RMILEC

4346 NB18 UHF Remote Control Unit Operating Manual

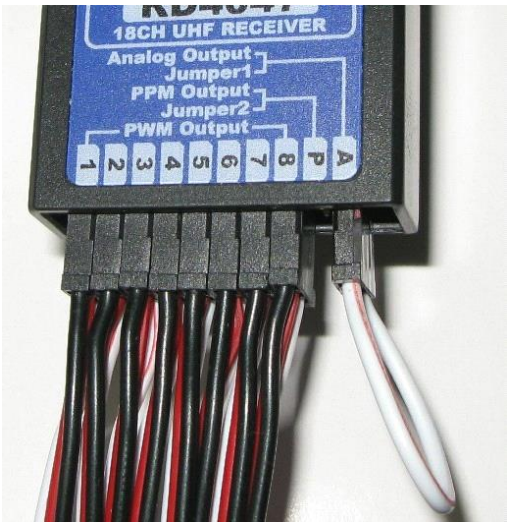
1 Warning

When the transmitter works, if the antenna were not connected, the result will be severe. With the high power transmitting mode, the transmitting current reaches to 500 mA or more.

2 Receiver

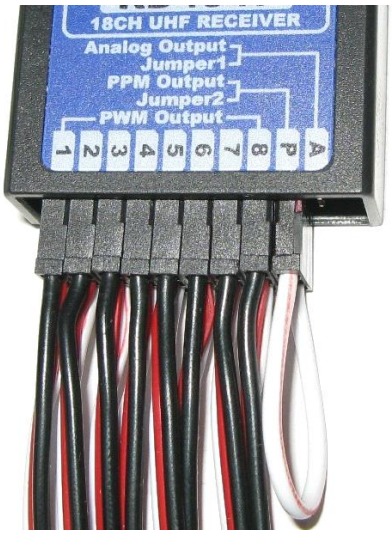
Jumper 1：

Bond and recovery PWM output low speed mode, 3003 simulated steering engine adopts this mode.



Jumper 2：

Use to set PWM output high speed mode (digital steering engine). Cooperate with the high speed mode of transmitter to get the more lower delay effect, using this mode by simulated steering engine will result in abnormal work and damage.



PWM1 -8 ：

The data of connecting steering engine comes from the remote controller output connector

PPM：

(S-BUS): connect PPM decoder or XUFO
According to the transmitter input signal source, it could configurate 8/10 channels output mode.
Remote controller is under PCM mode, after switching the code, the connector of PPM will configurates to 10 output channels automatically.
Remote controller is under PPM mode with 8 channels (did not include 8 channel),
After switching the code, PPM connectors is configurate to 10 channels to output.
Remote controller is on or under 8 channel with PPM mode, after switching the code, the connector of PPM is configurated to 8 channels output.
Cooperate with TS4047, the data of PPM channel comes from remote controller output data.
Cooperate with more advanced version transmitter , the data of 10 channel comes from any connector.

Analog :

The default setting is RSSI output
The voltage of RSSI after losing the signal, it will be available with field measurement.
Cooperate with advanced version transmitter, it could be configurated to any channel corresponding simulated voltage.
The relation is 1-2 millisecond pulse width to 0-3.3 V

Receiving power supply:

Using any connector could supply the power, the polarity of voltage is shown as the graph, the black wire is negative.
Input voltage 3-5V is the best range, built-in boosted circuit, it works well under low

voltage
If the power supply noise is loud, the lowest power supply voltage should be boosted, for example, 4-5V
The power supply voltage is less 2 V, it is possible to auto shut or the reduction of agility
The higher of power supply voltage, the severer of heat. During the summer, the highest voltage should not exceed the 6.5V （estimated figure)
The receiver is with built-in inversed protecting component, but the high inversed voltage still could result in the damage.
There is static fragile component in receiver, if disassemble the cover, it may be damaged.
The antenna of receiver maintains the static protection. If static electricity could discharge by battery negative, measured by multimeter, the antenna oscillator and battery negative might be short-circuited.

3 Transmitter

The RF connector of transmitter is 50 ohm, SMA connector external thread, inner bore
Under the low power mode, shot time no-load did not make burn the transmitter unit
Under the high power mode, no-load will result in the damage of the power amplifier by overheating in short time
Any circumstances, the short-circuited RF connector will result in the damage of the power amplifier by overheating in short time

Be careful of using the coaxial-cable with wave length n/4 (n=1,3,5,7,9…..). The open end is equivalent to input circuit, the power amplifier will be brunt in seconds. So advice you that use the original coaxial-cable, do not try the short-circuit and open attempt
Close range test, please use 5W or higher power dummy load. Long time work will make it heating, low power dummy load will make it burned

Multination button

Press on the button then starting up, it could enter into bond mode
After starting up, press on the button for 5 seconds, it could control the receiver to store all the position of channel

Output power option switch

Low power 30DB, High power 33 DB
Under the High power, the current may exceed 520mA, it will result the RC inner circuit with bad quality overheating to damage
There is over-current protection in some versions RC, so it exists the circuit protection under high power. It is avoidable by simple refit

speed

Low speed 40 hz, high speed 66 hz
Low speed could get the highest agility, high speed could get the best control effect

Out of control protection set:

Starting up: if out of control, first store all channel positions as PWM,PPM output data; did not starting up: if out of control, shut down PWM OOM output

Transmitter power supply

For 8.4-16V
When the voltage is lower than 8.4 , it may result in the output power reduction
Advice to use 3 Lipo batteries with large capacity
Notice: there is no inner inversed circuit protection in the transmitter, if inversed connected, it will result in the transmitter scrap.
The default setting waveband of transmitter is 1
If it is needed, it could change to 2 waveband. The method is opening back cover, welding waveband control jumper
The transmitter just could identify PPM signals within 10 channel. If input more PPM signals, the extra channels will be ignored

4 Bond

There is automatic scan system of RD4047, it could scan interference signal of electronic equipments
For example，CPU，on-board computer, steering engine, crystal oscillator and camera, these equipments could release the interference signals, and also the frequency is without standard. So please follow up the procedures during the bond
1, install receiver and other electronic equipments on place
2, start up all electronic equipments, and make them under normal working mode
3, insert the jumper to jumper 1, then supply the power to receiver
4, press on the multifunction button, then supply the power to the transmitter
5, wait for the transmitter BBB... Sound
6 supply the power to the transmitter again, the receiver unplug the jumper, supply the power again
Step 3,4 could be upside down
The bond procedure of bond is bidirectional communication between the transmitter and receiver. The transmitter transfer the working mode to receiver, then the receiver scan according to the working mode, the data of scanning post back to the transmitter. So, after bond, the transmitter and receiver store the same ID code and frequency hopping list.
If changes the receiver, there should be differences in frequency hopping list due to the working circumstance and machine situation. It is needed to bond again when change the receiver
Otherwise, receiver can not search the transmitter, or lost the frequency point, these above will result in the bad control effect

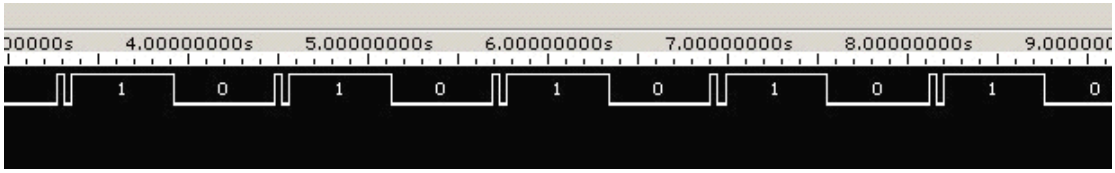
5 The meaning of transmitter of buzzer sound

Bi low power mode
Bi Bi high power mode
Hua out of control protection open, scan finished, start to launch

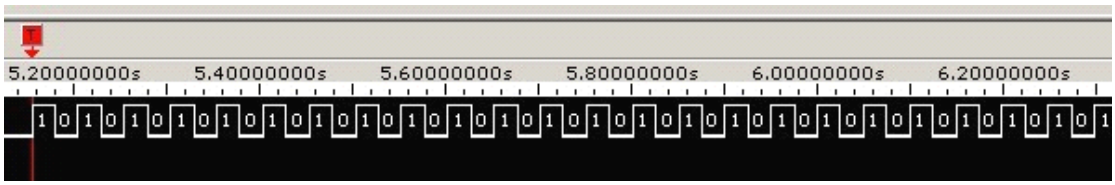
Hua Hua out of control protection shut, scan finished, start to launch
Bond mode, bi bi bi... Means bond finished

6 LED Meaning

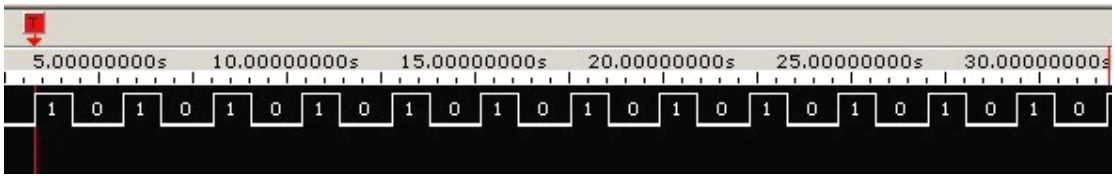
The receiver enters into the bond mode



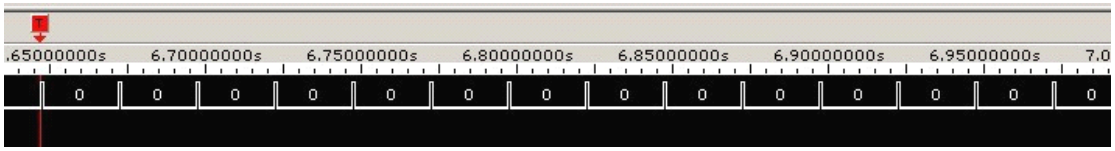
The receiver bond successfully



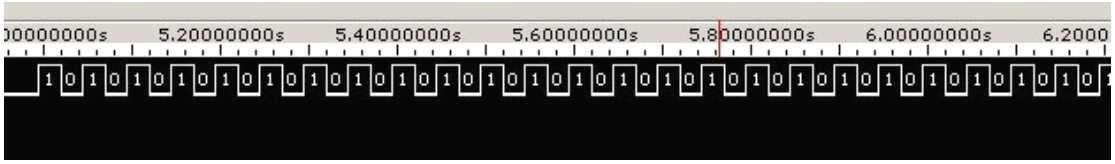
The search mode of receiver



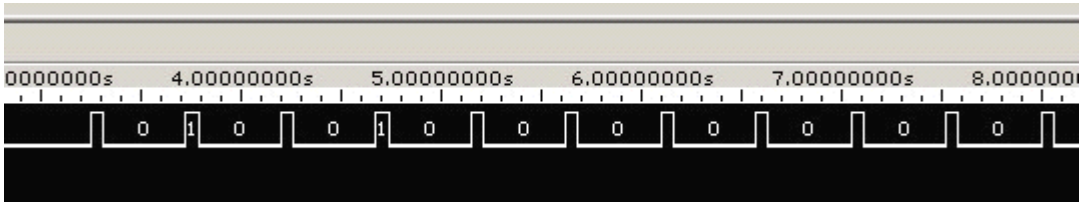
The normal mode of receiver: receiving one data, blink one time. It is continuous



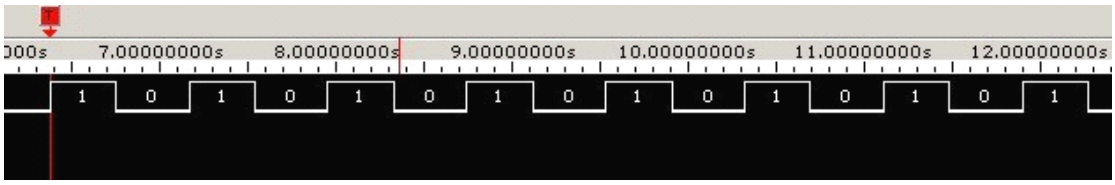
The normal mode of receiver: receiving two data, blink one time. It is continuous



The bond mode of transmitter



The high frequency part is damaged of transmitter

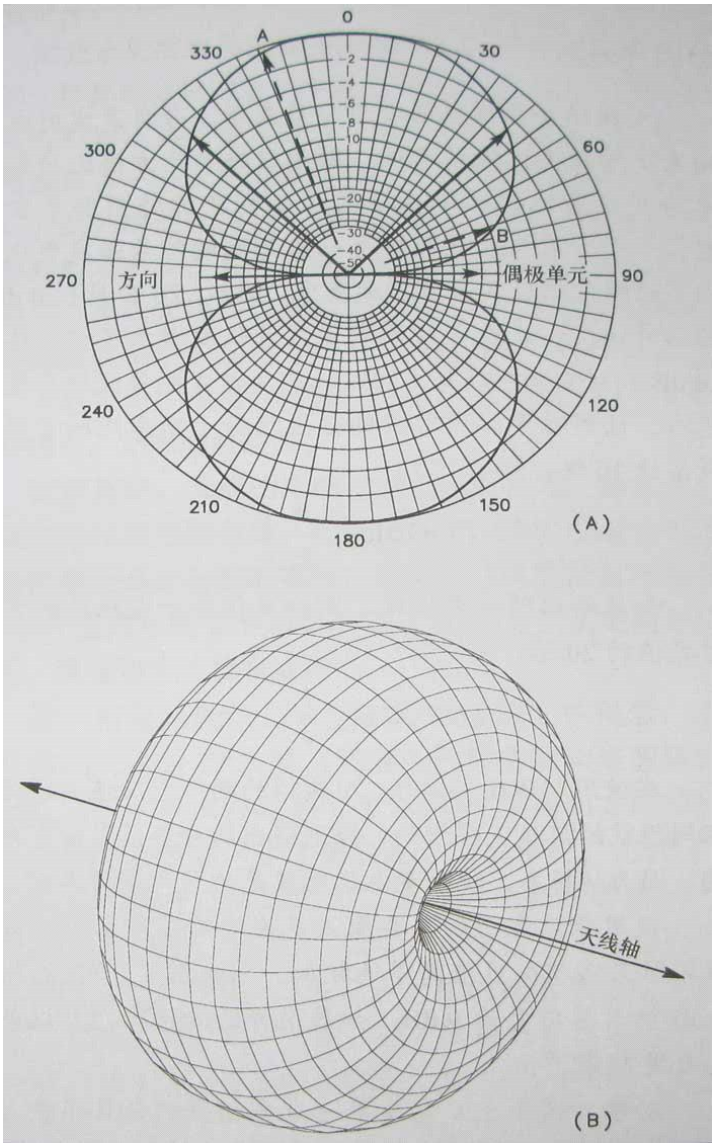


7 How to get the furthest remote control range

1, the antenna of receiver should be straight , two antennas is on 90 °

2 The materials around the antenna should be non-conductive, should not be metal or carbon fiber

3 The transmitter has right installation angle. Wrong angle will drop the range to 100m



4Right corresponding code operation
5There is no 350-550Mhz transmitter around the receiver
6There is no obstacle in the open place
7Right supply power voltage
If it could meet the above demand, the referred distance is 20-60KM
Using high gain antenna will get more further distance

8 Trouble removal

1The solution to can not bond

The indicator light of receiver strobes, the transmitter did not make BBB sound: check whether there is bond operation around. It is possible the receiver is bond to other transmitter
The indicator light of receiver blinks regularly: the jumper position of receiver is not right
The indicator light of transmitter did not strobe: the transmitter start up or not, PPM/PPM signal exists or not(when using the conversion board, if just supply the power to tuner

but did not post the signal, the turner did not work)
The indicator lights are all normal，but no reaction: the distance between transmitter and receiver is far, the normal distance is within 1 m.

2 The solution to can not control

The indicator light of receiver did not strobe： operating the bond, wait for the BBB sound , BBB is the bond completed sound
The indicator light of receiver did not strobe：after bond, forget to unplug the jumper of receiver
Alarming of transmitter or no normal working tone: there is no confirmation again after changing the PCM/PPM. Whether the PCM signal is not compatible, the PPM/PCM signal wires are bad connected.

3 The solution to the insensitive control

The abnormal situation of remote controller (backlight of screen strobes, voltage alarm, key tone without operation, did not power on, power on frequently): the signal interference of RF to the transmitter main board or the connected circuit may result in the above situation. The solution: install the antenna holder to the handle, the transmitting antenna can not be crooked and pulled out with the whole body. If it is too close to 72M antenna, take down the 72M antenna.

Under the PCM mode, the signal is off and on, delay: the signal interference of RF to PCM circuit result in the wrong decode of PCM. It may happen on the semi-electroplate body cover, but not happen on the whole electroplate such as 9ZAP. The solution: reduce the power, heighten the antenna holder, use the coaxial cable to connect the auto-load chunk antenna, change diamond 771 or 770 (there is shield in these two antennas loading parts).

Under the PPM mode, steering shakes: the reason is the same with PCM mode, the solution is the same. If the electricity and magnetism of the RC is not compatible, it may cause the steering shake. The solution is to add the smoothing magnet ring in inner circuit.

4 The solution to the short distance

A The obstacle of transmitting parts

The distance is just about 100m:

The antenna did not screw down, bad connect. Check your antenna connector is matched with RF end connector or not
The RF circuits is broken. Use the multimeter to check the breakover of the inner core and wire jacket. Check the internal and external short circuit.
Put the transmitter in the refrigerator or microwave, the signal can not be transmitted.

The distance is just about 500-900m:

It is the normal distance in city center with the high buildings.
The distance is just 5 km: there might be the block or the antenna and receiver is not vertical(refer to the antenna lobe pattern)

The distance is 10-15km:

The efficiency of transmitting antenna is not high, the visibility is bad. At noon, the macula may shorten the RC distance.

Others:

The voltage of transmitter is lower than 8.6V, it will affect the output power. When operating, please measure the voltage of transmitter. Some mode RC adopts 6V to supply the power, it just could be for the tuner.

The obstacle of receiving:

Analysis:

UBEC, computer,camera,OSD and coding IC, these electronic components release the low frequency signals, these signals will possess some weight on 400M frequency more or less, these interferences are the main cause of distance shortening. The situation is similar with 72M system. When the 72M is under the strong interference, the steering will shake. Under this situation to use the 400M system, the distance may shorten to 200m.

The method of testing and estimating

First we need to get the signal under the extreme range(-118DB), under this signal strength, the signal of receiver is off and on.Then power on the peripherals electronic equipments, if there is interference, the receiver will lost control immediately. Power on the receiver singly, just connect one steering engine or did not connect. The receiver install the dummy load, then put into the refrigerator, the control range is serval meters. The agility could be tested in other separated room. If there is no dummy load, just could get the intermittent signal with 100m . The peripherals electronic equipments power on gradually, for example, connect one
Switch, after stabilivolt, the signal becomes worse or no signal, it means the stabilivolt of this switch has the interference. you could try to connect the circuit with the magnet ring. Use the metal cover to package the switch, open the distance, the receiver and switch power on separately etc. methods to test.