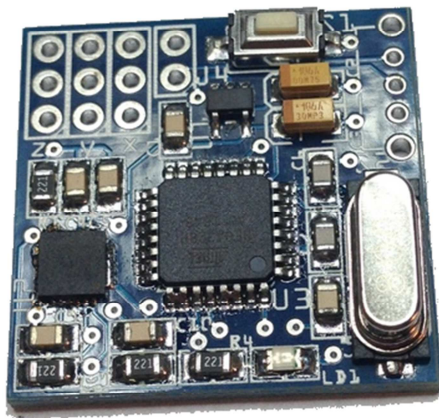
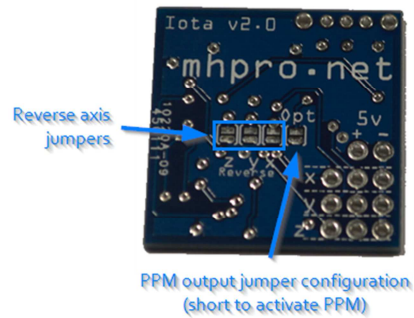
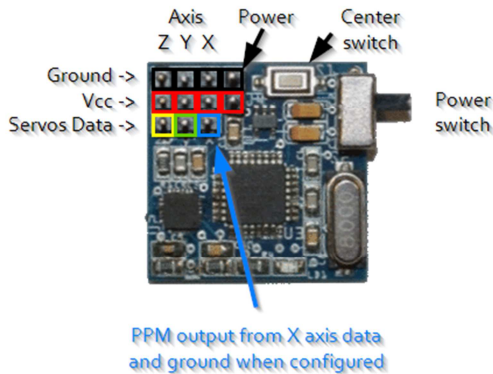


Gyroscope Sensor - Iota V2



This 3 axis motion sensor gyroscope allows you to track the movement of the head or arm and replicate it to servos. For Do It Yourself (DIY) home project lover who dreams of doing a head tracking system FPV themselves cheaply.

This system has been specially designed for DIY in electronics or robotics for students to explore electronics or who want their own system, but are less comfortable with advanced programming of accelerometers. You can use one or more axis (X, Y, and Z) independently. According to your needs.



Using the servos mode (default)

You can use the *Gyroscope Sensor - Iota V2* with servos directly connected to the module. To do that, **DO NOT** shortcut the Opt/PPM jumper underneath the PCB.

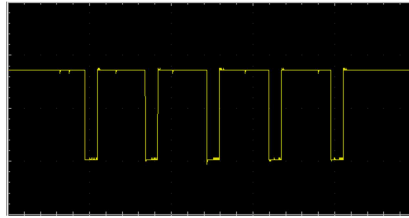
- Powering the Iota (servos)
 - Use the two pins *Power* header to apply servos voltage to the module. Generally 4.8 volts to 6 volts. Note: The 5 volts from USB port is insufficient to power the servos.
- Servos connectors
 - Connect up to three servos according the image above left.

NOTE: To show that the module is in servo mode, the LED will blink twice at start-up and after will have a heartbeat speed of about three seconds.

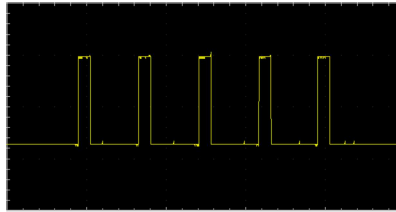
Using the PPM mode

You can use the *Gyroscope Sensor - Iota V2* with PPM output to connect it into the training port of your remote control. To do that, just shortcut the Opt/PPM jumper underneath the PCB. By default, the X, Y and Z axis will placed respectively on channels 5, 6 and 7. You can configure the module to use the 7, 8 and 9 channels (instead of 5, 6 and 7) by shortcutting the Y servo pin (green square on the image) to ground pin (one of the black square pins on the image). **Be sure to have configured the PPM mode before doing that otherwise, you risk to burning out the module.**

By default, the PPM signal is positive signal. Like this:



If your remote need negative signal, shortcut the Z servo pin (Yellow Square on the image) to ground pin (one of the black square pins on the image) and the signal will be reversed like this:



- **PPM stroke calibration**
 - You can determine the stroke of the servo of the three axis like this:
 - Be sure that your remote is in trainee mode.
 - Press the *Center button* while turning on the module.
 - Keep the *Center button* pressed for about 2 seconds.
 - The X axis servo will shake for about one second.
 - Release the *Center button*.
 - The servo will move by little steps in one direction.
 - Press the *Center button* for about 0,5 second to set the limit.
 - The servo will shake for about one second at center.
 - The servo will move by little steps in opposite direction.
 - Again, press the *Center button* for about 0,5 second to set this other limit.
 - The led will flash 5 times to confirm the calibration.
 - NOTE: The 0 – 180 degrees move of each axis of the module will be constrained between these two limits. You can turn off the module without lost these settings.
 - NOTE: The module will track 0 – 180 degrees of travel. However your remote and/or servos can limit this below this range.
- **Powering the Iota (PPM)**
 - Use the two pins *Power* header to apply voltage to the module. It can be 3.7 volts to 6 volts. Note: The 5 volts from USB port is good enough to power the module.

- **PPM output connector**

- Connect your trainee cable (not provided) like this: center tap of the audio jack or data pin to the X axis data pin (blue square on the image) and ground to the outer ring. Please refer to your remote control manual.

NOTE: To show that the module is in PPM mode, the LED will blink four times at start-up and after will have a heartbeat speed of about one second.

Reverse the stroke of the servos

No matter which mode is used you can reverse the direction of servo's rotation for each axis by shortcutting (soldering) the *reverse axis jumpers* located under the PCB.

Center button

Press the *Center button* anytime to center the horizontal (X axis) servo to the middle of its stroke.

Factory reset

To reset PPM stroke calibration data to factory default, turn on the Iota V2 module. After that, press and hold *Center button* for about 8 seconds. The LED will blink shortly three times. The data is now erased.

Note: The Gyroscope Sensor - Iota V2 can take up to 20 seconds to stabilize the X axis after power on.

You need to use the Gyroscope Sensor - Iota V2 in your Arduino project?

No problem, just powering the module and configure it in servos mode and then, connect the three axis pins to three analog pins of your Arduino (and one ground) and use the "analogRead" function. Have fun!