TALI H500
GPS SYSTEM

deVention

- Auto Take Off
- Object Round fly mode
- Hyper IOC mode
- GPS telemetry
- Altitude hold mode
- One key Return To Home
- Retractable Landing Gear
- 5.8 ghz video down link

FPV guy .com

Match with DEVO F12E
Quick Start Guide and Systems Flowchart

1 Installing the Propellers

1.1 Unpack the propellers, there are two kind right-hand and left hand rotation, the rotation is identified with arrows on the prop, and also with the colored prop-top. You need 3 of each kind.
*We recommend balancing the propellers. Check online for balancing instructions.

1.2 Match the arrows on the propellers to the arrows on the arm next to each motor. screw each propeller onto the motor, secure by hand, no need for tools.

1.3 After installing the props, check each propeller carefully.

Before EACH flight, Inspect propellers for damage.

2 Installing Battery, Binding the radio, and extending the landing gear.

The Landing gear is shipped in the retracted position. **DO NOT try to extend the landing gear by pulling on it.**
We will deploy the landing-gear the first time the system is powered, please follow these instructions carefully.

2.1 Install the fully charged battery
DO NOT turn on the battery until later.

*Please check the charger manual for charging instructions

2.2 Turn TALI on its back.
The belly and the retractable legs should now be facing up.
MAKE SURE nothing is blocking the legs.

2.3 On the F12e, move ALL switches to the "0" position, and move the throttle to the lowest position.
Then turn on the F12e power.

2.4 Slide the power-switch to the ON position then press on the triangle power button for about 3-5 seconds, until the green Power indicator lights up.
*The Landing gear will now unfold automatically.
* In the beginning of this process the light in the arms flast red-green, this means the system is binding.

2.5 Turn the aircraft to its UP-right position.
The Red-Green LED flashing will stop shortly.
When it stops, the F12e and the H500 have successfully connected to each other.
* This process is called "ID binding"

2.6 After the successful binding place the aircraft on a stable surface.

3 Compass Calibration

IMPORTANT: Make sure all TRIMs are in the center position, the trim value should be "0", and that the motors are locked.
The aircraft should NOT be flashing RED-GREEN. By default, the motors will automatically be locked after the ID binding process.
For more details about locking and unlocking motors, see points 6 & 7.

3.1 Enter the calibration mode
Do this by moving both sticks DOWN and to the middle position at the same time.
The aircraft will start a blinking fast RED-GREEN

3.2 FORWARD rotation
Rotate tilting the aircraft forward rotate smoothly in 90 deg increments.
Pausing 1 second for each 90 deg.
(0 / 90 / 180 / 270 / 360)

3.3 CLOCKWISE rotation
Rotate the aircraft around the roll axis rotate smoothly in 90 deg increments.
Pausing 1 second for each 90 deg.
(0 / 90 / 180 / 270 / 360)

3.4 HORISONTAL rotation
Rotate the aircraft around the YAW axis rotate smoothly in 90 deg increments.
Pausing 1 second for each 90 deg.
(0 / 90 / 180 / 270 / 360)

3.5 NOSE DOWN rotation
Rotate the aircraft facing the nose down.
rotate smoothly in 90 deg increments.
Pausing 1 second for each 90 deg.
(0 / 90 / 180 / 270 / 360)

3.6 Place the aircraft in normal position
The rapid RED-GREEN blinking will stop
This indicate that the calibration is finished
Disconnect the battery to save the settings.

IMPORTANT: The first couple of flights, you may expereince the aircraft drifting.
This is normal, please continue to fly the aircraft manually, while the system inprove the calibration, after 5-10 minutes land, lock the motors, this will save the improved settings.
Notice: The slight drifting may continue for a couple of batteries, you will notice significant improvement in the GPShold & stability after 4-5 batteries.
Notice: Always perform the calibration away from eletric fields and metal surfaces.
Trivia: Different brands have different calibration processes, the process is typically refered to as "the Calibration Dance".

4 G-3D 3-axis brushless gimbal installation

IMPORTANT: REMOVE the battery from the H500 while you install the gimbal
The gimbal is a high-performance eletromechanical design and should be handled with great care. AVOID using force when installing.

4.1 Unpack the G-3D gimbal,
prepare the gimbal, the mounting rail,
rubber washer, screws and spring loaded screw.

4.2 Put the rubber washer on the threaded hole on the bottom of the H500, use the M3x8mm and M3x10mm screws to install the gimbal "mounting block" also refered to as the quick mount rail.

4.3 Slide the gimbal unto the quik mount rail, the gimbal should slide from the front of the aircraft towards the rear, gently move it as far back as possible.

4.4 Install the springloaded
M3x12mm "finger screw" at the front
of the gimbal, this will secure the gimbal.

4.5 Connect the 9pin white data cable to the "complex data port" on the bottom of the TALI, then connect the cable to the back of the G-3D gimbal.

4.6 Make sure the gimbal move freely in all directions.
The G-3D gimbal is now successfully installed.

Specifications:

Main Rotor Dia. : 233mm

Overall (L x W x H): 471 x 536 x 270mm

Weight: 2020g(Battery included)

Takeoff Weight: <2500g

Transmitter: DEVO F12E

Receiver: DEVO-RX705

Brushless Motor: WK-WS-34-001

Brushless ESC: WST-15AH (R/G)

Main Controller: FCS-H500

Battery: 22.2V 5400mAh Li-Po

- M1/M3/M5 rotate in counterclockwise, motors are the dextrogyrate thread.
- M2/M4/M6 rotate in clockwise, motors are the levogyrate thread.

5 Installing the iLook+ 1080p camera with 5.8ghz video link

IMPORTANT: NEVER POWER the iLook+ camera without the antenna installed.
Powering a video transmitter may cause damage to the transmitter.

5.1 Screw the short "mushroom" antenna into the camera, use the included wrench to gently secure the antenna, do not use force.

5.2 Release the two M2x4 screws securing the camera mounting bracket.

5.3 Position the camera into the gimbal "tray", then secure the camera by positioning the mounting bracket over the camera, use the two M2x4mm screws to secure the mounting bracket.

* There is a cutout on the mounting bracket, this will fit around the lens.

** It is also possible to install a GoPro3 camera in this gimbal. IF you install a GoPro, unscrew and remove the motor cover on the pitch motor, this will adjust the balance of the gimbal for the GoPro.

*** Use the switch on the end of the iLook+ camera to select between STILL and 1080p video.

**** You can change the video link frequency on the back of the camera, see the instructions included with the camera for details on camera operation.

5.4 Connect the cameras power cable to the power port on the G-3D gimbal controller.

5.5 The iLook+ camera is now successfully installed in your G-3D gimbal.

6 Motor Unlock

After binding the F12e to the H500, Check that all trims are neutral, the throttle stick ALL the way DOWN. the display should say 0% throttle
Check that ALL switches are in the UP position,
You can not start the motors in the GPS hold mode.

Gently push the throttle stick down and move the rudder (YAW) stick to the left side. (on mode 2 radios throttle and rudder is the same stick)
You will see the RED / GREEN indicator LED's will turn on, this indicate the motors are unlocked,
Be very careful at this point, as pushing the thottle up will start the motors.
You can test by pushing the stick up a little, the motors should start.
For your safety, the motors will dis-arm again after 10seconds..

Mode 1(throttle stick on the right)

Mode 2(throttle stick on the left)

7 Motor Lock

Lock the motors by moving the throttle stick all the way down and the rudder (YAW) stick all the way to the right.
The RED-GREEN LED light will go out when the motors are disarmed.
TEST: push the throttle stick up a little, the motors will not start when locked.

NOTICE:
* The motors are LOCKED by default after successful binding.
* Motors can NOT be unlocked or locked in GPS-hold mode.
If you land in GPS mode, move the "MIX" switch to position "0"
before locking the motors, make sure you wait until the TALI is safely on the ground before changing the switch to "0" (manual)
While changing, make sure to keep the throttle DOWN to prevent motors start.

Mode 1(throttle stick on the right)

Mode 2(throttle stick on the left)

8 DEVO F12e - quick guide to control functions

Mode 2 (Throttle stick on the left)	Left stick	THRO/RUDD stick
	Right stick	ELEV/AILE stick
	Left trim	THRO trim
	Right trim	ELEV trim
Mode 1 (Throttle stick on the right)	Left stick	ELEV/RUDD stick
	Right stick	THRO/AILE stick
	Left trim	ELEV trim
	Right trim	THRO trim

(0) Manual Mode	(1) GPS-hold Mode	(2) Return To Home
MIX Switch to "0"	MIX Switch to "1"	MIX Switch to "2"

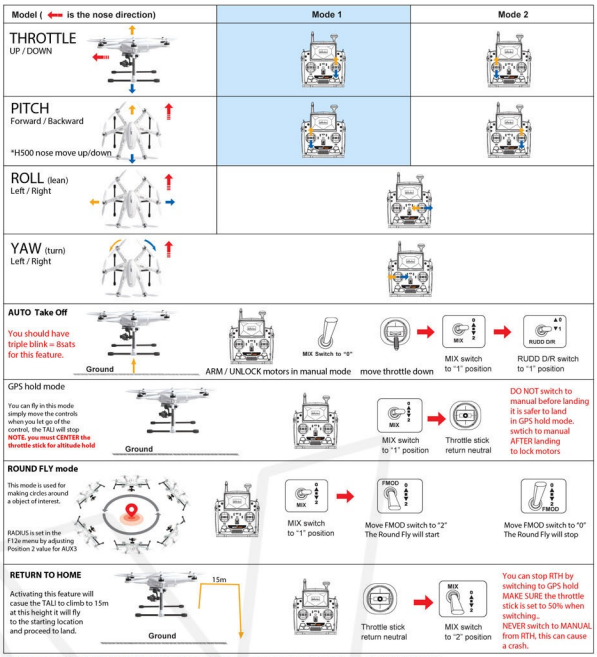
You NEED to memorize these settings

9 GPS indicator lights

GPS Satellites	<6	6	7	8	9	10	11	12	13
The blue LED status	No blinking	Blinking once	Blinking 2 times	Blinking 3 times	Blinking 4 times	Blinking 5 times	Blinking 6 times	Blinking 7 times	Blinking 8 times

IMPORTANT: For SAFE flight in GPS flight mode: the BLUE indicator light should at least "double" blink, (two blinks at a time)
It is highly recommended to wait for "triple blink" 8 statelites before starting the flight.
NEVER attempt to AUTO-START with less than "triple blinks"

10 Operation Instruction



RTH mode is activated AUTOMATICALLY by the FAILSAFE system in a emergency, you may not be able to interrupt a EMERGENCY RTH

11 F12e Radio function setup and operation instructions

Function	Switch	Transmitter setting	Instructions
AUTO Take Off	RUDD D/R	Model Menu → Device Output → Flap → RUDD D/R → Active	Place aircraft on level ground → Unlock motors → Move throttle stickt to lowest position → Set MIX switch to "0" Position → Set RUDD D/R switch to "1" Position IMPORTANT: ONLY use this function with BLUE TRIPLE blink = 8 or more satelites, AUTO take off with less satelites may result in a crash. AFTER completing auto-take-off, you can take control by moving the throttle stick to 50%, then flip the RUDD D/R switch to "0" position
GPS hold mode	MIX SW	Model Menu → Device Output → Gear → MIX SW → Active	"0" position: Manual mode "1" position: GPS hold mode "2" position: Return To Home NEVER use this mode with less than 8 satelites locked, you should see BLUE TRIBLE BLINK. BEFORE switching mode, always put the throttle stick to middle position (50%) IF the GPS signal degrades, the H500 will automatically enter "Altitude hold mode" note in this mode it will drift, but will hold its altitude. After flying 50% of the battery, do NOT switch from GPS mode to Manual, this may cause a sudden drop / crash. You can land in GPS mode, after landing, skeep the throttle stick DOWN and switch to manual, then lock the motors.
ROUND FLY mode	FMOD	Model Menu → Device Output → AUX3 → FMOD SW → Active	"0" Position: OFF "1" Position: Not in use "2" Position: activate round fly This mode require 8 satelites locked, you should see BLUE TRIBLE BLINK. BEFORE activating the round-fly mode, you should be in "GPS hold mode" always put the throttle stick to middle position (50%) The default roundfly radius is 5 meters (15 feet), You can change the Round Fly radius by editing the AUX 3 EPA (End Point Adjustment) on the F12e transmitter, for details on editing EPA settings, see the F12e instruction manual.
RETURN TO HOME	MIX SW	Model Menu → Device Output → Gear → MIX SW → Active	"0" position: Manual mode "1" position: GPS hold mode "2" position: Return To Home MIX switch to "2" position → Throttle stick return neutral The Return To Home mode, only work when you have a solid GPS lock, it is recommend to avoid flying if GPS lock is missing. After engaging Return to Home mode, lave the throttle stick at 50% (centered) do not touch any switches on the F12e radio. You can REGAIN control of the h500, make sure the throttle is centered, then flip the MIX switch to "1" position. in a emergency like loss of control link between the F12e and the H500, the Failsafe system will automatically start RTH, you may not be able to interupt a emergency RTH, simply let the aircraft continue until it lands.
HYPER IOC MODE	ELEV D/R	Model Menu → Device Output → AUX2 → ELEV D/R → Active	IOC or Intelligent Orientation Control mode Means the aircraft's flight direction is only relative to the orignal take-off point (where you armed the motors) REGARDLESS of the actual aircraft headding, with this mode you can fly past something and pan the aircraft to frame your shot, without having to worry what direction the aircraft is facing. ELEV D/R switch "0" Position: IOC OFF "1" Position: IOC ON The IOC mode require a strong GPS lock, you should have trible blinks on the blue GPS indicator light. IOC is inactive if the H500 is less than 10 meter (30 feet) from the original take-off position, (point where you armed the motors) Fly the H500 manually to past 10 meters using the GPS mode, activate the IOC mode when you are past 10meters, the H500 will now fly IOC until you change mode, you can pan freely for video shots, when you push the stick right or left, the H500 will move sideways relative to the original take-off position. Pushing the pitch stick up will push the H500 away from you, bulling the stick back, bring the H500 back to the starting point. When flying in IOC mode, you can make the H500 return home by simply puling the PITCH stick down WARNING: The IOC turns off when the aircraft get closer than 10meters to the take off point, be prepared for this, as the system will switch back to GPS hold mode at that point. this switch can cause confusion if the pilot are not prepared.
Extend / Retract Landing Gear	GEAR	Model Menu → Device Output → AUX4 → GEAR SW → Active	GEAR Switch: "0" Position: Extend Landing gear "1" Position: Retract Landing Gear NOTE: REMEMBER your landing gear, it is easy to forget the landing-gear when flying FPV. its not a good idea to land on your camera. When activating the RTH (Return To Home) system, either by the pilot of by the failsafe system, The TALI H500 will automatically extend the landing gear to protect your camera and make sure the H500 land safely. You can not change the landing gear after the H500 have automatically extended for landing. you must land and lock / unlock motors.