Congratulations on your purchase of Align professional aerial photography products! To ensure your success with this product, we would like to present the following information and important reminders.

For more detailed instruction, please check our website. http://www.align.com.tw/?p=5832

更詳細的組裝說明請上官網。
INTRODUCTION

We appreciate your patronage of Align professional aerial photography products. To ensure your success with this product, we would like to present the following information and important reminders.

Align G3-GH 3 Axis Gimbal can interface with PC, as well as iOS and Android systems through the use of Bluetooth. Built in receiver interface to accept various receiver systems on the market. An internal HDMI/AV converter for live video output to you video transmitter. The G3-GH is capable of fixed FPV mode as well as panoramic photography. Quick removal feature for compatibility with hand held gimbal rig.

In order for you to thoroughly enjoy the G3-GH 3 Axis Gimbal, please read through this manual prior to assembly and setting up. Keep this manual handy for future reference.

As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the property of others.

WARNING LABEL LEGEND

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>☠️ Forbidden 禁止</td>
<td>Do not attempt under any circumstances. 在任何禁止的环境下，请勿尝试操作。</td>
</tr>
<tr>
<td>⚠️ Warning 警告</td>
<td>Mishandling due to failure to follow these instructions may result in serious damage or injury. 因为疏忽这些操作说明，而使用错误可能造成财产损失或严重伤害。</td>
</tr>
<tr>
<td>🔴 Caution 注意</td>
<td>Mishandling due to failure to follow these instructions may result in danger. 因为疏忽这些操作说明，而使用错误可能造成危险。</td>
</tr>
</tbody>
</table>
**SAFETY NOTES**

**PROPER OPERATION**

Do not attempt to modify the aircraft to alter its intended design. Please use only designated replacement parts listed in the manual to ensure its design structure integrity. Operate this product within its intended design parameters; do not overload it with excess cargo. This product is limited to personal hobby use, and pilot should be proficient with operation of this model. Follow all local law and ordinances when operating. Do not use this product for purposes which may violate others’ personal privacy, and respect other’s intellectual properties. Do not use this product for illegal purposes or beyond the bonds of common safety.

**PREVENT MOISTURE**

R/C aircraft are composed of many precision electrical components. It is critical to keep the model and associated equipment away from moisture and other contaminants. The introduction or exposure to water or moisture in any form can cause the model to malfunction resulting in loss of use, or a crash. Do not operate or expose to rain or moisture.

**KEEP AWAY FROM HEAT**

R/C aircraft are made of various forms of plastics, such as carbon fiber and polyethylene. Plastics are very susceptible to damage or deformation from extreme heat and cold climate. Make sure not to store the model near any source of heat such as oven or heater. It is best to store the model indoors, in a climate-controlled, room temperature environment.

---

**安全注意事項**

**禁止**

勿不當使用本產品

請勿自行改造加工，任何的升級改裝或維修，請使用亞拓產品目錄中的零件，以確保結構的安。請確認於產品限界内操作，請勿過載使用。

本產品為休閒娛樂專用之精密電子遙控飛行產品，僅限熟練遙控飛行器之個人使用，使用時請遵守當地法律規定，並嚴禁在任何違反公共安全區域操作，請勿利用本產品侵犯他人隱私/公開權、並尊重他人智慧財產權、著作權，且勿用於安全、法令外之其它非法用途。並充分了解您任何的使用與操作必須負完全的責任。

**禁止**

遠離溼潤環境

R/C 航模是許多精密的電子零組件組成，所以必須絕對的防止溼澆或水氣，避免在浴室或雨天時使用，防止水氣進入機身內部而導致機件及電子零件故障而引發不可預期的意外！

**注意**

遠離熱源

遙控模型多半是以碳纖維、PA 纖維或聚乙烯、電子商品為主要材質，因此要盡量遠離熱源、日曬，以避免因高溫而變形甚至熔融損壞的可能。
Align G3-GH gimbal features an advanced control system with superior computational power. The highly integrated design allows for quick conversion between multicopter use and hand held use. Adjustable balance point on all 3 axis for greater camera compatibility, while the high precision brushless motors provide excellent agility and stability. Built in HDMI/AV converter and RC receiver connectivity. Supports programmability through PC interface, or connectivity to iOS/Android smartphones through Bluetooth. Equipped with automatic calibration function during power up. Supports single RC transmitter mode through APS-M, or independent remote control of the gimbal through a dedicated RC transmitter, as well as remote shutter trigger and video start/stop control to capture the optimal footage through precise framing.

**G3-GH雲台設計特色**

自動校正三軸中立定點檢測。
Support single RC transmitter control of multicopter and gimbal, or a separate dedicated RC transmitter control for gimbal.
Multi-function modes. Each of the 3-axis can be controlled through RC control.
高穩定/高精度的三軸雲台控制系統。
Highly integrated convertible design to quickly switch to hand held use.
Features gain adjustment for PAN/ROLL/TILT axis. Supports various DSLR cameras, with adjustability to achieve optimal compensation performance.

- Supports Spektrum and JR satellite receivers.
- Supports Futaba S.BUS / JR X.BUS.
- Configuration changes through iOS APP.
- Configuration changes through Android APP.
- Supports Bluetooth connectivity with smartphones.
- RoHS certified.

**MODE**

- Built in HDMI/AV converter function
- Highly integrated convertible design to quickly switch to hand held use.
- High stability, high precision 3 axis gimbal control system.
- Allowing precise lock on shooting objects, allowing capture of fantastic aerial footages with ease.
- Features gain adjustment for PAN/ROLL/TILT axis. Supports various DSLR cameras, with adjustability to achieve optimal compensation performance.

**HDMI to AV**

- Highly integrated convertible design to quickly switch to hand held use.
- High stability, high precision 3 axis gimbal control system.
- Allowing precise lock on shooting objects, allowing capture of fantastic aerial footages with ease.
- Features gain adjustment for PAN/ROLL/TILT axis. Supports various DSLR cameras, with adjustability to achieve optimal compensation performance.

**Shutter trigger and video start/stop control function**

- Highly integrated convertible design to quickly switch to hand held use.
- Built in HDMI/AV converter function
- Highly integrated convertible design to quickly switch to hand held use.
- Allowing precise lock on shooting objects, allowing capture of fantastic aerial footages with ease.
- Features gain adjustment for PAN/ROLL/TILT axis. Supports various DSLR cameras, with adjustability to achieve optimal compensation performance.

**Gain**

- Highly integrated convertible design to quickly switch to hand held use.
- High stability, high precision 3 axis gimbal control system.
- Allowing precise lock on shooting objects, allowing capture of fantastic aerial footages with ease.
- Features gain adjustment for PAN/ROLL/TILT axis. Supports various DSLR cameras, with adjustability to achieve optimal compensation performance.

**Supports Spektrum and JR satellite receivers.**

- Supports Spektrum 和 JR 卫星天线。
- Supports Futaba S.BUS / JR X.BUS。
- Configuration changes through iOS APP。
- Configuration changes through Android APP。
- Supports Bluetooth connectivity with smartphones。
- RoHS certified。

**Supports Futaba S.BUS / JR X.BUS.**

- 支援Futaba S.BUS / JR X.BUS功能。
- Configuration changes through iOS APP。
- Configuration changes through Android APP。
- Supports Bluetooth connectivity with smartphones。
- RoHS certified。

**Configuration changes through iOS APP.**

- 支援iOS手機APP調整功能。
- Configuration changes through Android APP。
- Supports Bluetooth connectivity with smartphones。
- RoHS certified。

**Configuration changes through Android APP.**

- 支援Android手機APP調整功能。
- Supports Bluetooth connectivity with smartphones。
- RoHS certified。

**Supports Bluetooth connectivity with smartphones.**

- 支援藍牙功能，可透過手機設定調整。
- RoHS certified。

**RoHS certified.**

- 符合RoHS限制規章。
### STANDARD EQUIPMENT

- **G3 Gimbal Assembly**
  - G3雲台組
  - Recommended for 800g cameras.

- **Gimbal Anti-Shock**
  - 雲台避震座
  - Recommended for 800g cameras.

- **Gimbal Block Spacer**
  - 雲台墊圈
  - Gray 灰 40° x 4
  - Red 紅 30° x 4

- **HDMI to AV Converter**
  - HDMI轉AV模組

- **Micro HDMI Signal Wire**
  - Micro HDMI訊號線 x 1

- **16V Voltage Booster**
  - 16V升壓器 x 1

- **Level**
  - 水平儀 x 1

- **Hex head wrench**
  - L型六角扳手
  - (2.0mm x 1 / 2.5mm x 1)

### PACKAGE CONTENTS

- **G3 Gimbal Assembly**
  - G3雲台組

- **Gimbal Anti-Shock Assembly**
  - 雲台避震座組

- **S-BUS signal wire**
  - S-BUS訊號線

- **AV signal wire**
  - AV訊號線

- **Gimbal power wire**
  - 雲台電源線

- **Gimbal Parts Accessory**
  - 雲台零件包

- **16V Voltage Booster**
  - 16V升壓器

- **Level**
  - 水平儀

- **Hex Head Wrench**
  - L型六角扳手
1 ANTI-SHOCK ASSEMBLY 避震座組裝

Remove gimbal anti-shock assembly and insert damper, then re-install the assembly back onto gimbal.
取出雲台避震座裝入墊圈，再將避震座組裝於雲台上。

**CAUTION 注意**

The lighter camera applies the softer dampers, the heavier one applies harder dampers. The dampers that are too soft will cause unstable video footage, while those too hard will introduce wavy lines (jello effect) into the video footage. The dampers can be mixed and matched to achieve the most optimal dampening effect.
相機越輕適用較軟的墊圈，越重則適用較硬的墊圈。墊圈搭配太軟會造成拍攝畫面不安定晃動，太硬則會造成拍攝畫面波紋，建議可利用不同硬度的墊圈混搭使用，以達到最佳的拍攝品質。
Conductor Sleeve wire conduit need to line up with PAN motor wire exit on anti-shock mount.

Factory-assembled unit: Ensure all the screws are fastened firmly before taking off.

When Gimbal assembly, make sure the socket screws M2.5x6 mm on PAN motor is securely fastened, and please use hex head wrench 2.0mm for screw checking. Any loose screws may affect gimbal function causing motor shake or tweak problem.
2 REMOVE GIMBAL MOUNT BLOCK

Loosen the socket screw M2.5x6mm from the two front gimbal mount block only, then loosen and remove the two rear gimbal mount block.

3 INSTALL THE GIMBAL ASSEMBLY ON MULTICOPTER FRAME

Slide the gimbal assembly over the gimbal mount carbon tube; install and tighten the gimbal mount block removed earlier; then tighten the forward gimbal mount block to completely secure the gimbal assembly to multicopter frame.

Please ensure to tighten the gimbal mount carbon tube and gimbal tube mount inward two hole locations while install the G3-GH Gimbal.

G3-GH安装时，请确保将云台固紧至多轴机碳纤臂及云台管座於多轴机下碳纤板内对孔位置。
2 CAMERA INSTALLATION AND POSITION ADJUSTMENT
相機組裝與固定

1 CAMERA INSTALLATION
相機組裝

First, simply install the camera onto the gimbal mounting plate.
首先，將相機簡易固定於座下固定板。

![Diagram of camera installation](image)

2 CAMERA POSITIONING
相機固定

Slide gimbal hotshoe block into the camera's hotshoe, and tighten to upper mounting bracket with a M2.5x5mm socket hex screw.
將雲台固定塊順著導軌插入，固定於相機上。使用圓頭內六角螺絲(M2.5x5mm)將相機鎖附於相機上固定板。

![Diagram of camera positioning](image)

Push through the rail.
順著導軌插入

![Optional equipment](image)
3 LINE UP CAMERA LENS CENTER LOCATION
對準相機鏡頭中心位置

While mounting the camera to gimbal, the center location of camera lens need to be inline with lens bracket.

3 MULTI PURPOSE GIMBAL MODIFICATION FEATURE
多功能雲台改裝用途

Multifunctional quick release gimbal mount design which can be quickly transferred between handheld rig and multicopter platform.
Proper gimbal balance is critical to the quality of resulting video footage. Please follow instruction and ensure proper balance of gimbal on all X, Y, Z axis.

雲台重心調整的完美與否，對於拍攝影像品質有密不可分的關係，所以請依說明指導，確實調整好雲台X、Y、Z軸三軸重心平衡。

Do not use tie strap as they may interfere with gimbal’s compensation movements, and cause vibrations or jello effect in resulting video.

嚴禁使用束帶固定，束帶會干擾雲台修正，造成拍攝影像異常抖動或水波紋現象。

Remove lens cap
取下鏡頭蓋
1. **Y-AXIS (TILT) BALANCE ADJUSTMENT**

Y軸（俯仰）平衡調整

After camera is properly mounted to gimbal, remove the lens cap. Check the tilt (Y) axis, adjust tilting gimbals position to achieve balance.

固定相機於雲台座後，請取下相機鏡頭蓋；首先檢測TILT軸(Y軸)，調整相機及雲台TILT向的前後位置，以校正Y軸重心平衡。

Position of base mount can be adjusted

底座固定板可移動位置

Make sure to tighten all screws after adjustment.

調整完成後務必將螺絲鎖緊。

2. **X-AXIS (ROLL) BALANCE ADJUSTMENT**

X軸（滾轉）重心調整

1. Check the Roll (X) axis. If imbalance is observed, loosen the M3x6mm Roll mounting screw, shift the Roll aluminum tube to achieve lateral balance, then check if camera’s vertical balance is centered.

2. When tightening Roll mounting screw, lift up the Tilt arm slightly then tighten to ensure tilt arm doesn’t droop down. Too high or too low of tilt arm will both cause left/right swaying of the roll axis.

3. If vertical balance is not centered, loosen the 4 (M2.5x6mm) screws on gimbal lens bracket, and shift the bracket up or down to achieve proper vertical balance.

1. 檢測ROLL軸 (X軸)。如果有重心不平衡的狀況，先鬆開ROLL軸固定螺絲 (M3x6mm)，
以移動ROLL鋁管調整ROLL軸左右平衡，再檢測相機上下重心是否置中？

2. 當鎖附ROLL軸固定螺絲時，請將Tilt臂向上提再鎖緊，否則會產生Tilt臂垂直現象。偏高或偏低都會讓ROLL軸呈左右偏擺。

3. 然後，再鬆開雲台前固定板四支螺絲 (M2.5x6mm)，以移動調整前固定板上下位置；調整至相機左右重心完全保持平衡。
3 Z-AXIS (YAW) BALANCE ADJUSTMENT

After TILT (Y) and ROLL (X) axis are balanced, tilt the gimbal at least 45 degrees, and move the Pan arm with your hands to observe imbalance on the PAN axis. Loosen the 4 Pan mounting screws, softly move the heavier side toward lighter side, until gimbal achieve perfect balance regardless of position in the whole 360 degrees rotation.

5 GIMBAL WIRING DIAGRAM

1 GIMBAL WIRING DIAGRAM
2 HDMI TO AV WIRING DIAGRAM

G3-GH/G3-5D Gimbal contains a HDMI to AV converter. Securely connect the camera signal wire to the converter to ensure proper video transmission. Caution: HDMI-AV converter output is in NTSC format. Please set your LCD display to NTSC.

Camera differs between different make and models. the Mini HDMI signal wire [HEPG3002] comes as an optional extra.

3 GIMBAL CONTROL WIRING DIAGRAM
4 CUSTOM SHUTTER WIRING EXAMPLE

Camera trigger cable differs between different make and models. Please check with camera manufacturer for proper cable.

Status Light Instruction

<table>
<thead>
<tr>
<th>Status Light 1</th>
<th>Status Light 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Green</td>
</tr>
</tbody>
</table>

Take GH4 Camera for example: (以GH4为例)

- **Photo mode**: Switch camera to photo mode, and configure RC trigger switch to enable remote photo taking function.
- **Video mode**: Switch camera to video mode, and configure RC trigger switch to enable remote video start/stop function.

Due to differences in camera models, the start/stop functionality is dependent on camera specification.

5 FUTABA S-BUS / JR X.BUS WIRING DIAGRAM

Please connect wires following correct orientation.
6 JR/SPEKTRUM SATELLITE ANTENNA WIRING DIAGRAM

JR/SPEKTRUM 衛星天線接線示意圖

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7 DC 12V INPUT / OUTPUT WIRING DIAGRAM

DC12V IN/OUTPUT 接線示意圖

Gimbal controller DC 12V input / output. This is a bi-directional port for voltage input or output. When gimbal is installed on an Align multicopter and connected to PCU, this port provides DV 12V~16V output, if the gimbal is converted to hand held rig mount, this port becomes DC 12~16V power input port.

警告

Please connect wires following correct orientation or it may cause irreversible damage to the gimbal controller's PCB.

警告

請依正確方向接線，正負極錯誤將導致控制PCB損壞。
8 DATA PORT / BLUETOOTH DEVICE WIRING DIAGRAM
資料傳輸埠 / 藍牙傳輸器接線示意圖

Gimbal can be connected through smartphone App through Bluetooth Device, perform gimbal setting on various parameters.

9 MINI USB WIRING DIAGRAM
MINI USB 接線示意圖

Gimbal can be connected to PC through Mini USB cable for configuration changes or firmware updates.
GIMBAL POWER ON AND SELF-TEST

1. POWER UP PROCEDURE WHEN MOUNTED TO ALIGN MULTICOPTERS
   Connect the 12V~16V output from Align's PCU/MBEC with the PCU port on gimbal.

   Turn on RC transmitter power
   Press and hold for 3 seconds to power up
   Gimbal power up

   Power ON
   Press and hold for 3 seconds to power up

2. POWER UP PROCEDURE WHEN USED AS HAND HELD UNIT
   Connect the 12V port of gimbal control to a 12~16V power source.
   (Please refer to page 14 for wiring method.)

   Turn on gimbal power
   Connect a 3B to gimbal controller's DC 12V input port.
   Gimbal power up

   Battery Plug

3. GIMBAL AUTOMATIC POWER ON TEST.
   After power is applied, gimbal will automatically perform 3-axis neutral point calibration. The process takes about 10 seconds, and ends with the gimbal locking its heading direction.

   雲台開機自行檢測回中立點
   開啟電源後，雲台會自動校正三軸中立定位點檢測，過程約10秒鐘自檢完成，鎖定頭向朝前。
1. PC Software Install: Please go to the following website to download the software and install on your PC.

If you are having difficulties installing Windows version of the Gimbal software, please check whether you have Microsoft .NET Framework 4 installed.

2. Please scan QR Code link ALIGN website to find related software, or search "ALIGN Gimbel" in iOS / Android app store. Optional Bluetooth module [HERBT001] is required for connectivity between iOS/Android app and Gimbal.

3. Apply power to gimbel. After gimbal's initialization routine is completed, connect to PC with a USB cable to perform setup.
When using smartphone app to make configuration changes, a Bluetooth password must be set for pairing with the smartphone. The factory default password is "0000". We strongly recommend you to change your password to avoid interference with others during Bluetooth transmission.

Connection Status:
Green: Connected; Red: Disconnected.

1. SELECT GIMBAL MODEL:
Select G3 gimbal. Different gimbal models contain different parameters. Incorrect selection will lead to operation and compensation errors.

1. 選擇雲台型號：
選擇G3雲台設定進入。
不同型號的雲台內建參數不同，選擇錯誤會導致雲台運作與修正錯誤。

2. SELECT THE CAMERA MODEL:
Please select camera models base on camera weight: camera weight over 1KG or under 1KG. To simplify the setup process, Align pre-configured various settings for specific cameras. Select the suitable camera to achieve optimal gimbal performance.

2. 選擇使用相機類型：
請以相機重量1kg以上或1kg以下做為相機類型選擇。
為了提供更方便、更簡易的使用方式，亞拓針對各類型相機，內建各種相機最佳使用參數，只要選擇所使用的相機選項，雲台就能有最佳的修正效果。
GIMBAL GAIN ADJUSTMENT
雲台感度調整

After selecting the gimbal and camera type, the system will populate all parameter values with optimal values, and gimbal will be ready to function with optimal compensation. When different lenses are attached, only the P/D/Power parameter of the Tilt axis needs to be adjusted. Adjustment to parameters inside “Advanced Parameters” menu is not recommended.

Please confirm the following bullet points before adjusting parameters.

1. Use 8 yellow 50 degrees dampers, and 4 black 50 degrees dampers.
2. Reset gimbal parameters to factory values.
3. Confirm gimbal is properly balanced on all axis as per instruction.
4. All components of gimbals are assembled true and straight, and all screws are properly tightened.
5. Camera lens are securely fixed in place.
6. Ensure camera or lens are not excessively large or excessively small to induce contact of the upper or lower lens ring. Distance between lens and lens ring must be 1mm or greater. If camera needs to be raised on the mount, use rigid material and ensure strong adhesion to mounting base.

警告: 請先檢查以下項目:
1. 雲台周圍使用黃色橡皮帶50° x8跟黑色橡皮帶50° x4跟。
2. 雲台使用原廠建議設定值。
3. 雲台重心平衡已經調整好。
4. 雲台組件是平行沒有歪斜，並檢查雲台各部位螺絲已經鎖緊。
5. 相機鏡頭穩固沒有鬆動。
6. 相機或鏡頭因尺寸過大或過小，而造成“碰觸”雲台前固定板出口的下緣或上緣，鏡頭與前固定板間隙至少1mm以上，相機如果需傾高，應選擇材質較硬且確實牢固黏著於固定座。

CAUTION

Camera specific functions and image processing settings must be set properly for optimal image production. For example, disable of electronic image stabilization, ISO, aperture, shutter, image resolution, etc.

各廠牌相機性能及影像處理對應設定適當變更，將明顯影響畫拍攝效果，如電子防手震/開關，ISO，光圈，快門，畫質，張數……等專業調設。
GIMBAL PARAMETER ADJUSTMENT METHOD
雲台參數調整方式

1. For lighter cameras or shorter lenses, adjust tilt axis’ P Gain, D Gain, and Power values lower, or add additional weights to keep those values high. Higher P Gain and Power values are preferable for optimal performance. The goal is to reach a point where P Gain and POWER values are as high as possible without Tilt motor oscillation.

2. To test proper gain values after adjustment: With the gimbal powered on and initialized, push the camera downwards 90° on the tilt axis until lens is looking straight down. Then let gimbal return to neutral position by itself, and watch for any tilt motor oscillation. If any tilt motor oscillation is observed, lower the P Gain, D Gain, or Power value by 1 to 2 units more, repeat the test, until oscillation disappears.

P.D. POWER PARAMETER ADJUSTMENT
P.D. POWER參數調整說明

<table>
<thead>
<tr>
<th>Gain too low</th>
<th>Gain too high</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P Gain</strong></td>
<td>Slow compensation, lagging reaction</td>
</tr>
<tr>
<td></td>
<td>Over-compensate</td>
</tr>
<tr>
<td><strong>D Gain</strong></td>
<td>Cause oscillation of gimbal motors</td>
</tr>
<tr>
<td></td>
<td>Motor oscillates or vibrates</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>Insufficient holding power, unable to lock</td>
</tr>
<tr>
<td></td>
<td>Motor oscillates or vibrates</td>
</tr>
</tbody>
</table>

RECOMMENDED PARAMETERS
參數調整建議表

<table>
<thead>
<tr>
<th>Camera Weight (Lens Included)</th>
<th>Damper Selection</th>
<th>PAN</th>
<th>ROLL</th>
<th>TILT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000g or higher 1500g以上</td>
<td>Yellow 50 Inertia Damper x8</td>
<td>65</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>600g-1000g</td>
<td>Black Silicon Damper x4</td>
<td>65</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Approximately 500g 500g上下</td>
<td>黃色慣性50° x8</td>
<td>65</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Approximately 400g 400g上下</td>
<td>黑色硅膠50° x4</td>
<td>65</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Environmental factors: Maximum 3500m above sea level; temperature 10-25 C degrees, Wind 5 knots or less, forward flight velocity 0-15m/s, descend speed 2m/s.

* 測試拍攝條件: 海拔3500公尺以下，氣溫+10-25度，風速5級內，直線飛行速度0~15m/s，下降速度2m/s.
Gimbal RC operator modes are set here. Align gimbals feature two types of RC operator modes: single RC transmitter and dual RC transmitters controlling modes.

1. **APS-M SINGLE RC TRANSMITTER**
   
   (Dedicated 10CH or higher RC transmitter for gimbal and multicopter)
   
   This mode requires the use of Align APS-M. Select APS-M in the receiver selection menu. Map an appropriate dial or switch on the RC transmitter to CH9 for gimbal PAN control, and CH10 for gimbal TILT control.

2. **DUAL RC TRANSMITTER**
   
   (Dedicated 6CH or higher RC transmitter for gimbal)
   
   Gimbal needs to be connected with a S.BUS/X.BUS receiver, or satellite receivers (please refer to page 13-14 of manual). Please create a new model in RC transmitter and set the model type to airplane.
There are 2 control modes for each of the three axis on the gimbal: angular mode and velocity mode.

雲台3軸的動作具備兩種操控模式，角度模式與速度模式，玩家可以依使用需求選擇操控模式。

1. CONTROLS THE RETURN TO NEUTRAL MODE(ANGLE MODE)

RC transmitter stick movement is translated as angular command. Gimbal will remain centered when the sticks are at neutral position. When stick is moved a certain amount, gimbal will move proportionally the same amount. Larger stick movement equals to larger gimbal movement. When stick returns to neutral, gimbal will return to neutral.

1. 控制角度回中模式(角度模式)

遙控器搖桿控制的角度命令，搖桿在中立點時，雲台會保持在中立點水平位置，當搖桿輸出某動作量時（搖桿動作輸出越大雲台轉動角度越大），雲台動作就會轉動到該動作量的位置，且如果搖桿保持在該動作量，雲台就會保持在該位置，當搖桿回中，雲台就會回到中立點位置。

CAUTION 注意

Angular mode is recommended if a dial or slider switch is used on RC transmitter.

使用遙控器旋鈕開關或滑軌開關控制雲台動作，建議使用角度模式。

The larger the stick movement, the more angle gimbal rotates.

搖桿動作輸出越大雲台轉動越大
2. CONTROLS THE ANGULAR LOCK MODE (SPEED MODE)

RC transmitter stick movement is translated as velocity command. When stick is at neutral position, movement command outputs zero, and gimbal remains stationary. When stick is moved a certain amount, gimbal will rotate at a speed determined by stick movement. Larger stick movement equals to faster gimbal movement. When stick returns to neutral, gimbal will remain at current position (does not return to neutral).

2. 控制角鎖定模式(速度模式)
遙控器搖桿控制為速度命令，搖桿在中立點時，動作為零輸出，雲台不轉動，當搖桿動作超出動作量時（搖桿動作輸出越大雲台轉動速度越快），雲台動作就為以該搖桿輸出量轉動速度，當搖桿回中立點，雲台就會停止在該轉動位置（不回中）。

The larger the stick movement, the faster gimbal rotates.
Stick returns to neutral, gimbal stops at current position.

搖桿動作輸出越大雲台轉動速度越快；
搖桿回中立點，雲台停止在該轉動位置。
3 RC TRANSMITTER FUNCTION VERIFICATION

1. Confirm each of the gimbal movement is correctly controlled by the RC transmitter. The control direction can be reversed on the RC transmitter as needed.

1. 確認遙控器遙控電台各動作是否正確，玩家可以使用遙控器正反向功能，來調整電台動作的正反向。

2. TAKING PHOTOS OR VIDEOS
   Align G3 gimbal features photo shutter control and video recording control capabilities, please select a 2 step switch on RC transmitter for photo trigger control.

2. 拍照與攝影
   亞拓G3電台具備遙控拍照與錄影功能，選擇一個兩段開關來控制。

3. PANORAMA
   Align G3 gimbal features panoramic photo capabilities, please select a 2 step switch on RC transmitter for panoramic control.

3. 環景拍照
   亞拓G3電台具備環景拍照功能，選擇一個兩段開關來控制。

4. RETURN TO CENTER
   Returns gimbal to center positio through a designated stick or switch on the RC transmitter.

4. 回中點
   透過遙控器指定一個桿子或開關，可以使用遙控器開關來讓電台各動作回到中點位置。
MULTI FUNCTION GIMBAL MODES

Each one of the 3 axis of Align gimbal features two working modes: Follow mode and locked mode. The mode can be selected by pilot based on needs. Factory default setting is locked mode.

1. LOCKING MODE
   Under locking mode, gimbal will remain fixed to a specific direction regardless of multicopter movement.

2. FOLLOW MODE
   Under follow mode, gimbal will not lock to a fixed position during compensation; instead it will slowly return to neutral position. For example: If PAN axis is set to follow mode and aircraft initiates a left yew, gimbal will first compensate, and then slowly return the heading to neutral position.
   The velocity in follow mode can be set to fast, medium, and slow.

GIMBAL CENTER POINT ADJUSTMENT

Adjust the center point of each axis on the gimbal. This adjustment can be used to trim the gimbal center point if any of the axis is off-centered.

All 3 axis on the gimbal must be leveled.
6 PANORAMA 環景拍照

Panoramic Photo: When camera is connected to gimbal's trigger port with optional cable, allows camera to take panoramic photos at 0-30-60-90 degrees through a designated stick or switch on the RC transmitter. The number of photos taken at each angle is set through control interface program.

環景拍照：透過遙控器指定一個搖桿或開關，且雲台與相機需搭配快門線，可以使遙控器開關來拍攝水平0度、30度、60度、90度環景照片，各角度拍攝張數可由操控介面報調度。

7 OFFSET COMPENSATION 偏移補償

Offset compensation is one of the gimbal's advanced adjustments. If gimbal centers normally, this function does not need to be adjusted. If gimbal exhibits off center movements, this setting can be adjusted to compensate for movement shifts.

偏移補償為雲台進階調整功能，如果雲台運作正常無偏移情況，則不須調整此功能。當雲台有動作偏移情況，可以透過此功能進行動作偏移補償調整。

PAN AXIS OFFSET COMPENSATION

Using RC transmitter to move the gimbal so it rotates horizontally on the pan axis. Observe the roll axis for any shifts from horizontal level. If horizontal shifts is observed, adjust the roll axis offset compensation until the roll axis remains level.

Pan軸偏移補償

操控雲台Pan軸，使雲台的頭向水平旋轉，觀看Roll軸水平是否有動作偏移。假設Roll軸有偏移，則調整Roll軸數值，使Roll軸動作不偏移。

8 TILT ENDPOINT ADJUSTMENT TILT軸可控角度設定

Gimbal's maximum tilt-up angle can be adjusted from 60 to 120 degrees based on needs.

提供雲台Tilt軸可控角度設定，玩家可以依使用需求調整Tilt軸可控角度60度~120度。
# SPECIFICATIONS

## GIMBAL CONTROLLER

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>DC 12<del>16V(3</del>4S)</td>
</tr>
<tr>
<td>Current Draw</td>
<td>&lt;500 mA@12V</td>
</tr>
<tr>
<td>Maximum Control Range</td>
<td>PAN 指向 360°</td>
</tr>
<tr>
<td></td>
<td>ROLL 滾轉 ±20°</td>
</tr>
<tr>
<td></td>
<td>TILT 俯仰 120°</td>
</tr>
<tr>
<td>Maximum Control Rotation Rate</td>
<td>PAN 指向 60°/s</td>
</tr>
<tr>
<td></td>
<td>ROLL 滾轉 60°/s</td>
</tr>
<tr>
<td></td>
<td>TILT 俯仰 60°/s</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-20℃~80℃</td>
</tr>
<tr>
<td>Voltage Output</td>
<td>5V / 0.5A</td>
</tr>
<tr>
<td>Dimension</td>
<td>59.5x35x16.4mm</td>
</tr>
</tbody>
</table>

## HDMI-AV (DIGITAL TO ANALOG) CONVERTER

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>DC 5V</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>1800mW (5V/300mA)</td>
</tr>
<tr>
<td>Compatible Cameras</td>
<td>G3-GH: Panasonic GH3/GH4, Sony A6000 or equivalent.</td>
</tr>
<tr>
<td>Supported Output Format</td>
<td>1800mW/50Hz/60Hz; 720P/50Hz/60Hz; 576P/50Hz/60Hz; 480P/50Hz/60Hz; 1080I/50Hz/60Hz; 576I/50Hz/60Hz; 480I/50Hz/60Hz</td>
</tr>
<tr>
<td>Video Output Format</td>
<td>NTSC(480)</td>
</tr>
<tr>
<td>Signal Output Resistance</td>
<td>75 Ω</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-20<del>65℃ (-4</del>149°F)</td>
</tr>
<tr>
<td>Dimension</td>
<td>42x32x7mm</td>
</tr>
</tbody>
</table>

Camera differs between different make and models, the Mini HDMI signal wire [HEPG3002] comes as an optional extra.

因應各廠牌相機規格不同，可依需求另購[HEPG3002] Mini HDMI訊號線搭配使用。
Gimbal status LED does not light up, or gimbal does not have any movement.
Check power is connected to gimbal, and also ensure power cable between PCU and gimbal is properly connected.

HDMI converter does not provide AV output.
(1) Check for proper HDMI connection to camera, and all connections to HDMI converter are properly connected.
(2) Check if HDMI live output feature is enabled on camera.

Recorded video are not in focus
Ensure camera is set to manual focus, and focus is set to infinity.

Recorded video has wavy lines (Jello Effect)
(1) Check for excessive vibration on airframe and eliminate the vibration source
(2) Use a different dampener.
(3) Gimbal support posts needs to be parallel, otherwise dampener position may be skewed.
(4) Check if gimbal motors are oscillating. Balanced of gimbal needs to be achieved, then the P gain and Power values decreased.

Recorded video has slight swaying movement
(1) Multicopter rudder gain is too low; increase the rudder gain in both Manual and Attitude modes.
(2) The P gain and Power value are too low for gimbal's PAN axis. Increase these values.
Q&A

6

1. Ensure gimbal CG is balanced correctly.
2. Lower the oscillating motor's P gain and Power values. Lighter cameras require lower values.

Gimbal exhibits momentary pauses while compensating.
Adjust the gimbal heading of affecting axis, and increase the P gain and Power value for this specific axis.

7

雲台修正時，有間斷停頓出現一格一格的現象。
調整會有該現象的雲台軸向，將該軸P感度與Power加大。

Oscillation when gimbal points the camera straight down.
1. Ensure gimbal CG is balanced correctly.
2. Lower the P gain and Power values on gimbal's Roll axis.

8

將雲台相機朝下時，會出現抖動情況。
1. 請先確認雲台重心是否調整正確。
2. 將雲台ROLL軸的P感度與Power降低。
SPECIFICATIONS / 產品規格
Weight / 重量：approx. 1180g
Dimension / 尺寸：(Unit / 單位:mm)

- 224.6 mm
- 109 mm
- 72 mm
- 33.5 mm
- 149 mm
- 116.6 mm
- 126.5 mm