

New Features in Rev. 1.12

1) You can put HandiCODE to "Sleep" by sending a (go) --.--- GO to Sleep code. This is very useful for Lap-Top / Wheelchair systems to remain quiet during "travel". You can "Wake" it up by either a <Enter> from the Keyboard or Morse (-.-)

2) We have added 2 single-code Morse character to control HandiWORD:

(za) --...- Add a Word or Expansion (Issues an ALT-Space)

(zn) --...- eNable / disable Hword (Issues an CTL-Space)

Note: You must install HandiWORD with the default ALT-CTL with Space

--- Preliminary ---

ADVANCED HCD MACRO PROGRAMMING

This note describes some of more powerful features available via ## predefined macros.

CONVERTING MORSE CODES TO HEX AND BINARY

Most of arguments for these macros require radix to be Hex or Binary.

Hex numbers are easily converted to/from binary. Hex digits are 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F and binary digits are 0,1. Each Hex digit is translated into 4 binary digits as follows:

0	0000	4	0100	8	1000	C	1100
1	0001	5	0101	9	1001	D	1101
2	0010	6	0110	A	1010	E	1110
3	0011	7	0111	B	1011	F	1111

Computer normally handles data in bytes, which contain 2 hex digits, which is equivalent to 8 binary digits (bits).

Examples: C9 --> 11001001

0F --> 00001111 or in short 1111

The Morse codes are represented as binary digits, DASH is 0, DOT is 1. Since the codes are handled in 8-bit chunks (bytes), there is unused space in the 8-bit byte. In order to delimit the start of the Morse code (which is always shorter than 7 bits) we use binary digit 1 to the left of the pattern for dots and

dashes. For example \$ has Morse code -..-, the binary digits would be (from left to right) 01100, and we also need delimiter 1 to the left which results in 101100 full Morse code in binary. To convert to 2 digit Hex we padd 0 to the left resulting in 0010 1100 8-bit code, which is in Hex 2C.

Letter	Morse	Binary	Hex	Designation
a	.-	110	6	3-bit code
b	...-	10111	17	5-bit code
c	-. .	10101	15	5-bit code
)	..- .	111001	39	6-bit code
\$	-..-	101100	2C	6-bit code
<Help>-	1111100	7C	7-bit code

EXTENDED MORSE CODES (##M macro)

HandyCODE allows such codes to be entered directly in Hex via macro ##M. For example invoke macro ##M and when prompted with MC/H enter 2 digit Hex code 2C. This will produce \$ as a keystroke. Obviously this is not the simplest way to produce \$, but the power of such entry becomes useful when dealing with special Extended Morse codes with 7 and 8 bit codes which cannot be entered directly. These codes allow access to many internal commands not available otherwise. When in learn mode, only the actual code entered will be retained, so you can fine tune the content of a macro. The table below lists some of more useful extended codes:

Hex Code	Description
95	Delay 1/10-th of a second
84	Print screen
82	Repeat last item (letter or a macro)
A0	Press & Hold Left Shift
B0	Release Left Shift
A1	Press Right Shift
B1	Release Right Shift
A2	Press Left Control
B2	Release Left Control
A3	Press Left Alt
B3	Release Left Alt
94	Next hex code is ASCII code of a key
93	Next hex code is Scan code of a key

For example <sg> macro for Sidekick (...-.) requires Left and Right shift keys to be held down for a fraction of a second then released. You can create such macro by activating Learn mode, then using ##M macro to enter the following Extended Morse codes (in Hex):

A0 A1 95 95 95 B1 B0

which means: Press-Left-Shift, Press-Right-Shift, Delay 3/10 sec,
Release-R-Shift, Release-L-Shift.

Similarly, one can create a macro which holds Alt key then releases it:

A3 95 95 95 95 B3

Or Control key:

A2 95 95 95 95 B3

It is not necessary to Learn entire sequence in this form (via ##M). Regular Morse codes may be entered from the keyer or the keyboard. The ##M code entry is useful only for those special codes which cannot be entered any other way. The three methods of entry: ##M, keyer and keyboard may be intermixed freely.

EXAMINING DETAILED CODES (##L macro)

You can look at the detailed content of HCD macros using ##L macro. This command lists all of macros in hex format. Extended morse codes (like A0 above) are shown as {A0}. For example the Sidekick <sg> macro will be shown as:

[79] = {A0} {A1} {95} {95} {95} {B1} {B1}

The [79] denotes regular Morse code for <sg> in Hex:

<sg> = ...--.
= 1111001 = 79 (Hex)

Another symbols used by ##L command are (xx) where xx denotes hex value of an ASCII code, and [xx] where xx denotes regular Morse code. For easier reading, regular morse codes for letters are converted to readable letters. The keyboard scan codes are shown as <xx> where xx is hex value of scan code (this is an abbreviated form of 93 xx hex sequence).