, Black, Red
2KΩ	Red, Black, Red (or Red, Black, Black, Brown)
4.7KΩ	Yellow, Violet, Red
10KΩ	Brown, Black, Orange
22KΩ	Red, Red, Orange
1MΩ	Brown, Black, Green

The capacitors may be marked with codes instead of values as follows:

0.1μF	104	10μF	106
1.0μF	105	220pF	221 (may also be unmarked)
2.2μF	225		

The diodes can be identified by their package:

1N4001	Black Plastic
1N914	Small Glass
1N270	Large Glass

The kit is supplied with LM2940 voltage regulators instead of 7805 ones. These will work with lower input voltage (as low as 6 to 6.5 volts) power supplies which will reduce heat generation. They will also work fine at the original power supply voltage the Super Elf was shipped with and are fully compatible.

The monitor code programmed is that from the cosmacelf forum files section on Yahoo. It works differently from that described in the manual in that the address is entered before pressing RUN G and the mode is entered after, but otherwise operates the same. Presumably this was changed at some point in Super Elf production.