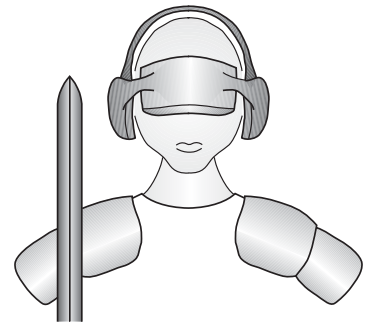


# JW24MOD-A8

## USB Joystick Electronics Module



Code Mercenaries

### 1. Features

- USB interface
- Full USB V1.1/2.0 compliance
- Full USB HID 1.1 compliance
- Three analog potentiometer axes with 8 bit resolution each (100k pots required)
- Available with support for either up to 8 buttons or up to 16 buttons
- Autocalibration and autocentering
- Single +5V power supply

#### 1.1 Variants

JW24MOD-A8-8 supports up to eight buttons which close to Ground.

JW24MOD-A8-16 supports up to 16 buttons arranged in a matrix of 4x4. Diodes are required for proper operation of the matrix.

#### 1.2 Custom variants

Custom adaptations are available on request.

### 2. Functional overview

The JW24MOD-A8-x comes equipped with JoyWarrior24 A8-x chips. It allows direct connection of up to three 100k potentiometers and either up to 8 or up to 16 buttons depending on the JoyWarrior variant used.

The JW24MOD-A8-x has been optimized for the use with 100k pots, any significant deviation ( $\pm 20\%$ ) from this value results in reduced resolution of the joystick 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.

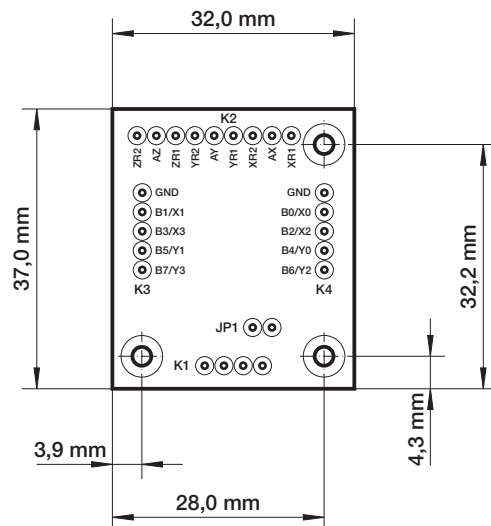
K3 and K4 are for the connection of the buttons. In case of a JW24MOD-A8-8 the buttons have to close to GND. For the JW24MOD-A8-16 the buttons are arranged in a 4x4 matrix. To ensure all buttons can be pressed in any combination it is necessary to insert diodes in series with every button. The cathodes of these diodes have to connect to the Y lines.

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

For further details please refer to the JoyWarrior 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 JW24MOD-A8-x 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.

# JW24MOD-A8

## 6. Ordering information

Partname	Order Code	Description
JoyWarrior24 MOD-A8-8	JW24MOD-A8-8	Joystick electronics for three pots and up to 8 buttons
JoyWarrior24 MOD-A8-16	JW24MOD-A8-16	Joystick electronics for three pots and up to 16 buttons

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 JoyWarrior 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@codemercs.com](mailto:sales@codemercs.com)> for details.

Following are the ProductIDs:

JW24MOD-A8-8	\$1104
JW24MOD-A8-16	\$1105

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Code Mercenaries  
 Hard- und Software GmbH  
 Karl-Marx-Str. 147a  
 12529 Schönefeld OT Grossziethen  
 Germany  
 Tel: x49-3379-20509-20  
 Fax: x49-33790-20509-30  
 Mail: [support@codemercs.com](mailto:support@codemercs.com)  
 Web: [www.codemercs.com](http://www.codemercs.com)

HRB 16007 P  
 Geschäftsführer: Guido Körber, Christian Lucht