

TRIAX|lite 2.0 FAQ

What is the TRIAX|lite 2.0?

- The TRIAX|lite 2.0 is a professional grade 3 axis camera mount that was designed from the ground up with HD cinematography and photography in mind for the RC helicopter after market.
- TRIAX|lite 2.0 takes the proven design of the TRIAX|lite to the next level while still providing an affordable price point.
- With a bigger opening for your camera, anodized black and red finish and the integration of several parts into one, result in high quality design.
- The TRIAX|lite 2.0 is light-weight, yet incredibly strong and rigid, perfect for the HD cinematographer or photographer.
- The unit is made from high quality aluminum and is CNC cut to precision.
- The design also incorporates changes to accept the TRIAX|cms (camera stabilization) option.
- The TRIAX|lite 2.0 is modular in design and can be mounted to nearly any helicopter platform in a front mount or under slung configuration.
- The solution supports continuous rotation in all 3 axis
- TRIAX|lite 2.0 comes standard with one rate gyro for the roll axis.

What is TRIAX|cms?

- TRIAX|cms is designed to aid to the camera operator, not as an auto pilot for the camera mount.
- TRIAX|cms provides essentially drift free position lock for the TRIAX|lite 2.0 camera mount and was designed specifically for use with the TRIAX|lite 2.0 camera mount.
- Best performance is achieved in two axis stabilization (pitch/roll) operating mode with manual pan control.
- TRIAX|cms achieves Synchronized Stabilization by using multiple sensors as input into a set of complex control algorithms that are implemented in the firmware.
- “cms” stands for camera mount stabilization.
- “Synchronized Stabilization” means the TRIAX|cms is providing interactive 3-axis real time feedback control to the TRIAX|lite 2.0 servos, resulting in an essentially drift free position lock for the camera mount. The result being improved capability to capture high quality video or still images.
- TRIAX|cms connects between a radio receiver and the TRIAX|lite 2.0 servos. The TRIAX|cms processes the input from multiple sensors, generating the required servo control signals to the TRIAX|lite 2.0 servos. No additional gyros or IR sensors are used. Everything needed is contained in the TRIAX|cms module attached to the TRIAX|lite 2.0 camera plate.

TRIAX

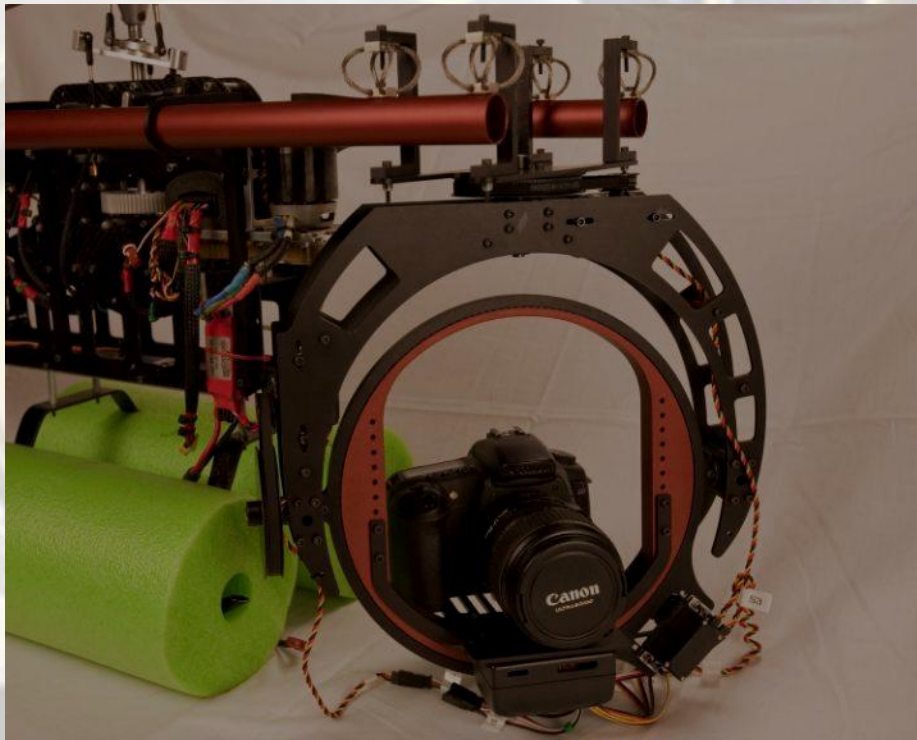
TRIAX|lite 2.0 FAQ

TRIAX|lite VISUAL HISTORY

TRIAX|lite 1st Generation



TRIAX|lite 2.0 2nd Generation



TRIAX

TRIAX|lite 2.0 FAQ



TRIAX|lite 2.0 - 2nd Generation



TRIAX

TRIAX|lite 2.0 FAQ



TRIAX|lite 2.0 is here!

FAQ1: What is the TRIAX|lite 2.0?

The TRIAX|lite 2.0 is a professional grade 3 axis camera mount that was designed from the ground up with HD cinematography and photography in mind for the RC helicopter after market.

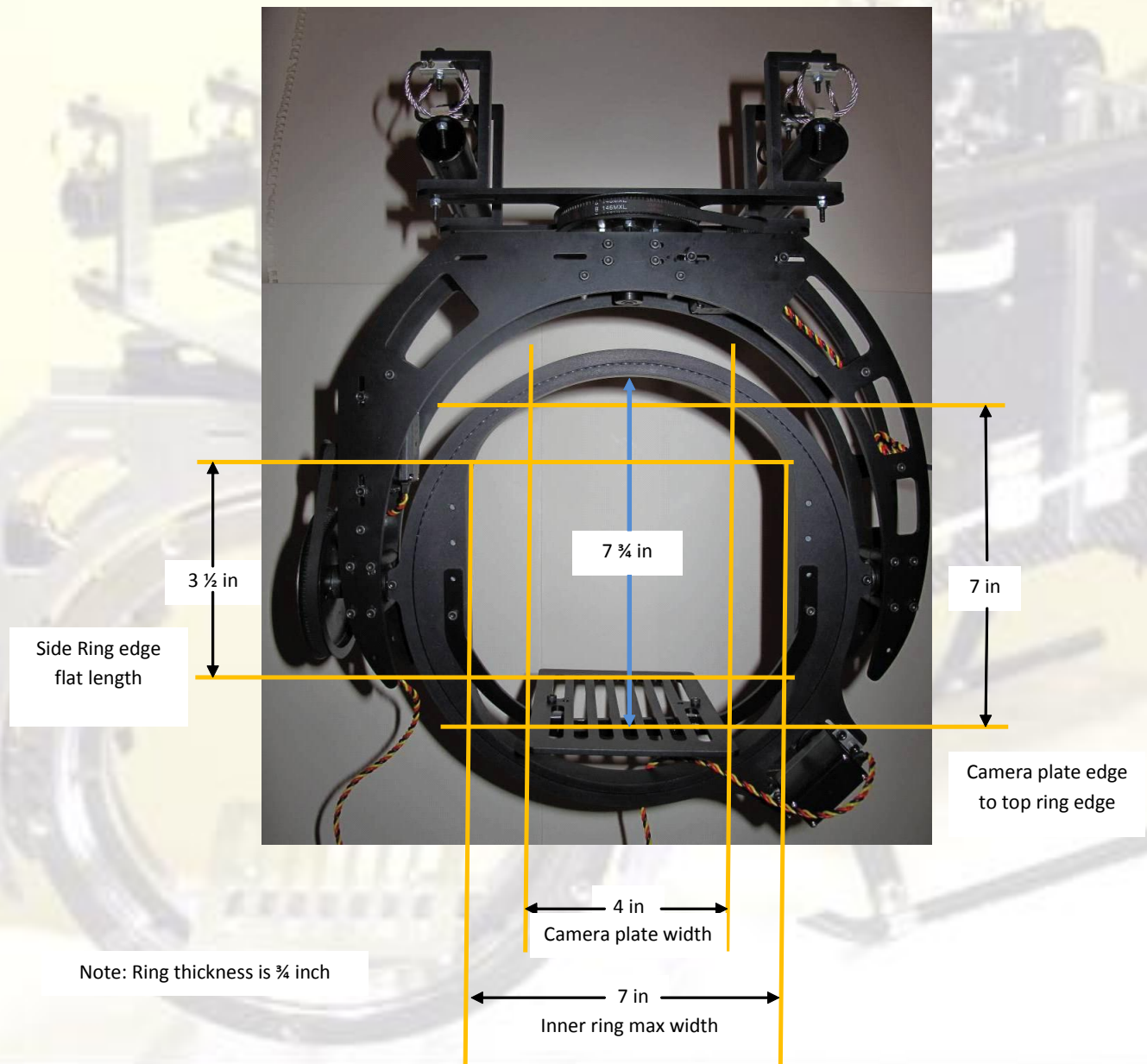
- TRIAX|lite 2.0 takes the proven design of the TRIAX|lite to the next level while still providing an affordable price point.
- With a bigger opening for your camera, anodized black and red finish and the integration of several parts into one, result in high quality design.
- The TRIAX|lite 2.0 is light-weight, yet incredibly strong and rigid, perfect for the HD cinematographer or photographer.
- The unit is made from high quality aluminum and is CNC cut to precision.
- The design also incorporates changes to accept the TRIAX|cms (camera stabilization) option.
- The TRIAX|lite 2.0 is modular in design and can be mounted to nearly any helicopter platform in a front mount or under slung configuration.
- The solution supports continuous rotation in all 3 axis
- TRIAX|lite 2.0 comes standard with one rate gyro for the roll axis.

TRIAX

TRIAX|lite 2.0 FAQ

FAQ2: What are the inner dimensions of the roll ring, measured from the camera mount bed to the top of the inner ring?

The custom designed roll ring has an inner circle diameter (vertical height) of ~7.75 to 8 inches inches (measured from the top surface of the camera mounting plate located at the bottom of the inner ring to the top of the inner ring).



TRIAX

TRIAX|lite 2.0 FAQ



Use this as a cut out template to check your camera size for mounting.

TRIAX|lite 2.0 FAQ

FAQ3: What cameras or video cameras can the TRIAX|lite 2.0 accommodate?

The TRIAX|lite 2.0 is capable of carrying a wide range of cameras and video cameras with no modification to the TRIAX|lite 2.0 mount or the camera.

- Common DSLR's include the Canon 5D Mark II and Nikon D200.
- Example large HD video cameras supported include the Sony HVRZ1U, and the Panasonic HVX170/200.
- Small HD video cameras and compact cameras are easily accommodated.
- An adjustable camera plate is a standard feature that allows the user to adjust the height of the camera bed enabling the camera to sit on the center of rotation in all 3 of the axis.
- Cameras are normally mounted in the horizontal plane, but can also be mounted in the vertical plane.
- **NOTE:** It is the responsibility of the user to determine if the overall weight and balance of the mount and camera are within the operating parameters of the helicopter.

FAQ4: How much does the TRIAX|lite 2.0 weigh?

- Weight of the TRIAX|lite 2.0 camera mount is ~4.5 lbs.
- With the TRIAX|cms option, the mount weighs just less than 5lbs.
- This does not include any user provided electronics.

FAQ5: How is TRAX/lite 2.0 roll axis stabilized?

The TRIAX|lite 2.0 uses a single rate gyro (FUTABA g190) on the roll axis. The one rate gyro is included as a standard accessory.

- Gyro drift will be a problem with any camera mount that uses 360° servos and rate gyros.
- Because the design uses a combination of modified high speed and high torque 360° servos, when the gyro is in rate mode, drift can happen over time. With proper tuning of radios and servos, the gyro drift becomes very slight.
- The most effective option for solid stabilized mounts using the 360° servos is to use the TRIAX|cms solution.

TRIAX

TRIAX|lite 2.0 FAQ

FAQ6: Is it possible to add additional gyro stabilization to the TRIAX|lite 2.0?

The TRIAX|lite 2.0 comes with the FUTABA g190 gyro on the roll axis.

- Please note that roll stabilization can drift over time. This is the nature of using a gyro and the 360° servos.
- Adding more stabilization would be up to the end user and implemented at their risk.
- If considering adding a gyro to tilt, the recommendation would be to use the same FUTABA g190 gyro.
- With a properly tuned radio, gyro drift can be minimal. This drift is something that a camera operator could easily compensate for.

FAQ7: Do you offer any other 3 axis stabilization solution for the TRIAX|lite 2.0?

- Yes
- TRIAX|cms is an option for your TRIAX|lite 2.0 that provides synchronized 2 or 3 axis stabilization control capability

FAQ8: What helicopter frames will the TRIAX|lite 2.0 work with?

The TRIAX|lite 2.0 was designed around the Joker 2 using the photo conversion frame set part #841.

- The Hardware provided will support the mounting of the TRIAX|lite 2.0 to a Joker 2 or TREX700 helicopter in a front mount setup.
- **NOTE:** Additional mounting holes may be required to be added during installation.
- Given the modularity of the design, it should be very straight forward to use the included mounting hardware, in a front mount or under slung configuration on many different helicopter frames of a similar class.
- **NOTE:** TRIAX|lite 2.0 does not provide any modifications for the landing gear. These modifications are the responsibility of the purchaser.

FAQ9: Is any camera cover provided with the TRIAX|lite 2.0?

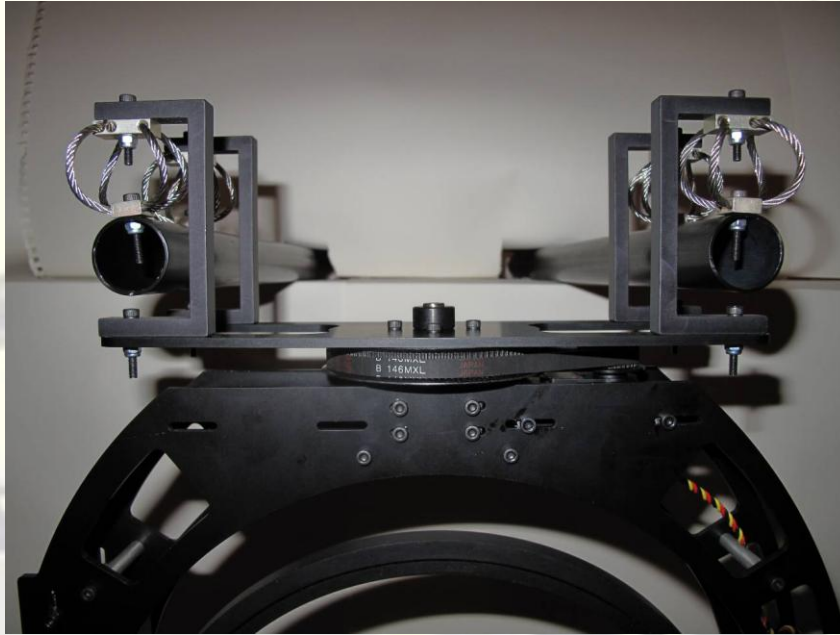
- No hood or cover is provided with the TRIAX|lite 2.0 mount.

TRIAX

TRIAX|lite 2.0 FAQ

FAQ10: What else is done to reduce the effects of helicopter vibration?

- 4 CWR (compact wire rope) isolators are used to connect the TRIAX|lite 2.0 to the helicopter frame for vibration isolation.



FAQ11: What else is needed to use the TRIAX|lite 2.0?

- The purchaser will need to supply a radio receiver and receiver battery pack.
- Purchaser will need to provide appropriate landing gear to accommodate the TRIAX|lite.
- Front mount Installation will require modifications to adjust helicopter center of gravity.
- Purchaser is responsible for any required modifications.

TRIAX

TRIAX|lite 2.0 FAQ

FAQ12: How do I setup my TRIAX|lite 2.0?

The TRIAX|lite 2.0 comes ready to use.

- The TRIAX|lite 2.0 unit is pre-built and shipped ready to attach to the aerial platform.
- Currently the TRIAX|lite 2.0 is being offered with side mounting plates that work with either the Joker or TREX700.
- **NOTE:** Additional mounting holes may be required to be added during installation to the TREX700 or Joker 3.
- If purchaser is NOT flying a Joker 2 or TREX700, purchaser is responsible for fabrication of a mounting system for their specific application and insuring the helicopter has the power to safely lift the TRIAX|lite 2.0 with the camera installed.
- Purchaser will need to supply is a radio, receiver and battery. Because radios differ from brand to brand, some fine tuning of the gyro may need to be made to suit your application.

FAQ13: Can I buy the previous version/generation TRIAX|lite 2.0 at the lower price?

The TRIAX|lite 2.0 camera mount is a custom design. Unfortunately we will not be offering the previous TRIAX|lite designs or used units for sale.

- All sales are final.
- In the event of a damaged mount, TRIAX|AERIAL can rebuild the mount at a reasonable price to the purchaser, replacing components as needed.



TRIAX

TRIAX|lite 2.0 FAQ

FAQ14: What is TRIAX|cms?

- TRIAX|cms provides essentially drift free position lock for the TRIAX|lite 2.0 camera mount and was designed specifically for use with the TRIAX|lite 2.0 camera mount.
- TRIAX|cms is designed to aid to the camera operator, not as an auto pilot for the camera mount.
- Best performance is achieved in two axis stabilization (pitch/roll) operating mode with manual pan control.
- TRIAX|cms achieves Synchronized Stabilization by using multiple sensors as input into a set of complex control algorithms that are implemented in the firmware.
- “cms” stands for camera mount stabilization.
- “Synchronized Stabilization” means the TRIAX|cms is providing interactive 3-axis real time feedback control to the TRIAX|lite 2.0 servos, resulting in an essentially drift free position lock for the camera mount. The result being improved capability to capture high quality video or still images.
- TRIAX|cms connects between a radio receiver and the TRIAX|lite 2.0 servos. The TRIAX|cms processes the input from multiple sensors, generating the required servo control signals to the TRIAX|lite 2.0 servos. No additional gyros or IR sensors are used. Everything needed is contained in the TRIAX|cms module attached to the TRIAX|lite 2.0 camera plate.



TRIAX

TRIAX|lite 2.0 FAQ

FAQ15: What features come with the TRIAX|cms?

The TRIAX|cms has several operating modes that the user can configure.

Normal Operation

Normal Operation enables Synchronized Stabilization and provides external radio control input that can be used for TRIAX|lite 2.0 camera mount pre-flight position setup and provide in-flight real-time position augmentation control of the TRIAX|lite 2.0 camera mount.

Possible configurations within the Normal Operation include:

1. 2-axis Synchronized Stabilization with real-time position control on the pitch and roll axis for the TRIAX|lite 2.0. Pan axis is under external radio control only, no position lock is provided. This mode will provide best performance.
 2. Providing 3-axis Synchronized Stabilization with real-time position control on the pitch and roll axis for the TRIAX|lite 2.0. Pan lock positional adjustment is also provided.
 3. 3-axis external manual control is provided to the TRIAX|lite 2.0, with Synchronized Stabilization disabled.
- **NOTE:** It is the responsibility of the user/ purchaser to provide the radio controller, receiver and battery that will be used for TRIAX|lite with TRIAX|cms.

Autonomous Operation Control

Autonomous Operation enables the TRIAX|lite 2.0 to operate in a fully self-contained mode with no external radio controller or radio receiver being required.

Possible configurations include:

1. 2-axis Synchronized Stabilization for pitch and roll, with manual pan control. This mode will provide best performance.
2. Full 3-axis Synchronized Stabilization for pitch, roll and pan axis.

TRIAX

TRIAX|lite 2.0 FAQ

Other Features

Power-on Safety Hold: When using radio control with receiver or other external servo control, the TRIAX|cms will not automatically transition to initialization mode. User must start initialization mode.

Servo Lock: A servo hold output is provided to the TRIAX|lite 2.0 servos during TRIAX|cms initialization. This hold signal effectively locks out any control signal input and eliminates any servo drift during the initialization process.

Control Signal Detection: If the TRIAX|cms detects loss of external servo input control signal (loss of any of the 4 channels of servo input from the radio receiver or external servo control) at any point, the TRIAX|cms will Servo Lock, freezing the camera mount motion. TRIAX|cms stays in the Servo Lock until the TRIAX|cms power cycles (off and then back on).

Pan Lock Loss: If TRIAX|cms detects that the TRIAX|lite pan has drifted off of lock more than 45 degrees, TRIAX|cms will initiate a Servo Lock for the TRIAX|lite 2.0.

Pitch and Roll Lock: Max travel direction limited to prevent stabilization issues.

FAQ16: Can TRIAX|cms be used with other 3 axis camera mounts?

- No
- TRIAX|cms is not sold as by itself
- The TRIAX|cms design was targeted to compliment and work with the TRIAX|lite 2.0 camera mount. Design considerations included the different operating modes, gains and interactions between the belt drive ratios, servo torque and max rotational speeds required, camera weights, and optimizing the performance by tuning the internal gain settings for the control loops that have interactions between the 3 different axis.

FAQ17: What is the order lead time, shipment time and payment?

The TRIAX|lite 2.0 and TRIAX|cms have an order lead time of 4 weeks, once the order is confirmed.

- Standard shipping is USPS
- US Shipments typically take 5-7 days
- International shipments typically take ~ 10 days
- Purchaser is responsible for all VAT
- Inquire for special shipping needs and associated costs
- Payment is Bank wire transfer or PayPal.
- We are happy to provide quotes to specific shipping location. Please indicate Option Configuration, ship to address and contact phone number by sending an email to info-triax@artispheres.com Subject: Quote Request.

TRIAX|lite 2.0 FAQ

FAQ18: How do we contact you?

The TRIAX|AERIAL team can be contacted at info-triax@artispheres.com .

Additional Links

Example Commercial

Making of:

http://www.youtube.com/watch?v=Yz7rBuXJG58&feature=player_embedded#

Final commercial:

http://www.youtube.com/watch?v=aSUpbovpiJg&feature=player_embedded

Please check the following web site. There are additional pictures and videos of the system being used.

www.icamcopters.com

Disclaimer

Model helicopters, the TRIAX|lite 2.0 camera mount and the TRIAX|cms are not toys. They have the potential to be very dangerous. Beginners should seek advice from those competent in the field.

By the act of installing and using these products, the purchaser and/or acknowledges and accepts all liability. Neither TRIAX|AERIAL nor artispheres, llc assume any liability for any injury or damages resulting from the use of these products. Under no circumstance will the purchaser and/or user be entitled to consequential or incidental damages.

Specifications and FAQs subject to change without notice:

TRIAX