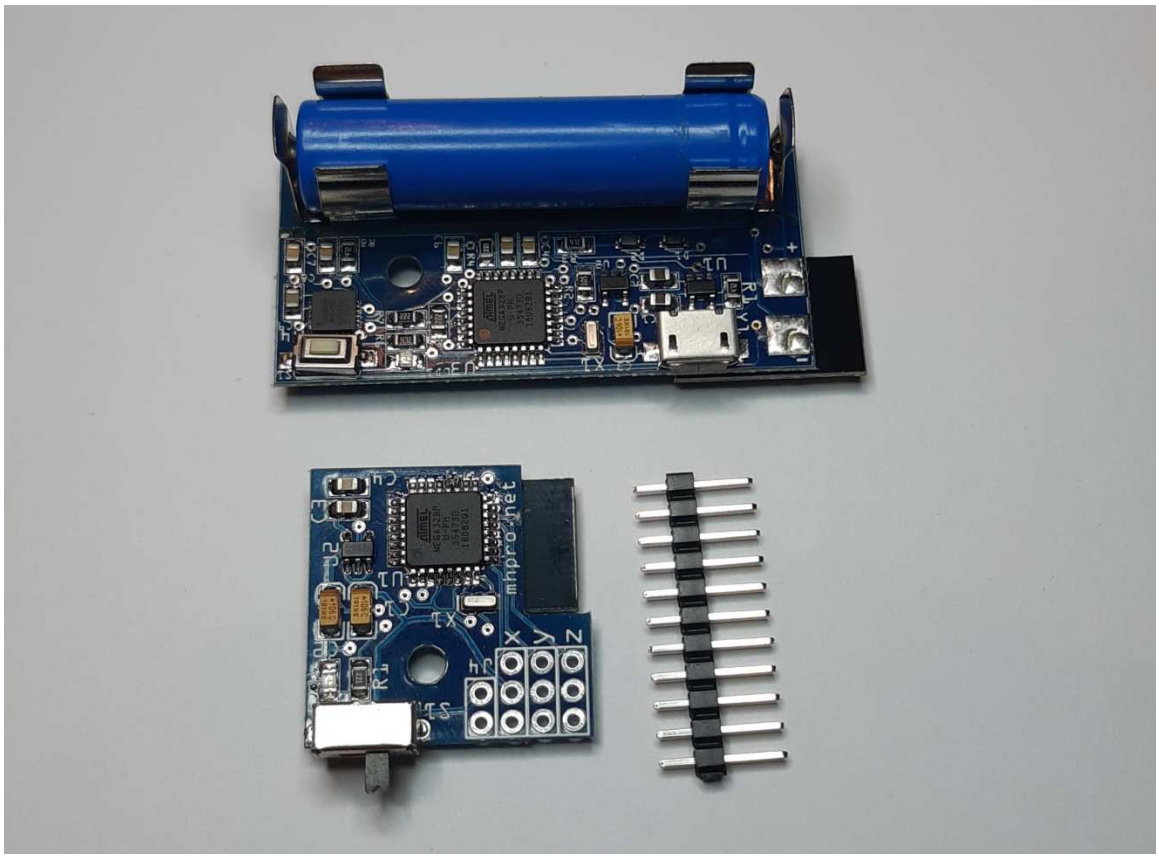
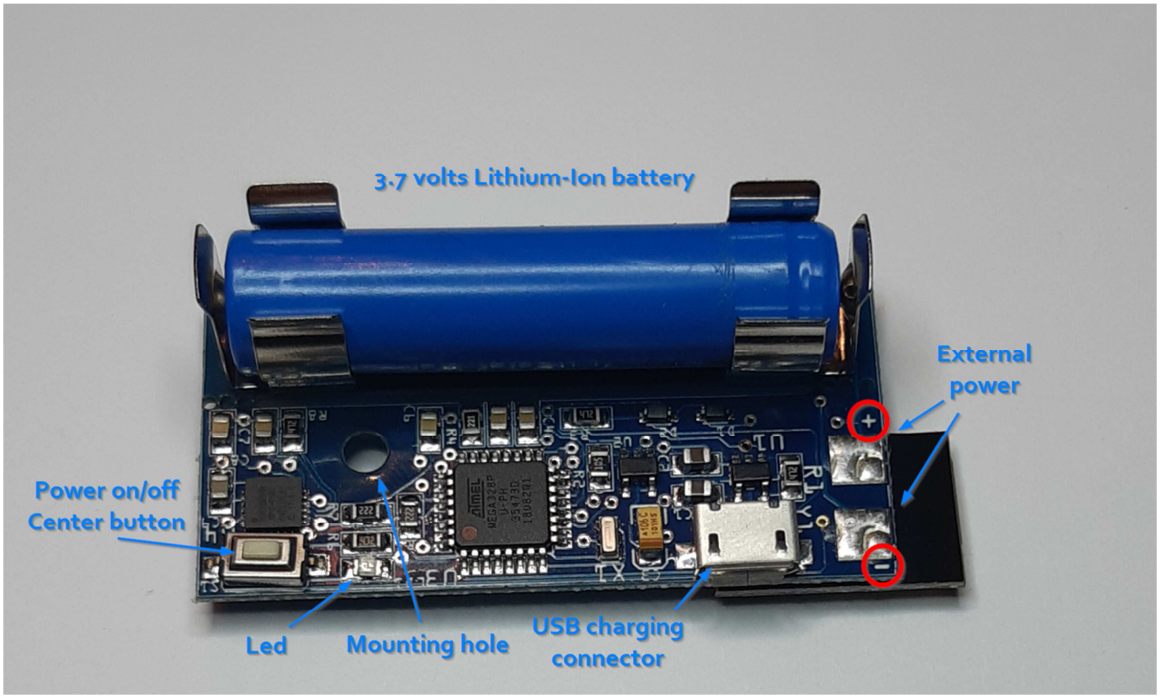
3 Axis Wireless Gyroscope Sensor Zita V2

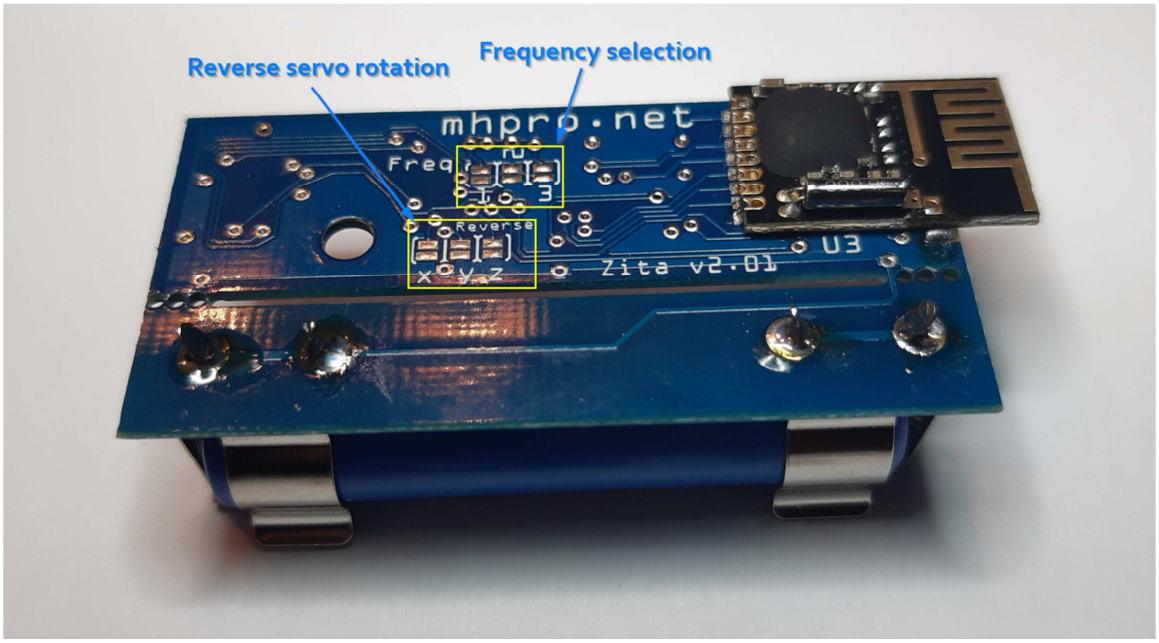


This 3 axis motion sensor gyroscope allows you to track the movement of the head or arm and replicate it to servos by the air (about 30 feet). For Do It Yourself (DIY) home project lover who dreams of doing a head tracking system FPV themselves cheaply.

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.

Emitter

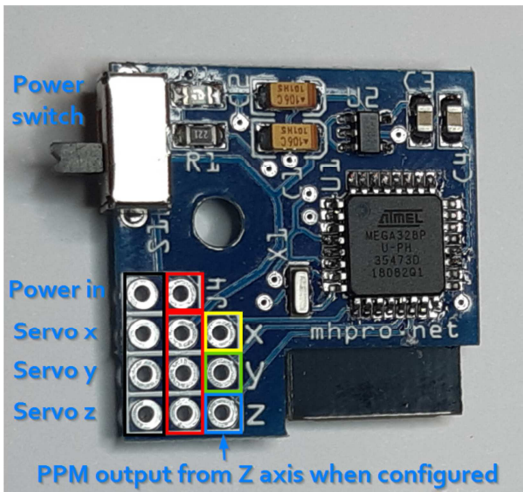


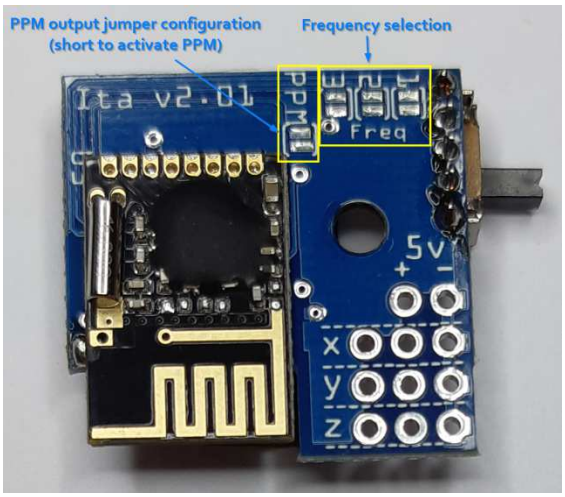


Turn on/off

To turn on the emitter, press and hold down the momentary button for three (3) seconds up to led lights up. To turn off the emitter, press and hold down the momentary button up to the led flash quickly (about three (3) seconds).

Receiver





Using the servos mode (default)

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

- **Powering the receiver (servos)**
  - Use the two pins *Power in* 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.

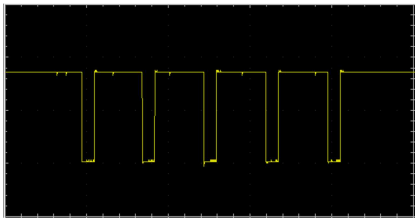
NOTE: To show that the module is in servo mode, the LED will blink twice at start-up and after will have a heartbeat speed of about three seconds.

Using the PPM mode

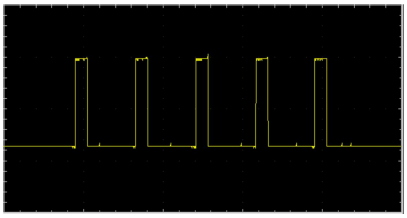
You can use the *Gyroscope Sensor - Zita V2* with PPM output mode to connect it into the training port of your remote control. By default, the X, Y and Z axis will placed respectively on channels 5, 6 and 7. You can configure the module to use the 7, 8 and 9 channels (instead of 5, 6 and 7) by shortcutting 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.**

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

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



If your remote need negative signal, shortcut the X 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:



- **Powering the Receiver in PPM mode**
  - 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 you trainee cable (not provided) like this: center tap of the audio jack or data pin to the Z 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 underneath the PCB of the emitter.

Center button

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

Frequency selection

By default, the *Gyroscope Sensor - Zita V2* communicate at 2.490Ghz frequency. If you want to use another frequency or use more than one kit nearby, you can select frequency by shorting (soldering) the "Freq" jumpers located underneath the PCB of the emitter AND receiver according to the table below. NOTE: The emitter and the receiver should have the same configuration to communicate together.

Freq jumpers (1-3) located underneath of the emitter and receiver			
RF Channel	**1**	**2 (not affect)**	**3**
2.490 Ghz	Open (not shorted)	**Reserved**	Open (not shorted)
2.494 Ghz	Open (not shorted)	**Reserved**	Soldered (shorted)
2.498 Ghz	Soldered (shorted)	**Reserved**	Open (not shorted)
2.502 Ghz	Soldered (shorted)	**Reserved**	Soldered (shorted)

Battery and USB port on the emitter

You can charge the onboard battery of the emitter by connecting a micro USB type B cable to any USB port. It takes about 2 hours to fully charge from fully discharge. A fully charged battery will last over 10 hours of use.

LED activity when charging

If the *Gyroscope Sensor - Zita V2* is turned off and you connect a USB cable, the LED will blink as this: 1 quick blink every 5 seconds mean "battery in charge", 2 quick blinks "battery charged" and 3 quick blinks mean "no battery present". You can turn on and off the *Gyroscope Sensor - Zita V2* when battery is in charge but it is not possible to know the charging status when it is on. Note the charge management is automatic whether the *Gyroscope Sensor - Zita V2* on or off.

Using external power on emitter

If your project already has a power source, you can break (split) the PCB along the battery and connect your power source to the external power tabs by respecting the polarity. The power source can be from 3.7 volts to 7 volts. Applying more than 7 volts on the external power tabs will burnout the module. **Be sure to remove the battery if you use the external power tabs.**

Also, you can supply and use the emitter by the USB port if battery is not present.

You need to use the *Gyroscope Sensor - Zita 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!