

# MW24J8-MOD



Code Mercenaries

## USB Mouse/Joystick Hybrid Electronics Module

### 1. Features

- Low Speed USB interface
- Full USB V1.1/2.0 compliance
- Full USB HID 1.1 compliance
- Uses 100K potentiometers for three axis joystick or mouse with scroll function
- Up to 6 buttons supported
- On-the-fly switching between joystick and mouse operation
- Autocalibration and autocentering
- Single +5V power supply

### 2. Functional overview

The MW24J8-MOD comes equipped with MouseWarrior24J8 chips. It allows direct connection of up to three 100k potentiometers and up to 6 buttons.

The axes are used either for cursor control emulating a six button mouse with scroll wheel or as a three axis joystick. Switching between joystick and mouse mode can be done at any time by pulling the mode input low or high.

This allows to use one controller for the user interface as well as for input into specialised control software. By utilizing the USB standard joystick protocol MW24J8 can be easily used via the game controller input functions on any operating system. At the same time the mouse function can be used via the standard mouse driver of the system.

The MW24J8-MOD has been optimized for the use with 100k pots, any significant deviation ( $>\pm 20\%$ ) from this value results in reduced resolution of the axis movement.

### 3. Connecting the electromechanics

The module has the signal names printed next to the solder pads.

K1 is for the connection of the USB cable.

K2 is the group of signals to connect the pots. AZ, AY, AX are the respective center taps for the three pots. All three taps of the pots need to be connected.

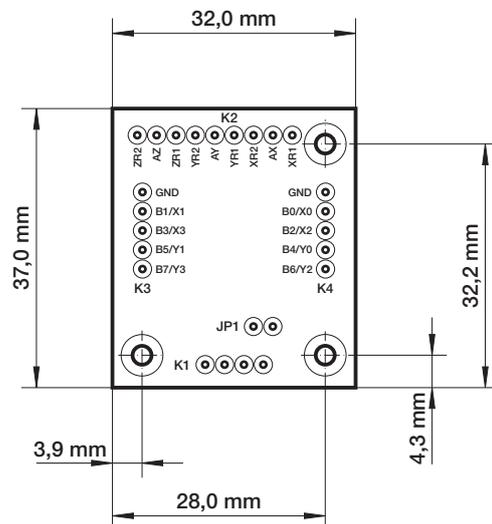
K3 and K4 are for the connection of the buttons. The buttons have to close to GND. Buttons B0 to B5 correspond to the mouse/joystick buttons. B6 is unused, B7 is used to switch between mouse and joystick mode.

JP1 is an optional jumper to enable the Raw mode of the JoyWarrior for testing purposes.

For further details please refer to the MouseWarrior24J8 datasheet.

Soldering wires to the module should be done carefully to avoid separating the pads from the PCB due to overheating or mechanical stress.

### 4. Mechanical dimensions



The mounting holes are 2.5mm in diameter. The solder pad holes are 0.9mm in diameter.

Tolerances:

Hole diameters:  $-0.05 +0.1\text{mm}$

Hole positions:  $\pm 0.05\text{mm}$

Outer contour:  $\pm 0.2\text{mm}$

### 5. FCC / CE

The MW24J8-MOD is sold as a module to be integrated into a device. As such it can not be FCC or CE approved.

Code Mercenaries has exerted greatest care in designing this module to minimize RF emission and assure stable operation. Though the use of proper cable materials and correct integration into a device is crucial to assure product safety and interference free operation.

The integrator who assembles the module into a device has to take care for appropriate testing and safety measures.

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## 6. Ordering information

Partname	Order Code	Description
MouseWarrior24J8-MOD	MW24J8-MOD	Mouse/Joystick Hybrid Electronics

The modules listed here are standard products. Customized modules are available on request.

### 6.1 Packaging info

The modules are produced in larger boards consisting of 56 modules each. For custom versions it is only possible to produce in multiples of 56, though the actual shipping quantity may vary from this as faulty modules may be rejected in production testing.

### 6.2 USB VendorID and ProductID

By default all MouseWarrior24J8 modules are shipped with the USB VendorID of Code Mercenaries (\$7C0 or decimal 1984) and a fixed ProductID.

On request modules can be equipped with the customers VendorID and ProductID. VendorIDs can be obtained from the USB Implementers Forum <[www.usb.org](http://www.usb.org)>

Customized modules are subject to minimum order quantities, contact <[sales@codemerics.com](mailto:sales@codemerics.com)> for details.

Following are the ProductIDs:

MW24J8-MOD                      \$1112

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