Product Introduction:

ARKBIRD-433UHF is a 10-channel module designed for long-distance flight. The 25W version updates high frequency module and industrial-grade regulator power, is more suitable in using of complicated environment.

1. The advanced code division frequency hopping system (FHSS) produces the only way of frequency hopping sequence according to the only ID code of each transmitter, and receives it by different ID addresses with fast frequency hopping at full frequency; **No interfered by jammer.**
2. Adjustable power (500mw-25000mw), with electric quantity of battery display and tripod mounting hole;
3. Both Tuner mode and Repeater station mode are optional, plug and play and automatically identify. Repeater mode can be compatible with all radio TXs;
4. No welding setup, wires are connected easily;
5. With Receiver 10-channel Servo output port, PPM output, 3.3V RSSI output port and head sensor port, support SBUS port;
6. Rapid response of 20ms, without delay.

With Arkbird OSD, it has the following functions:

7. It can be configured to single-wire PPM&RSSI output, three-wire transmission of 10-channel signal and RSSI, with very simple wire connecting;
8. Dimensions: 9cm(L) * 14cm(W) * 60cm(H)

Transmitter:	working voltage: 4S（16V）	peak current: 1500mA@16V
Receiver:	working voltage: 4～8V	peak current: 120mA@5V

Attention:

Read the instructions carefully before using, pay attention to details and wire connection, and avoid the missing of important messages, which may become a hidden danger for the flight.

Please connect the antenna for the transmitter at first, and then connect it to the power supply. Otherwise, it will be damaged!!:(

1. Transmitter Tuner Mode(Not recommend):

1. Please refer to the remote control instruction, and set the remote TX to PPM output. (Attention! If it's set to PCM, it will not be identified.) The PPM Port is soldered under the internal PCB board, and the Aluminum housing may need to be disassembled.

2. Please turn off the remote control, wield three wires of the '4S port' in the bottom left corner (black=ground wire, **red=16V,** white=PPM signal wire) into the remote control. (The pads is under the PCB broad and you need to remove the panel first)

3. Please turn on the remote control after checking the wire connection. If PPM signal is identified, the status LED of transmitter will flicker fast; otherwise it will flicker slowly (one second one time).

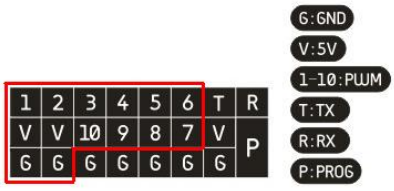
4. The transmitting power can be adjusted by spinning the 'power adj' knob at the top-right corner of the transmitter.

Pay Attention:

Some radio controllers such as WFLY, Futaba etc. which tuner position is current-limiting, cannot reach to max power. Please test if the tuner connected with the battery or not by the multimeter, if not, please use the repeater station mode.

If tuner mode interference video receiver or radio controller, please change to repeater station mode.

2. Transmitter Repeater station mode:



1. Repeater mode provides a simple way to forward your 2.4G/72M receiver signal to the UHF receiver, suitable for the transmitter placed far away from Video RX for avoiding interference, please using tripod, ensure the UHF transmitter antenna vertically installed 1m above the ground.
2. Please refer to the above graph, connect the 2.4G/72M receiver channel 1-10 to the UHF transmitter, insert the V (5V) and G (ground wire) to power-up the receiver.
3. After checking the wire connection, please insert the balance charge port of the 4S lithium battery into the '4S port' in the bottom left corner to supply power. If receiver signal is identified, the status LED will flicker fast; otherwise it will flicker slowly (one second one time).

Warning: In Repeater mode, in order to archive "Turn off radio TX" return, you need to set 2.4G/72M receiver's failsafe. (To archive "out of control range" return, you need to set the Arkbird UHF receiver's failsafe); please correctly set up both receiver, and test before the flight as:

1. Close the radio controller

2. Close 433 transmitter power

Check if both failsafe is OK, otherwise it may not be able to give Return to Home failsafe control.

We suggest you make a ground net shield plate with the complimentary silver paper for avoiding interference to 2.4G receiver and adding transmitting distance.

Make a cardboard with a radius of 18cm, which front and back are affixed with tin foil, and dig a hole in the carboard center which the antenna installed position.

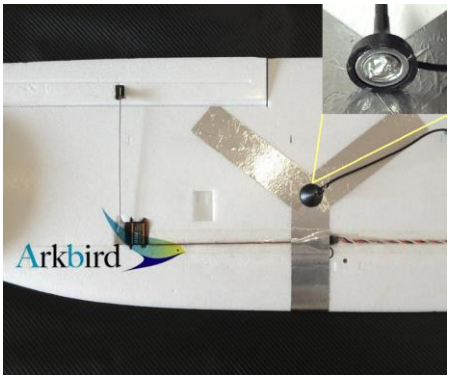
3. The Receiver's ID Code matching / Failsafe Protection

Press the SET button on the receiver for 10 seconds, then the receiver enters the ID code waiting status, LED flickers fast (5 times per second). Now reopen the transmitter to match Code. If succeeded, the receiver will automatically enter into the FHSS working condition.

Press the SET button of the receiver for 5 seconds, set the failsafe protection. (The LED will flicker slowly for 3 times after the setting.)

If the receiver is receiving the signal, the status LED will flicker fast, otherwise flicker slowly (one second one time).

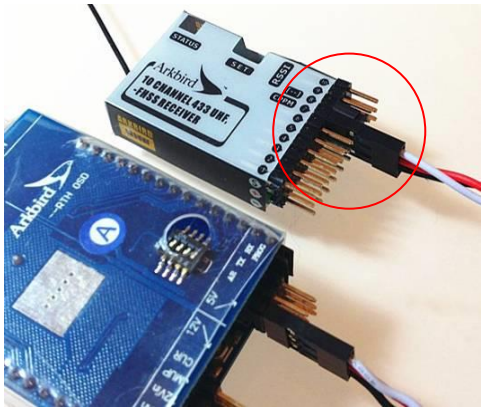
Please place the receiver antenna vertically and away from the interference source such as camera & video TX, make grid antenna with 18cm foil paper, increasing the gain for long-distance flight. (Bottom of the antenna metal position connected to the grid antenna)

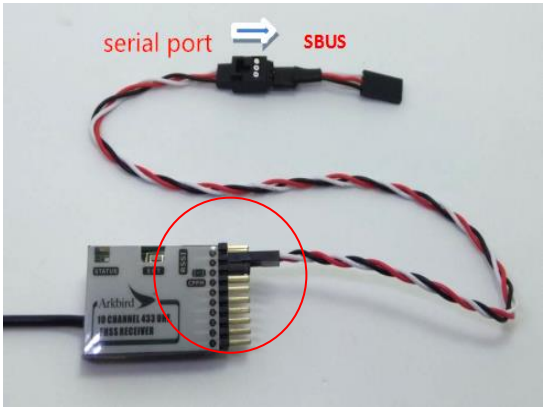


4. Receiver Single-line PPM & RSSI Output , and SBUS function

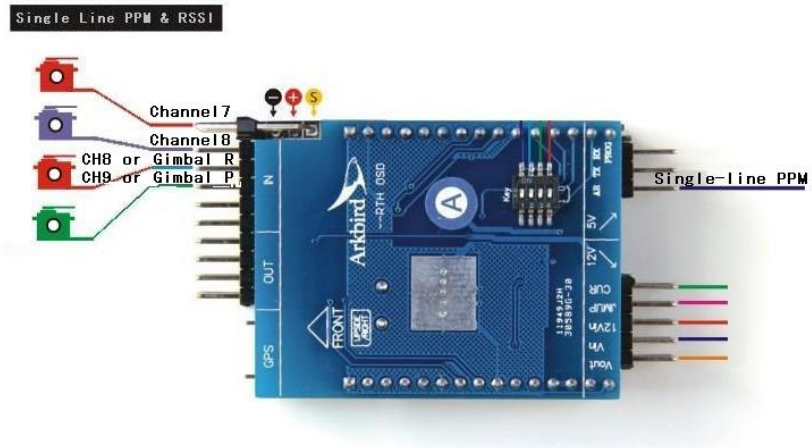
Make a short circuit between the Channel 8's signal to the 5V (in the middle row) using jumper cap. Then channel 7 will output composite PPM signal. It can be connected to Arkbird OSD 's AR port, and make single-wire transfer of the 10 channels and RSSI value.

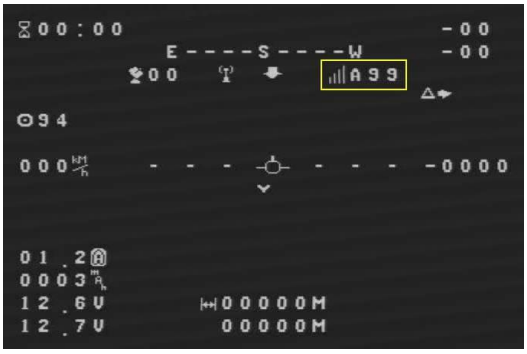
And, the Channel 9, after passing through a SBUS inverter, it can connect with other types of SBUS controllers.

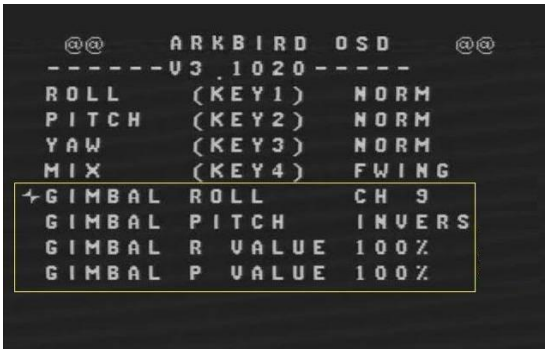




On the Arkbird OSD 1.0, the original 1-4 channel input ports which used to connect common receivers, automatically become output ports which will output the controlling value of channel 7-10 of the remote control.







The OSD interface automatically displays the RSSI strength A99.

Flight / Mix / Gimbal can be selected on the OSD menu, by which channel 9 and 10 output can be set to steer a Servo-Stabilizing-Gimbal for camera (radio TX channel 7&8 can control direction & pitch). Positive & negative compensation and the controlling amount can be adjusted.

5. Frequently Asked Questions (FAQ)

Q: Unable to control the servo?

A: Check the wiring, match the receiver's ID code, transmitter and receiver LED will flash fast and smoothly. Check if the radio TX is set to PPM mode, (or 2.4G/72M receiver is working and able to control a servo).

If you use the Arkbird OSD single wire transmission, enter the OSD menu; check the first row, to see whether it is upgraded to latest firmware (above V3.1020).

Q: Short distance, Failsafe less than 5km under maximum power (LED brightest)

A: check RSSI intensity through OSD, if signal is still not A00, it may be failsafe from repeater receiver.

Check if the UHF TX antenna, RX antenna is installed firmly and perpendicular to the horizontal plane.

Strongly recommend using the original antenna, which is selected specifically for the frequency hopping system (wide band and appropriate), other high gain antenna for fixed frequency system may be not suitable for Arkbird frequency hopping algorithm.

Q: receiver working not ideal, not smooth?

A: During communication, transmitter and receiver LED will flash fast and smoothly (no lost step). If the LED is flashing all right, there may be UHF transmitter power suppression on radio TX or 2.4G/72M receiver.

Adjust UHF power to minimum; connect a servo to the 2.4G/72M receiver to test.

Recommend to use the Repeater station mode, with a vehicle mounted antenna extension lines, so that the antenna could be placed far from the 2.4G/72M receiver.

Use attached foil to wrap up the 2.4G/72M receiver (don't wrap up the antenna). Or use foil and cardboard to make a 18cm-radius isolation plate (isolation plate should be in contact with the antenna ground); which can isolate interference as well as improve the UHF signal effect. (Pictured at right)

Q: Single-line PPM&RSSI Output to Arkbird OSD, the aileron, elevator channel control is not corresponding.

A: single-line transmission 1-6 channels as follows: aileron, elevator, throttle, direction and 2 auxiliary channels. If no corresponding, please change the servo line sequence, or set the radio TX's PPM 1-6 channel as the above order.

Attentions:

Be sure to read the Safety precautions of Arkbird equipment carefully:

1. The Arkbird equipment can only be used for small aircraft model entertainment. Please do not install it in the camera plane which may fly over the crowds. Fly should be done in open field, and the loss of people and property caused by any accident should be prevented.
2. The equipment must be installed and used according to requirements, and the check for the working condition should be done before every fly.
3. Since equipments on the plane and any other electronics are not completely reliable, you should evaluate the product when using it, and should use it according to the related rules. The system provider is not responsible for any direct or indirect losses and effects caused by using the product.
4. It is strictly prohibited to open this tuner near the gas station, or place where the radio signal is prohibited!

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