

# A HEXADECIMAL READER for Digital Television Experiments

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As a follow up to the digital articles from Mike Cox this hexadecimal reader was built for testing the digital signal path as explained in those digital articles. Separate seven segment readers with in built decoders are available at RS (TIL311 P/N 586-734) but at a price. However most will have in their junk box an assortment of e-proms and seven segment display units. The costs associated with this approach are very small. Two e-proms are used for decoding the 4-bit hexadecimal binary code to feed either separate or dual seven segment displays via suitable current limiting resistors. Room was left on the PCB to include a buffer if deemed necessary later on during experiments. 28 pin machine IC sockets have been used for the e-proms, and the wiring arranged to allow for different e-prom types that maybe at hand.

The E-prom table shown should be programmed into the e-prom and any unused cells must be filled with "00". Wiring of the unit is straight forward and can be built on vero board or the like. The diagram shows how the EPROM 28-pin socket is wired to accommodate the different e-proms. The seven segment displays should be wired so that the MSB display is on the left and the LSB display on its right. The input is supplied on an IDC10 connector and is wired as per the standard set by Mike Cox. The waveform shows the hexadecimal values used for composite video inputs. The photo shows the wiring used on the prototype and space for the number generator.

**EPROM PROGRAM**

Byte	Hex	D6	D5	D4	D3	D2	D1	D0	Code
0	0000	1	1	1	1	1	1	0	7E
1	0001	1	1	0	0	0	0	0	60
2	0010	1	0	1	1	0	1	1	5B
3	0011	1	1	1	0	0	1	1	63
4	0100	1	1	0	0	1	0	1	65
5	0101	0	1	1	0	1	1	1	37
6	0110	0	1	1	1	1	1	1	3F
7	0111	1	1	0	0	0	1	0	62
8	1000	1	1	1	1	1	1	1	7F
9	1001	1	1	1	0	1	1	1	77
A	1010	1	1	0	1	1	1	1	6F
B	1011	0	1	1	1	1	0	1	3D
C	1100	0	0	1	1	1	1	0	1E
D	1101	1	1	1	1	0	0	1	79
E	1110	0	0	1	1	1	1	1	1F
F	1111	0	0	0	1	1	1	1	0F

