

# PS/2 Keyer User's Guide

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## Starting the PS/2 Keyer

1. Attach the *PS/2 Keyer* purple and green male PS/2 connectors to a USB to PS/2 keyboard and mouse adapter.
2. Connect a CW paddle such as a *Benchner* paddle to the *PS/2 Keyer* green female PS/2 connector.
3. Open a *WordPad* window and click on it to make it the current window.
4. Plug the USB to PS/2 adapter into a USB port. All green LEDs should all blink twice. Then the PS/2 keyboard and mouse LEDs will blink during initialization. Next, while PS/2 keyboard LED is blinking, the name of the program, version number, date and time the program was compiled will be typed in the *WordPad* window. Then, while PS/2 mouse LED is lit, the mouse pointer will move in a clockwise circle and then a counter-clockwise circle.
5. The *PS/2 Keyer* is now ready to type in the *WordPad* window with the CW paddle.

## Using the PS/2 Keyer

### Keyboard mode

#### *Typing:*

Type using Morse code on the CW paddle. The program is configured for a right-handed paddle: the left paddle is the *DIT* paddle and the right paddle is the *DAH* paddle. Iambic keying is currently not supported.

#### *Command codes:*

In addition to Morse Code characters, the following command codes are provided.

Using ! to represent the command code . . \_ \_

!S send CAPS LOCK

!E send ENTER

!T erase word

!M switch to mouse mode

!X send F10 key (for the NUE-PSK modem)

!V send program version

!L send license information

!B send brag information

!? send this summary

In addition to !T, six or more *DITs* erases a word by entering the appropriate number of backspaces to the beginning of the word.

## Mouse mode

*clicking mouse buttons:*

- left mouse button – quick tap on left paddle
- middle mouse button – not supported
- right mouse – quick tap on right paddle

*moving mouse pointer:*

- left-right direction – press and hold the left paddle. To change direction, release momentarily the paddle.
- up-down direction – press and hold right paddle. To change direction, release momentarily the paddle.
- four diagonal directions – press and hold a paddle to start moving, then press the other paddle to move along a diagonal. Release momentarily a paddle to change diagonal directions. With a little practice you can move the mouse pointer in a clockwise or counter-clockwise octagonal direction by repeatedly releasing momentarily alternating paddles.
- moving the mouse pointer in the same direction for several seconds causes it to move faster.

*switching to keyboard mode:*

- three slow left clicks

## Serial output

TTL serial output is available at test point TP9 with the following parameters:

bits per second: 9600  
data bits: 8  
parity: none  
stop bits: 1  
flow control: none

This TTL to RS-232 serial adapter has been tested:

- RS-232 Driver Module – DCE  
[http://www.hvwtech.com/products\\_view.asp?ProductID=289](http://www.hvwtech.com/products_view.asp?ProductID=289)

Using an actual RS-232 serial port on a computer is suggested since it avoids USB issues.

These TTL to USB serial adapters have been tested:

- FTDI Basic Breakout – 5V  
[http://www.sparkfun.com/commerce/product\\_info.php?products\\_id=9115](http://www.sparkfun.com/commerce/product_info.php?products_id=9115)
- Breakout Board for CP2102 USB to Serial  
[http://www.sparkfun.com/commerce/product\\_info.php?products\\_id=198](http://www.sparkfun.com/commerce/product_info.php?products_id=198)
- Breakout Board for FT232RL USB to Serial  
[http://www.sparkfun.com/commerce/product\\_info.php?products\\_id=718](http://www.sparkfun.com/commerce/product_info.php?products_id=718)

These serial terminal emulator programs have been tested:

- HyperTerminal – available in Windows XP
- RealTerm  
<http://realterm.sourceforge.net/>
- TeraTerm Pro Web  
<http://www.ayera.com/teraterm/>

## Software development

The *PS/2 Keyer* program was developed using

- MPLAB Integrated Development Environment, MPLAB IDE v8.50  
[http://www.microchip.com/stellent/idcplg?IdcService=SS\\_GET\\_PAGE&nodeId=1406&dDocName=en019469&part=SW007002](http://www.microchip.com/stellent/idcplg?IdcService=SS_GET_PAGE&nodeId=1406&dDocName=en019469&part=SW007002)
- CCS C compiler, PICC 4.107  
<http://www.ccsinfo.com/content.php?page=compilers>
- PICkit 2 Development Programmer/Debugger  
[http://www.microchip.com/stellent/idcplg?IdcService=SS\\_GET\\_PAGE&nodeId=1406&dDocName=en023805](http://www.microchip.com/stellent/idcplg?IdcService=SS_GET_PAGE&nodeId=1406&dDocName=en023805)
- Micro Center Inland Pro USB Converter USB to PS/2 Keyboard and Mouse, SKU: 919712,  
[http://www.microcenter.com/single\\_product\\_results.phtml?product\\_id=0230515](http://www.microcenter.com/single_product_results.phtml?product_id=0230515)

The development operating system was

- Microsoft Windows XP Professional Version 2002 Service Pack 3

Please send all suggestions, modifications, improvements, any other contributions, or just to tell me that you are using the *PS/2 Keyer* to

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Thank you.

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