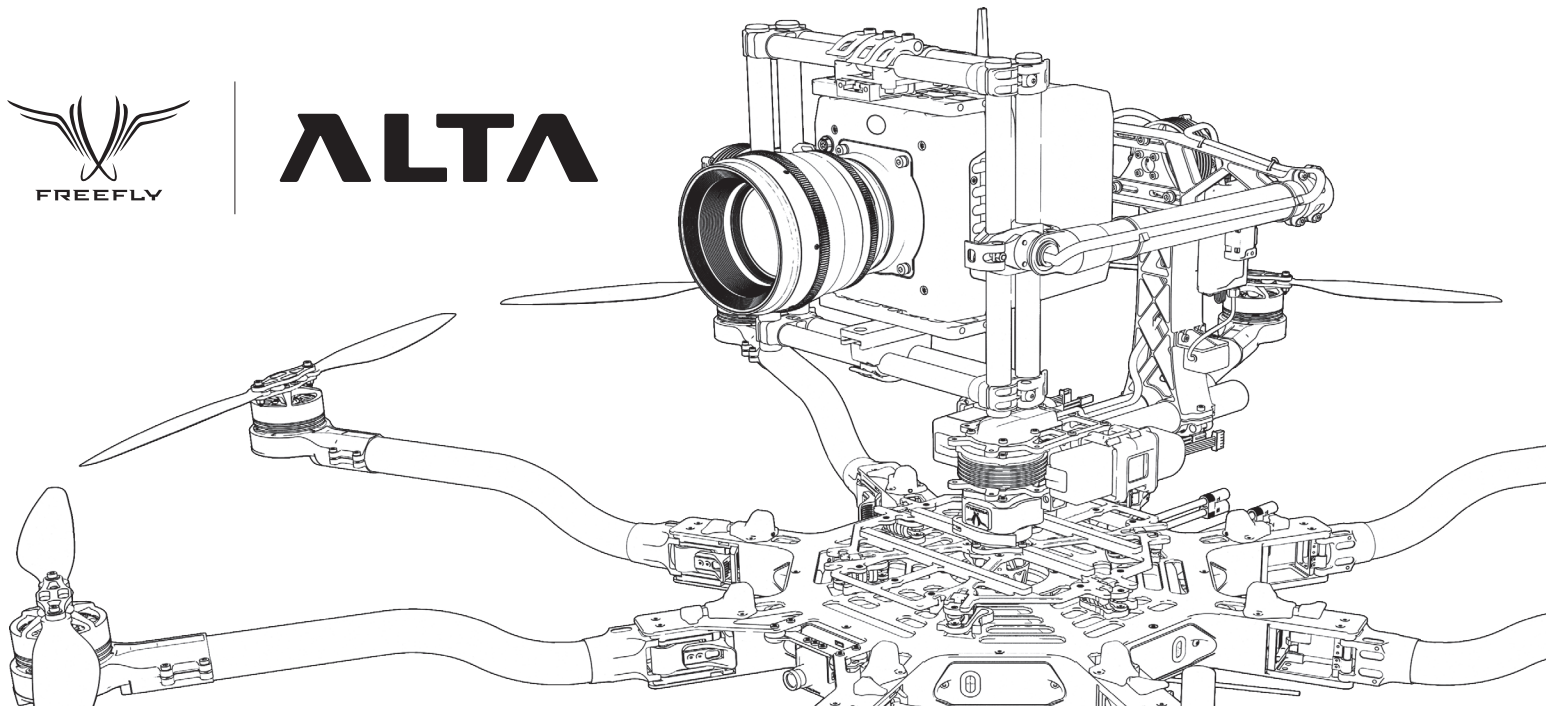


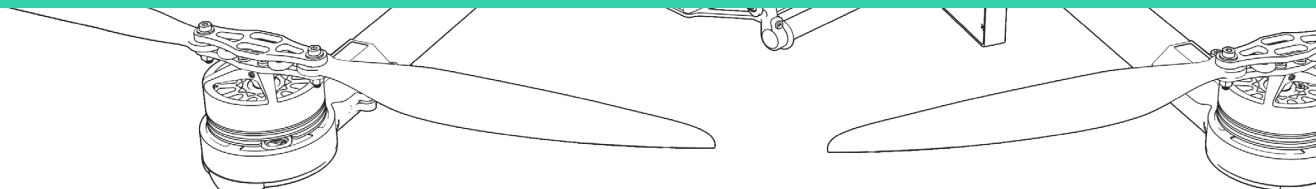


ALTA



SETUP GUIDE

REVISION C | 03.18.2016



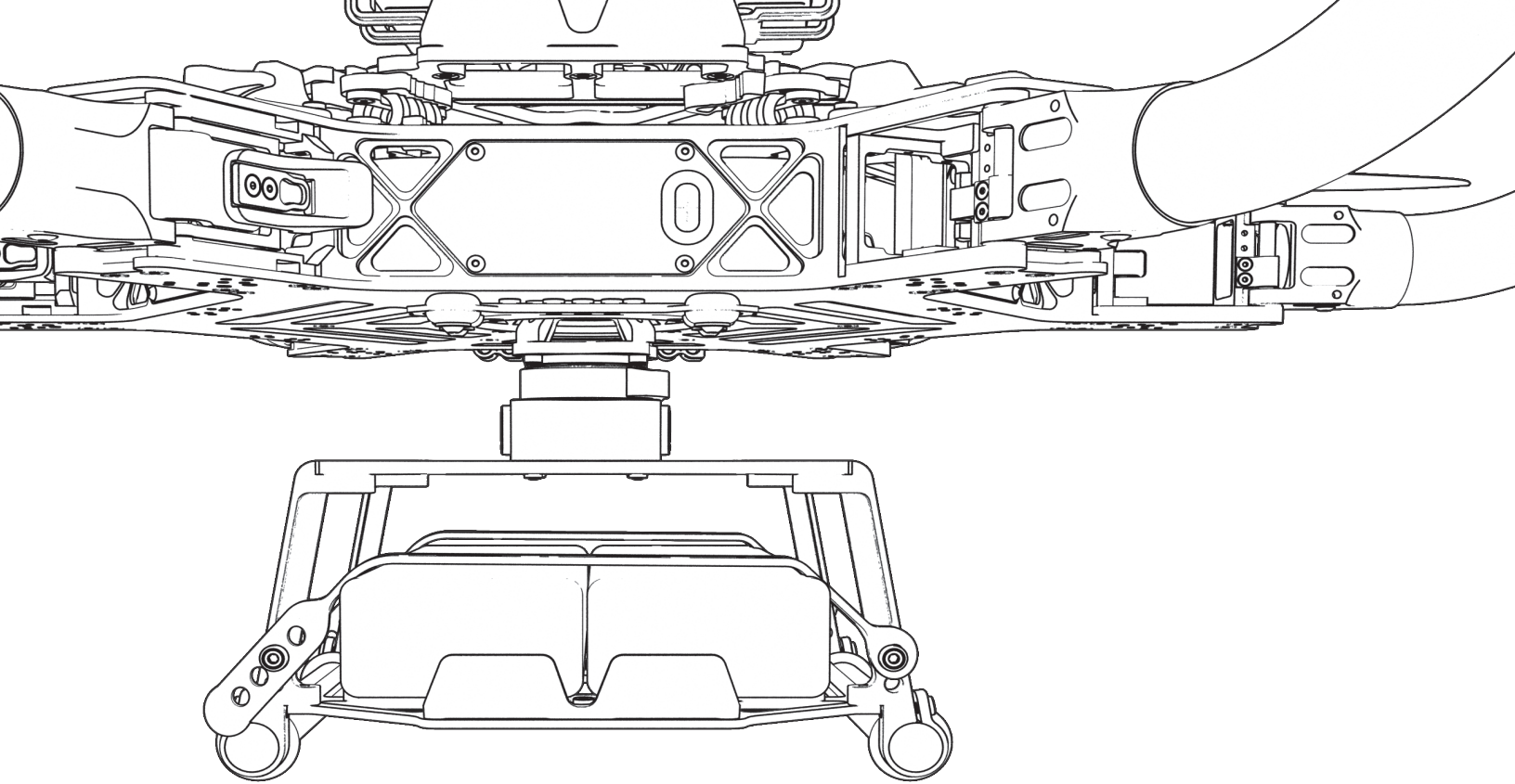


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DISCLAIMER AND WARNING

IMPORTANT - Please read this disclaimer and warning carefully and review the appropriate ALTA Aircraft Flight Manual (AFM) for your ALTA model prior to flight. If you have any questions, please contact support@freeflysystems.com prior to using the ALTA. You can review the most current version of this Setup Guide at www.freeflysystems.com/software-manuals/.

By using ALTA, you acknowledge that you have read, understand and agree to this disclaimer. You agree that you are solely responsible for your conduct while using ALTA, and for any direct or indirect consequences that may result from its use. You agree to only use ALTA for proper purposes that are in accordance with local and airspace rules and regulations.

- » ALTA is not a toy and should be operated with extreme care, as improper operation can cause damage to property, serious personal injury or death.
- » As with any multi-rotor aircraft, ALTA is a complex and technical machine. Novice pilots should invest sufficient time on a flight simulator and seek training from an experienced pilot prior to operation. A flight simulator is no substitute for training with an experienced pilot, particularly when it comes to learning how to safely operate ALTA. Novice pilots should never fly without the supervision of an experienced pilot.
- » Always check ALTA and its components for proper and complete installation prior to operation.
- » Always maintain a safe distance from ALTA when in use.
- » Never attempt to touch ALTA when the propellers are moving.

- » Never fly ALTA over or around people, power lines or other aircraft.
- » Always keep children and animals a safe distance away from ALTA when in use and when changing ALTA's configurations.
- » Only use propellers supplied by Freefly Systems that are designed for use on ALTA.
- » Always remove the propellers or power ALTA using a low-power source when making a change to the configuration of ALTA to prevent propeller strikes in the event of unintentional motor starts.
- » Always remove the Configuration Jumper when making changes to the configuration of ALTA.
- » Always test ALTA with the propellers removed to make sure that the motors are spinning in the correct direction and that the motor assignment is correct with respect to the Synapse Flight Controller. If either of these conditions are not met, ALTA will be uncontrollable and dangerous.
- » It is your responsibility to perform a full system check of ALTA prior to every flight.
- » It is your responsibility to learn how to safely operate ALTA and to adhere to all applicable rules and regulations.
- » Fly at your own risk.
- » ALTA is a tuned system with custom components selected for each application. Modification to, removal, or substitution of ALTA components will void the warranty and can lead to unsafe operating conditions.

LIMITATION OF LIABILITY

IN NO EVENT SHALL FREEFLY BE LIABLE TO BUYER FOR ANY INDIRECT, CONSEQUENTIAL, PUNITIVE, INCIDENTAL, OR SPECIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF ALTA OR FROM LOSS OF USE, DATA OR PROFITS (HOWEVER CAUSED AND UNDER ANY THEORY OF LIABILITY), EVEN IF FREEFLY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL FREEFLY'S LIABILITY FOR A PRODUCT (WHETHER ASSERTED AS A TORT CLAIM, A CONTRACT CLAIM OR OTHERWISE) EXCEED THE AMOUNTS PAID TO FREEFLY FOR SUCH PRODUCT. NOTWITHSTANDING ANYTHING HEREIN, IN NO EVENT SHALL FREEFLY'S LIABILITY FOR ALL CLAIMS ARISING OUT OF OR RELATING TO THIS AGREEMENT EXCEED THE AMOUNTS PAID BY BUYER TO FREEFLY FOR PRODUCT IN THE LAST TWELVE (12) MONTHS. IN NO EVENT WILL FREEFLY BE LIABLE FOR COSTS OF PROCUREMENT OR SUBSTITUTE GOODS BY BUYER. THE LIMITATIONS SET FORTH HEREIN SHALL APPLY TO ALL LIABILITIES THAT MAY ARISE OUT OF THIRD-PARTY CLAIMS AGAINST BUYER. THESE LIMITATIONS SHALL APPLY NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY.

Freefly shall not be liable for damages or injuries incurred directly or indirectly from the use of ALTA including, but not limited to, the following situations:

- » Failure of operator to follow proper instructions and safety warnings found at

www.freeflysystems.com/software-manuals/.

- » Failure of the operator to understand and operate the aircraft within the operating limitations described in this manual.
- » Failure of the operator to follow onboard safety warnings while using ALTA.
- » Failure of the operator to follow and comply with local rules and regulations.
- » Failure of the operator to inspect ALTA and its components prior to operation.
- » Failure of the operator to properly maintain and/or service ALTA through an authorized Freefly Service Center with genuine ALTA parts.
- » Use of third-party products on ALTA.
- » Use of ALTA in a physically or mentally impaired capacity.
- » Use of ALTA without sufficient training.
- » Use of ALTA in unsafe conditions, including, but not limited to, bad or severe weather, such as rain, wind, snow, lightning, dust storms, etc., or in areas of magnetic or radio interference, such as power stations, broadcasting and cell phone towers, government prohibited airspace, etc.
- » Improper operation, misjudgment or risky behavior while using ALTA.
- » Infringement of third-party data, audio or video rights recorded when using ALTA.

BOOM NUMBERING AND PROP ROTATION (OVERHEAD VIEW)

BOOM 1 – Clockwise

BOOM 2 – Counter-Clockwise

BOOM 3 – Clockwise

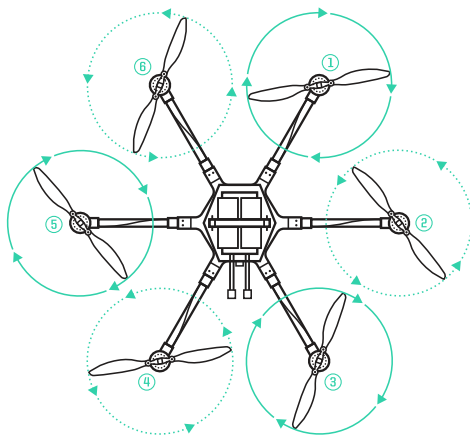
BOOM 4 – Counter-Clockwise

BOOM 5 – Clockwise

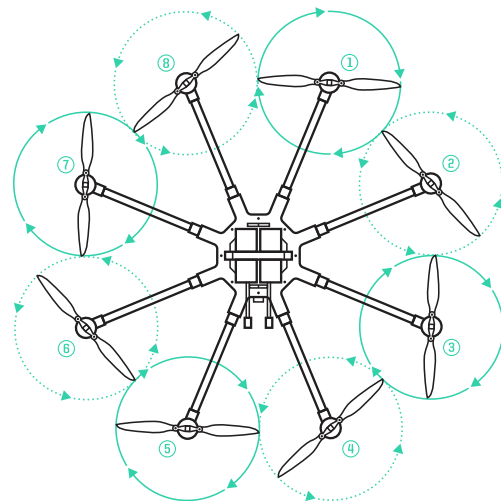
BOOM 6 – Counter-Clockwise

BOOM 7* – Clockwise

BOOM 8* – Counter-Clockwise



ALTA 6



ALTA 8

* Applies to ALTA 8

INTRODUCTION

ALTA is a line of professional multi-rotor aircraft designed for demanding cinematic, television, and photographic applications. Within five minutes, ALTA can unfold from its carrying case to flying some of the most advanced cinema cameras on either the top or bottom of the aircraft. The Synapse Flight Controller is purpose-built for cinema use, yielding precise yet smooth control.

This Setup Guide has been prepared to highlight the operation of basic airframe and flight control systems. It is supplemental to the Aircraft Flight Manual (AFM) for your ALTA model, which contains all the information required to set up, operate and maintain an ALTA system safely. Do not operate ALTA without completely reading the AFM found at www.freeflysystems.com/software-manuals/.

WARNING

Warnings are used to call attention to operating procedures which, if not strictly observed, may result in personal injury or loss of life.

CAUTION

Cautions are used to call attention to operating procedures which, if not strictly observed, may cause damage to equipment.

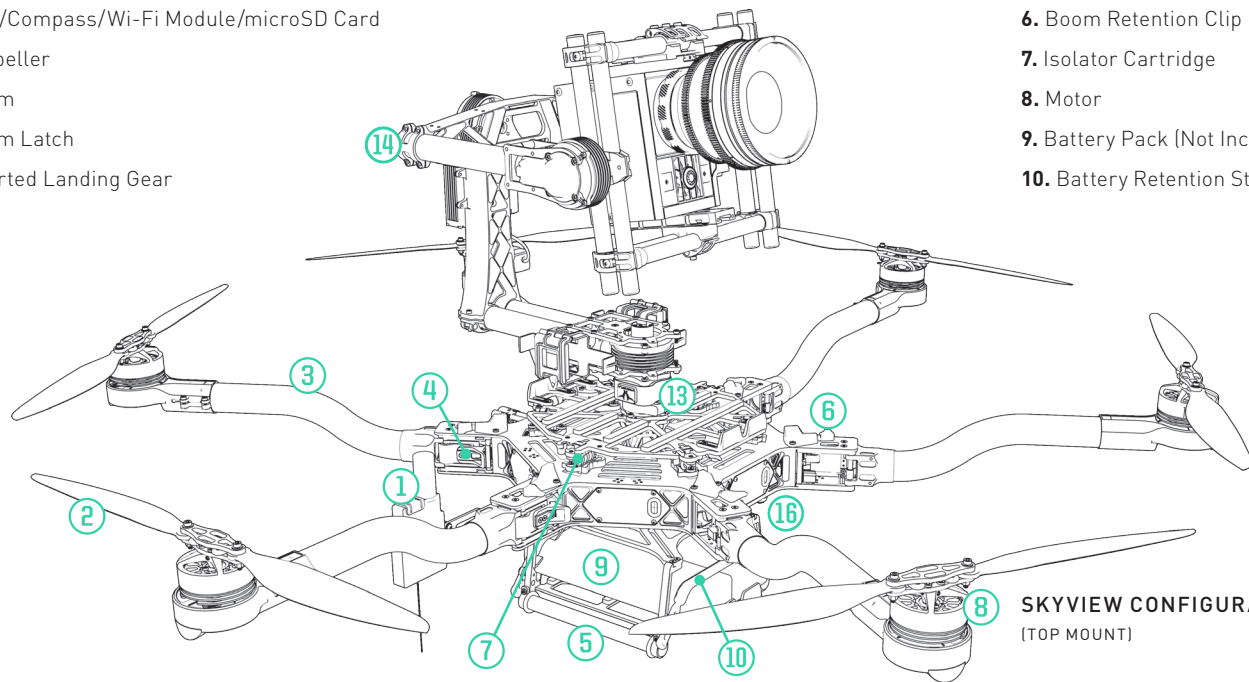
NOTE

Notes are used to highlight specific operating conditions or steps of a procedure.

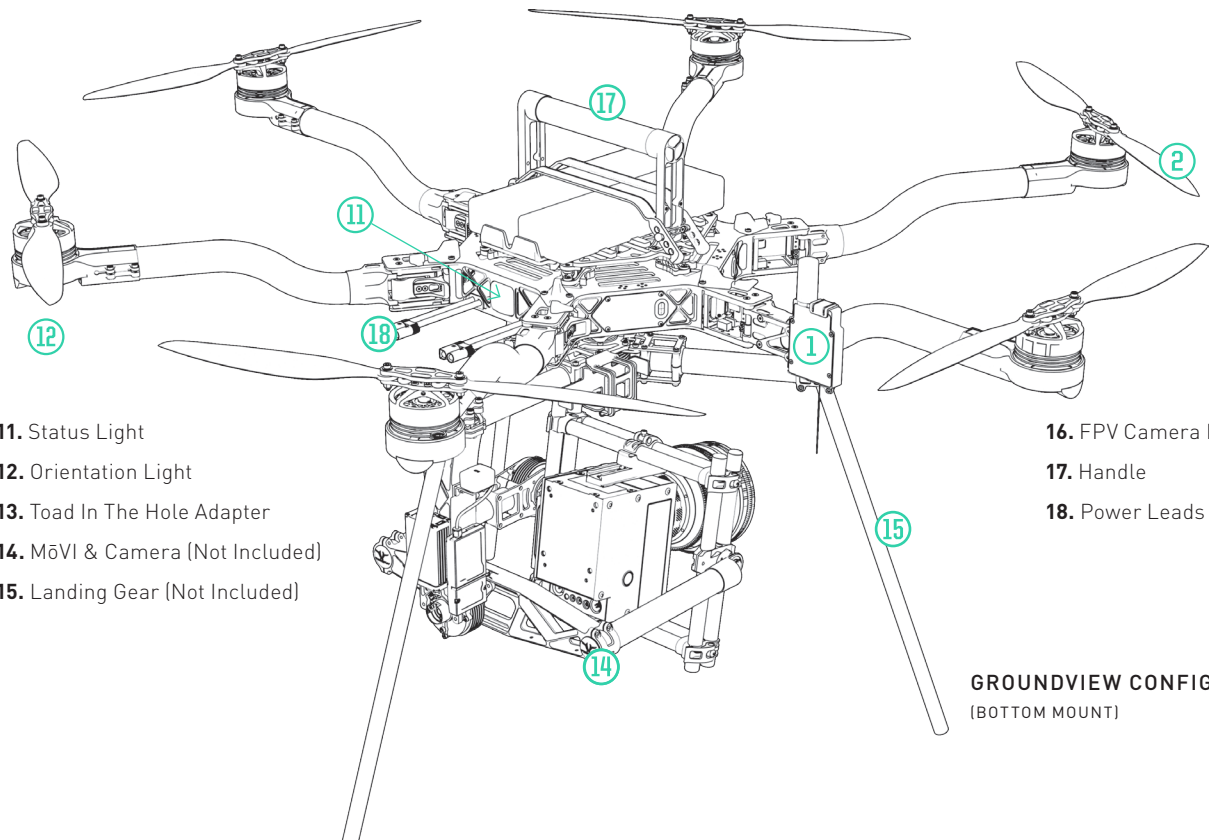
ALTA 6 OVERVIEW

- 1. GPS/Compass/Wi-Fi Module/microSD Card
- 2. Propeller
- 3. Boom
- 4. Boom Latch
- 5. Inverted Landing Gear

- 6. Boom Retention Clip
- 7. Isolator Cartridge
- 8. Motor
- 9. Battery Pack (Not Included)
- 10. Battery Retention Strap



SKYVIEW CONFIGURATION
(TOP MOUNT)



- 11. Status Light
- 12. Orientation Light
- 13. Toad In The Hole Adapter
- 14. MōVI & Camera (Not Included)
- 15. Landing Gear (Not Included)

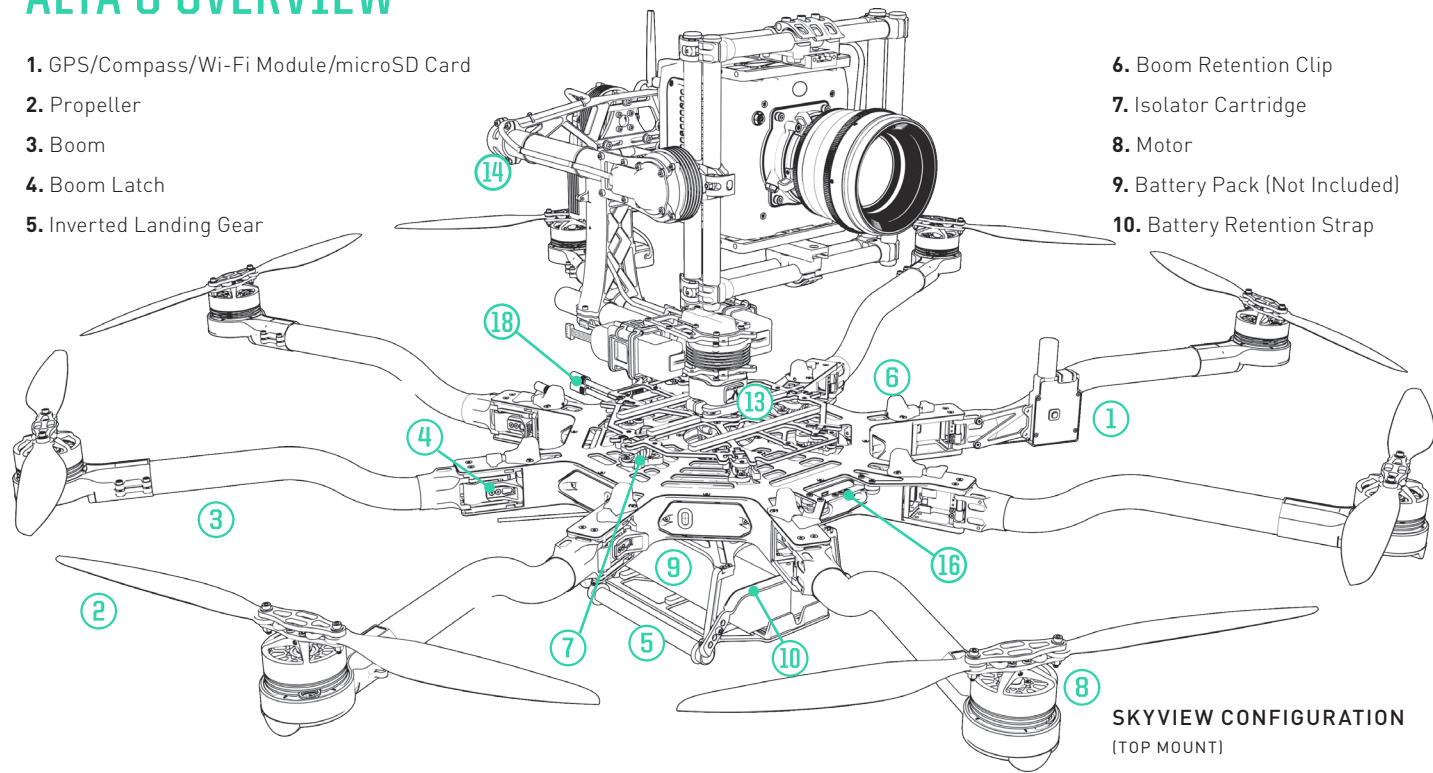
- 16. FPV Camera Mount
- 17. Handle
- 18. Power Leads

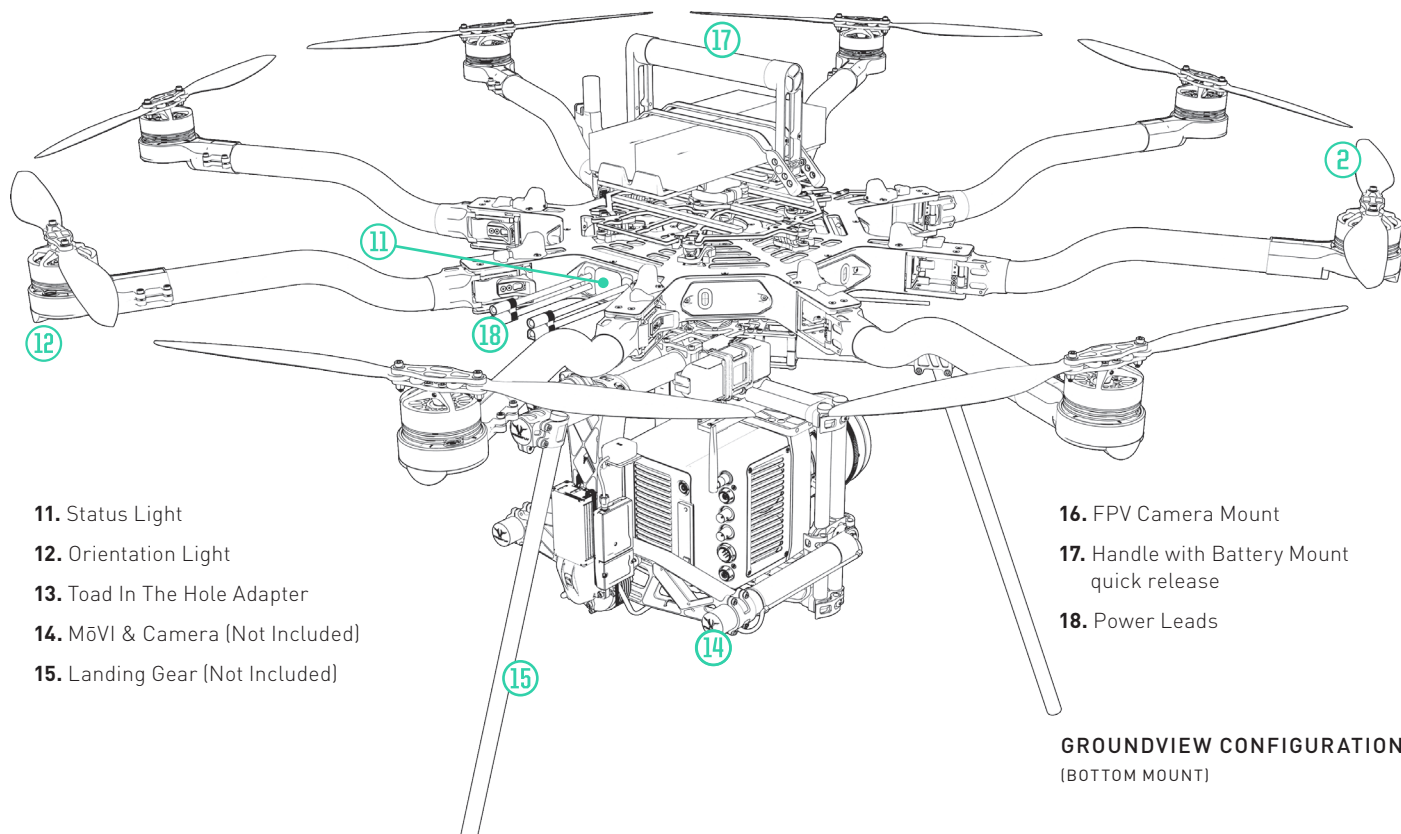
GROUNDVIEW CONFIGURATION
(BOTTOM MOUNT)

ALTA 8 OVERVIEW

- 1. GPS/Compass/Wi-Fi Module/microSD Card
- 2. Propeller
- 3. Boom
- 4. Boom Latch
- 5. Inverted Landing Gear

- 6. Boom Retention Clip
- 7. Isolator Cartridge
- 8. Motor
- 9. Battery Pack (Not Included)
- 10. Battery Retention Strap





11. Status Light

12. Orientation Light

13. Toad In The Hole Adapter

14. MōVI & Camera (Not Included)

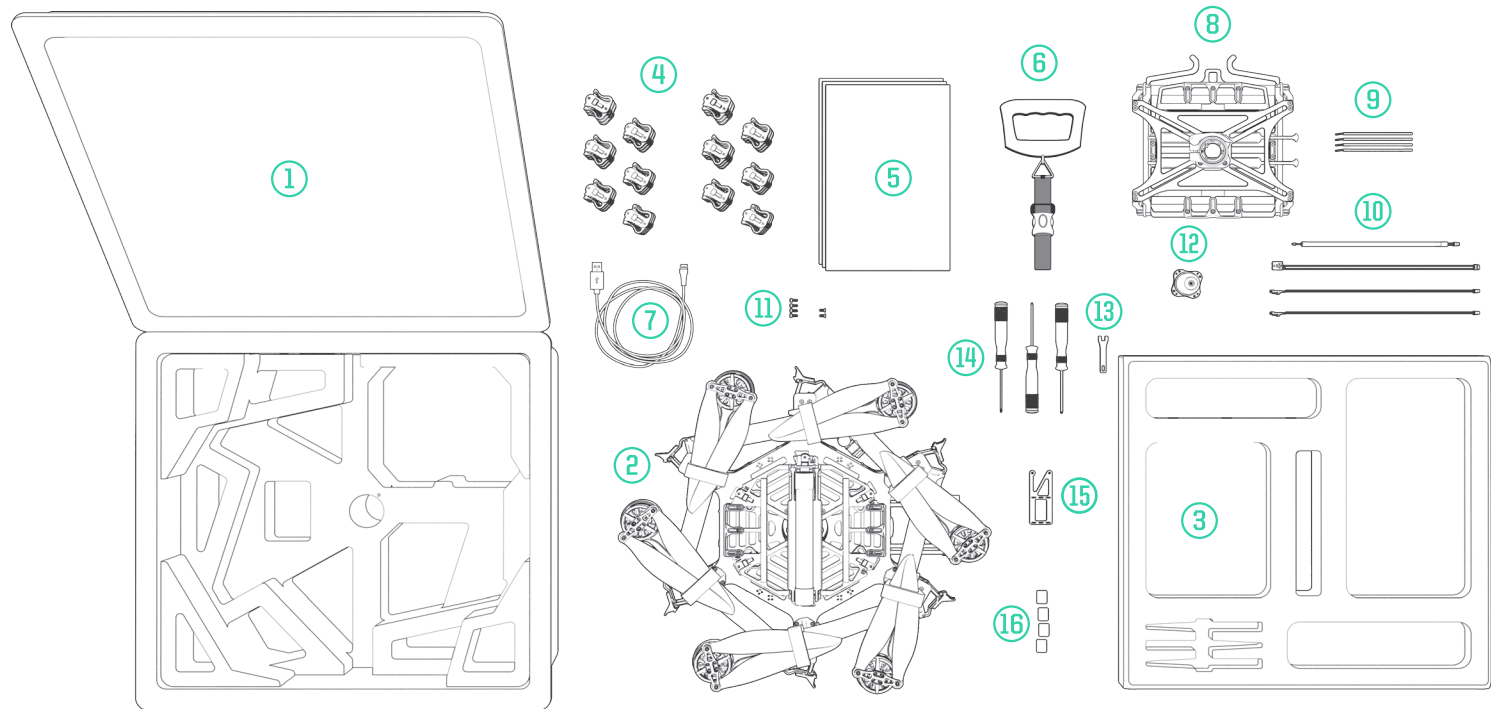
15. Landing Gear (Not Included)

16. FPV Camera Mount

17. Handle with Battery Mount
quick release

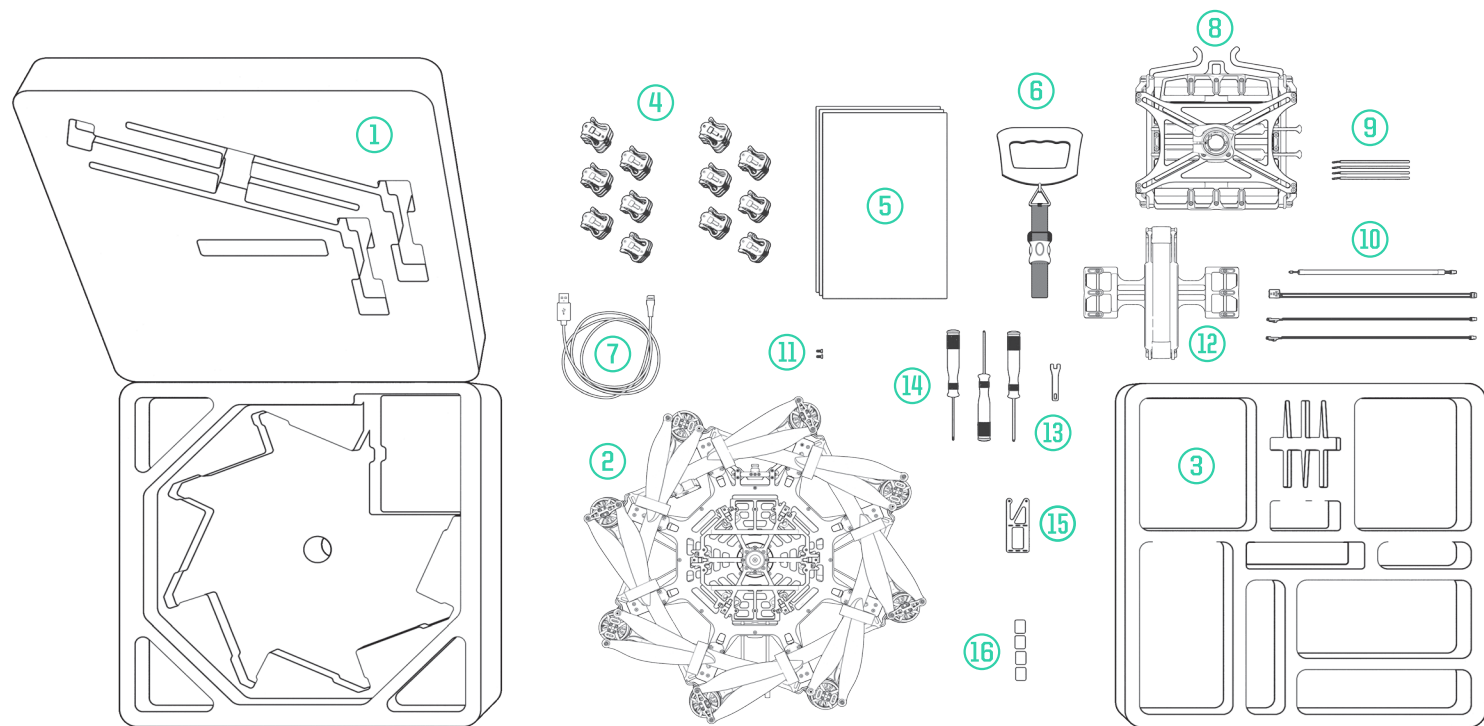
18. Power Leads

GROUNDVIEW CONFIGURATION
(BOTTOM MOUNT)



UNBOXING ALTA 6

1. Case
2. ALTA 6 Aircraft
3. Case Lid Foam
4. Isolator Cartridges
 - a. (6) Teal (Installed)
 - b. (6) Black
 - c. (6) Red
5. Documentation
6. Electronic Luggage Scale
7. USB-Futaba Power Cable
8. Inverted Landing Gear
9. Antenna Tubes
10. FPV Cables
 - a. Skyzone/BOSCAM Transmitter
 - b. ImmersionRC/Fat Shark Transmitter
 - c. BOSCAM Micro Transmitter
 - d. Ready Made RC Camera
11. Fasteners
 - a. (4) M3 × 8 Socket Head for Toad In The Hole Male Adapter
 - b. (2) M3 × 6 Flat Head for Accessory Mount
12. Toad In The Hole Male Adapter
13. 5.5mm Wrench
14. Hex Drivers (1.5mm, 2.0mm, 2.5mm)
15. Accessory Mount
16. Double-Sided Tape



UNBOXING ALTA 8

- 1.** Case
- 2.** ALTA 8 Aircraft
- 3.** Case Lid Foam
- 4.** Isolator Cartridges
 - a.** (6) Teal (Installed)
 - b.** (6) Black
 - c.** (6) Red
- 5.** Documentation
- 6.** Electronic Luggage Scale
- 7.** USB-Futaba Power Cable
- 8.** Inverted Landing Gear
- 9.** Antenna Tubes
- 10.** FPV Cables
 - a.** Skyzone/BOSCAM Transmitter
 - b.** ImmersionRC/Fat Shark Transmitter
 - c.** BOSCAM Micro Transmitter
 - d.** Ready Made RC Camera
- 11.** (2) M3 x 6 Flat Head for Accessory Mount
- 12.** Quick Release Battery Tray (Installed)
- 13.** 5.5mm Wrench
- 14.** Hex Drivers (1.5mm, 2.0mm, 2.5mm)
- 15.** Accessory Mount
- 16.** Double-Sided Tape

WEIGHT LIMITATIONS

As altitude and temperature increase, the density of the air decreases. Consequently, ALTA's thrust will decrease. The following tables describe maximum gross weight limits with respect to altitude and temperature for both ALTA 6 and ALTA 8 models.

ALTA 6

Press Alt Ft	0°C		10°C		20°C		30°C		40°C	
	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)
S.L.	30.0	13.6	30.0	13.6	29.5	13.4	28.5	12.9	27.6	12.5
1000	30.0	13.6	29.4	13.4	28.4	12.9	27.5	12.5	26.6	12.1
2000	29.4	13.3	28.4	12.9	27.4	12.4	26.5	12.0	25.7	11.6
3000	28.4	12.9	27.4	12.4	26.4	12.0	25.5	11.6	24.7	11.2
4000	27.3	12.4	26.4	12.0	25.5	11.5	24.6	11.2	23.8	10.8
5000	26.3	11.9	25.4	11.5	24.5	11.1	23.7	10.8	23.0	10.4
6000	25.4	11.5	24.5	11.1	23.6	10.7	22.8	10.4	22.1	10.0
7000	24.4	11.1	23.5	10.7	22.7	10.3	22.0	10.0	21.3	9.7
8000	23.5	10.7	22.7	10.3	21.9	9.9	21.2	9.6	20.5	9.3
9000	22.6	10.3	21.8	9.9	21.1	9.6	20.4	9.2	19.7	8.9
10000	21.8	9.9	21.0	9.5	20.3	9.2	19.6	8.9	19.0	8.6

WEIGHT LIMITATIONS (CONTINUED)

ALTA 8

Press Alt Ft	0°C		10°C		20°C		30°C		40°C	
	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)	Maximum Gross Weight (lb)	Maximum Gross Weight (kg)
S.L.	40.0	18.1	40.0	18.1	39.3	17.8	38.0	17.2	36.8	16.7
1000	40.0	18.1	39.3	17.8	37.9	17.2	36.7	16.6	35.5	16.1
2000	39.2	17.8	37.8	17.2	36.6	16.6	35.4	16.0	34.2	15.5
3000	37.8	17.2	36.5	16.5	35.2	16.0	34.1	15.5	33.0	15.0
4000	36.4	16.5	35.2	15.9	34.0	15.4	32.8	14.9	31.8	14.4
5000	35.1	15.9	33.9	15.4	32.7	14.8	31.6	14.3	30.6	13.9
6000	33.8	15.3	32.6	14.8	31.5	14.3	30.5	13.8	29.5	13.4
7000	32.6	14.8	31.4	14.2	30.3	13.8	29.3	13.3	28.4	12.9
8000	31.3	14.2	30.2	13.7	29.2	13.2	28.2	12.8	27.3	12.4
9000	30.2	13.7	29.1	13.2	28.1	12.7	27.2	12.3	26.3	11.9
10000	29.0	13.2	28.0	12.7	27.0	12.3	26.1	11.9	25.3	11.5

DISARM SAFETY SWITCH

The Disarm Safety Switch aids in preventing accidental motor disarming while the ALTA is in flight and in manual mode. It may be mapped to either a two-position or three-position switch. To set up the Lockout Switch, refer to the Mapping Channels section or the ALTA Aircraft Flight Manual.

3-POSITION SWITCH	FUNCTION
1	On - Disarming is not possible
2	Off - Disarming is possible
3	Off - Disarming is possible

2-POSITION SWITCH	FUNCTION
1	On - Disarming is not possible
2	Off - Disarming is possible

CONTROL MODES

ALTA has three primary flight control modes: Manual Mode, Height Mode, and Position Mode. They are selected with the Mode Switch. ALTA also has two emergency control modes, Return-To-Home and Autoland, which are available only during certain situations. For additional information, refer to the sub-section associated with each emergency control mode in the AFM.

MANUAL MODE

In Manual Mode, ALTA will only stabilize its attitude. At neutral control input (middle pitch and roll stick position), ALTA will attempt to remain level. Throttle control is direct.

HEIGHT MODE

Height Mode changes the throttle stick behavior to command climb and descent rates. The higher the throttle stick position, the faster ALTA will climb. Conversely, the lower the throttle stick position, the faster ALTA will descend.

When the throttle stick is centered, ALTA will enter Height Hold. In Height Hold, ALTA will maintain a target altitude and try to correct for drift. If a disturbance moves ALTA away from this target altitude, ALTA will climb or descend to return to the target altitude.

CAUTION

Always neutralize control inputs when switching between control modes.

NOTE

ALTA's emergency control modes are for emergency use only. Do not test or use emergency control modes in normal flight conditions.

CONTROL MODES [CONTINUED]

POSITION MODE

Position Mode changes the pitch/roll stick behavior to command ground speeds. Pitch and roll stick deflection will command fore/aft and left/right ground speeds respectively. Controlling altitude in Position Mode is the same as in Height Mode.

With pitch and roll controls centered, ALTA will enter Position Hold. In Position Hold, ALTA will maintain its position over a given point on the ground and correct for disturbances.

Position Mode requires a strong GPS signal. If a weak signal is present, ALTA will not enter Position Mode, and if the GPS signal degrades while in Position Mode, ALTA will automatically revert to Manual Mode.

RETURN-TO-HOME

Return-To-Home (RTH) Mode will command ALTA to fly back to the starting point of the flight or the last defined Home Point. When ALTA first acquires a GPS position, it sets this as the Home Point of the flight. The Home Switch on your radio controller can also be used to set a new Home Point. See Channel Mapping in the AFM for more information on setting up the Home Switch.

RTH can be initiated manually by the Home Switch or be initiated with an Loss of Signal (LOS) event.

When initiated with the Home Switch, ALTA will fly back to the Home Point, and the pilot will maintain control of ALTA's altitude the entire

time. ALTA will not autoland if adequate signal is detected. The pilot can cancel the RTH procedure by commanding a pitch or roll command.

During an LOS event, ALTA will first check its current altitude against Safe Height. If it is lower, it will climb to Safe Height, and if ALTA is above Safe Height, it will remain at its current altitude. Next, ALTA will fly back to the home position at the RTH Speed set in the ALTA App. Finally, upon reaching the home position, ALTA will begin Autoland.

AUTOLAND

The Autoland function will command ALTA to hover for 10 seconds and will then land in place. If ALTA is above the app-configurable Safe Height setting, ALTA will first descend to it at the Maximum Descent Rate. After reaching this height, ALTA's descent will slow to the Autoland Descent Rate.

Autoland will only initiate if one of the following conditions is met:

- During Loss of Signal (LOS) if Autoland is selected as the LOS event in the ALTA app
- At the end of a LOS Return-to-Home event
- Battery exhaustion while flying in Height or Position modes only

⚠ CAUTION

Flight using Position Mode in areas of degraded GPS signal, such as near buildings or under dense tree cover, is not recommended. The reversion to Manual Mode can sometimes cause abrupt changes in flight behavior.

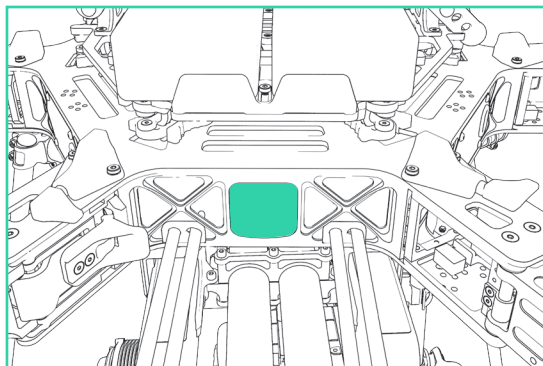
RADIO LOSS OF SIGNAL

Return To Home



STATUS LIGHT

The rear-facing Status Light shows the status of ALTA as it boots, arms and flies. The following table shows the different meanings of the light in the various flight phases.



FLIGHT PHASE	LIGHT COLOR	MEANING
BOOTING	Flashing Red + White	Flight controller is booting
STANDBY	Flashing White	Flight controller is running and ready to arm
	Flashing Red	Flight controller is running and not ready to arm
	Solid Red	Flight controller boot unsuccessful
ARMED	Off	Ready for flight
FLIGHT - ALL MODES	Solid Red	Flight critical alarm- Land immediately!
FLIGHT - MANUAL MODE	Off	Nominal flight status No errors
	Solid White	Outside user-defined range, height or speed limits
FLIGHT - HEIGHT MODE	Off	Nominal flight status Height Hold inactive
	Slow Flashing White	Height Hold active
	Flashing Red	Flight critical alarm- Land immediately!
FLIGHT - POSITION MODE	Off	Nominal flight status Height Hold inactive Position Hold inactive
	Slow Flashing White	Height Hold or Position Hold active
	Fast Flashing White	Height Hold and Position Hold active
	Flashing Red	Flight critical alarm- Land immediately!

ALARMS

ALTA will notify the pilot of critical alarms using the Status Light. These alarms indicate a serious issue has been observed in the behavior of the ALTA that, if not acted upon immediately, can cause loss of control. Never continue a flight when ALTA indicates an alarm.

During an alarm, the Status Light will turn red.

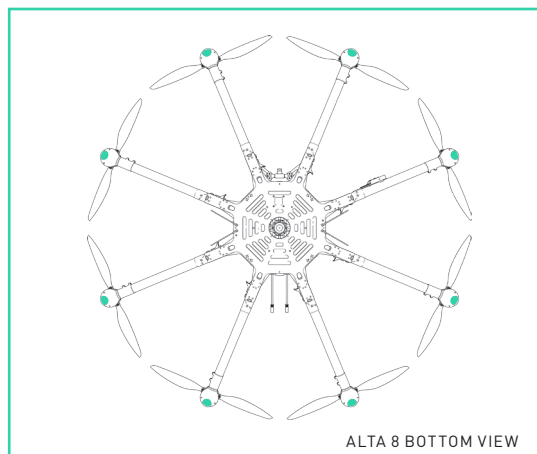
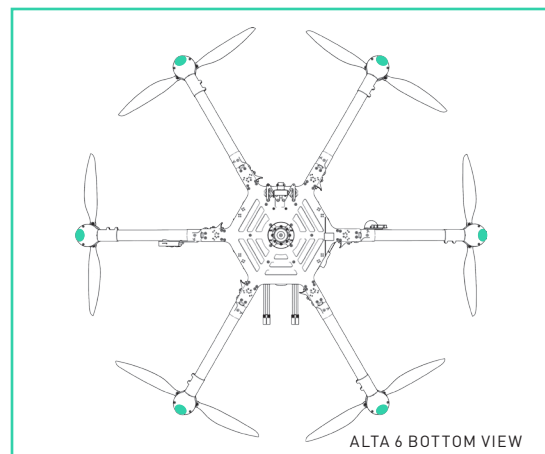
WARNING

If ALTA displays an alarm, land immediately.

ORIENTATION LIGHTS

The boom-end mounted Orientation Lights indicate both the orientation of ALTA in flight and the status of the individual motor Electronic Speed Controllers (ESCs) during other flight phases. The following table shows the different meanings of the light colors in the various flight phases.

FLIGHT PHASE	LIGHT COLOR	MEANING
BOOTING	Blue	ESC booting
STANDBY	Flashing green	ESC booted normally
ARMED	User-defined	Nominal status
FLIGHT	User-defined	Nominal status
FIRMWARE UPDATE	Blue then yellow	ESC firmware is updating



COMPASS CALIBRATION

ALTA features a highly sensitive 3-axis magnetometer that measures the earth's magnetic field to infer heading. Occasionally, the compass will require calibration, especially when traveling between different geographic locations.

TO PERFORM A COMPASS CALIBRATION:

1. Secure a battery onto ALTA (see page 18-19)
2. Plug in the battery
3. Open the ALTA App
4. Select Configurations > More > Compass
5. Under Calibration, select Start Manual
6. Follow the on-screen instructions

WARNING

Verify ALTA is disarmed prior to performing a compass calibration. To ensure ALTA does not arm, remove the Configuration Jumper, set the mode switch to Height or Position, or set the home switch to Set New Home Position.

NOTE

It is recommended to use two people to perform the compass calibration as it requires handling and rotating ALTA. Perform calibration without a payload attached.

NOTE

Ensure a microSD card is installed in the GPS/compass module prior to performing compass calibration.

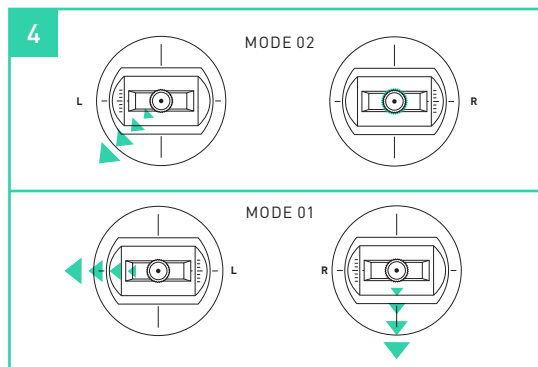
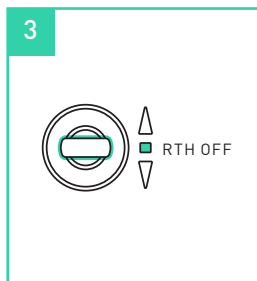
ARMING AND STARTING ALTA MOTORS

TO ARM ALTA

1. Ensure ALTA is powered on and is in Standby Mode
2. Select Manual Mode using the radio controller's Mode Switch
3. Set the Home Switch to the middle position
4. Hold full low throttle and full left yaw
5. Ensure Status Light extinguishes and Orientation Lights change to the colors defined in the app

NOTE

Refer to the radio controller's documentation for help determining the controller mode (1 or 2).

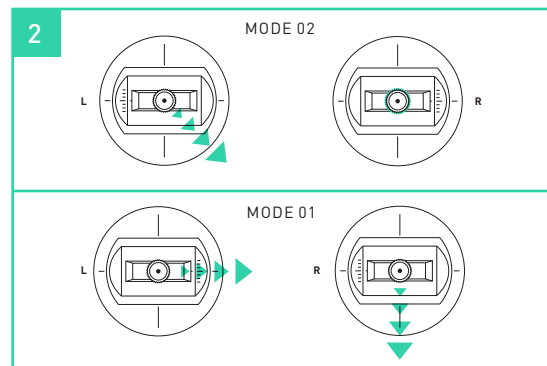


TO START ALTA MOTORS

1. Ensure ALTA is armed
2. Hold full low throttle and full right yaw
3. Ensure ALTA motors spin up

WARNING

Always check the ALTA and its components prior to operation.
Always maintain a safe distance from the ALTA when in use.
Never attempt to touch the ALTA when the propellers are moving.



TO STOP ALTA MOTORS AND DISARM

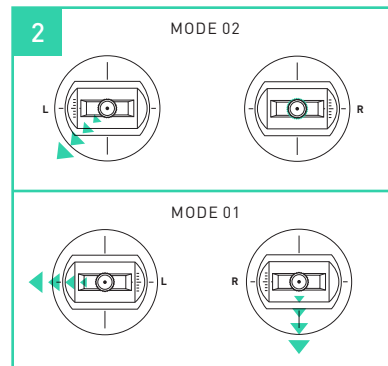
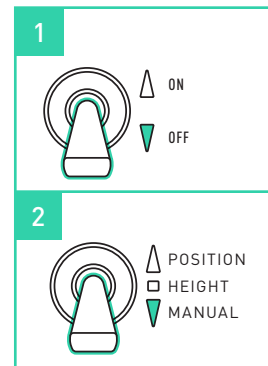
1. Set the Disarm Safety Switch to Off
2. Ensure Mode Switch is set to Manual Mode
3. Hold full low throttle and full left yaw
4. Ensure ALTA Status Light flashes white and Orientation Lights flash green

WARNING

Motors can be disabled in flight if the disarming procedure is followed.

CAUTION

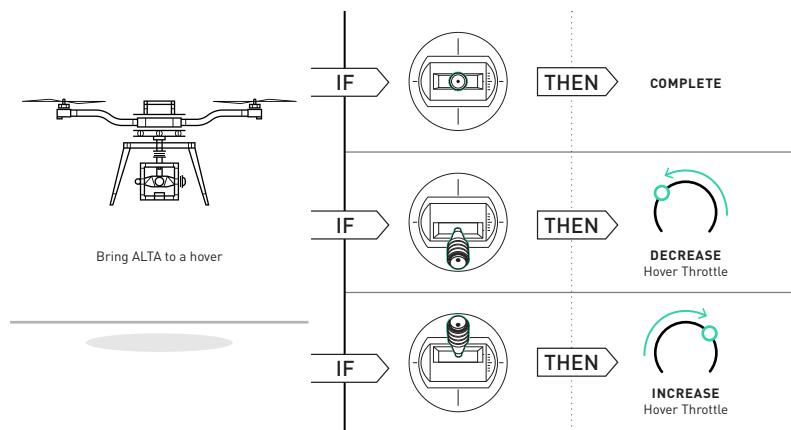
Do not attempt to disarm motors in Height or Position Modes.



SETTING HOVER THROTTLE

Hover Throttle is an app-configurable parameter that adjusts ALTA's thrust at center throttle stick and ensures ALTA does not climb or descend at the center stick position while flying in Manual Mode. A Hover Throttle setting that is too high or too low can cause ALTA to climb or descend when switching between Manual Mode and Height Mode.

Adjust the Hover Throttle setting by entering a stable hover in Manual Mode. Note the stick position, or have an assistant view the radio chart in the ALTA App to determine stick position. If ALTA hovers with the stick below neutral, decrease the Hover Throttle until ALTA hovers with neutral stick input. If ALTA hovers with the stick above neutral, increase the Hover Throttle until ALTA hovers with neutral stick input.



NOTE

Hover Throttle will need to be adjusted when changing the overall weight of the system, or when moving between very different elevations.

NOTE

The ALTA App does not allow Hover Throttle adjustments while ALTA is flying.

TUNING ALTA

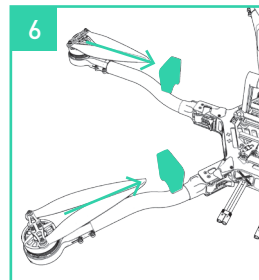
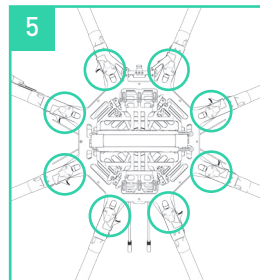
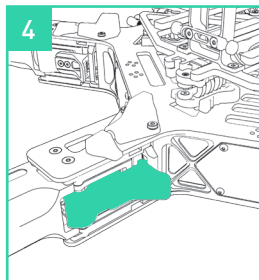
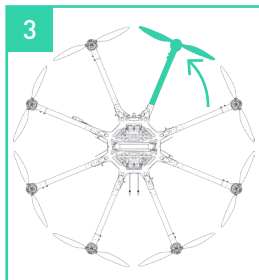
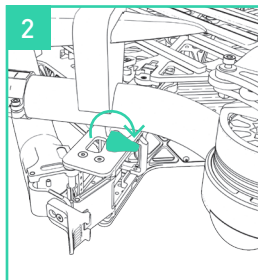
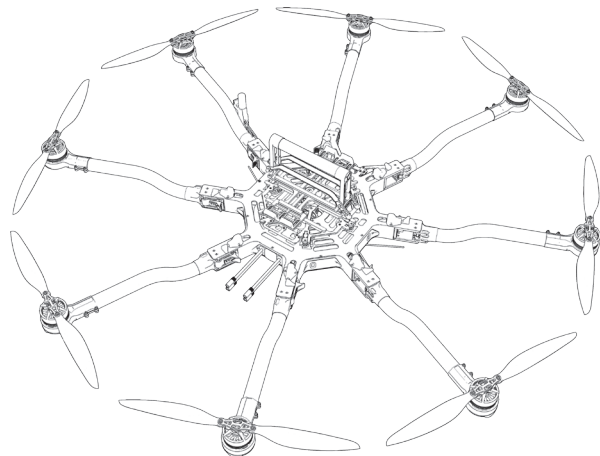
ALTA models come pre-tuned for a wide variety of payloads and flying conditions. Generally, additional tuning is not required to fly ALTA, and additional tuning will only need to take place if more customization of control feel is desired. For more information on tuning parameters, refer to the Aircraft Flight Manual for your ALTA model.

WARNING

Tuning can change the fundamental flying characteristics of ALTA. It is possible for ALTA to become unstable or even uncontrollable if values are set too high or too low. Only change tuning parameters in small increments and with caution. Always test new tuning configurations in open areas away from people or obstacles.

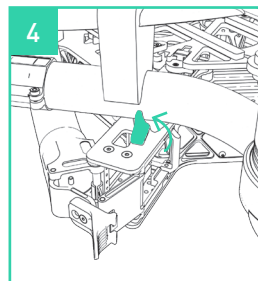
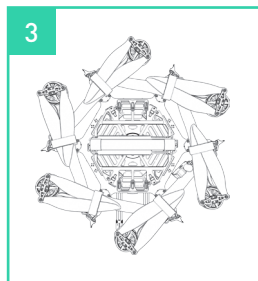
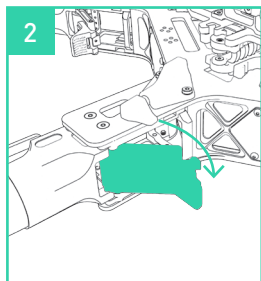
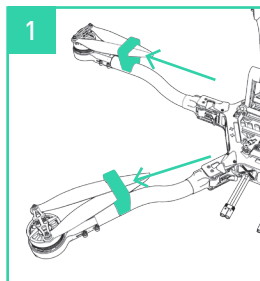
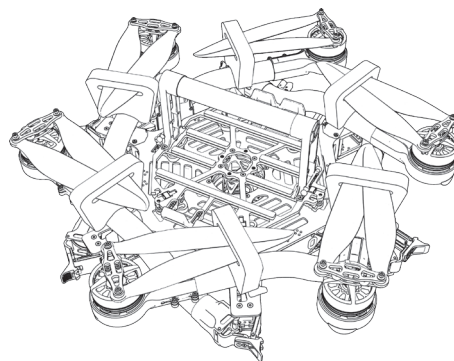
UNFOLDING ALTA

1. Remove ALTA from case
2. Fold down all boom retention clips
3. Open ALTA booms
4. Snap shut all boom latches until they “click”
5. Visually confirm all latches are seated properly
6. Remove prop protectors



FOLDING ALTA

1. Secure props with prop protectors
2. Unlatch all booms
3. Close ALTA booms
4. Fold up all boom retention clips to secure booms



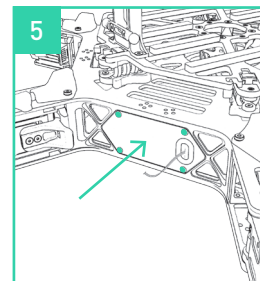
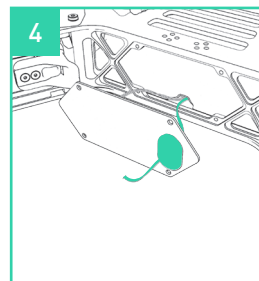
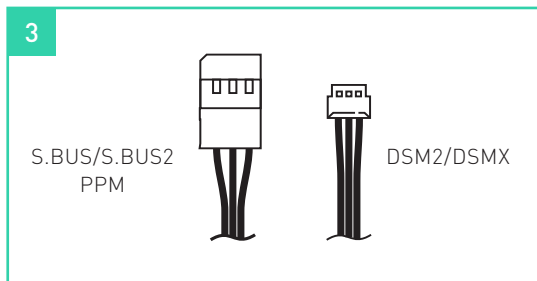
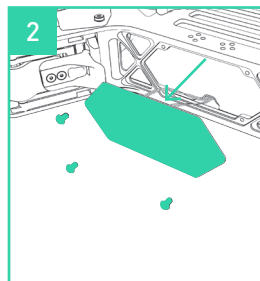
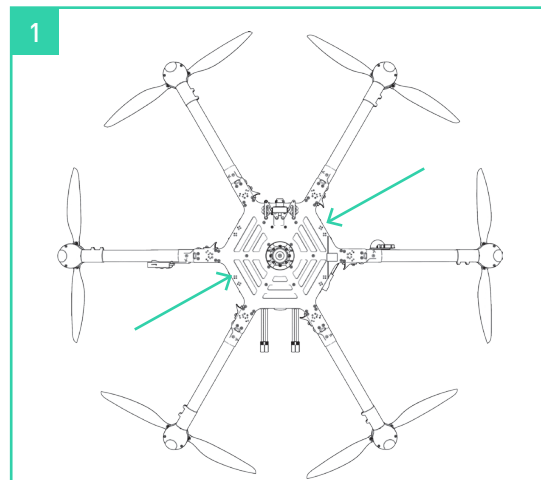
INSTALLING A RADIO RECEIVER ON ALTA 6

1. Locate the noted closeout panels used for receiver installation (between booms 1 & 2 and 4 & 5)
2. Remove side closeout panel with radio wires using a 1.5mm hex driver
3. Identify required wire
4. Feed wire through grommet
5. Replace side closeout panel
6. Plug in receiver/satellite to wire per the radio manufacturer's installation instructions



NOTE

Refer to the Aircraft Flight Manual for Futaba voltage telemetry installation instructions. Telemetry is only available between booms 1 & 2.



BINDING A RADIO RECEIVER

7. Attach receiver/satellite to exterior using the provided double sided tape:

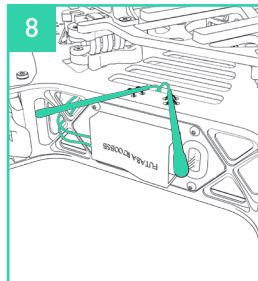
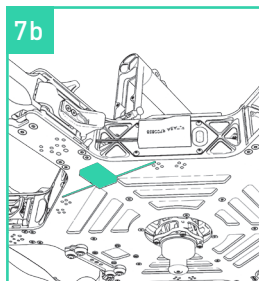
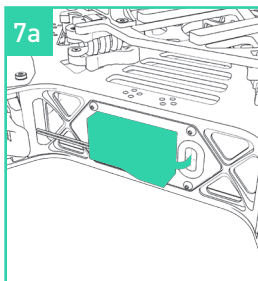
a. Futaba & PPM receiver

b. Spektrum/JR

8. For Futaba receivers, feed antenna wires into antenna tubes and zip tie to noted mounting location

9. Repeat 1-7 on opposite side for dual receivers
(only applies to Futaba and Spektrum/JR)

Refer to the instructions provided with your radio controller to complete the binding process. For Spektrum/JR radios, a receiver is required to bind the satellites to a radio controller.



INSTALLING A RADIO RECEIVER ON ALTA 8

For Futaba and PPM receivers:

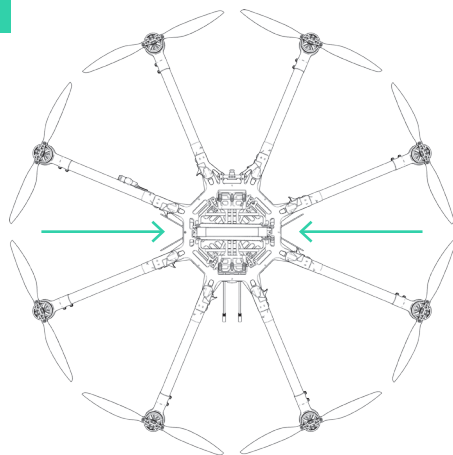
1. Locate the noted closeout panels used for Futaba receiver installation (between booms 2 & 3 and 6 & 7)
2. Remove side closeout panel using a 2.0mm hex driver
3. Plug signal wire into receiver
4. If using telemetry, plug telemetry wire in (refer to ALTA 8 Aircraft Flight Manual for instructions)
5. Feed receiver antenna into lower antenna tube



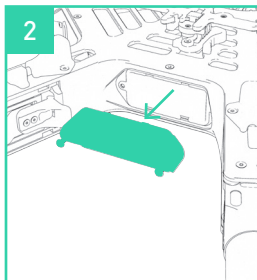
NOTE

Refer to the Aircraft Flight Manual for Futaba voltage telemetry installation instructions.

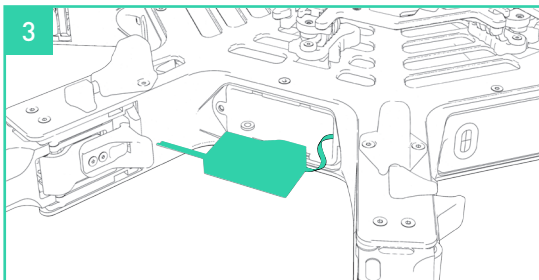
1



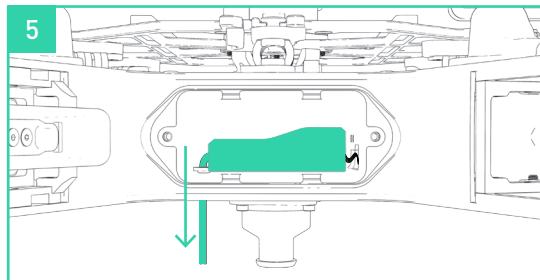
2



3



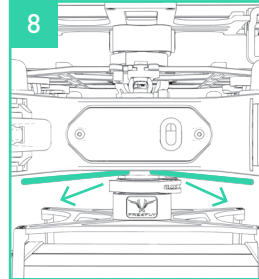
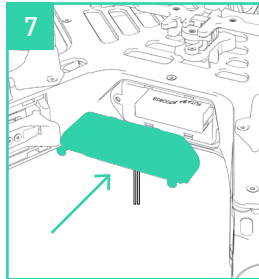
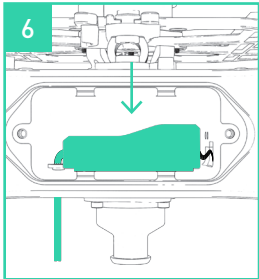
5



BINDING A RADIO RECEIVER

6. Secure receiver using the provided double sided tape to inside of receiver housing
7. Reattach closeout panel
8. Route antenna wires into the two antenna tubes below ALTA 8 chassis
9. Repeat steps 1-8 for dual receivers (only applies to Futaba receivers)

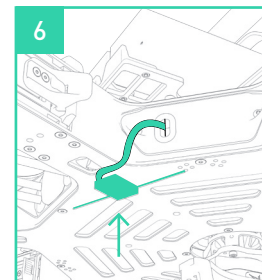
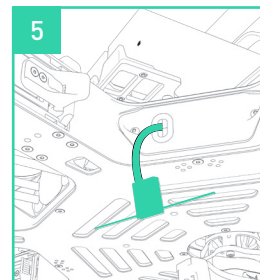
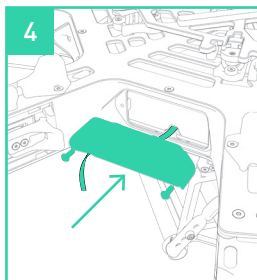
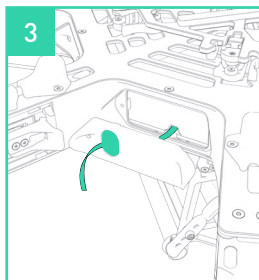
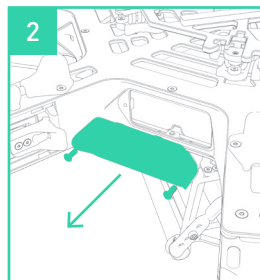
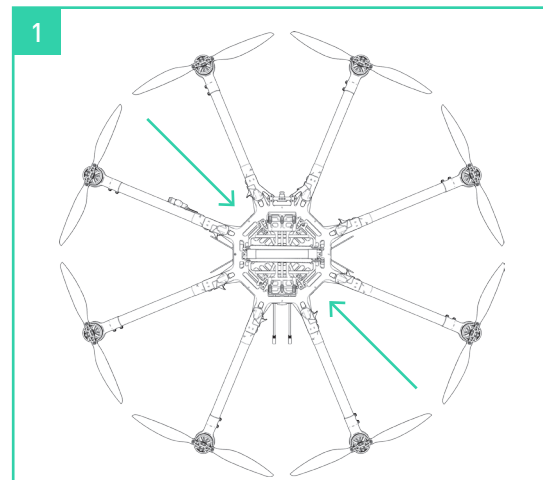
Refer to the instructions provided with your radio controller to complete the binding process. For Spektrum/JR radios, a receiver is required to bind the satellites to a radio controller.



INSTALLING A RADIO RECEIVER ON ALTA 8 (CONTINUED)

For Spektrum/JR:

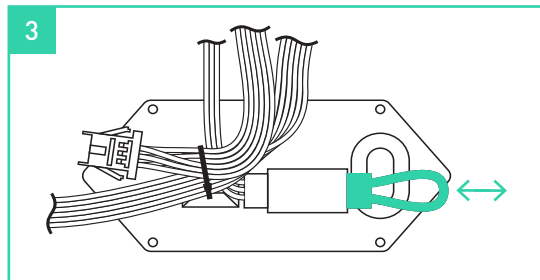
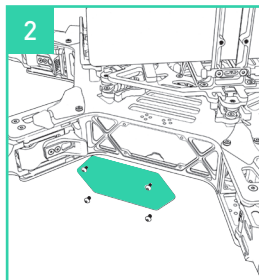
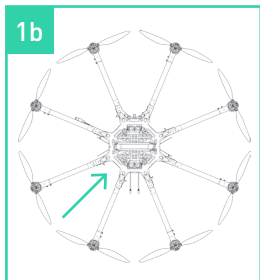
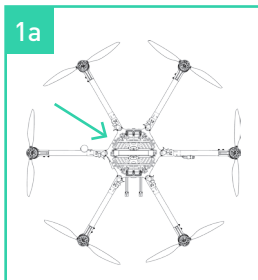
1. Located the noted closeout panels used for Spektrum/JR receiver installation (between booms 3 & 4 and 7 & 8)
2. Remove side closeout panel using a 2.0mm hex driver.
3. Feed signal cable through panel grommet
4. Reattach closeout panel
5. Plug in receiver/satellite into signal cable
6. Attach receiver/satellite to exterior using double sided tape
7. Repeat steps 1-6 for dual receivers



CONFIGURATION JUMPER

A small jumper is used to prevent motor operation while configuring radio mapping parameters. With the jumper in place, the motors may operate, but channel mapping is prevented. With the jumper removed, channel mapping may take place, but the motors will be turned off.

1. Locate the closeout panel where the jumper is installed
 - a. ALTA 6 between booms 5 & 6
 - b. ALTA 8 between booms 5 & 6
2. Remove the side closeout panel with the jumper using a 1.5mm (ALTA 6) or a 2.0mm (ALTA 8) hex driver
3. Remove or replace the jumper
4. Reattach the closeout panel



ALTA APP

The ALTA App is used to configure ALTA parameters and to monitor ALTA's status during flight.

To download the ALTA App, search for "Freefly ALTA" in the App Store or on Google Play™.

NOTE

When making configuration changes with the ALTA App, wait three seconds before closing the app for changes to be saved automatically.

DOWNLOAD THE **FREEFLY ALTA** MOBILE APP



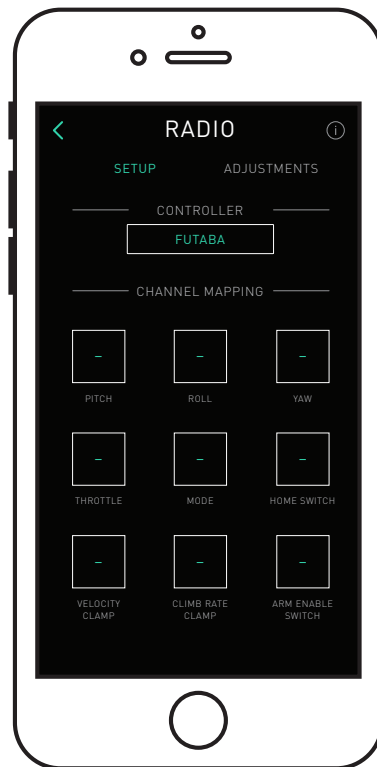
MAPPING CHANNELS

To map channels, use the ALTA App. For complete information on channel mapping, please refer to the ALTA Aircraft Flight Manual.

1. Remove the Configuration Jumper
2. Power ALTA using a battery pack or by plugging in the included USB-Futaba cable into an available port on a Futaba receiver
3. Open the ALTA App and connect to ALTA
4. Open Configurations > Radio
5. Open each ALTA function and adjust the channel to the desired channel number, and use the toggle to invert the orientation of a control
6. Ensure proper channel selection by moving the control input on the radio controller and verifying the displayed graph in the ALTA App responds correctly

ONCE CHANNELS ARE MAPPED

7. Remove the battery or USB-Futaba cable from ALTA
8. Replace the Configuration Jumper



WARNING

Always ensure the Configuration Jumper is removed prior to adjusting radio settings to prevent unintentional motor starts.

WARNING

Ensure proper channel mapping prior to flight. Incorrect mapping can lead to immediate loss of control.

FAILSAFE AND LOSS OF SIGNAL

FUTABA S.BUS AND SPEKTRUM/JR DSM

When using Futaba receivers with S.Bus or S.Bus2, or using Spektrum or JR receiver satellites with DSM2 or DSMX, the Synapse Flight Controller can detect signal strength and a loss of signal event.

Setting failsafes in the receiver is not necessary, as failsafe behavior is set in the ALTA App. The radio's failsafe settings will not be used.

PPM RECEIVERS

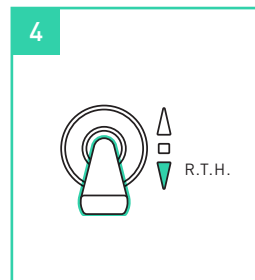
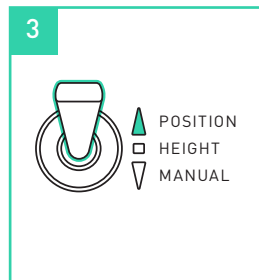
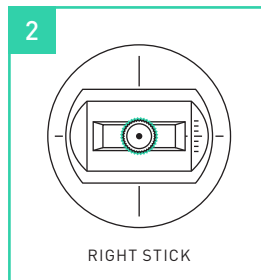
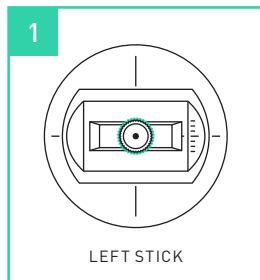
When using a receiver with a PPM output signal, the Synapse Flight Controller will not automatically detect loss of signal and will follow the radio controller failsafe commands typically set during the bind process. Refer to your radio controller manual for information on setting up failsafes.

WARNING

Improperly set failsafe settings on PPM radio receivers can cause unexpected flight behaviors if ALTA loses radio control signal. After setting radio failsafe settings, ensure they are correct by viewing the channel mapping parameters in the radio configuration screen in the ALTA App, or viewing radio charts in the ALTA App. Ensure that the radio commands behave as expected when the radio controller is powered off.

FREEFLY RECOMMENDS THE FOLLOWING FAILSAFE SETTINGS:

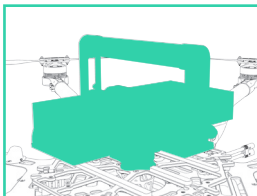
1. Throttle: Neutral
2. Pitch/Roll/Yaw: Neutral
3. Flight Mode Switch: Position Mode
4. Home Switch: Return to Home



INSTALLING A BATTERY

GROUNDVIEW

1. Place battery retention strap studs at the appropriate height for battery packs
2. Adjust battery stops to fit battery packs
3. Attach the single-hole end of the battery retention straps to the studs
4. Place battery packs on battery tray below handle
5. Tension and secure battery retention straps.



NOTE

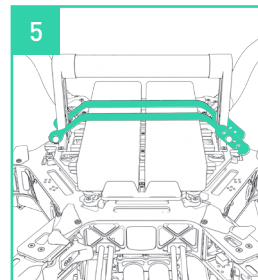
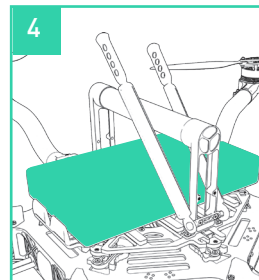
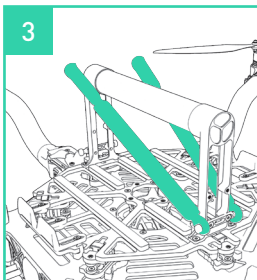
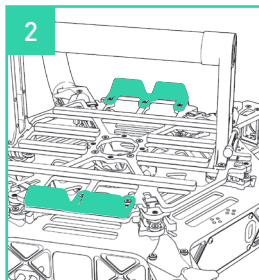
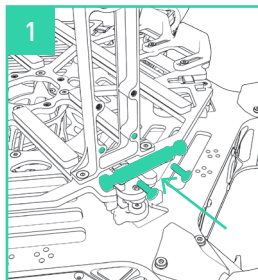
For ALTA 8, use the included Quick Release Battery Tray for battery mounting.

CAUTION

Do not install batteries on the lower battery tray if a Toad adapter is also installed. Either remove the Toad adapter or use the Quick Release Battery Tray.

WARNING CAUTION

See warning and cautions on page 44.

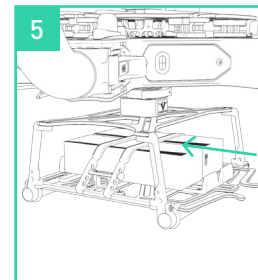
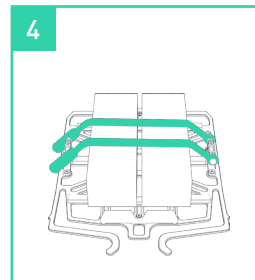
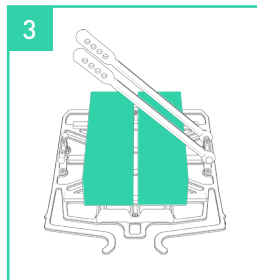
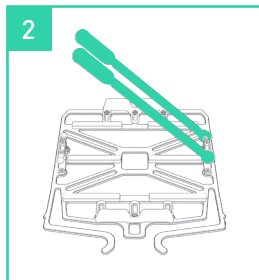
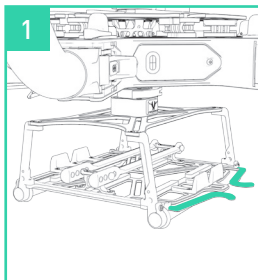


⚠ WARNING ⚠ CAUTION

See warning and cautions on page 44.

SKYVIEW

1. Pinch the battery tray handles and slide to remove it from landing gear.
2. Attach the single-hole ends of the battery retention straps to the studs on the battery tray
3. Place battery packs onto battery tray
4. Tension and secure battery retention straps
5. Slide tray with battery packs back into landing gear until it latches in place.
6. Ensure tray and battery packs are secure



 **WARNING**

Always secure battery packs with both battery retention straps.

 **CAUTION**

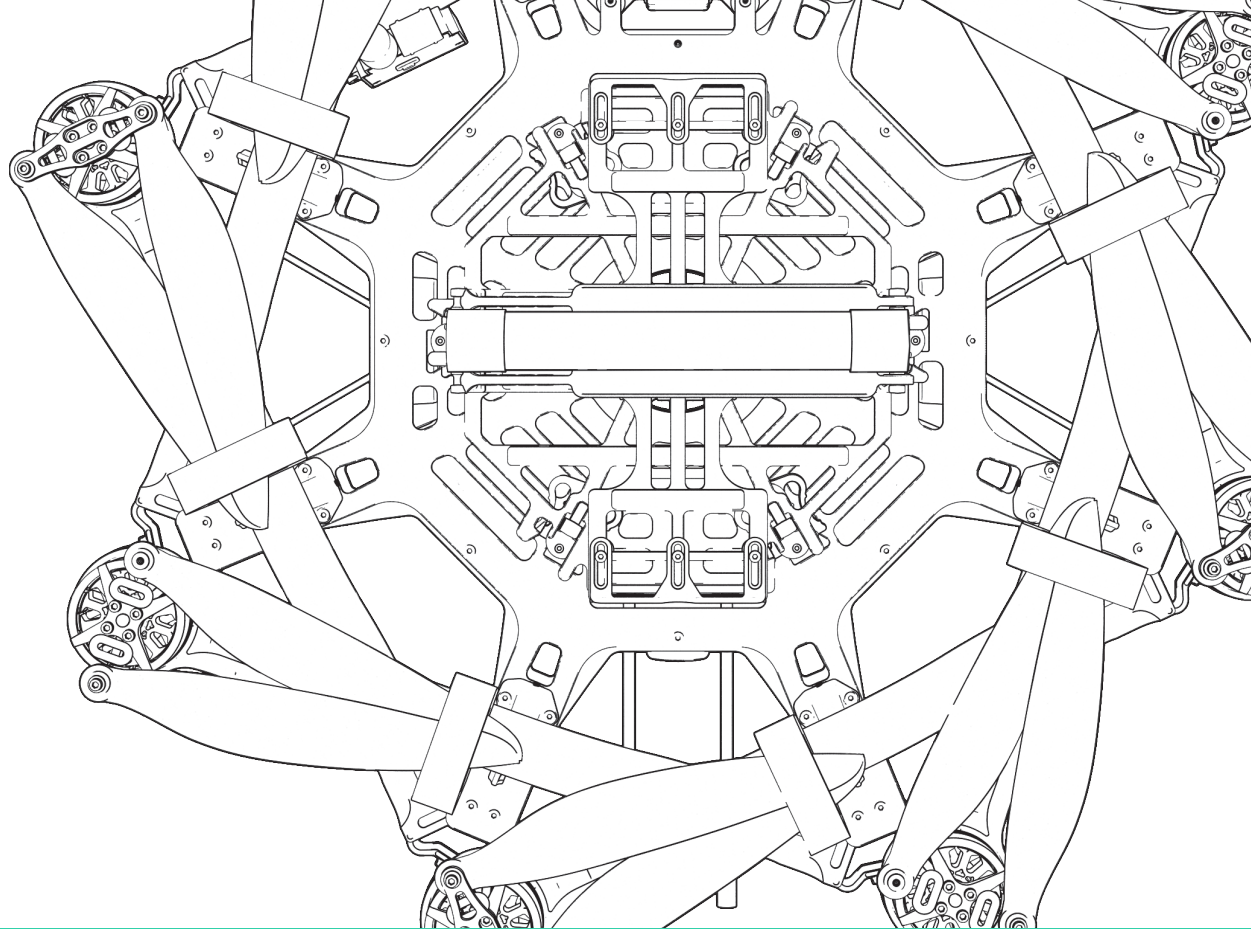
When plugging in battery packs, ensure the polarity is correct. Positive is indicated by a red power lead, and negative/ground is indicated by a black power lead. Reversing polarity will damage ALTA's electronics.

 **CAUTION**

Ensure both battery packs are at a similar state of charge (a full pack voltage difference less than 0.5V) prior to connecting them to ALTA. Plugging in two dissimilarly charged packs could cause one pack to rapidly discharge into the other and damage the batteries or cause a battery fire.

 **CAUTION**

Only use packs that are identical in their capacity and at a similar condition. Using a pack with another that is larger, or has many more cycles, can damage the battery packs.



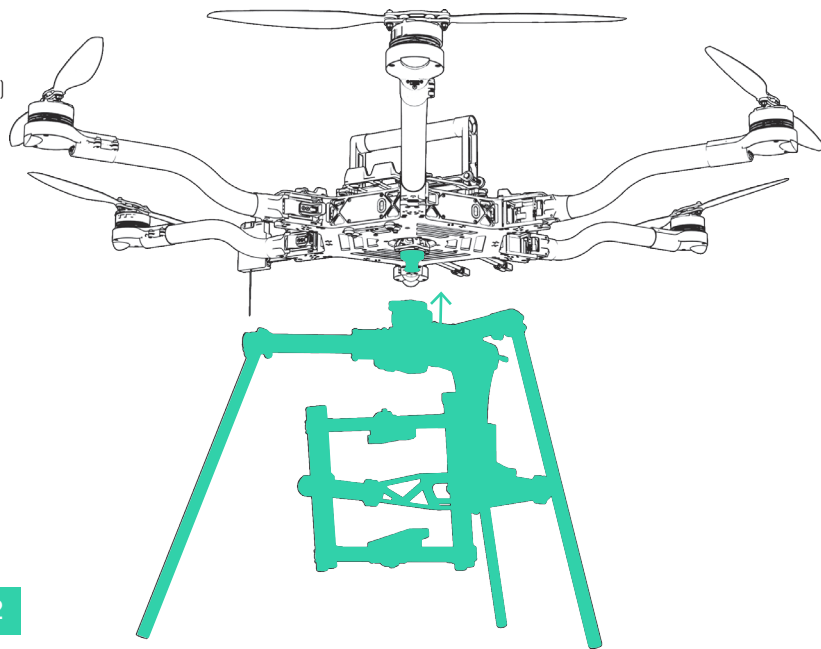
ATTACHING A MōVI

A MōVI can be attached to either the top or bottom of the ALTA via the Freely Toad In The Hole (TITH) Quick Release.

ALTA comes pre-configured for bottom mounting a MōVI.

GROUNDVIEW

1. Prepare your MōVI for GroundView flight (see MōVI manual)
 - a. Attach landing gear
 - b. Install TITH receiver on MōVI
2. Connect MōVI to bottom Toad



SKYVIEW

1. Prepare your MōVI for SkyView flight
 - a. Remove landing gear (see MōVI manual)
 - b. Install TITH receiver on MōVI (see MōVI manual)
2. Connect and secure the supplied inverted landing gear to the bottom Toad
3. Prepare your ALTA for SkyView Flight

For ALTA 6

- a. Remove the four flathead M3×6 bolts that secure the top handle
- b. Attach the supplied Toad to the top plate using the four M3×8 bolts provided

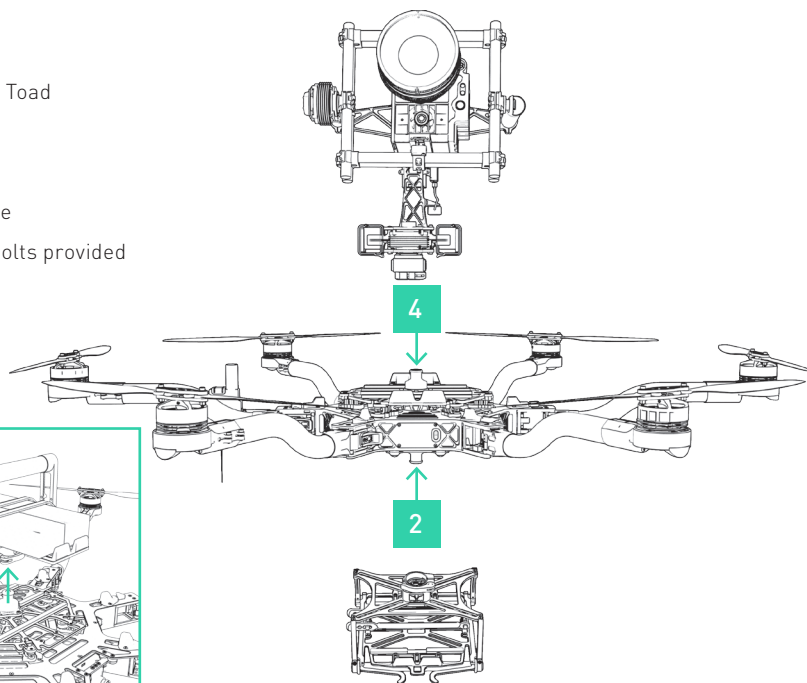
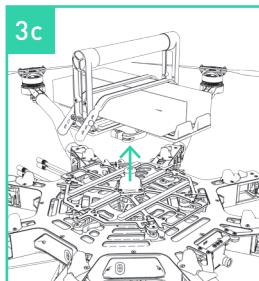
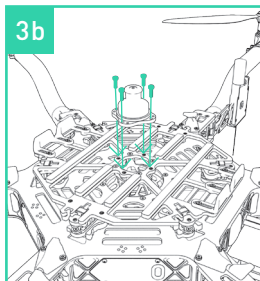
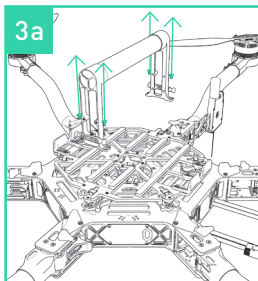
For ALTA 8

- c. Remove Quick Release Battery Tray

4. Connect MōVI to the top Toad

CAUTION

Top mounting is not supported by the MōVI M10.



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