

Veracity Control Wheels

Wireless Operation Manual



READ ALL INSTRUCTIONS BEFORE OPERATING.

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Contents

Introduction	4
Unpacking	5
What is in the case?	5
Mounting.....	5
Connections	6
PAN Wheel	6
TILT/ROLL Wheel(s).....	6
Power Requirements	7
Plugging In.....	7
Connectors and Pinouts.....	8
Powering Up.....	8
Veracity PPM (Wired to RC Controller) Operation	9
Veracity Slice (Wireless) Operation	10
Installing the Radio Module onto the Slice.....	10
Switching between MōVI (Standard Gimbal), Ronin and Maxima Modes	12
Veracity Slide Mode Switch	13
MōVI M10/M15/Standard Gimbal (Spektrum Radio) Setup	14
MōVI Pro (Spektrum Radio) Setup.....	16
DJI Ronin (Futaba Radio) Setup.....	18
Maxima (Jeti Radio) Setup	19
Basic Maxima Setup	19
Pairing the Maxima and Veracity Control Wheels.....	24
Slice (Wireless) Zeroing/Drift Correction.....	25
Zeroing/Drift Correction with FoMa Control Software:.....	25
Zeroing/Drift Correction with MōVI App/Software (MōVI Pro App or Freefly Configurator):	26
Gimbal Zeroing Without App/Software:	28
Advanced Gimbal Setup with Deadband Compensation (PLC Veracity Wheels Software).....	29
Troubleshooting.....	33
Pan/Tilt/Roll axes – incorrect axis control or some axes do not work	33
Nothing happens – no lights, no sound, no motion.....	33
Hand Wheels & Radio Controller – do not connect.....	33
Axis Drifting.....	33
Lights When Zeroing – do not switch from red to green.....	33

Tilt/Roll – does not work.....	33
FCC Declaration.....	33
Limited Warranty.....	34
Technical Support.....	34

Introduction

The Veracity Control Wheels System consists of:

- PAN and TILT Wheel modules, mounted together on default baseplate.
- Power cable and module interconnect cable(s).
- Selected choice of radio module (dependent on gimbal used with)
- Road case with foam insert.
- Optionally additional third axis ROLL Wheel, if ordered.

This manual describes necessary setup requirements and how to operate the Veracity Control Wheels.

The Veracity Control Wheels system is a professional digitally controlled hand wheel system for operation of RC style camera gimbal mounts.

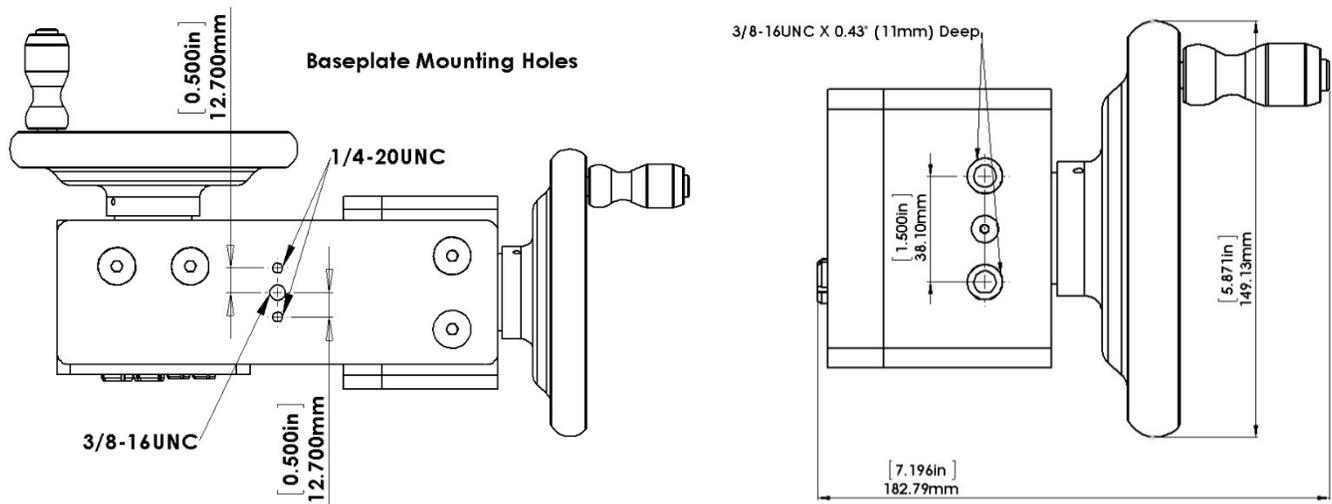
Unpacking

What is in the case?

The first thing to note is the Veracity Control Wheels ship in a customized Pelican Storm™ hard case, so repackaging for field use is not required. The foam cut-outs provide spots for the PAN and TILT modules together on the default baseplate as well as the ROLL wheel, which can be added at any time as an option to the system. There is also space for the power cable, the interconnect cables that connect the modules and the data cable that plugs into the RC camera mounting transmitter.

Mounting

The Veracity Control Wheels basic PAN and TILT modules come pre-mounted on a machined aluminum baseplate. It is easy to mount this plate to any number of commercially available tripods using the centrally located 3/8-16 or 1/4-20 tapped holes. The modules need to be mounted on some platform or riser so the Control Wheels are clear to rotate. If the default mounting plate is not desirable, the individual wheel modules can be removed and mounted as needed via the 3/8-16 hard points on the bottom of the module.

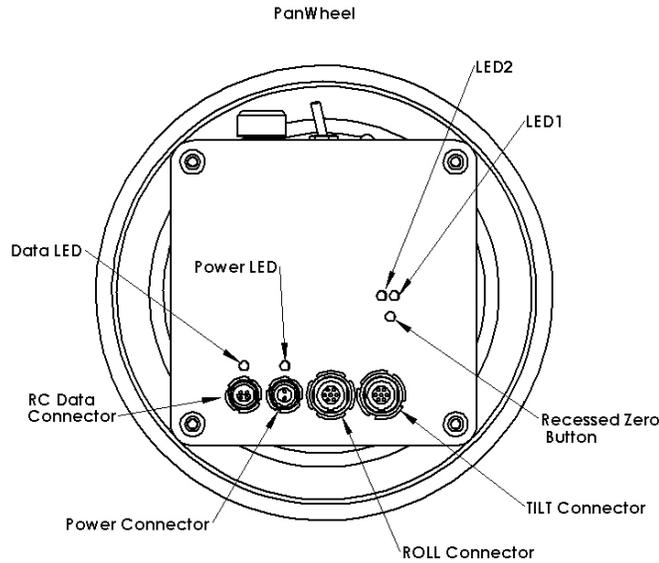


Connections

The Veracity Control Wheels have the following connections:

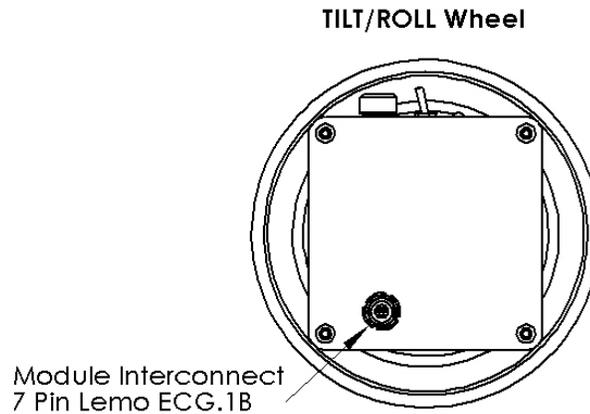
PAN Wheel

The PAN Wheel module is the 'smart' module. It has 4 Lemo connectors on the back of the enclosure. These are for Power, Data, Tilt and Roll as shown. It also has 4 LEDs and a recessed switch on the same face as the connectors.



TILT/ROLL Wheel(s)

The TILT/ROLL Wheel modules are interchangeable and have a single connector on the back of the enclosure. This port connects to the PAN Wheel module, the TILT or ROLL connector determines which the TILT/ROLL Wheel module will be used for.

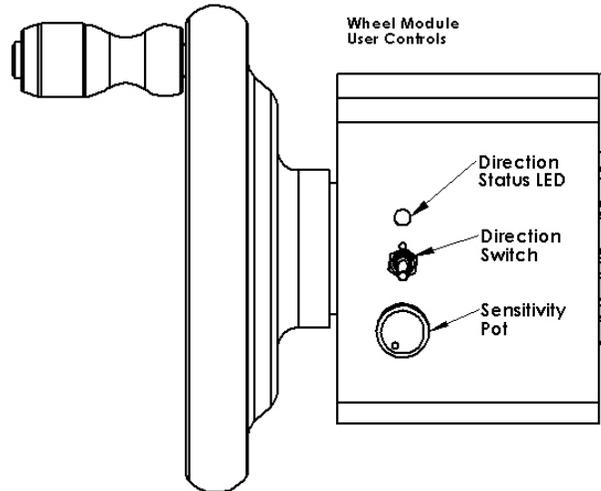


Power Requirements

The Veracity Control Wheels are a 12V or 24V DC system. They are designed to operate with voltages from 8-30V DC with a draw of less than 0.2 A at 12V. The Veracity Wheels system has built in reverse polarity protection and a self-resetting internal fuse in the event of overload.

Plugging In

Before applying power, plug in all the connections except the data plug that connects into the RC transmitter. There are 3 or 4 cables that need to be plugged in to the Pan Module. The slave wheel(s) (TILT and/or ROLL), the data cable (plug into Veracity wheels only before power up, depending on what your RC system requires) and finally the power cable.



The controls are similar to those found on most remote camera mount wheels. The sensitivity pot is an infinite ratio control. The actual wheel to camera ratios will depend on the mount used and the scaling set up in the RC controller. The sensitivity makes the digital pulse stream vary from 0 – 100% when the wheel is turned as fast as possible. It reduces the hand wheel signal according to the pot position.

The direction switch is a three position switch. The center position disables the wheels output. The left and right positions set the direction sense of the wheel.

The LED is green for one direction and red for the other and is off when the wheels are disabled.

Connectors and Pinouts

Data Connector	Lemo	4 pos 0S series	
Pin 1) TX	Pin 2) PPM Out	Pin 3) RX	Pin 4) Gnd
Power Connector	Lemo	2 pos 0B series	
Pin 1) 8-30V DC	Pin 2) Gnd		
Axis 2/3 Port	Lemo	7 pos 1B series	
Pin1) Switch Rev	P2) Switch Fwd	P3) Encoder A	P4) Vcc
P5) Gnd	P6) Encoder B	P7) Speed Pot	

Powering Up

- 1) Apply power to the Veracity Control Wheels either via a battery or power supply (neither are supplied). The Green LED over the power connector should come on immediately. If this does not, you should check your cables and power source.
- 2) The Yellow LED over the data port should come on shortly after power is applied. This LED flashes indicating that data is streaming out the data connector. The Veracity Control Wheels have no way of detecting if it is connected to the RC controller as the communication is a one way stream.
- 3) The wheel direction lights are off in the center position of the direction switch, and red or green depending on the direction selected. These will light up or not on power up accordingly.

Veracity PPM (Wired to RC Controller) Operation

The Veracity Control Wheels stream a PPM (Pulse Position Modulation) signal that is standard on many RC controllers. They are designed to interface with the 'trainer' port commonly available on RC controllers.

Please see the Veracity Wired Manual for more information.

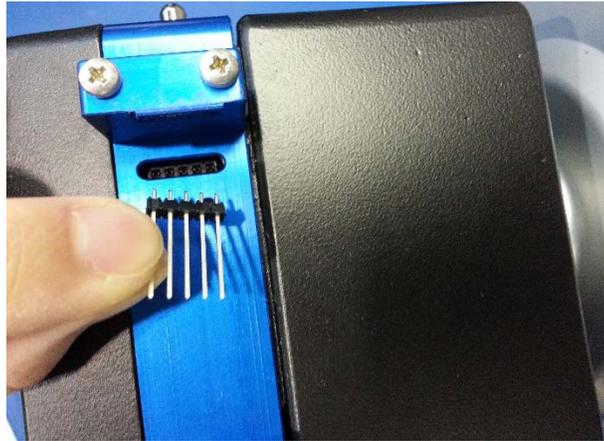
Veracity Slice (Wireless) Operation

The Radio Slice eliminates the need for an RC controller to wirelessly control your camera gimbal system.

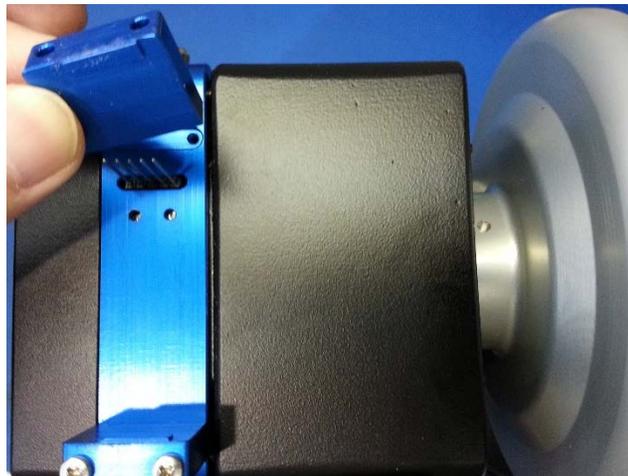
Here is a step-by-step guide to get your **Veracity Slice Control Wheels** set-up with your receiver.

Installing the Radio Module onto the Slice

1. With the Control Wheels **powered off**, insert short end of the **5-pin header** into the Slice receptacle.
***Note: Spare headers included with the Slice can be used in the event pins become bent or broken.

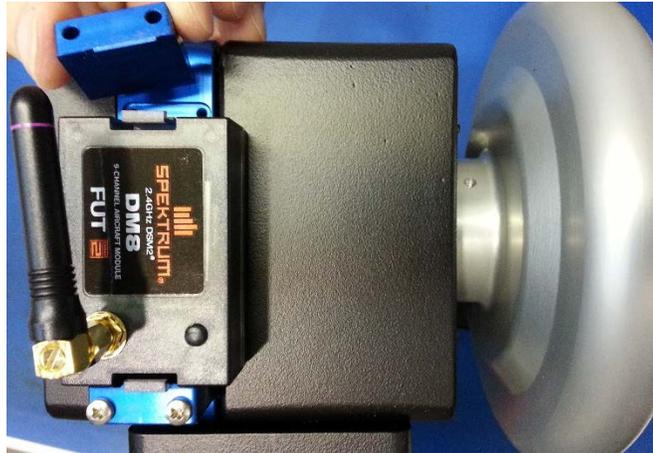


2. Using a Philips screwdriver, remove the two screws on the bracket above the Slice receptacle. Remove the bracket.

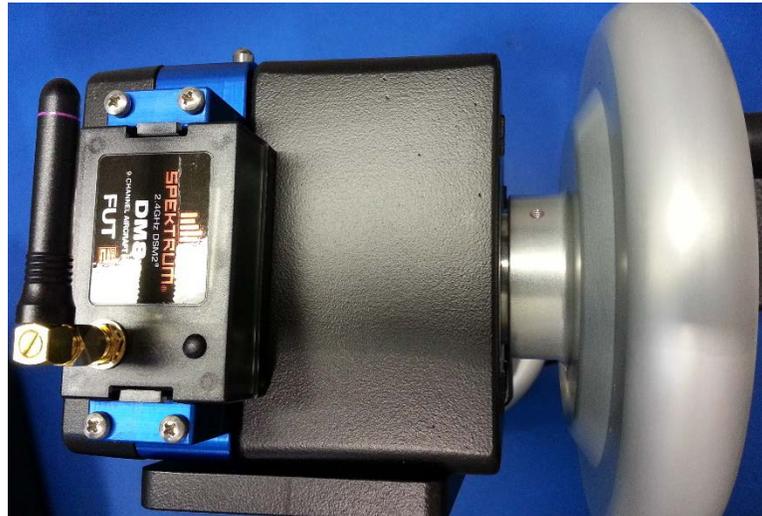


3. Install the **Futaba TM-8**, **Spektrum DM8** or **PLC Jeti** radio module into the slice, guiding the unit radio module **gently** into the **5-pin header**.

***Note: Squeezing the retention clips on the Radio Module may be necessary



4. Replace the bracket and screws.



5. Uninstall in reverse order (if required).

Switching between MōVI (Standard Gimbal), Ronin and Maxima Modes

Users can select between MōVI mode, Ronin mode and Maxima mode by following the steps below:

1. With the system powered off:
 - **MōVI/Ronin Mode:** To select **MōVI or Ronin Mode**, ensure all **Direction Switches** for the Pan, Tilt and Roll wheels are **CENTERED, in the OFF position**. With the **Roll Trim Switch** on the blue Slice section held **away from the wheel for MōVI Mode and towards the wheel for Ronin Mode**, power on the system.
 - **Maxima Mode:** To select **Maxima Mode** ensure **Direction Switches** for the Pan and Roll (if connected) wheels are **CENTERED, in the OFF position**. **Set the Tilt wheel Direction Switch in the FORWARD position**. With the **Roll Trim Switch** on the blue Slice section held **in either direction**, power on the system.



2. The mode will be indicated at start-up to the user through the **Pan wheel STATUS LED**
 - **MōVI (Spektrum) = Green** STATUS LED flashes green 4 times on start-up
 - **Ronin (Futaba) = Red** STATUS LED flashes red 4 times on start-up
 - **Maxima (Jeti) = Orange** STATUS LED flashes orange 4 times on start-up

The mode selection is stored in memory and will be recalled on power-up every time.

Veracity Slide Mode Switch

The MODE switch function varies depending on whether the Veracity Control Wheels are in MōVI mode, Ronin mode or Maxima mode.

MōVI (Standard Gimbal)

With the unit in MōVI Mode, the operator has access to 3 mode-select options using the **MODE select switch**.

- **MODE 0 - Off**
- **MODE 1 - Majestic Mode**
- **MODE 2 - Remote Mode**

Ronin

With the unit in Ronin Mode, the operator has access to 3 mode-select options using the **MODE select switch**.

- **MODE 0 - Reset**
- **MODE 1 - Follow Mode**
- **MODE 2 - 2-Person Mode**

Maxima

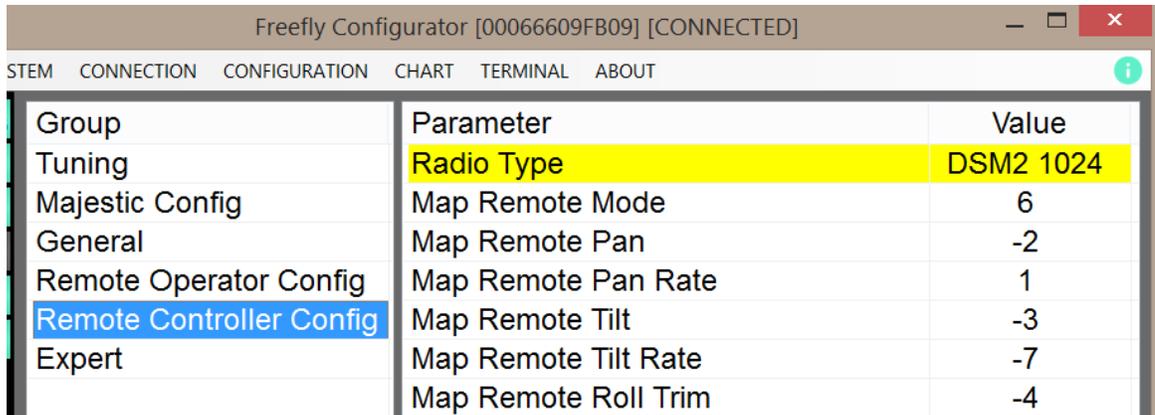
With the unit in Maxima Mode, the operator has access to 3 mode-select options using the **MODE select switch**.

- **MODE 0 - Off**
- **MODE 1 - Remote Mode (Low Speed)**
- **MODE 2 - Remote Mode (High Speed)**

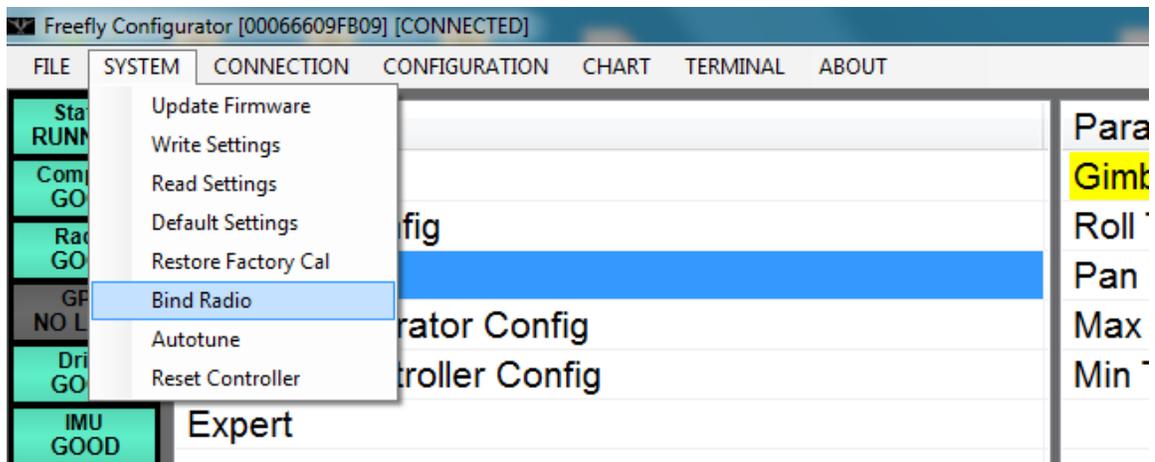


MōVI M10/M15/Standard Gimbal (Spektrum Radio) Setup

1. Ensure the **Spektrum DM8 Radio Module** is installed onto the slice.
2. **Power on** the MōVI System and ensure no other Spektrum Radio Controllers are powered on.
3. From the **Freefly Configurator Program** on your computer, place the receiver in the “Bind” state by doing the following (See your Gimbal User Manual for model-specific instruction):
 - a. From your operating system, pair your MōVI with your PC via Bluetooth
 - b. Click **CONNECTION -> Select Bluetooth...**
 - c. Select the Receiver radio from the list of Bluetooth devices.
 - d. Click **CONNECTION -> Connect...**
 - e. Click **CONFIGURATION...** Then click **Remote Controller Config.**
 - f. Ensure “**DSM2 1024**” is the selected **Radio Type**. *****This is very important*****



- g. Click **SYSTEM -> Bind Radio...**



- h. Turn the MōVI System off and on again to place it in a “Bind” state.

4. With the Veracity & Spektrum Slice Control Wheels **powered off** and the Spektrum DM8 Radio Module installed, **hold down the push-button on the DM8** Radio Module and power-on the Veracity Control Wheel System.



5. The radio light on the DM8 should initially flash red to indicate an attempt to bind, then it should arrive at a solid light once bound.
6. See “**Switching between MōVI (Standard Gimbal), Ronin and Maxima Modes**” to ensure the wheels are in MōVI Mode.
7. See the section on “**Slice (Wireless) Zeroing/Drift Correction**” to rectify any drifting issues.
8. To mitigate the effects of Deadband and improve wheel responsiveness. See the section “**Advanced Gimbal Setup with Deadband Compensation (PLC Veracity Wheels Software)**”

MōVI Pro (Spektrum Radio) Setup

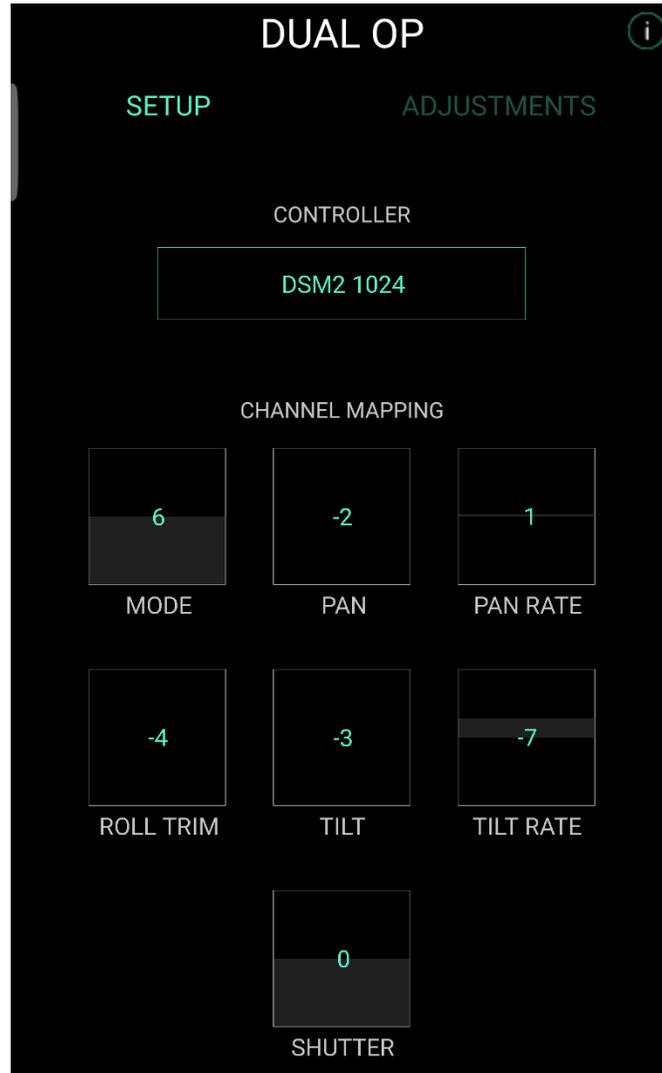
1. Please ensure the MōVI Pro Firmware is up to date and you have the latest version of the App. – Visit the Freelyfly website for additional information.
2. Ensure the **Spektrum DM8 Radio Module** is installed onto the slice.
3. Connect the pre-paired **Spektrum DSMX Remote Receiver Module (SPM9645)** to the MōVI Pro using the **MōVI Pro COM to Spektrum Cable**.



4. Power on the MōVI Pro and through the **MōVI Pro app**, connect using an iOS or Android device.

5. From the MōVI Pro app, in the **CONFIGURATIONS > DUAL OP** menu, Select **DSM2 1024** and set the following channel assignments under the Channel Mapping section:

- **MODE: 6**
- **PAN: -2**
- **PAN RATE: 1**
- **ROLL TRIM: -4**
- **TILT: -3**
- **TILT RATE: -7**



6. See “**Switching between MōVI (Standard Gimbal), Ronin and Maxima Modes**” to ensure the wheels are in **MōVI Mode**.
7. See the section on “**Slice (Wireless) Zeroing/Drift Correction**” to rectify any drifting issues.
8. To mitigate the effects of Deadband and improve wheel responsiveness. See the section “**Advanced Gimbal Setup with Deadband Compensation (PLC Veracity Wheels Software)**”

DJI Ronin (Futaba Radio) Setup

1. Ensure the **Futaba TM-8 Radio Module** is installed onto the slice.
2. **Power on** the DJI Ronin and ensure no other Futaba Radio Controllers are powered on.



3. With the Futaba TM-8 Radio Module installed, **power on** the Veracity & Futaba Slice Control Wheels.
4. **Using a pointed (but not sharp) object**, hold down the **BIND** button on the **DJI Ronin**.

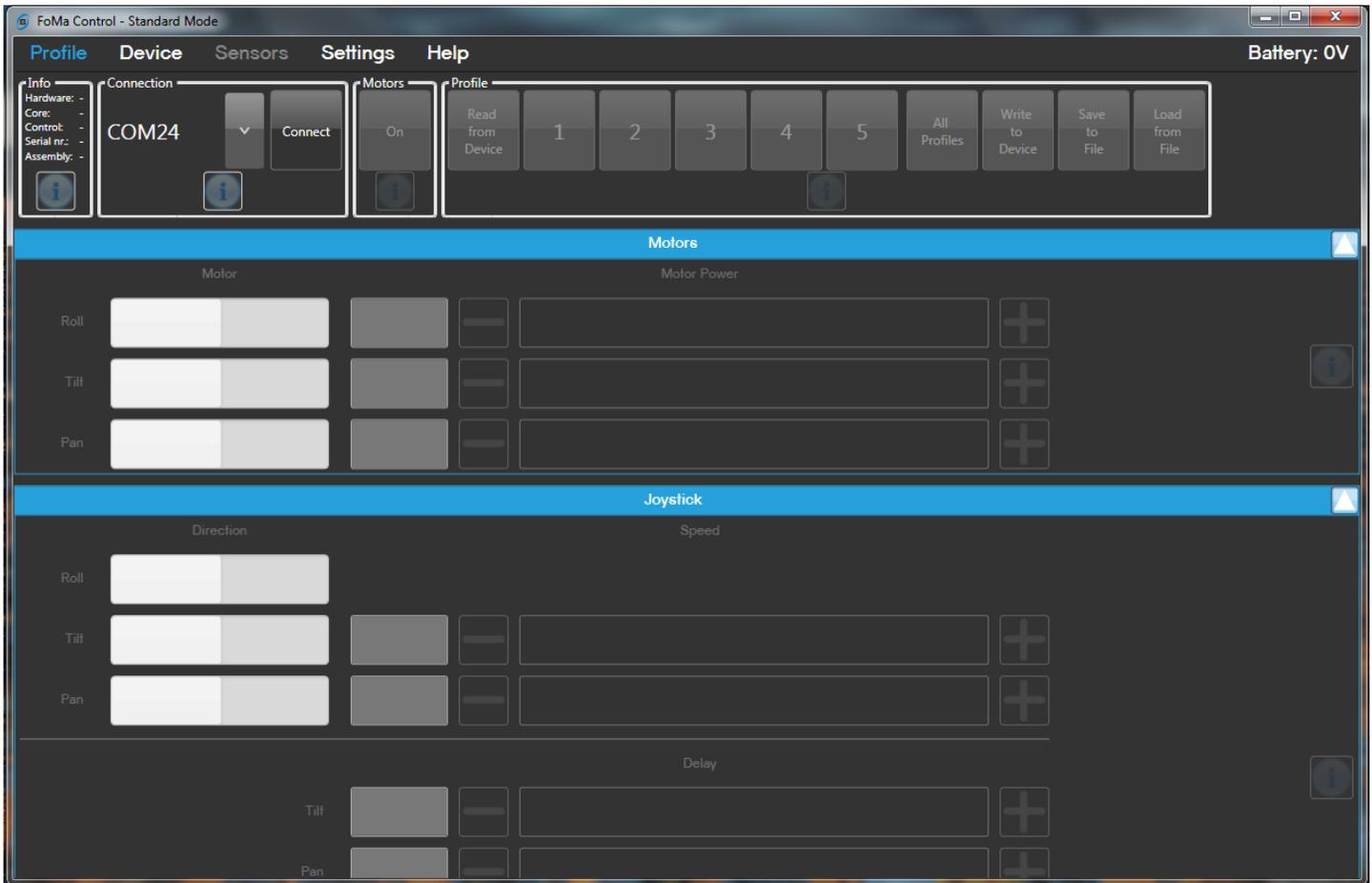


5. The Bind LED on the Ronin should initially flash to indicate an attempt to bind, then should arrive at a solid light once bound.
6. See “**Switching between MōVI (Standard Gimbal), Ronin and Maxima Modes**” to ensure the wheels are in Ronin Mode.
7. See the section on “**Slice (Wireless) Zeroing/Drift Correction**” to rectify any drifting issues.
8. To mitigate the effects of Deadband and improve wheel responsiveness. See the section “**Advanced Gimbal Setup with Deadband Compensation (PLC Veracity Wheels Software)**”

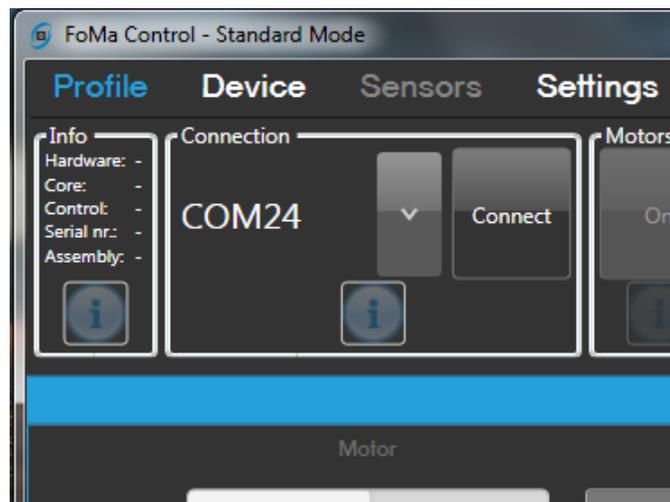
Maxima (Jeti Radio) Setup

Basic Maxima Setup

1. Launch the MAXIMA Setup Software.



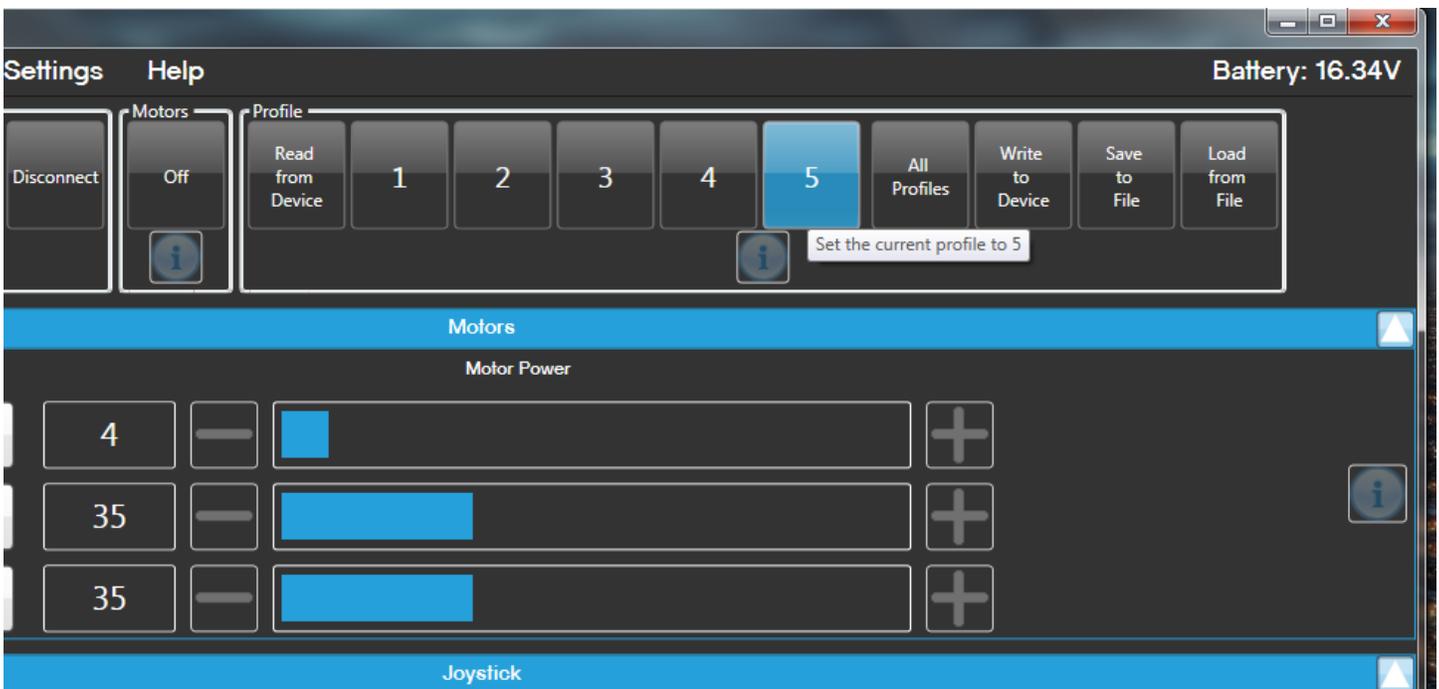
2. Connect a USB cable between the Maxima gimbal and the computer. Power on the Maxima gimbal and click **Connect**.



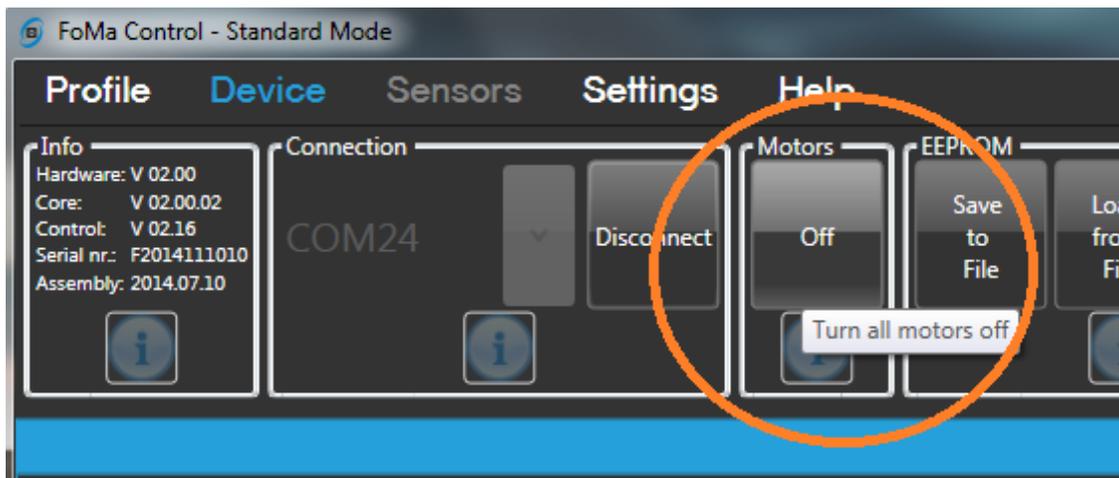
3. Once the Maxima gimbal is connected, configuration boxes should no longer be grayed out.



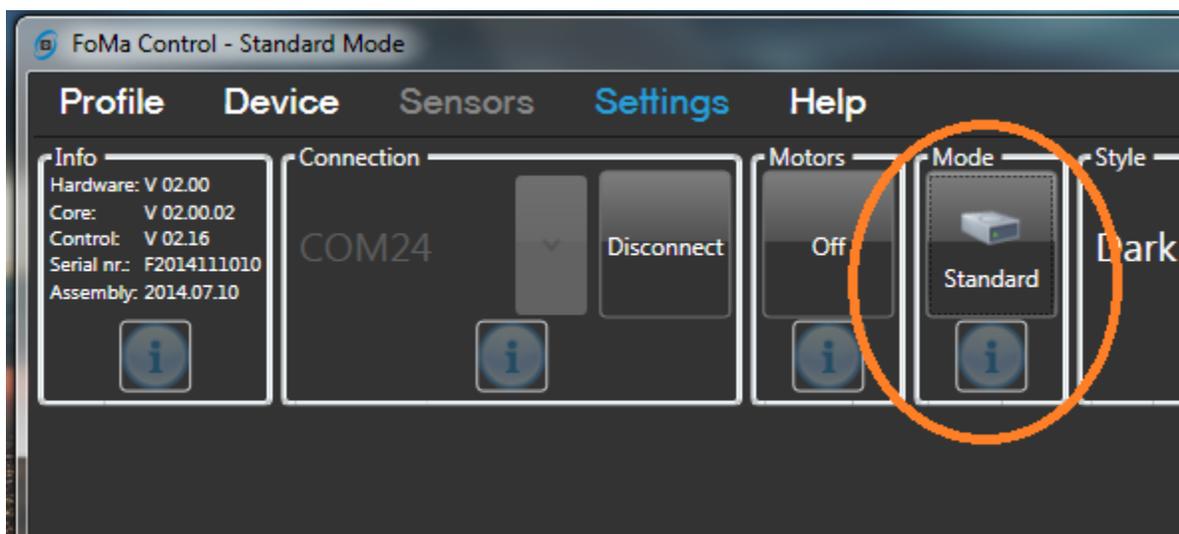
4. When the head is connected there are 5 profiles that can be modified. These correspond to the 5 profiles that are saved in the Maxima gimbal itself that can individually be chosen via the OLED screen and menu. For the purpose of the setup, **Profile 5** will be modified.



5. You can chose to turn **ON** or **OFF** the PAN / TILT / and ROLL axis motors using the Motors On/Off Button as seen below. It is recommended to keep the motors OFF until the profile has been fully configured and turned back **ON** during the **Zeroing/Drift Correction** procedure. ***Note: When connected to a PC through USB, motors are always enabled.

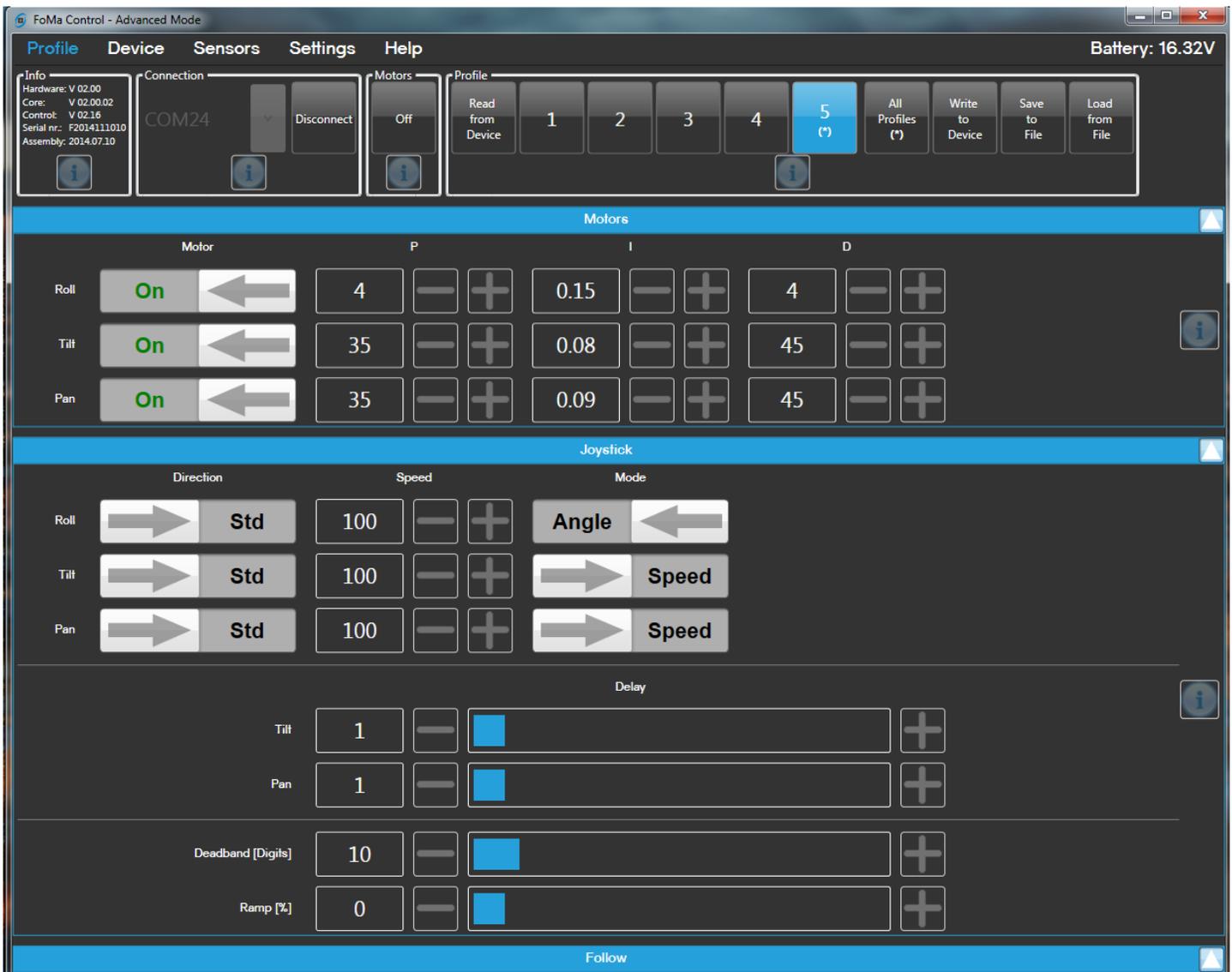


6. Switch to **Advanced Mode** by Clicking the **Standard/Advanced** button from the **Settings > Mode** Menu.



7. Recommended Maxima Profile Settings (FoMa Control 3.0.0.59):

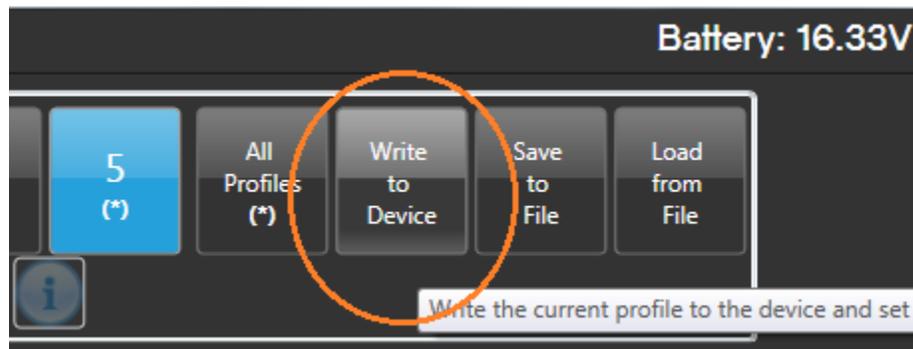
- **Profile > Motors:** Dependent on Camera Setup (weight/size) - See Maxima User Manual
- **Profile > Joystick:**
 - Speed: **100** (for Pan, Tilt and Roll)
 - Mode: **Speed** (for Pan, Tilt and Roll) ***If no roll wheel, set to **Angle*****
 - Delay: **2** (for Pan, Tilt and Roll) – Higher values increase smoothness but add input delay
 - Joystick Deadband: **between 2-10***
 - *Set Joystick Deadband as low possible such that no drift can be seen. This value is best set after the **Zeroing/Drift Correction** process.
 - Ramp: **0**
- **Profile > Follow:** Leave at default, can be changed as needed to fine-tune Follow Mode.
- **Device > Joystick:**
 - Offset: **0** (for Pan, Tilt and Roll)
- **Device > Filters:** Optional for noise/vibration reduction - See Maxima User Manual



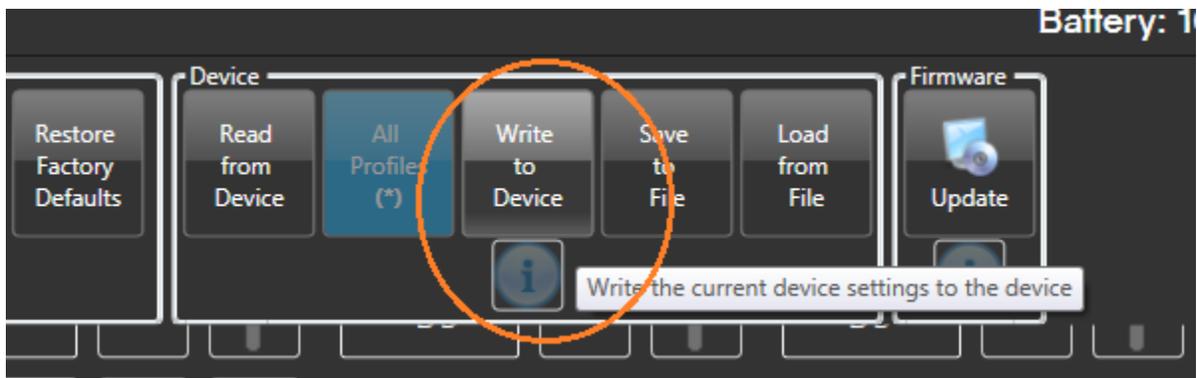


*****Note:** These setting values are chosen to mitigate drift, optimizing speed and responsiveness when used with the **PLC Veracity Wheels Software** application. As a general rule of thumb, if you increase axis **Speed** values, **Joystick Deadband** will have to be increased to prevent drift. In order to mitigate the effects of **Deadband**, complete the **Advanced Setup with Deadband Compensation** procedure using the PLC Veracity Wheels Software.

8. From the **Profile > Profile Menu**, click **Write to Device**.



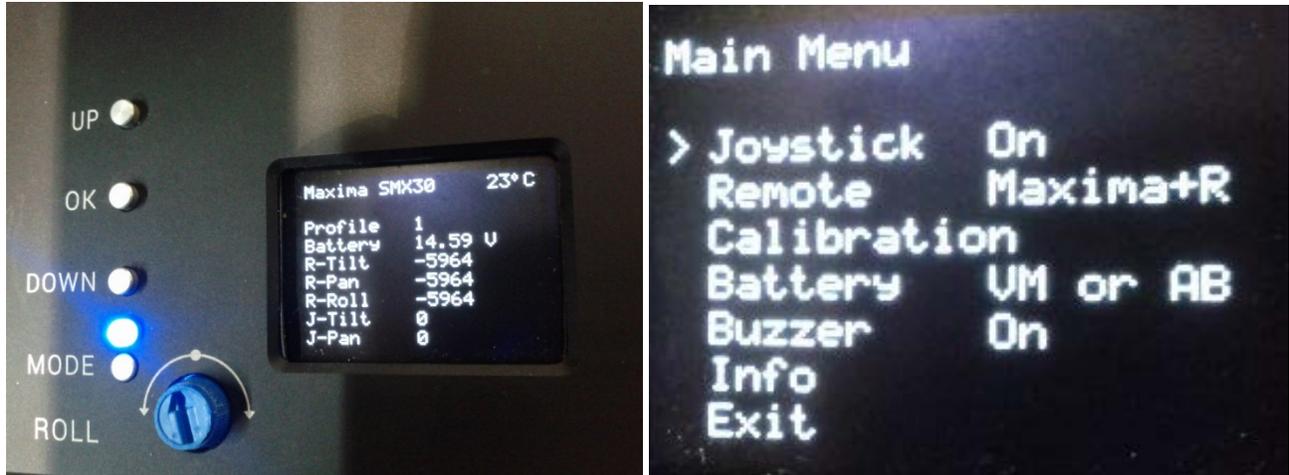
9. From the **Device > Device Menu**, click **Write to Device**.



10. Ensure the **Jeti Radio Module** is installed onto the slice.

Pairing the Maxima and Veracity Control Wheels

1. See “**Switching between MōVI (Standard Gimbal), Ronin and Maxima Modes**” to ensure the wheels are in Maxima Mode.
2. To bind the Maxima gimbal to the Veracity Wheels, power on the Maxima and Press the **OK** button to get to the Main Menu.



3. Scroll down to ‘**Remote Pairing**’ and press the OK button. *****Once in this mode you have 10 seconds to complete the next step.**



4. After 5 seconds, you will hear a “beep” from the Maxima. Power-on the Veracity Wheels with the **Zero Button** (located on the back of the PAN Wheel) held down and release after hearing a second beep. The Jeti Radio Module will automatically bind to the Maxima gimbal.
5. See the section on “**Slice (Wireless) Zeroing/Drift Correction**” to rectify any drifting issues.

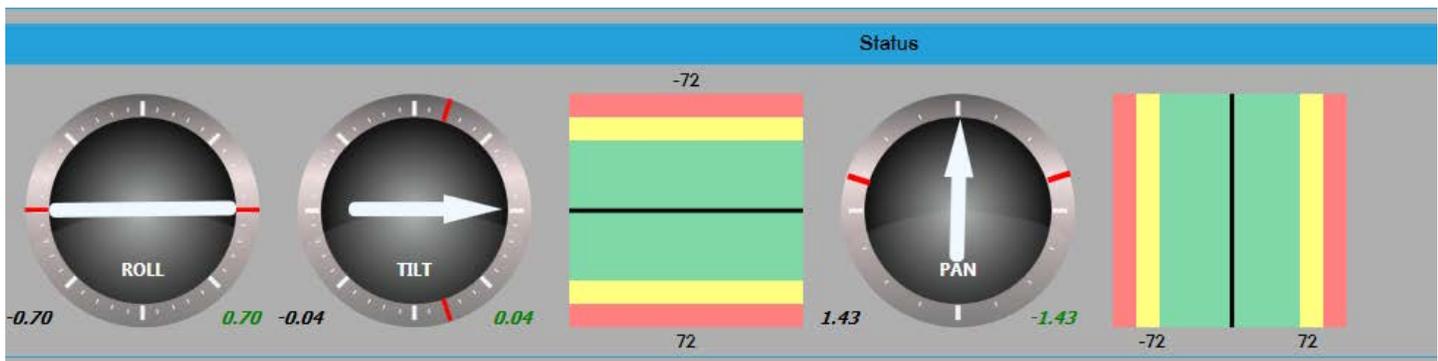
Slice (Wireless) Zeroing/Drift Correction

You may notice that when Veracity Control Wheels are connected to your gimbal system, a constant 'drift' or movement in a direction occurs in any of the 3 axes. This 'drift' is due to the Wheels sending a signal for motion when it should not be. If you are experiencing this, the following steps will correct it.

*****Note:** Zeroing will need to be performed with each gimbal that is used, as the offsets required will vary.

Zeroing/Drift Correction with FoMa Control Software:

1. Switch all axis direction switches to the center position and set the **Sensitivity Dials** into the center of their range.
2. Press and hold the **Zero Button** located on the back of the PAN Wheel, until you notice the direction LEDs on each axis start flashing Red and Green. The system is now in **Zeroing Mode**.
3. From the **FoMa Control** software, in the **Profile > Joystick** menu, set Joystick **Deadband [Digits]** to **0** and **Write to Device** to save the setting to the Maxima.
4. Ensure the motors are turned **on** from the **Device > Motors** menu.
5. Live positional values for Pan, Tilt and Roll input can be viewed under the **Device > Status** menu.



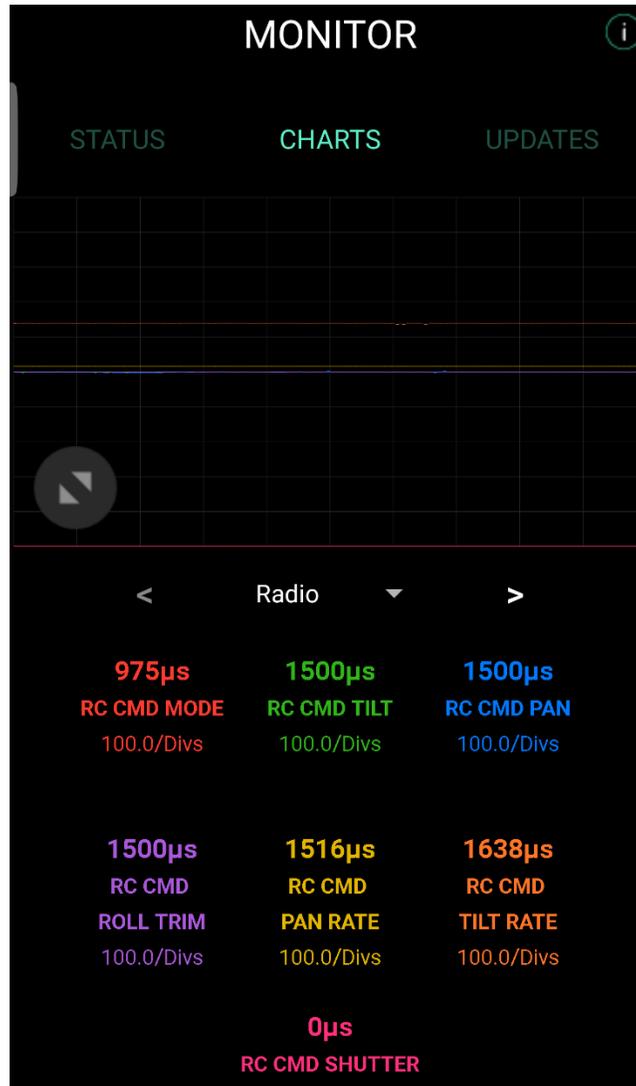
1. Using the each wheel's **Sensitivity Dial**, adjust for the drift such that
 - a. almost no drift can be visually seen from the Maxima itself and
 - b. The positional Status values for Pan, Tilt and Roll (optional) show minimal change.
2. Some unresolvable drift may still be visible from the previous step, but will be eliminated by increasing the **Deadband [Digital]** value between **2-10** and **Write** the setting to the Maxima. Lower Deadband values are better so long as no drift is observed.
3. To mitigate the effects of Deadband and improve wheel responsiveness. See the following section "**Advanced Gimbal Setup with Deadband Compensation (PLC Veracity Wheels Software)**"

*****Note:** If the **Sensitivity dial** reaches the endpoint of its rotational range with its axis still drifting:

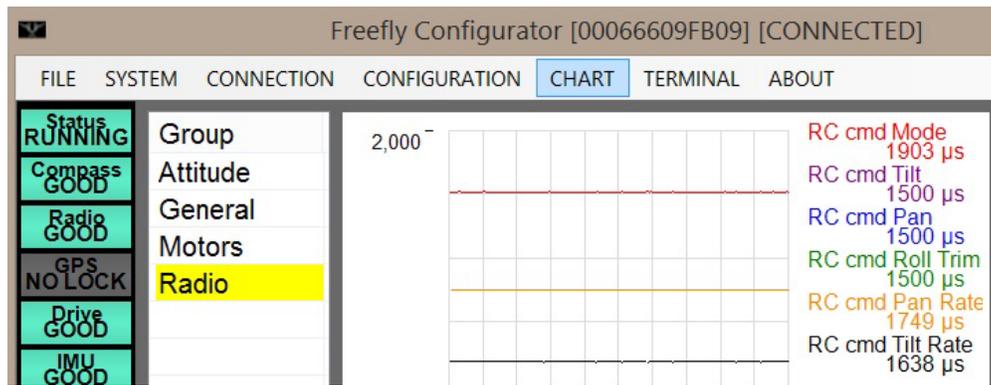
1. Press and hold the **Zero Button** to exit from Zeroing Mode.
2. **Re-center the Sensitivity Dial.**
3. Press and hold the **Zero Button** to get back into **Zeroing Mode** and continue to adjust for drift.

Zeroing/Drift Correction with MōVI App/Software (MōVI Pro App or Freely Configurator):

1. Switch all axis direction switches to the center position and set the **Sensitivity Dials** into the center of their range.
2. Press and hold the **Zero Button** located on the back of the PAN Wheel, until you notice the direction LEDs on each axis start flashing Red and Green. The system is now in **Zeroing Mode**.
3. From the gimbal system software, enter the monitoring screen to view signal data. ***From the MōVI Pro app, this can be found under MONITOR > CHARTS > Radio***



- Click **CHARTS**, then under the **Radio** submenu, you can view a chart streaming the signal data. The “**RC cmd Tilt**”, “**RC cmd Pan**” and “**RC cmd Roll Trim**” should be at **1500 µs**. This equates to the gimbal seeing a “zero/centered” input.
- a. Using the **Sensitivity Dial** on each wheel, adjust the signal so that the **RC cmd** value for the corresponding wheel is at **1500 µs** and no drift can be seen.
 - Pan Wheel = “RC cmd Pan” = 1500 µs
 - Tilt Wheel = “RC cmd Tilt” = 1500 µs
 - Roll Wheel = “RC cmd Roll Trim” = 1500 µs (*If connected to optional Roll Wheel)



4. Once the drift has been corrected, press and hold the **Zero Button** until the LEDs stop flashing and are lit solid, then release. The LEDs will go off. The new offsets will be stored in the Veracity Control Wheels flash memory.

*****Note:** If the **Sensitivity dial** reaches the endpoint of its rotational range with its axis still drifting:

1. Press and hold the **Zero Button** to exit from Zeroing Mode.
2. **Re-center the Sensitivity Dial.**
3. Press and hold the **Zero Button** to get back into **Zeroing Mode** and continue to adjust for drift.

Gimbal Zeroing Without App/Software:

1. Switch all axis direction switches to the center position and set the **Sensitivity Dials** into the center of their range.
2. Press and hold the **Zero Button** located on the back of the PAN Wheel, until you notice the direction LEDs on each axis start flashing Red and Green. The system is now in **Zeroing Mode**.
3. Note the direction, rate of movement and axis of the drift on your gimbal. Using the **Sensitivity Dial** on each wheel, adjust the signal until no drift can be seen on each axis.
4. Once the drift has been corrected, press and hold the **Zero Button** until the LEDs stop flashing and are on solid, then release. The LEDs will go off. The new offsets will be stored in the Veracity Control Wheels flash memory.

*****Note:** If you do not have a Roll Wheel but do have a Blue Slice (with Roll Trim), plug the Tilt/Roll Wheel into the Roll Wheel connector, zero out this axis, press the Zero Button as in step 4 and power off the unit. Now plug the Tilt/Roll Wheel into the Tilt Wheel connector, power up the unit and calibrate the tilt and pan axis. If the Tilt/Roll Wheel is unplugged while the unit is powered the settings will return to default.

*****Note:** If the **Sensitivity dial** reaches the endpoint of its rotational range with its axis still drifting:

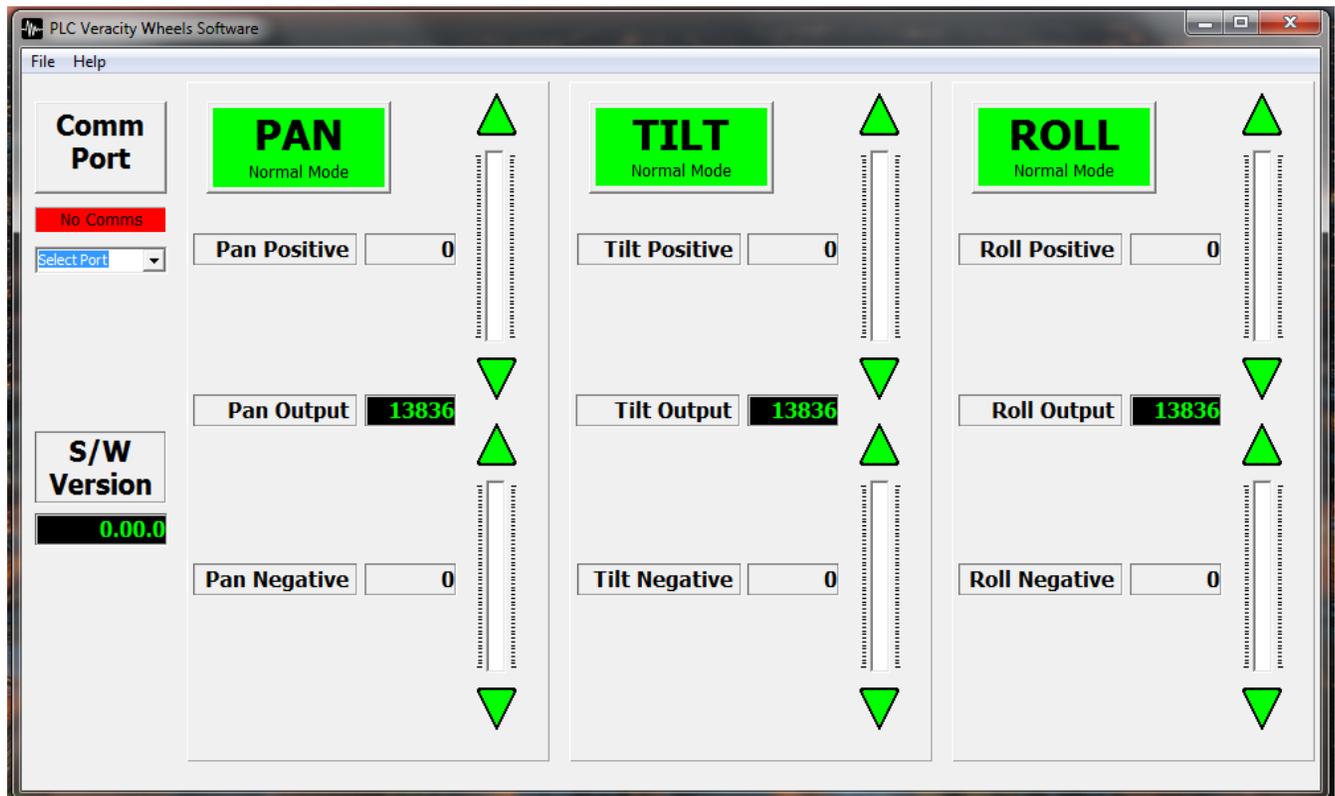
1. Press and hold the **Zero Button** to exit from Zeroing Mode.
2. **Re-center the Sensitivity Dial.**
3. Press and hold the **Zero Button** to get back into **Zeroing Mode** and continue to adjust for drift.

Advanced Gimbal Setup with Deadband Compensation (PLC Veracity Wheels Software)

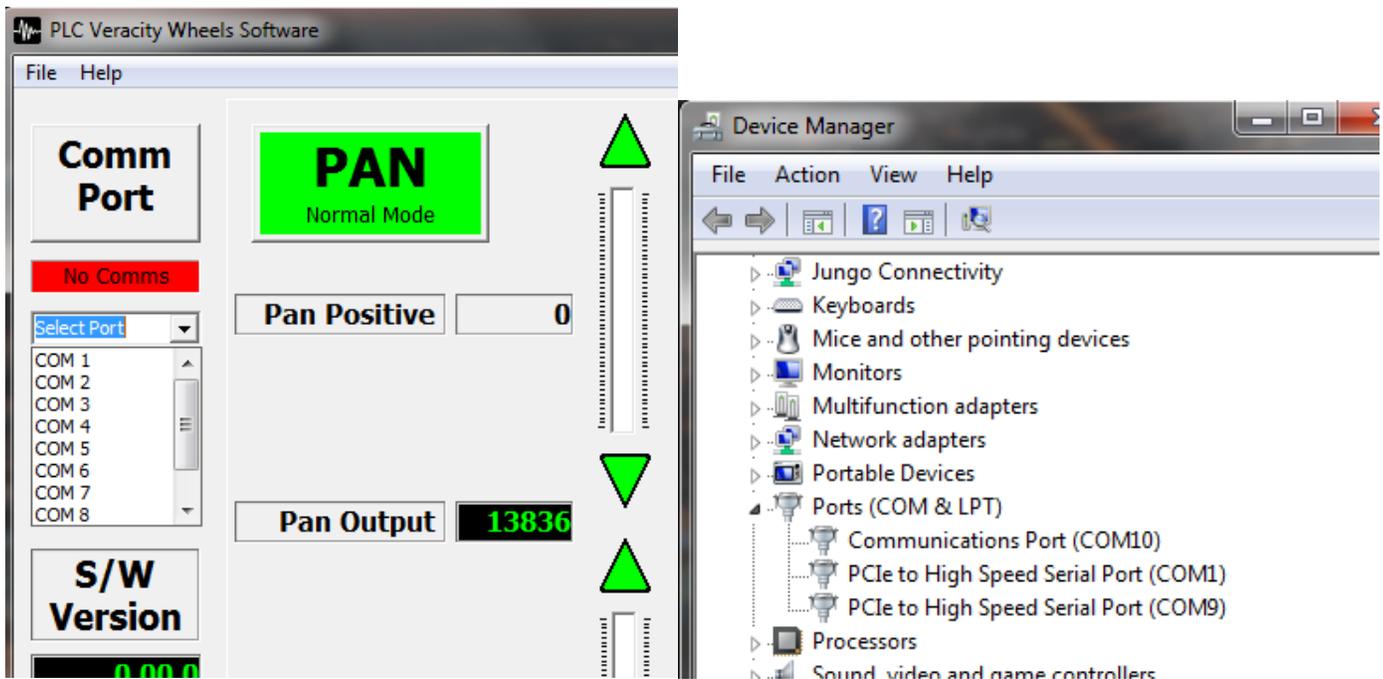
Important: This software requires a Windows PC with a DB9 Serial port (or a USB to DB9 adapter). This also requires **Veracity Firmware Version 4.09.1 or higher**. Please visit our website for software downloads and more information on updating your firmware to the latest version.

Completing this procedure will minimize the effects of Deadband, minimizing drift, while increasing wheel motion responsiveness. This especially useful for low-speed shots and detailed movement.

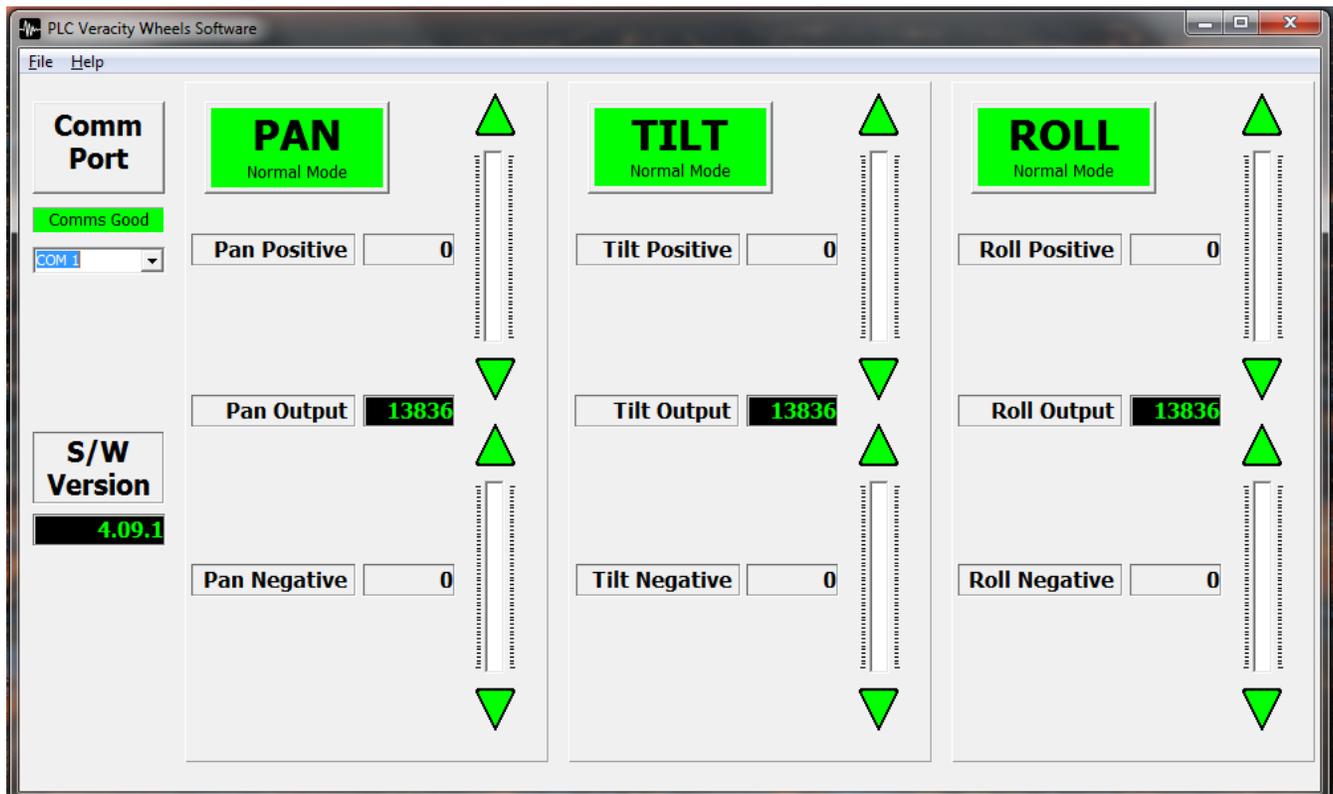
1. Ensure you have completed the basic gimbal setup procedures including zeroing from the previous sections and ensure your wheels and Maxima are currently powered-on and communicating with **Motors On**.
2. Once the Gimbal and Wheels have been zeroed, connect your PC to the Veracity wheels via the DB9 **Serial Data Cable** (PLC940-0029).
3. Launch the **PLC Veracity Wheels Software**.



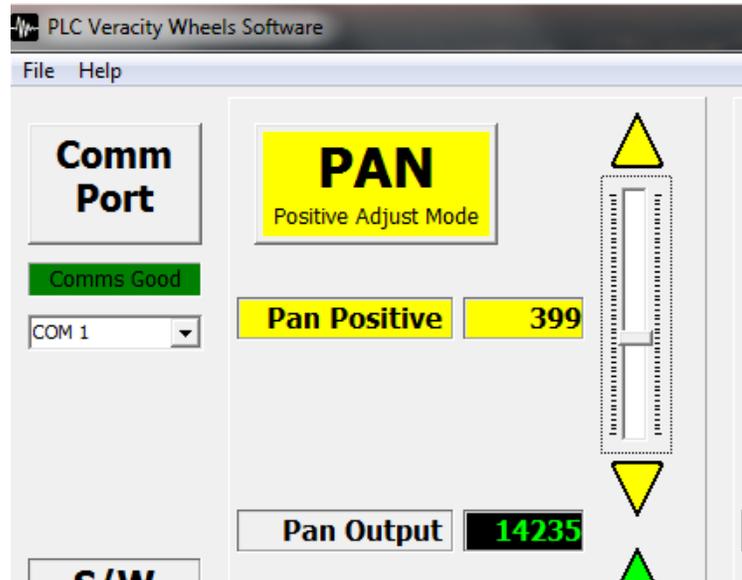
- From the drop-down menu, select the PC's designated **COM port** (COM 1 in this example). A list of assigned COM ports can be found from the **Windows Device Manager** (Press the "Windows key", type "Device Manager" and hit Enter).



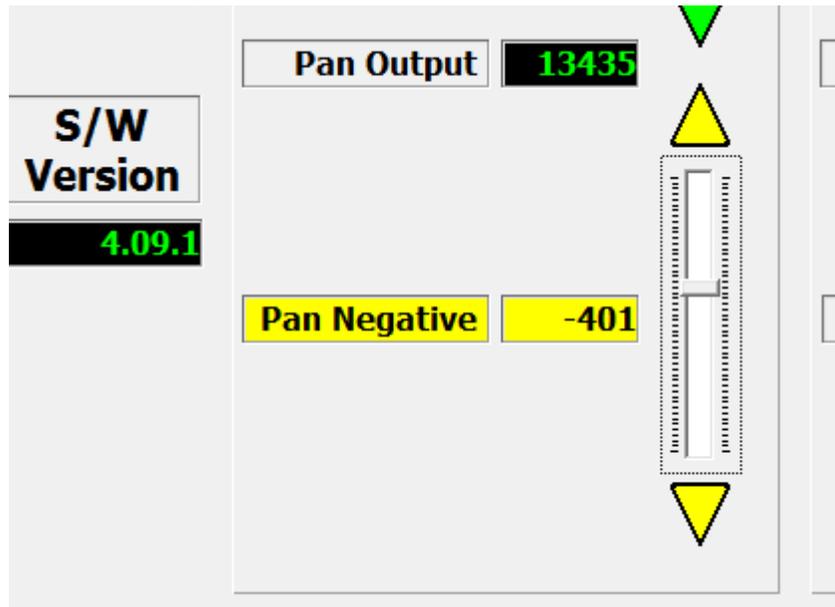
- Once connected the Comm Port status should change to "**Comms Good**" in Green. The firmware version in your Veracity Wheels will also be displayed. If unable to connect, you may have selected the incorrect port or require a Veracity firmware update. If the wheels become disconnected at any point, the Comm Port status will change to "**Comms Lost**".



- With your wheels and Gimbal powered and idle, turn the **Sensitivity Knobs** on each of your wheels **fully clockwise to 100%**.
- Starting with the Pan Wheel, increase the **Pan Positive** value until you notice the gimbal begin to pan in one direction. Adjust this value to the point where only the slightest amount of movement can be noticed.

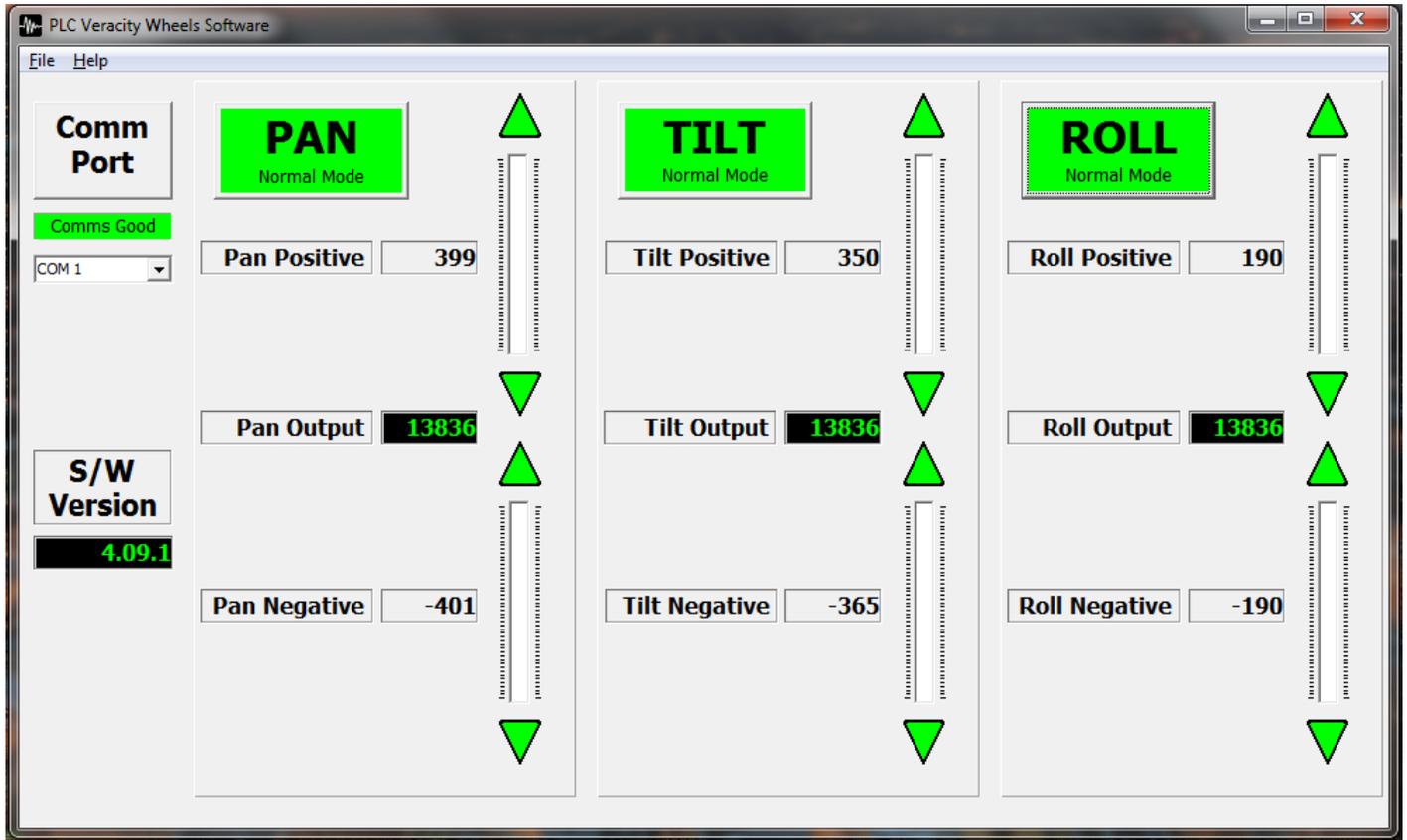


- Once satisfied, click on the large **PAN Button** to save the value to Veracity memory.
- Now raise the **Pan Negative** value until you notice the gimbal begin to pan in the opposite direction. Adjust this value to the point where only the slightest amount of movement can be noticed.



- Click on the large **PAN Button** to save the value to Veracity memory.

11. Repeat steps 7 to 10 but for the **Tilt and Roll (if roll is used) Axes**.



12. Once values for all axes have been set, ensure all Axes buttons are green. The wheels are now optimized for Deadband compensation and increased wheel motion responsiveness.

13. Parameters can be saved to file and opened later from the “**File**” menu. This may be useful for use with different profiles or if values are reset during a software update.



*****Note:** This procedure must be performed for any changes to your Gimbal Setup Profile or after re-zeroing your wheels.

Troubleshooting

Pan/Tilt/Roll axes – incorrect axis control or some axes do not work

Check that the Veracity wheels start up in the correct mode for your gimbal (MōVI, Maxima, or Ronin). See section on “Switching between MōVI (Standard Gimbal), Ronin and Maxima Modes”.

Nothing happens – no lights, no sound, no motion

Check wiring and ensure power is available on the Veracity Control Wheels. Make sure that your power cable is the correct polarity for this system.

Hand Wheels & Radio Controller – do not connect

Go to the Appendices section to set up your radio controller or refer to your RC controller manual for information on configuring the Trainer port. Check that Channels 2, 3, 4 are assigned properly

Axis Drifting

If one or more axis are drifting the system needs to be calibrated for your gimbal, please see the Zeroing section in this manual. If drift persists, try rebalancing your gimbal and running an auto-calibration from your gimbal (i.e. for the Maxima, calibrate the gyros and accelerometers).

Lights When Zeroing – do not switch from red to green

When zeroing the switch must be in the middle position to zero the PAN, TILT or ROLL Wheel properly.

Tilt/Roll – does not work

Make sure that all of your cables are connected to the correct ports, you may have your tilt/roll axis plugged into the incorrect Axis Connector. Make sure that the light is red or green but not flashing.

FCC Declaration



Class B

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Limited Warranty

PLC Electronic Solutions Ltd. warrants this equipment for 1 year from the date of original purchase against defects in materials or workmanship, provided it was purchased from an authorized dealer. This warranty does not cover equipment, which has been abused or damaged by careless handling or shipping, nor does it cover products subjected to customer alteration, modification, negligence or misuse. This warranty does not apply to used or demonstrator equipment.

Should any defect develop within the warranted time period, PLC Electronic Solutions Ltd. will at its sole option, repair or replace the defective instrument without charge. To obtain warranty service, the defective instrument must be returned within 1 year from the original purchase date to PLC Electronic Solutions Ltd., along with a brief description of the defect claimed. PLC Electronic Solutions Ltd. will pay for ground shipping of any unit deemed to be covered under warranty. Under no circumstances will PLC Electronic Solutions Ltd. be liable for greater than the original purchase cost of the PLC Electronic Solutions Ltd. product.

Technical Support

Address any technical question to:



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Monday to Friday, 8:00 pm - 4:00 PM PST

E-mail: info@plcelectronicsolutions.com

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