

morse training with the Junior Computer

J Sgonina

Here is yet another small program to be added to the large amount of software already available for the Junior Computer. It is intended to teach prospective short wave listeners to read morse code. The program can be used even with the basic version of the JC. The only additional hardware is the amplifier stage shown in the accompanying figure. The input to this is taken from port line PB5.

The number and speed of the morse characters can be predetermined. After the program has started, the JC will generate 1 to 6 morse characters, which the trainee should decode and write down. The letters corresponding to the generated characters appear on the display after a short delay, so that the trainee can check his decoding with the actual text. During this phase, the computer is on stand by until an arbitrary key, other than ST and RST, is pressed.

The hex dump given is sufficient to write the program into the JC. Once that has been done, you can prepare the start, but the program needs the following information before it can run.

- in address 0010 write data 00...05;
- in address 0011 write data 01...55 (max);
- in address 0014 write data from table 1 for the first character to be generated minus 1;
- in address 0015 write data from table 1 for the last character to be generated.

Now, the program can be run; it starts in address 0020 when key GO is pressed. Programming example: the JC is to generate morse characters for the letters B to G. Before the start, the following data should be written:

- in address 0010 — data 05
- in address 0011 — data 55
- in address 0014 — data 02
- in address 0015 — data 07

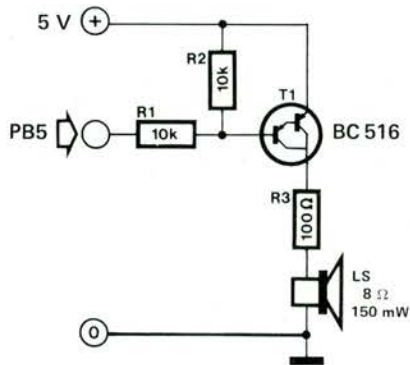
Table 1.

alphanumeric character	hexadecimal code	alphanumeric character	hexadecimal code
A	01	S	13
B	02	T	14
C	03	U	15
D	04	V	16
E	05	W	17
F	06	X	18
G	07	Y	19
H	08	Z	1A
I	09	1	1B
J	0A	2	1C
K	0B	3	1D
L	0C	4	1E
M	0D	5	1F
N	0E	6	20
O	0F	7	21
P	10	8	22
Q	11	9	23
R	12	0	24

Table 2.

address	function
026F	alphanumeric display routine
028D	tone generation routine
02A8	random number routine
02CB	display code table
02EF	morse code table
0000 to 0005	display buffer
0010	number of letters
0011	length of dots and dashes (speed)
0014	lower limit of block of characters to be generated
0015	upper limit of block of characters to be generated

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0200:	A9	FF	8D	83	1A	8D	81	1A	85	01	85	02	85	03	85	04
0210:	85	05	18	A5	11	65	11	65	11	85	12	A5	10	AA	20	A8
0220:	02	A8	B9	CB	02	95	00	B9	EF	02	85	21	29	07	85	20
0230:	06	21	B0	07	A5	11	85	13	4C	3F	02	A5	12	85	13	20
0240:	8D	02	C6	20	D0	EA	A5	12	85	13	C6	40	D0	FC	C6	13
0250:	D0	F8	CA	10	C9	20	6F	02	20	AC	1D	F0	F8	20	6F	02
0260:	20	AC	1D	F0	F0	20	6F	02	C6	40	D0	F9	4C	00	02	8A
0270:	48	A9	FF	8D	81	1A	8D	83	1A	A2	08	A5	04	20	E3	1D
0280:	CE	7C	02	10	F6	A9	05	8D	7C	02	68	AA	60	A9	FF	8D
0290:	83	1A	EE	82	1A	D0	FB	C6	13	D0	F7	A5	11	85	13	C6
02A0:	40	D0	FC	C6	13	D0	F8	60	8A	48	38	A5	E9	65	EC	65
02B0:	ED	85	E8	A2	04	B5	E8	95	E9	CA	10	F9	C5	15	B0	EA
02C0:	C5	14	30	E6	85	30	68	AA	A5	30	60	08	03	27	21	06
02D0:	0E	42	09	7A	72	0A	47	48	2B	23	0C	18	2F	52	07	63
02E0:	41	01	36	11	64	79	24	30	19	12	02	78	00	10	40	42
02F0:	84	A4	83	01	24	C3	04	02	74	A3	44	C2	82	E3	64	D4
0300:	43	03	81	23	14	63	94	B4	C4	7D	3D	1D	0D	05	85	C5
0310:	E5	F5	FD													



As soon as these data have been written, the program starts when key GO is pressed.

The hex data for the letters of the alphabet and numbers 0...9 are given in table 1. The most important addresses are given in table 2.