AT9S Pro

(DSSS&FHSS&CRSF)

Quick Start Guide

(Helicopter/Fixed-wing/Glider/Multirotor/Car/Boat/Robot)

10/12 channels transmitter

CE FCC RoHS

Safety Precautions

⊗ Never operate your model during adverse weather conditions. Poor visibility can cause disorientation and loss of control of your model.

⊗ Never use this product in a crowded and illegal area and strictly comply with the local regulations.

! Always ensure the trim levers at 0 and battery properly charged before connecting the receiver.

! Always check all servos and their connections prior to each run.

! Multi-rotor must check whether the motor rotation direction is normal.

! Always be sure about turning off the receiver before the transmitter.

! The AT9S Pro transmitter cannot be restored to factory settings, but the currently used model can be reset in "BASIC MENU"-"MODEL TYPE".

! Please strictly abide by local laws and regulations and use it safely!

This product is not a toy and is NOT suitable for children under the age of 14. Adults should keep the product out of the reach of children and exercise caution when operating this product in the presence of children.

Packing List

AT9S Pro Transmitter×1

R9DS Receiver×1

Lanyard×1

Throttle Return Accessories×1

Quick Start Guide×1

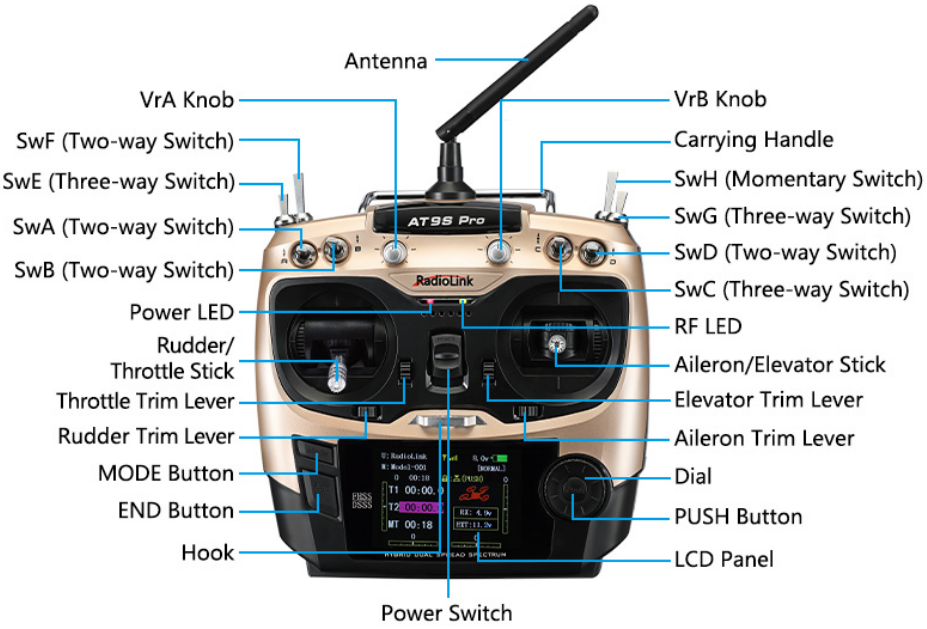
Packing Box×1

Specifications

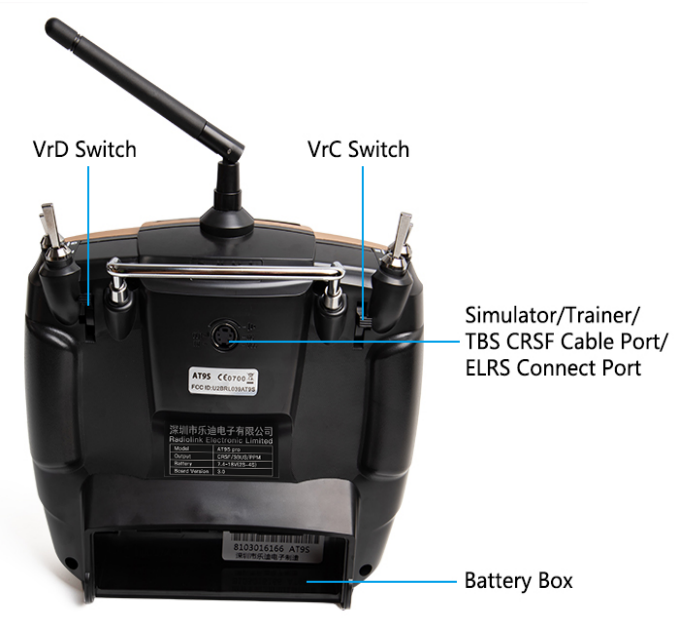
AT9S Pro Transmitter	
Size	183*100*193mm (7.2”*3.9”*7.6”)
Weight	0.88kg
Channel Quantity	10/12 (all twelve channels can be programmed)
Control Range	① DSSS&FHSS: 3400 meters in the air; 900 meters on the ground (Maximum range is tested in an unobstructed area free of interference) ② CRSF: Depends on the RX and TX from BLACKSHEEP
Operating Current	① DSSS&FHSS: < 90mA@12V ② CRSF: Depends on the transmission power selected
Operating Voltage	7.4 ~ 18.0V (8pcs AA battery, a 2S-4S LiPo or 18650 Lithium battery)
ACPR	>38dbm
Frequencies Band	2.4GHz ISM band (2400MHz~2483.5MHz)
Modulation Mode	QPSK
Bandwidth	5.0MHz
Spread Spectrum Mode	DSSS&FHSS/CRSF
Storage Model Quantity	15
Battery Box Size	116*36*32mm (L*W*H=4.57"*1.42"*1.26")
Low Voltage Alarm	Support. Voltage alarm can be customized
Signal Output	PWM/SBUS/PPM/CRSF (The current output signal depends on the signal supported by the paired receiver. R9DS can output SBUS and PWM signals at the same time by default)
Simulator Mode	Yes, with the radio frequency off to save battery power
Screen	2.8 inches 16 colorful screens, 240*320 pixels
Operating Temperature	-20° to 85° C (-4° to 185° F)
Adaptable Models	Rotary Wing/Fixed-wing/Glider/Multicopter/Car/Boat/Robot
Compatible Receivers	R9DS (Standard), R12DS, R12DSM, R6DS, R6DSM CRSF- Receivers from BLACKSHEEP

R9DS Receiver	
Size	43*24*15mm (1.69” *0.94” * 0.59”)
Weight	10.5g
Antenna Length	145mm (5.71")
Channel Quantity	9 channels for PWM signal output; 10 channels for SBUS&PWM signal output
Control Range	3400 meters in the air; 900 meters on the ground (Maximum range is tested in an unobstructed area free of interference)
Operating Current	38~45mA@5V
Operating Voltage	3.6-12V
Signal Output	PWM(red LED) and PWM&SBUS(blue/purple LED)
Section Precision	4096, 0.25us per section
Compatible extended telemetry module	Connect PRM-01 for model voltage telemetry. Connect PRM-03 and flight controller crossflight, PIXHAWK, Mini Pix, and TURBO PiX, APM for OSD information telemetry
Compatible Transmitters	AT10II/AT10/AT9S Pro/AT9S/AT9

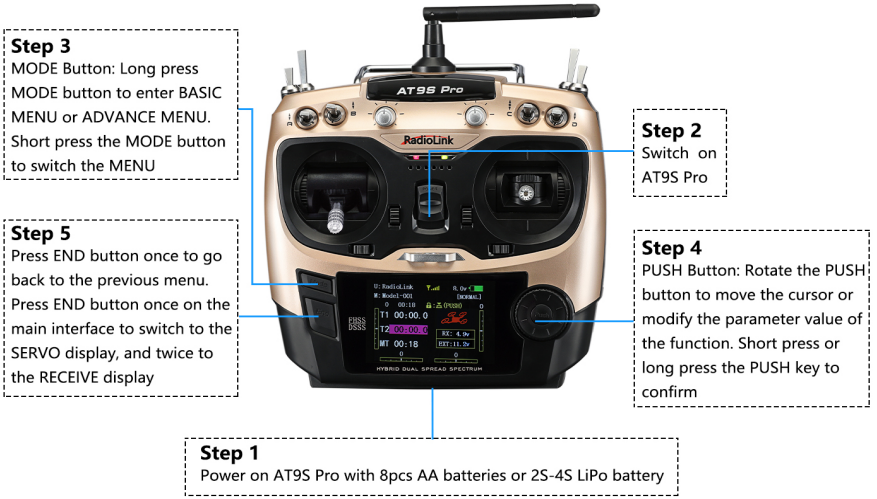
Transmitter AT9S Pro



Note: The picture above takes the left-hand throttle as an example.



Basic Operations



Note：For normal functions, short press the PUSH button to confirm, but when modifying the "MODEL SEL" and "MODE TYPE", long press the PUSH button for 1 second to confirm.

- Aileron/Elevator/Throttle/Rudder Stick controls 1 to 4 channels by default. Set STK-MODE in PARAMETER menu. If you set the STK-MODE to "-" and then the AUX-CH in BASIC MENU, you can assign other switches to control channel 1 to channel 4.
- Two VR knob switches and two VR slider switches on the back meet the needs of pan/tilt control, and the functions of these switches can be customized.
- AT9S Pro has 4 two-way switches, 3 three-way switches and a reset switch. Function of all switches can be customized. For details, please refer to the detailed manual of AT9S Pro www.radiolink.com/at9spro_manual.

Basic Settings

1. Language Settings: Long press the MODE button to enter the menu, if the language is displayed as Chinese, please rotate the PUSH button to move the cursor to PARAMETER(系统设置), short press the PUSH button to enter the setting interface, and change the language from Chinese (语言选择:简体) to English.

2. Alarm Settings: The low voltage alarm of the transmitter, receiver, model battery and RSSI(Received Signal Strength Indicator) alarm can be customized on AT9S Pro. The factory low

voltage alarm is 8.6V for transmitter; 4.0V for receiver; 11.1V for model battery. When the voltage is lower than the set alarm value, the transmitter will send out an alarm (See pictures below), and the low battery alarm can be set according to the actual voltage of the battery to avoid battery over-discharge.

Setting steps: BASIC menu - PARAMETER - TX-ALARM/RX-ALARM/EXT-ALARM. (Voltage alarm reference: 2S lithium battery -7.4V; 3S lithium battery -11.1V; 4S lithium battery -14.8V.)

The RSSI alarm is turned off by default. The alarm value can be customized. When the signal strength is lower than the set alarm value, the transmitter will send out an alarm (See picture below). **Setting steps: BASIC menu - SYSTEM - RSSI ALM.**

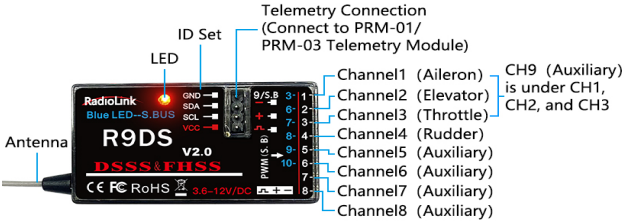
****** WARNING!!! ****** TX Low Power !	****** WARNING!!! ****** Rx Low Power !	****** WARNING!!! ****** Ext. Low Power !	****** WARNING!!! ****** RSSI ALARM !!
Radio Low Power	Receiver Low Power	Model Low Power	RSSI Low Alarm

R9DS Receiver

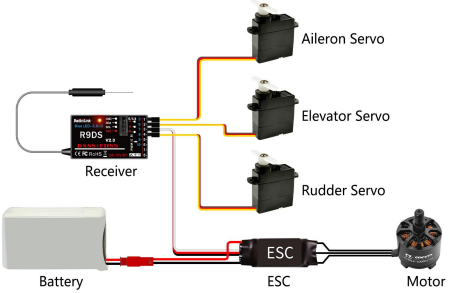
Working Modes

R9DS, with 2.4G DSSS&FHSS spread spectrum technology, is a 9-channel receiver when working with PWM signal output (red LED) or a 10-channel receiver when with SBUS&PWM signal output (purple/blue LED).

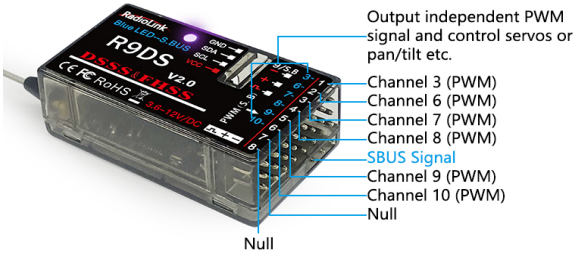
1. PWM Signal Mode：Red LED indicates PWM signal output, 9 channels totally.

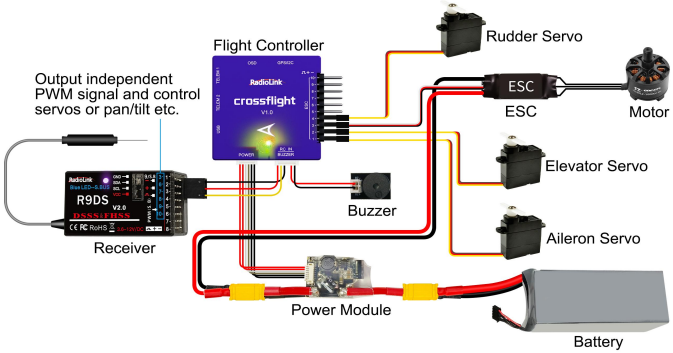


Note: PRM-01 and PRM-03 telemetry modules are sold separately.



2. SBUS&PWM Signal Mode: Blue/purple LED indicates SBUS&PWM signal output at the same time with 10 channels totally. CH9 outputs SBUS signal while the original CH1 outputs CH3 PWM signal and original CH2 to CH6 output CH6 to CH10 PWM signal at the same time.



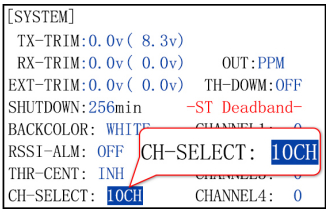


Note: Fixed wing equipped with flight controller is taken as an example.

Switch Signal Mode : Short press binding button (ID SET) twice within 1 second, the working mode will be switched.

Channel Settings

AT9S Pro is a 12-channel transmitter, but the channel is selected as 10 channels by default (See the right picture). When using the standard packed R9DS receiver, there is no need to modify the settings; but when using R12DS or R12DSM receiver, channel of AT9S Pro should be selected as 12channel, 12CH. For the channel selection of AT9S Pro when using different receivers , please refer to the figure below:



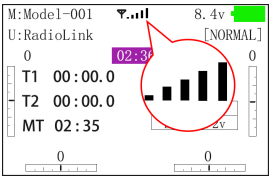
Receiver Model	AT9S Pro CH-SELECT		Receiver Model	AT9S Pro CH-SELECT
R9DS	10CH		R12DS	12CH
R6DS	10CH		R12DSM	12CH
R6DSM	10CH			

Setting steps: BASIC menu - SYSTEM - CH-SELECT.

Note: If the channel of AT9S Pro is selected incorrectly, the servo may vibrate all the time.

Binding

AT9S Pro and R9DS have already finished binding by default. Turn on AT9S Pro and R9DS, the signal tower will be displayed on the top of the screen (See the right picture), which means AT9S Pro and receiver have finished binding.



If you purchase a new R9DS receiver separately, you need to bind the receiver to the transmitter. Each receiver has an individual ID code. When the binding is done, the ID code will be stored in the transmitter and there's no need to rebind.

Binding Steps:

1. Put the transmitter and the receiver close to each other (about 30 centimeters).
2. Power on AT9S Pro and R9DS, the LED of R9DS will be on.
3. There is a black binding button (ID SET) on the side of receiver. Press the button for more than one second and release, the RED (by default, could be Purple for SBUS&PWM signal output) LED will flash, meaning binding process is ongoing.
4. When the LED stops flashing and is always on, binding is complete. There will be a signal tower shown on top of the LCD screen of the transmitter. If not succeed, the LED will keep flashing slowly to notify, repeat the above steps.

Note：Since RadioLink radio control systems are not open sourced, RadioLink transmitters are ONLY compatible with RadioLink receivers. After connecting TBS Crossfire module to AT9S Pro, the connection to TBS Crossfire receiver is supported.

Installment of Antenna

1. Receiver Antenna Installment

(1) Please test RSSI (Received Signal Strength Indicator) before operating models. For methods on how to test it, please refer to https://www.radiolink.com/newsinfo/477894.html.

(2) If the antenna of the receiver is damaged, replace it with a new antenna or receiver in time.

(3) Keep antennas as straight as possible, or the effective control range will reduce.

(4) Big models may contain metal parts that influence signal emission. In this case, antenna should be positioned at one side of the model to ensure the best signal status in all circumstances.

(5) Antennas should be kept away from metal conductor and carbon fiber at least half inch away and no over bending.

(6) Keep antennas away from motor, ESC, or other possible interference sources.

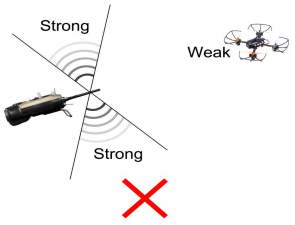
(7) Receiver contains some electronic components of high-precision. Be careful to avoid strong vibration and high temperature.

2. Transmitter Antenna Orientation

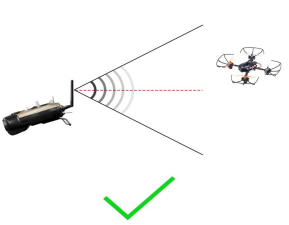
(1) The transmitter antenna orientation is adjustable. Please make sure that the antenna never points directly at the model when flying as this may possibly decrease the receiver signal. (See Picture 1 below).

(2) If the antenna is upright, the antenna signal mainly diverges in the horizontal direction, which is beneficial to flying farther (See Picture 2 below); if the antenna is horizontal and parallel to the ground, the signal mainly diverges in the vertical direction, which is beneficial to fly higher (See Picture 3 below), so it is best to place the transmitter antenna perpendicular to the connection line between the remote control and the aircraft during flight.

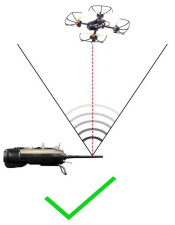
(3) During the flight, please ensure that there is no obstruction between the transmitter antenna and the receiver antenna to maximize the communication distance.



Picture 1



Picture 2



Picture 3

RSSI Testing

RSSI stands for Received Signal Strength Indicator. Before flight, always remember to do the RSSI testing to avoid the possible unexpected signal loss.

1. Power on transmitter and receiver, keep them with the distance of about 30 centimeters and both antennas straight (See the right picture).

2. Enter the basic menu. Rotate the PUSH button to select

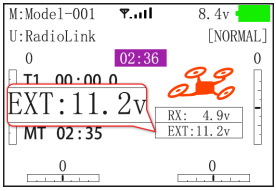
RECEIVE and press PUSH button to enter and check the RSSI value. RSSI value between 0 to -30dBm is normal when the transmitter keeps about 30 centimeters distance from the receiver. The RSSI value is closer to 0, the signal is stronger.

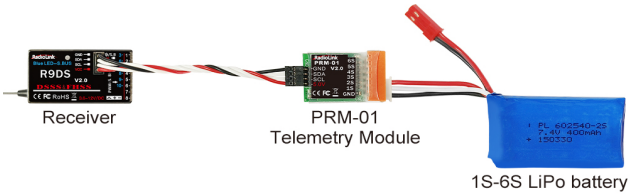
Real-time Built-in Telemetry

R9DS receiver integrates telemetry of signal strength and receiver voltage by default. It can also realize the telemetry of model battery voltage or flight controller and GPS information when used with RadioLink PRM-01 or PRM-03 telemetry module, and the telemetry information can be displayed on the screen of AT9S Pro or AT10II transmitter.

Model battery voltage telemetry: When connecting R9DS to telemetry module PRM-01, the model voltage will be displayed on the screen of AT9S Pro (See picture below).

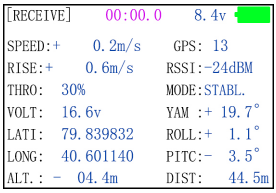
Note: PRM-01 is sold separately. PRM-01 only supports R9DS or R12DS receiver.

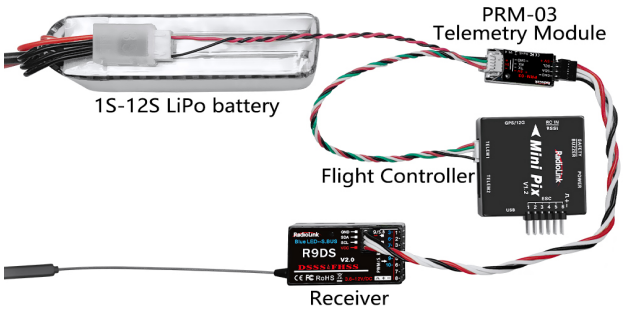




Flight controller and GPS information telemetry: When connecting R9DS to telemetry module PRM-03 and flight controller, more information will be displayed on the screen of AT9S Pro, including the model battery voltage, speed, climb, throttle, longitude, latitude, altitude, GPS, RSSI, flight mode, yaw, roll, pitch, and distance (See picture below).

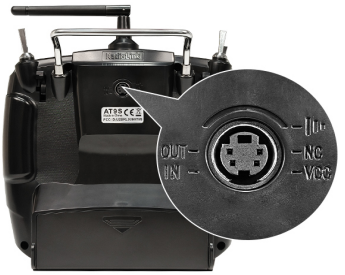
Note: PRM-03 is sold separately. PRM-03 only supports R9DS or R12DS receiver, and it works with flight controller crossflight, PIXHAWK, Mini Pix, TURBO PiX or APM.





Multiple Function Port

AT9S Pro can be connected to many devices via simulator port on the back. Enter **BASIC menu-SYSTEM-OUT** and select the appropriate signal output.

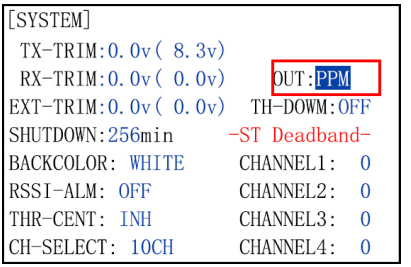


Details of simulator port

- : GND
-NC : No Output
-VCC : Voltage Output: 7.4-18V
-OUT : Signal Out: PPM/SBUS/CRSF
-IN : RSSI Signal Input

For setting of function of AT9S Pro simulator port, please refer to the picture on the right.

For the connected devices and the corresponding signal output, please refer to the figure below:



	Signal Output	Matching Device
OUT	PPM	Head track, trainer cable, simulator or any other devices supports PPM input
	SBUS	Devices supports PPM input
	CRSF1	TBS Crossfire, with baud rate 115200
	CRSF4	TBS Crossfire, with baud rate 416000
	ELRS1	ELRS module, with baud rate 115200
	ELRS4	ELRS module, with baud rate 416000

Note:

1. Scan the QR code on the last page of the Quick Start Guide to view detailed video tutorials for connecting AT9S Pro to all the above devices.

2. TBS Crossfire connect cable and wireless trainer cable are sold separately. Please refer to the official website www.radiolink.com for more information and purchase.

Technical Support Here

Contact **RadioLink RL** via Facebook Messenger

AT9S Pro User Manual

AT9S Pro Tutorials

If the above information cannot solve your problem, you can also send emails to our technical support: after_service@radiolink.com.cn

This content is subject to change. Download the manual of AT9S Pro from https://www.radiolink.com/at9spro_manual

Thank you again for choosing RadioLink product.