KESTREL V2 SE

Instruction Manual V1.0

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Specification

Voltage Range	3.75V—17V
Current	17mA
Dimensions (L/W/H)	47.4 x 28.7 x 13.5(mm)
Product Weight	27.6g
Temperature Range	-15°C—50°C
Humidity	≤80%

Product Features

- Kestrel is a ETU module with wireless Bluetooth connectivity.
- With Kestrel , you can adjust your AEG's parameters from the mobile app, ESHOOTER (Android and iOS)
- Kestrel is compatible with standard Tokyo Marui V2 gearbox.
- This is totally prewired with T-plug connector.
- New shooting experience: ROF, pre-cocking, active braking, etc.
- The highest battery voltage limit is 17v (LiPo/LiFe, 4 cells, 14.8v).

Cautions

1. Relevant technical skill is required for the installation of Kestrel into your AEG.
2. In order to avoid any damage, please read through this instruction manual before installation.
3. Your AEG might be damaged by short circuit or battery misconnection which is not under the warranty. This might even cause fire or battery explosion.
4. Kestrel will go to sleep mode if your AEG is idle for an hour. Battery connection is required to reset to restart.
5. Please disconnect the battery after using your AEG, as Kestrel maintains a small power consumption even this is not operated.
6. Do not connect the battery when your AEG points at yourself, others, or any creatures.
7. Do not modify or repair Kestrel by yourself. Avoid immersing in any kind of liquid and keep away from any thermal shock equipment.

Toolkit Checklist

Plum blossom metal gasket *2Pcs

0.2mm：(DIAM 6mm /ID 3.2mm /THK 0.2mm) *2Pcs

0.3mm：(DIAM 6mm /ID 3.2mm /THK 0.3mm) *8Pcs

0.5mm：(DIAM 6mm /ID 3.2mm /THK 0.5mm) *8Pcs

Selector plate sticker*1

Deans-T*1

Heat shrink tube*2

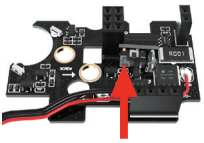
M2x4screw*2Pcs

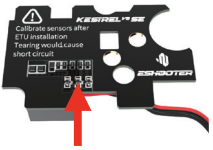
Product Overview

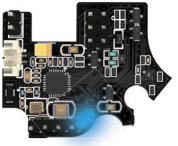
Trigger Detection: Check the trigger movement by physical buttons, achieved high precision controls.

Mode Detection: Utilize higher precision and more durable infrared sensors to detect and switch modes.

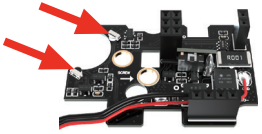
Status Light: Blue light flashing means disconnect, blue light always on means connected.







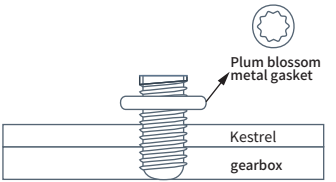
Axis Teeth Detection: With infrared sensors to check the gear axis teeth, acheived high precision controls.



Preparation for Installation

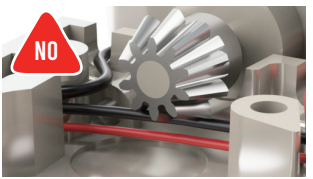
1. Please follow all the safety precautions procedure in order to avoid any damage of your AEG, no matter how experienced you are.
2. Installation of Kestrel is required a good technical knowledge of the gearbox mechanism. This is strongly recommended the installation should be done by the relevant technical persons. Any damage caused by mis-use or incorrect installation is not covered by the warranty.
3. Kestrel does not support the infinite torque-up gear.
4. Apply a thin layer of grease only, excessive grease application might cover the gap between the sensors and teeth which can be resulted in the cycle detection problem. Please use appropriate viscosity and density of grease.
5. Please remember to configure the gear type in the ESHOOTER App (if your gears are out of stock) and perform first-time sensor calibration .

6. Please be careful that sector gear might damage the sensor during the installation.

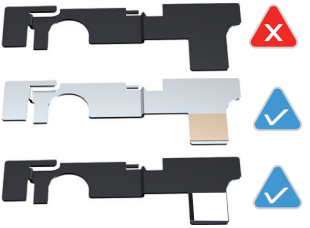


7. Please place the washers and gasket in the correct sequence by the diagram indicated, incorrect placement might cause the damage of KESTREL which is not covered by the warranty.

8. Please stick the wires to the bottom of the gearbox or the motor gear may damage the wires.

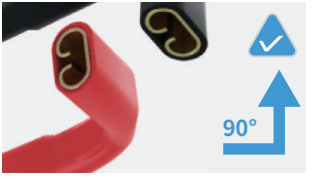


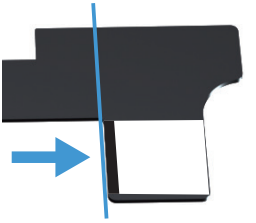
9. If the selector is not light reflective, please use the sticker from the installation kit.



10. The position of sticker is very important. Please make sure it is fully aligned with the left edge and the top line. There are 3 different stickers in the kit. Please use the thinnest sticker, if you cannot calibrate the selector, try another one.

11. Please bend the connector according to the below picture, the wrong direction may cause the connector to break.

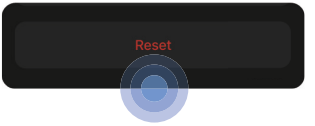


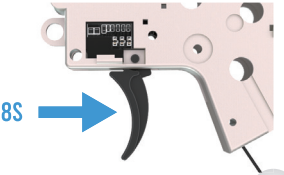


12. Restore factory setting will cause Kestrel resets to default setting, all users' setting and records will be erased.

13. Restore factory setting can be done by ESHOOTER App. Please open the App, connect your AEG and switch to the Dashboard, click 'Reset' at the bottom of Dashboard.

NOTE: If reset is not successful through App, you can turn your AEG to safe mode, then long press the trigger for 8 seconds to perform the reset manually.

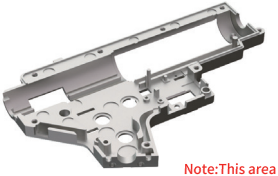


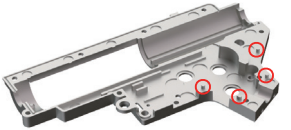


Installation Instruction

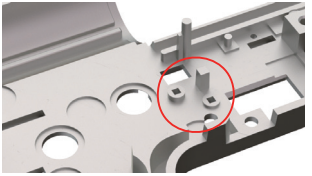
You will need:
Philips screwdriver/Flat Head screwdriver/Metal file or milling machine/ Solvent/Grease/An Android phone or an iPhone/iPad
Follow the bellowing steps:

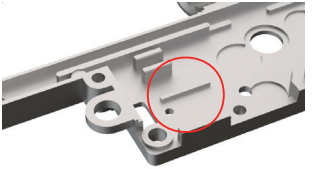
1. Remove the gearbox from the AEG body.
2. Disassemble the gearbox and remove all the internals.
3. Clean the gearbox case with proper solvent.
4. Pay attention to the marked area. If you find it is not smooth, use the metal file to prepare the surface. The gearbox surface should be smooth, sharp edges may damage Kestrel.



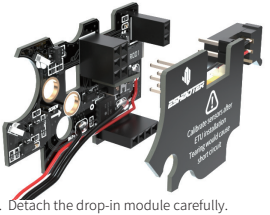


Note:This area should be sanded to the right height to avoid damage to the Kestrel.

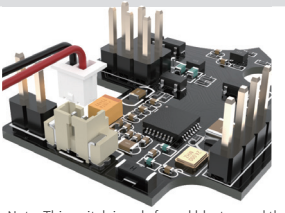




Installation Notes

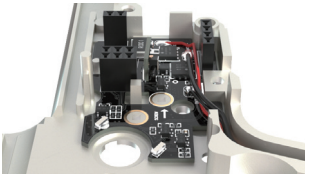


1. Detach the drop-in module carefully.

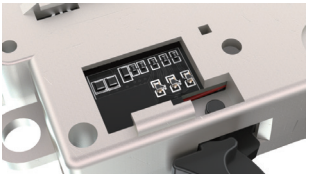


2. Note: This switch is only for gel blaster, and the switch can be removed for non gel blaster.

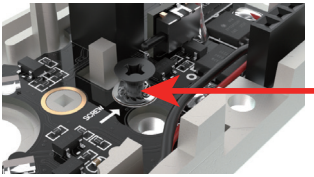
3. Put the bottom plate on the bottom of the gearbox, please check whether the bottom plate is placed flat in the gearbox.Make sure the wires are close to the inner wall of the gearbox.



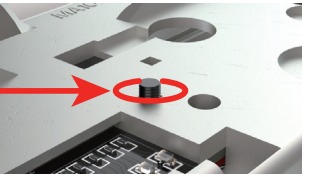
4. Make sure the right sensors are not touching the gearbox.



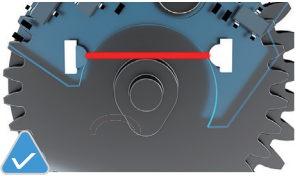
5. Take the plum blossom metal gasket in the kit and place on the screw hole, secure the bottom part to the gearbox case by original screw or the one from the kit.



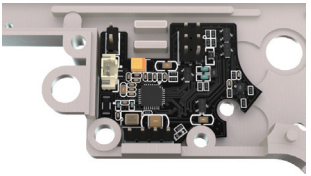
6. If the screw in the left picture protrudes out of the gearbox, please grind it flat



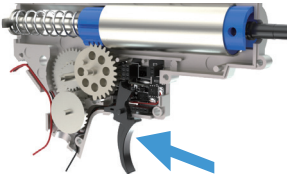
7. The placement of the sector gear sensor is very important. Make sure that the gear cam sensor detects the cam correctly.



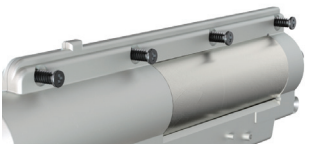
8. Put the top plate on the bottom of the gearbox, please check whether the top plate is placed flat in the gearbox.



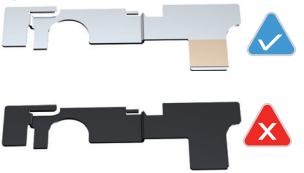
9. Install the sector gear and pull the trigger making sure the gear is not touching the Kestrel.



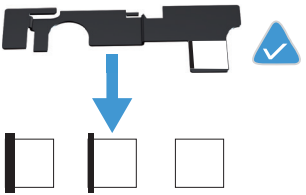
10. After installing the internal components of the gearbox, tighten the screws of the gearbox.



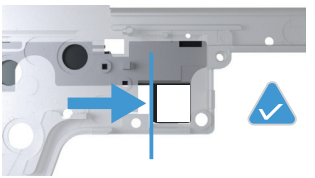
11. If your selector has a copper sheet then no reflective sticker is required.
If your selector is black please follow the next step to paste the sticker.



12. Please try to modify the black selector plate from the thinnest sitcker. If there is a copper connector on the selector, please do not make any modification.



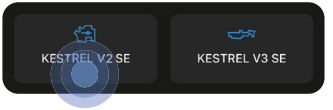
13. Sticker position is very important for modifying black plate, please make sure the sticker is aligned at the left side edge.

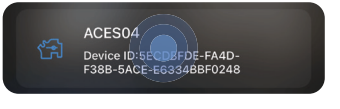


App Instruction

1. Download and install the App
By searching "ESHOOTER" at the App Store or google Play, you also could scan the QR code we provide

2. Connect with your device
Make sure your device is charged and open the App, then click "KESTEREL " and come to its interface, click the device



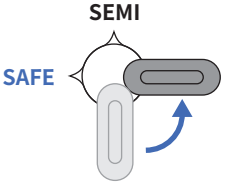


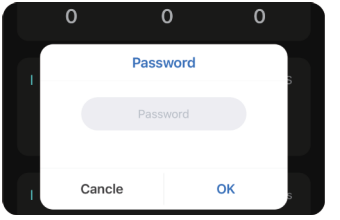
3. Password Setting:

3.1 Initial password: The initial password is "888888" , when you first log in the App.

3.2 Change the password: Click "Setting" , you will see a change password button at the bottom of the page, then change your password as the following guide.

3.3 Reset the password: If you forget the password, you can reset it by setting your gun. Just pull the selector of your AEG to SAFE ans long pull the trigger for 8 seconds , the password is settled successfully till the gun body is slightly shaking.





4.Dash Board:

You can switch to the data display interface by clicking the “Dash Board” button

4.1 BB Counter: Current shows the shots number which connect the App one time; Total is all the historical shots number.

4.2 Rate of Fire: There are minimum rate of fire, average rate of fire and maximum rate of fire to display.

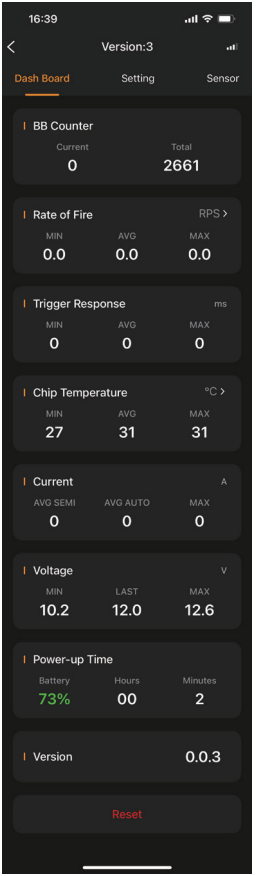
4.3 Trigger Response: There are minimum response time, average response time, and maximum response time to display.

4.4 Temperature: There are minimum temperature, average temperature and maximum temperature to display.

4.5 Current: There are average single shooting current, average continuous current and the maximum current to current.

4.6 Voltage: There are minimum voltage, current voltage and maximum voltage to display.

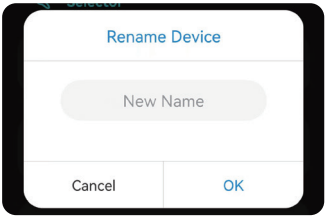
4.7 Power-up Time: There are battery left percentage, Connection hours and minutes to display.



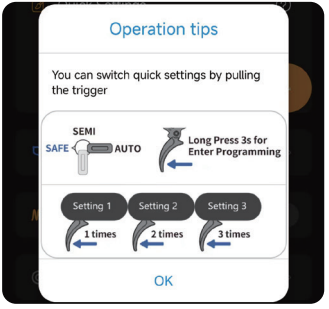
5.Setting

5.1 Device Name Setting：

Click the Device Name column, you can change the user name in the pop-up window.



5.2 Quick Settings：

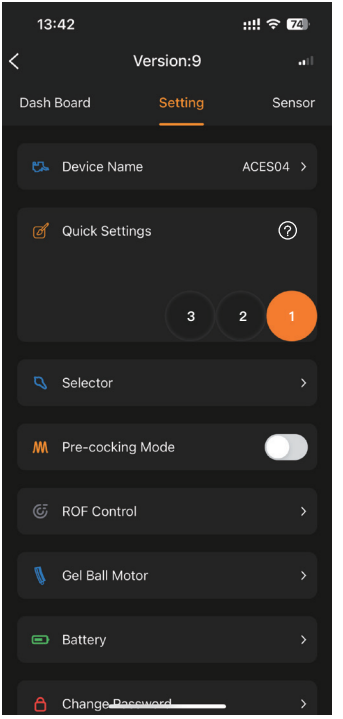


Click to customize the quick settings options. You can switch to different quick settings through trigger programming.

Offline Programming(Switch Quick Setting):

Firstly: Switch to 'SAFE' and pull the trigger for 3 seconds to enter the programming mode.

Secondly:
1. Pull the trigger 1 time again, switch to quick setting 1.
2. Pull the trigger 2 times again, switch to quick setting 2.
3. Pull the trigger 3 times again, switch to quick setting 3.



5.3 Selector Setting：

SAFE　SEMI　AUTO

SAFE (default) includes: SAFE
SEMI (default) includes: SAFE, SEMI, AUTO, BURST, BINARY, and SNIPER
AUTO (default) includes: SAFE, SEMI, AUTO, BURST, BINARY, SNIPER

5.4 Burst Function Setting：

Clicking the Burst bar, select single burst number in the pop-up window. The number range is from 3 to 10.

5.5 ROF Control:

In AUTO cases, the rate of fire can be controlled by selecting the percentage. You can select 0%, 50%, 60%, 70%, 80%, 90%, 100% under the continuous shooting mode. 0% means the ROF control function is turned off.

5.6 Pre-cocking mode:

Pre-cocking sensitivity selectable '0-100ms'.

5.7 Sniper delay setting:

Sniper can set the trigger time after pulling the trigger.

5.8 Gel Ball Motor:

Gel Blaster Feeding Time(OFF/0.5-5s)

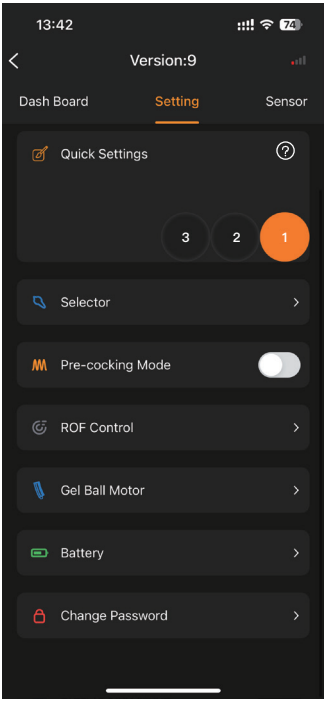
Attention: make sure to select the right gear to avoid affecting the life time of gearbox.

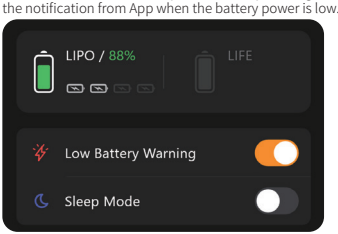
5.9 Battery Setting：

There are 2 Battery types: LIPO and LIFE, the correct battery type will provide better battery protection.

When the battery is connected, the number of the battery will be displayed.

When turn on the low battery notification, you will get the notification from App when the battery power is low.

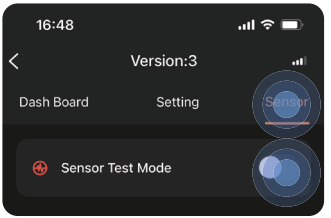




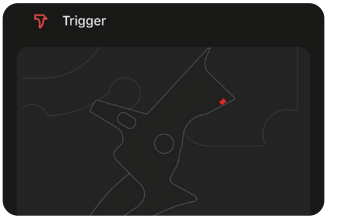
6. Commissioning Function:

After clicking the “Sensor” , you can enter the sensor interface, which can test and calibrate the sensor. Turn on the “Sensor Test Mode” you can recognize whether the sensor works or not .

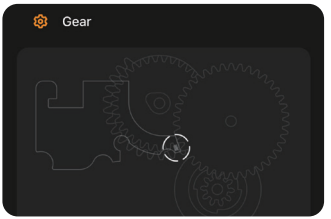
6.1 Sensor Test Mode: Please click the button on the right to test whether the sensor is OK by observing the display below.

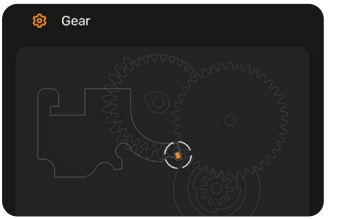


6.2 Trigger: Pull the trigger gently and observe if the Trigger bar in the App will illuminate the corresponding position.

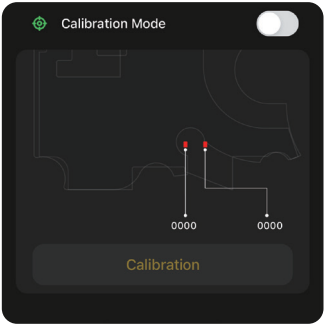


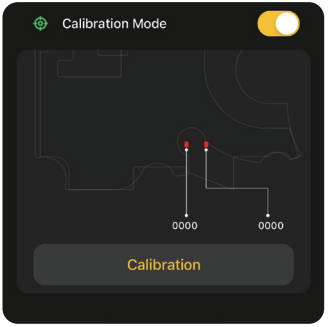
6.3 Gear: It shows the position for tooth or break.



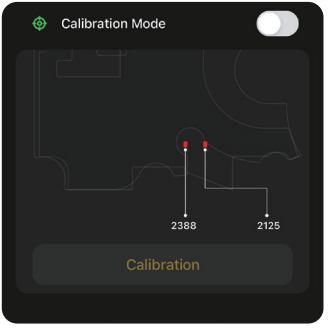


7. Calibration Mode: By clicking the button on the right to turn on calibration operation.





Click to start 'Calibration', follow the steps to get the calibration result.

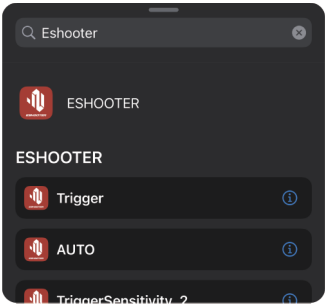


8.The iOS Shortcut Command

The ESHOOTER App provide shortcut command function under the iOS system which could control the equipment quickly.
The setting steps are:

Turn on your Shortcut App on the phone, click the “+” button at the top right corner . Searching the “ESHOOTER” at the search window, the shortcut list of ESHOOTER will appear.

Selecting a command and click the start button at the bottom right corner, then you can back to ESHOOTER App to operate.



9.OTA Update:

9.1 Click the “Setting” button at the App homepage , enter the setting interface, and click the "OTA UPDATE" to enter the device search interface.

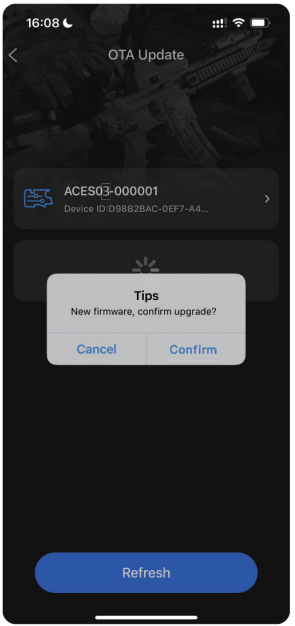
9.2 Click the device in the device list, and the software version will be verified after connecting the device. You will be noticed to upgrade when there is a new version, click the “upgrade” to get a new version.

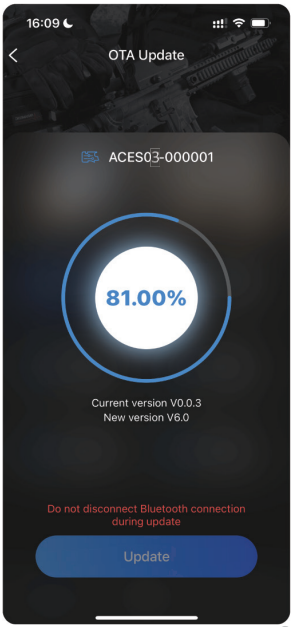
9.3 Upgrade to the newest version for the better hardware experience.

9.4 When using the OTA function, please put the device close to your equipment to avoid the upgrade failure due to Bluetooth signal weakness.

9.5 When the upgrade is finished, your equipment will slightly shake, and the ESHOOTER App need be reconnected.

Note: Please make sure to recalibrate after successful upgrade.





Warranty Card

Name: _____

Phone Number: _____

Email: _____

Address: _____

Item Model: **Kestrel V2 SE**

Inspector: _____

Date of Production: _____

After Sale Policy

Please kindly provide Warranty Card, Purchase Invoice and packaged the product well before you send back for repairing or replacement

1. We provide 6 months warranty time for Kestrel when you purchase.
2. We provide replacement service within 30 purchasing days if the product has a quality problem (non-artificial damage) and without disassembly marks.
3. The free maintenance service only be provided during our warranty period, and the product problem will be assessed and confirmed by our engineer whether it is be normal used. Shipping fee and door to door maintenance service are not included in our after sale policy.
4. For the following situation, we will not provide free maintenance .
   - 4.1 Users don't follow the requirement and installation steps from the product instruction and cause product damage and failure.
   - 4.2 Damage caused by the irresistible factors.
   - 4.3 The disassembly damage or failure caused by people who are not authorized by E-Shooter company.
   - 4.4 Without purchase proof or warranty card.
   - 4.5 The Warranty time is expired.
5. We refuse to provide maintenance service if the warranty card is not the original version, warranty record is not correct or be altered , as well as the card content is difficult to recognize.

CE FC FCC ID 2A42J-V010 R 214-117906 RoHS Pb Pb-Free

Warning

Measures for the Administration of Low-Power Radio-Wave Radiating Motors

Article 12
For low-power RF motors that have passed the type certification, without permission, companies, trade names or use are not allowed to change the frequency, increase the power or change the characteristics and functions of the original design.

Article 14
The use of low-power radio frequency motors shall not affect flight safety and interfere with legal communications. When interference is found, it should be improved until there is no interference and can continue to be used.

The legal communication in the preceding paragraph refers to the wireless communication that operates under the Telecommunications Law. Low-power radio frequency motors must endure interference from legal communications or electrical equipment that radiates radio waves for industrial, scientific, and medical use.

CE FC RoHS

More

Scan the QR code for more details

ESHOOTER App

App Instruction

Watch the Video

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