



Upgrade • The Home Creator Way

Dual Purpose Battery

**Model: Duple EV12-30 / Duple EV12-60
Duple EV12-105 / Duple EV12-140**

VEVOR Support Center

1	Duble EV12-30		2	Duble EV12-60	
3	Duble EV12-105		4	Duble EV12-140	



Duble EV12-30



Duble EV12-60



Duble EV12-105



Duble EV12-140

This is the original instruction, please read all manual instructions carefully before operating. VEVOR reserves a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.

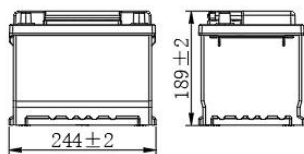
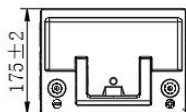
	Warning-To reduce the risk of injury, user must read instructions manual carefully.
	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1)This device may not cause harmful interference, and (2)this device must accept any interference received, including interference that may cause undesired operation.
	This product is subject to the provision of European Directive 2012/19/EC. The symbol showing a wheeled bin crossed through indicates that the product requires separate refuse collection in the European Union. This applies to the product and all accessories marked with this symbol. Products marked as such may not be discarded with normal domestic waste, but must be taken to a collection point for recycling electrical and electronic devices

Instructions

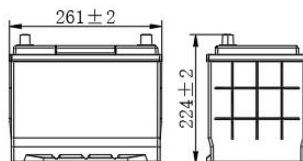
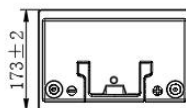
These products adopt LifePO4 battery with the highest cost performance and self-designed BMS system. Support parallel use, is an ideal choice for outdoor, small energy storage, ships and other fields. BMS is built into the battery system, which is responsible for collecting and analyzing the voltage, temperature and current of the single cell. It has the functions of over-voltage protection, under-voltage protection, high temperature protection, low temperature protection, short circuit protection and cell balance.

Model	Duble EV12-30	Duble EV12-60	Duble EV12-105	Duble EV12-140
Nominal Voltage	12.8V			
Capacity	30Ah $\pm$ 3%	60Ah $\pm$ 3%	105Ah $\pm$ 3%	140Ah $\pm$ 3%
Cell	3.2V30Ah	3.2V60Ah	3.2V105Ah	3.2v70Ah
Cells Grouping	4S1P	4S1P	4S1P	4S2P

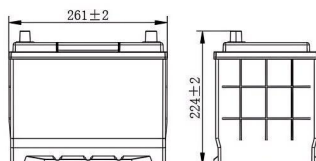
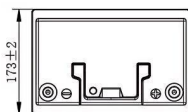
Dimension



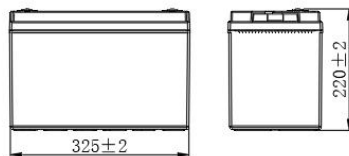
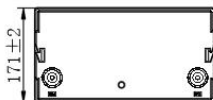
Duble EV12-30



Duble EV12-60



Duble EV12-105



Duble EV12-140

Model		Duble EV12-30	Duble EV12-60	Duble EV12-105	Duble EV12-140
Rated Voltage		12.8V			
Rated Capacity		30Ah±3%	60Ah±3%	105Ah±3%	140Ah±3%
Rated Energy		384Wh	768Wh	1344Wh	1792Wh
Recommended Charging Current		15A	30A	52.5A	70A
Maximum Charging Current		30A	60A	105A	140A
Recommended Continuous Discharge Current		15A	30A	52.5A	70A
Maximum Discharging Current		30A	60A	105A	140A
Cold Start Current		600CCA	800CCA	1000CCA	1000CCA
Peak Discharge Current		720A@2S	960A@2S	1200A@2S	1200A@2S
Discharge Cut-off Voltage		10.0V			
Recommended Charging Voltage		13.6-13.8V			
Maximum Charging Voltage		14.6V			
Torque		10 N.m-12 N.m			
Thermal Management		Nature cooling			
IP Grade		IP67			
Operating Humidity		60 ± 25% R.H.			
Operating Temperature	Charging	0~50℃			-10℃~50℃
	Discharging	-25℃~65℃			

Performance

- High acquisition of voltage data collection (5mv).
- Customized BMS function and parameter.
- Intelligent equalization management.
- Over Charging, Over Discharging, Over Temperature, Short Circuit Protection.
- Low-temperature charging heating function: Before charging at low temperatures, it will first heat up to adapt to the use in low-temperature conditions! (This function is only applicable to the Duple EV12-140 model)
- This BMS supports a matrix of 4 batteries in parallel.

Installation Guide

Preparation

Before installation, please read all safety information provided in this document. If you have any questions about operation and safe use of the battery system, please contact the technical support engineer immediately for a free consultation.

Before Operation:

- Qualified electric worker qualification is mandatory.
- Remove all metal items, such as jewelry, watch, pen, etc.
- To ensure the safety of construction personnel and equipment, disconnect the battery pack from the operating equipment during wiring.
- Pay attention to the terminal voltage polarity of the battery module.
- Make sure installation tools are insulated and use tools correctly.
- Follow the connection port description and system connection diagram.
- It is absolutely forbidden to plug and unplug when the battery is working. Necessary operation should be done after the power supply is disconnected.
- Before the formal operation, ensure that the power terminals are properly connected and tighten the terminals. When it is necessary to

measure, be careful to use instruments and tools to avoid short circuits and other accidents.

- It is strictly prohibited to disassemble the battery without permission from the professional technician from the manufacturer.

Installation Tools

Torque Wrench	
Cross Screwdriver	
Insulating Gloves	
Multimeter	

Battery Connection

To use batteries in parallel, the following conditions must be met:

- the same battery capacity (Ah).
- from same brand (as lithium battery from different brands has their special BMS).
- purchased in near time (within one month).

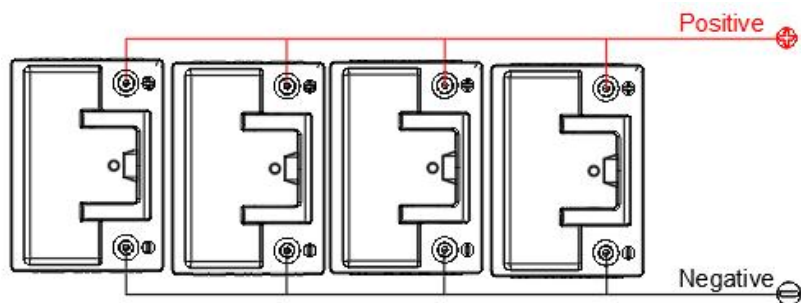
Two Necessary Steps Before Connecting

These two steps are indispensable for reducing the voltage difference between the batteries. Through these steps, the battery system can perform at its best in the parallel mode.

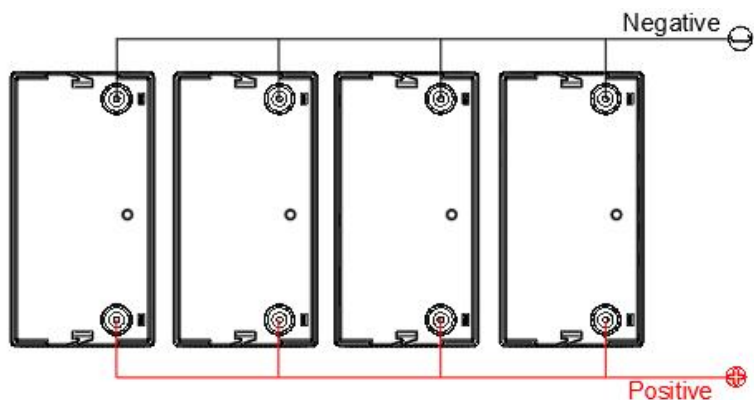
First, fully charge each of your 4 batteries separately. Secondly, place them together for 12 to 24 hours, and then connect your 4 batteries in series one after another.

Battery Parallel:

Duble EV12-30/60/105



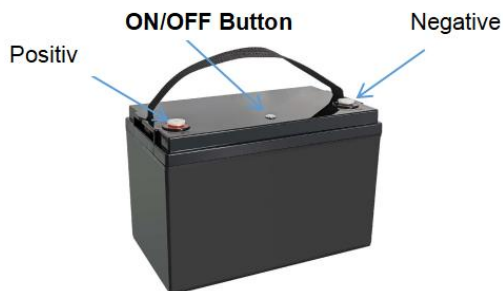
Duble EV12-140



INSTRUCTIONS



Duble EV12-30/60/105



Duble EV12-140

BUTTON FUNCTIONS

ON/OFF Button: A. Battery output on/off function; B. Strong start function;

OPERATION

Deep cycling mode:

1. Connect the positive and negative terminals of the battery correctly to the load or the device.

2. Press the "On/Off" button to activate the battery discharge output.

initiating mode:

When the battery is in a state of low voltage or other discharge-related protection and no voltage output is available, press the ON/OFF Button to restart the battery. At this time, the BMS will forcibly activate the discharge MOS to output voltage, and after approximately 60 seconds, the output voltage will be turned off to meet the power requirements for vehicle startup or other special situations;

 **Warning: Before connecting the load and equipment, please confirm that the positive and negative terminals of the battery are connected. Do not reverse the connection.**

Attention

- Charging current shall be less than the maximum charging current specified in the data sheet. Charging current exceeding the recommended current may damage the battery.
- The discharge current shall be less than the maximum discharge current specified in the product specifications; Discharge current bigger than the recommended current may damage the battery.
- Non-professional personnel is not allowed to disassemble the battery.
- Reverse charging the battery is strictly prohibited.
- Battery pack should not be used or placed at high temperatures. It will cause overheating, function failure, or shorter life.

- Battery pack should be placed in a dry and cool environment when it is not in use. Immersion in water is prohibited.
- It is strictly prohibited to install and disassemble the battery pack when it is live.
- For optimum performance, you must charge at 14.6V. If you do not, you will not be able to reach the full usable capacity of the battery.
- To ensure the best performance of the battery when stored for a long time, the battery should be charged and discharged every three months.
- After the battery discharge protection, it can be removed in the following ways:
 1. Let the battery stand for 15-20 min
The battery will be automatically unprotected after standing for 15-20 min.
 2. Use the charger with OV charging function
(It can charge the battery starting from 0V) to charge the battery. After being fully charged, the battery can be used normally.
 3. Use another 12V lithium battery with same capacity to connect in parallel with the battery and put them aside for over 12hrs. After that, fully charge the battery and it can be used normally.
- If solar charging is used, please set the regulator to the charging mode of lithium battery

When charged with controller, and the controller output is used to connect to a load:

It is recommended that the controller be set as below parameters to avoid the battery failing to recover when the BMS cuts off the battery for protection after a continuous small current discharge.

	12V
Overcharge Protection Voltage	14.8V
Overcharge Recovery Voltage	14.2V
Over-discharge Protection Voltage	10.8V
Over-discharge Recovery Voltage	11.6V

The above settings can ensure that the controller triggers the protection first instead of the battery BMS, which can prolong the service life of the battery.

Bluetooth instructions

1、 Download the corresponding APP of different mobile phone systems, and download the QR code as follows:

IOS

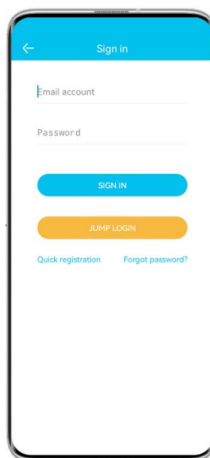


Android



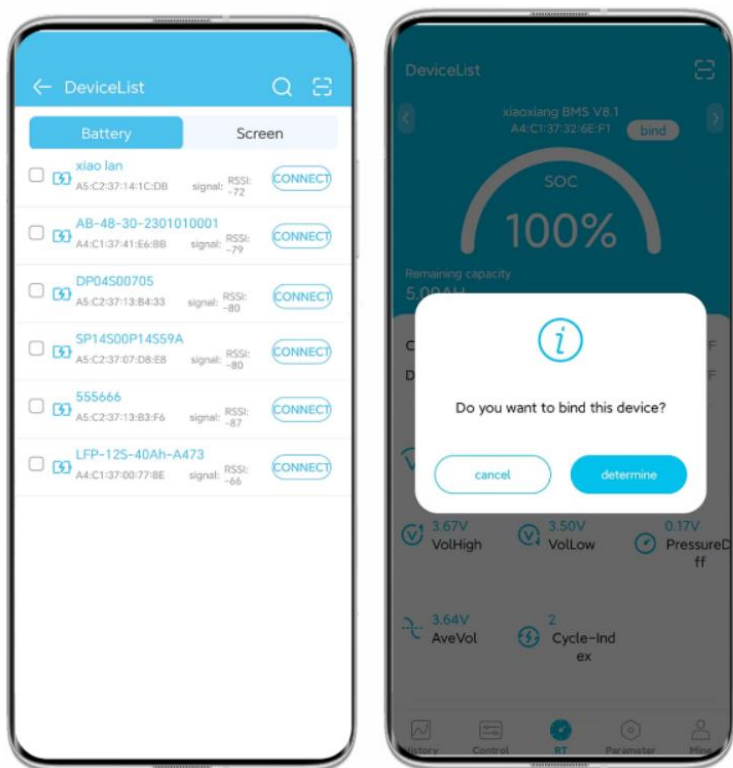
2、 Login or Register an Account

After installing the APP successfully, open the APP, allow to open Bluetooth, get the location information, the APP will automatically pop up the account registration page, please enter the mobile phone number according to the requirements, set the password, and confirm the completion point, as shown in the following picture:



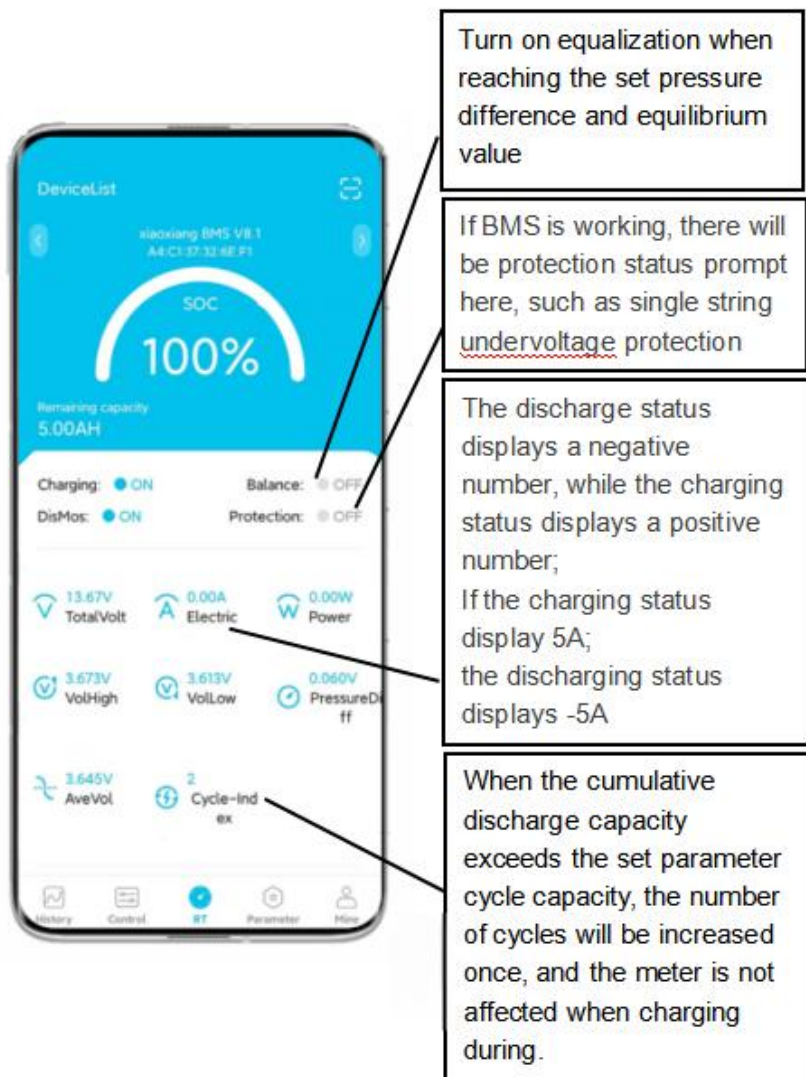
3 Connect the battery

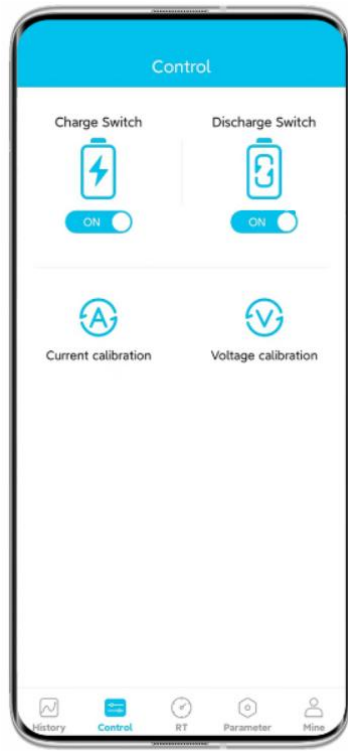
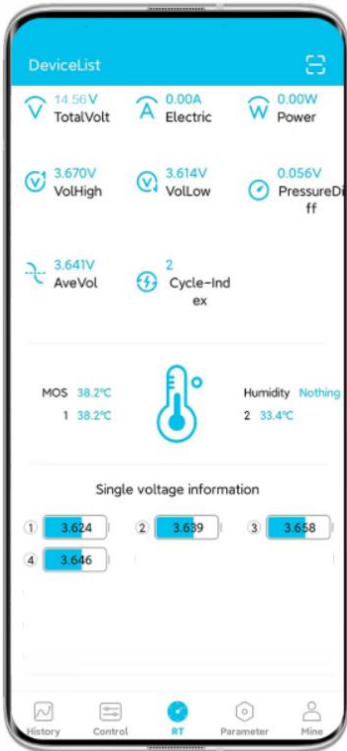
After successful login, the APP will jump to the Bluetooth list, enter the Bluetooth number on the battery surface to connect. When there are multiple batteries, you can quickly find the battery that needs to be connected by searching for the Bluetooth name. Bind device after successful connection.



4 Real-Time Interface

Click the real-time interface in the middle, and the following battery information will appear. In the interface, we can monitor the battery information, as shown in the following picture:



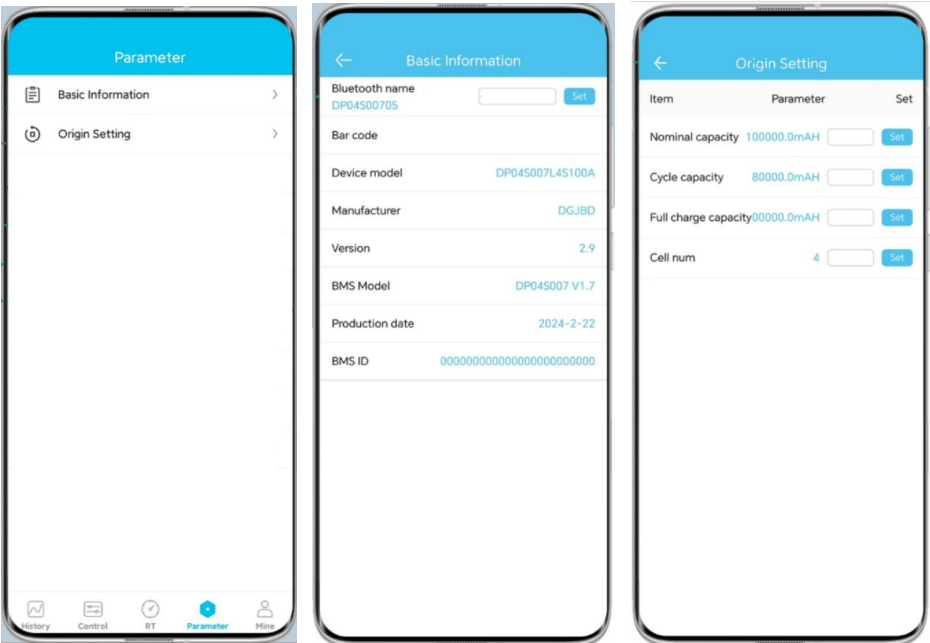


5 Control interface

1. Charge and discharge switch: Through the APP can directly control the charge and discharge switch on or off, control the battery charge/discharge.
2. Current calibration: When the charging/discharging current deviates from the actual, the current value can be calibrated through the APP.
3. Voltage calibration: When the single string voltage is deviated from the actual, the voltage value can be calibrated through the APP.

6 Parameter setting screen

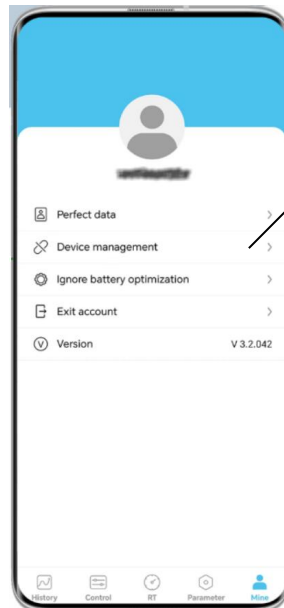
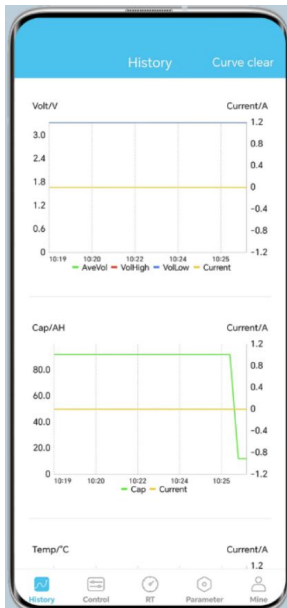
Different parameters can be set according to customer requirements, and the specific parameters can be changed as follows:



Note: It is not recommended that customers modify the data on this screen. If you need to modify the data, please contact the battery manufacturer.

7 History interface

The system will record data curve graphs when connecting to the APP; Display the variation curves of battery maximum and minimum voltage, battery current, remaining capacity, temperature and other data, with the last 100 pieces of data, one per minute.



8 My interface

The solution to the Bluetooth connection problem

The following is the troubleshooting method for the Bluetooth APP connection problem:

1. Ensure that the Bluetooth Settings of the phone are in a detectable state:

Ensure that the battery output voltage is normal, turn on the Bluetooth of the mobile phone, and set it to be discoverable. Different mobile phones may have different Settings. Generally, look for the options of "searchable", "visible to all" or "Open detection" in the Bluetooth setting interface and turn it on.

2. Check the connection environment:

Try to connect in an open, distraction-free environment. Avoid connecting where there are a lot of electronic devices or metal obstructions, as these

may interfere with the Bluetooth signal. At the same time, ensure that the distance between the phone and the battery is within the Bluetooth effective range (generally about 5 meters).

3. Make sure the Bluetooth number is entered correctly:

Make sure you enter the correct Bluetooth code when connecting. Especially in the case of multiple batteries;

4. Restart the APP:

Turn off your phone's Bluetooth APP first, then restart it, and try to connect again to see if you can solve the problem.

5. Clear Bluetooth connection history:

Enter the Bluetooth connection interface on the mobile APP, find the Bluetooth code of the battery that has been paired and connected, and click "Cancel" to clear the previous connection record. The battery is then re-searched and paired, which helps resolve connection issues caused by cached data errors.

6. Update the APP:

Check whether the APP in the mobile App Store is updated, and update it if it is. Updating to the latest version may fix some known connectivity issues or compatibility issues.

7. Check the hardware:

If the above methods are invalid, there may be a hardware fault in the Bluetooth module of the battery or the Bluetooth function of the phone. You can try to connect the battery's Bluetooth to another phone to determine whether the problem is the original phone. If the problem is the battery Bluetooth module, it is recommended to contact the battery manufacturer's after-sales service or professional maintenance personnel for maintenance.

FCC Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Manufacturer: Huizhou Tianchen Shangneng Technology Co., Ltd

Address: No 3 Building, Wuyi village Road, Chenjiang Street, Zhongkai High-TechZone, Huizhou City, Guangdong, China

