

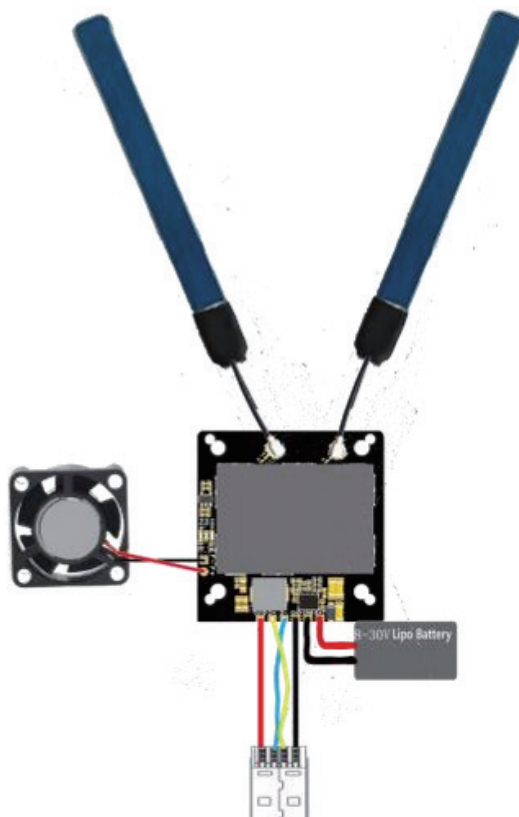
RTL8812AU Module User Manual

Important Notes!

1. Before powering on, ensure both antenna interfaces are connected to low SWR ($SWR \leq 2$) antennas within the 5–6 GHz frequency range. Failure to do so may damage the module.

2. During usage, proper heat dissipation is essential. Apply high-thermal-conductivity materials like thermal paste, thermal gel, or thermal tape on the module's gold-plated areas. Additionally, install a large aluminum heatsink (28x28x11mm) and a 2510-spec cooling fan for effective cooling. Failure to do so may damage the module.

3. When using the module's [BAT] power interface to connect a battery, the [5V19] interface will output 5.19V. Under no circumstances should the USB port be connected to USB devices such as computers, as this may burn out the USB port and cause significant economic losses.



Introduction

The RTL8812AU module is a network wireless module based on the RTL8812AU chip and a high-power amplifier. It acts as a network transmission module for data transmission and can be used with RubyFPV, OpenHD, and OpenIPC FPV systems.

When using the [BAT] power port as the power input, the module operates at a minimum voltage of 8V and can support up to 30V. It features an integrated MP9447 switching power supply that can provide 5.19V/1A for cooling fans, cameras, and other devices. Alternatively, the module can be powered solely through the [5V19] port, which has an input voltage range of 5–5.5V.

Usage Instructions

Using the OpenIPC FPV camera as an example (firmware uploading and burning processes are skipped):

Required Materials:

Two 5–6 GHz low SWR antennas for PEX1 interface

2510-spec DC cooling fan with 5V working voltage

Silicone-sheathed 28AWG wires for data transmission and 22AWG wires for power connections

An 8–30V power source

A 28x28x11mm heatsink with adhesive backing (for improved performance, use a combination of thermal paste, heatsink, and adhesive glue)

Installation:

Connect the Antennas: Attach two antennas to the two antenna ports.

Connect the Cooling Fan: Using a soldering iron, connect the cooling fan's power wires to the module's [FAN–] and [FAN+] terminals. Connect [FAN–] to the negative power terminal (usually a black wire) and [FAN+] to the positive terminal (usually a red wire).

USB Connection: Connect the USB 2.0 port of the camera using three twisted data transmission wires. Connect the module's [D+] (pin ⑤) to the MINiipc's [USB D+/DP], and [D–] (pin ⑥) to the MINiipc's [USB D–/DN]. The MINiipc's [USB GND] connects to the twisted cable's ground wire for electromagnetic shielding.

Output Power Connection: Use two power wires to connect the RTL8812AU module's [5V19] (pin ④) to the positive terminal of the MINiipc power input (12V). Connect the module's [GND] (pin ⑦) to the negative terminal (GND) of the MINiipc power input.

Input Power Connection: Use two power wires to connect the RTL8812AU module's [GND] (pin ⑧) to the negative terminal of the input power source, and [BAT] (pin ⑨) to the positive terminal of the input power source.

Note: Before debugging network parameters, disconnect the RTL8812AU module from the MINiipc. Otherwise, the 12V from the power adapter may be transmitted via the power wires to the module's [5V19] output (pin ④), potentially causing overvoltage damage and rendering the module unusable.

Connection and Operation

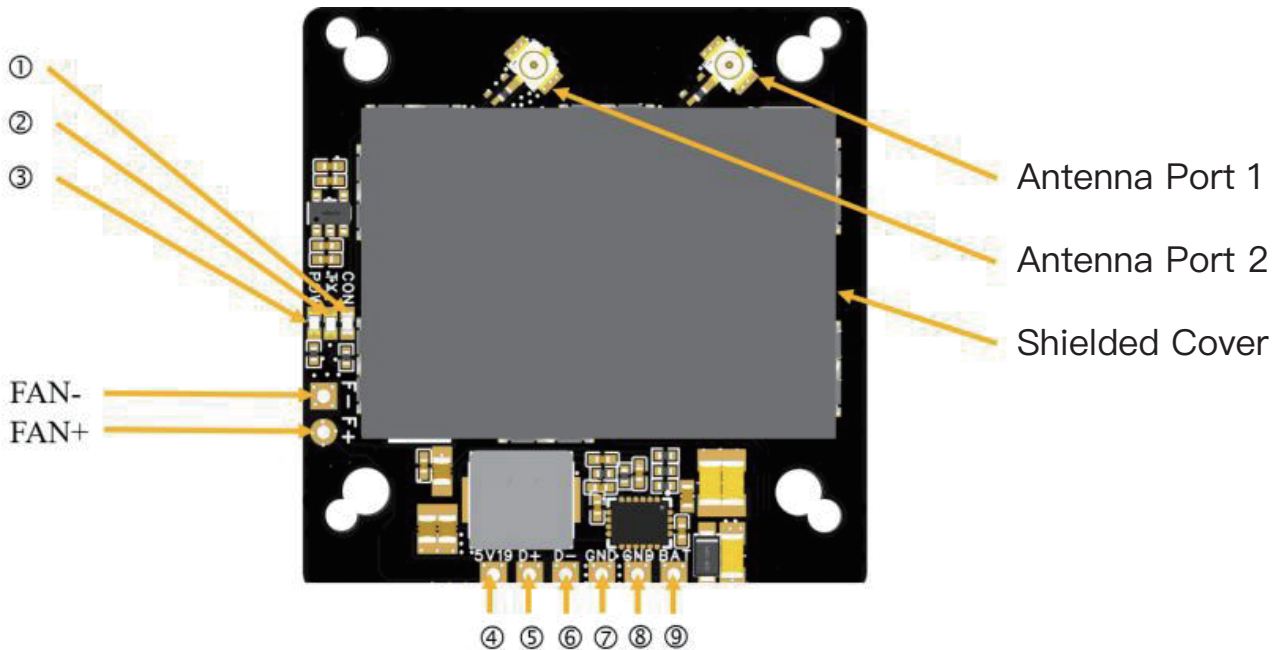
Once the above steps are complete, your MINlipc will be ready for data transmission. Follow the OpenIPC tutorial to view real-time images using a mobile device or other ground equipment. The recommended settings for OpenIPC cameras are as follows:

Set the mcs value to 1 or higher

Enable stbc=1 and ldpc=1

Set the txpower value to 40 or below

The terminal ports of the module are described as follows:



①: USB connection indicator

②: Data sending status light

③: Power indicator light

FAN-: Connect to the negative pole of 5V cooling fan power supply.

FAN+: Connect to 5V cooling fan power supply positive pole

Recommended power setting range: 0–40

④: Power output, 5.19V/1A

⑤: Connect USB DP/D+ cable

⑥: Connect USB DM/D- cable

⑦: power output, connect to USB ground

⑧: Power input, connect to power ground (battery ground)

⑨: power input, connect to power positive (battery positive, maximum input 30V)

The physical connection diagram is as follows:

