



T8S(BT)

(FHSS)

User Manual

V2.0

8-Channel Remote Controller
APP Parameter Setting via Bluetooth Connection



Compatible with Fixed-wings/Gliders/Multirotors/Cars/Boats/Robots

CE FCC RoHS

Content

Chapter 1 Introduction.....	2
1.1 Operation precautions	2
1.2 T8S+R8EF introduction.....	2
1.2.1 Specification	2
1.2.2 Recommended accessories	3
1.2.3 Transmitter Hardware	3
1.2.4 Transmitter Battery Charging	4
1.2.5 T8S Gimbals Calibration.....	4
1.3 R8EF Receiver	5
1.3.1 Receiver Mode and Signal Switch.....	5
1.3.2 Receiver Connection	5
1.3.3 Guide of Receiver Install	6
1.3.4 Binding	6
Chapter 2 Parameters Setup APP	7
2.1 Mobile phone APP	7
2.1.1 APP Installation.....	7
2.1.2 APP Connection.....	7
2.1.3 Parameters Setup Menu.....	8
2.2 Software APP on Computer	9
2.2.1 Software APP Installation	9
2.2.2 Software APP Connection	9
Chapter 3 Function Setup Menu on APP	11
3.1 SERVO Menu	11
3.2 BASIC Menu.....	12
3.2.1 REVERSE.....	12
3.2.2 SBU-TRIM	13
3.2.3 END POINT ADJUSTMENT (EPA).....	14
3.2.4 FAIL SAFE (F/S)	15
3.2.5 DELAY	16
3.2.6 AUX.CH.....	16
3.3 ADVANCED Menu.....	17
3.3.1 D/R (Dual Rate).....	17
3.3.2 ATTITUDE.....	18
3.3.3 ELEVON	19
3.3.4 V-TAIL	20
3.3.5 PROG.MIX.....	21
3.3.6 TH/CURE.....	22
3.4 SYSTEM Menu.....	22
3.4.1 ALARM SETTINGS	22
3.4.2 STK-MODE(SYSTEM)	24
3.4.3 RESET	25
Chapter 4 Firmware Upgrade.....	26
4.1 Firmware Version	26
4.2 Firmware Upgrade Steps	27
4.2.1 Driver Installation	27
4.2.2 Download Software and Upgrade Firmware	29
Thanks	34

Chapter 1 Introduction

1.1 Operation precautions

- 1) Do not use the remote controller in the rain!
Avoid moisture entering the transmitter. If it is unavoidable to use this product in humid weather (such as competitions), please cover your remote controller and receiver with a waterproof cloth, and do not fly if there is lightning.
- 2) Don't use it in rainy and snowy weather. This weather environment will interfere with the remote controller equipment, resulting in loss of control and accidents!
- 3) Don't use this equipment in crowded areas and places prohibited by national laws and regulations!
- 4) Do not allow children (Less than 14 years old) to touch this product. This product is not a toy. Please be careful when operating in scenes where children are present.
- 5) Please strictly abide by local laws and regulations when flying to ensure safe flight!
- 6) Make sure the throttle stick and trim button are set at the lowest end before turning on, then turn on the power button and check whether the power supply is sufficient, then turn on the receiver!
- 7) Check whether the various actions of servo are consistent with the direction of the corresponding joystick before operating the model. If they are inconsistent, please adjust before using!
- 8) Please turn off the receiver and controlled equipment before stopping use, and then turn off the power supply of the transmitter. If the operation is reversed, it may cause loss of control and cause an accident!
- 9) T8S transmitter has a built-in lithium battery with an operating voltage of 3.7V~4.2V. Please do not use a battery outside this voltage range when replacing the battery by yourself.
- 10) The T8S is compatible with R8EF/R8F/R8FM/R8SM/R7FG/R6FG/R6F/R4FGM/R4F receivers. Other brands of receivers cannot be used.
- 11) Please refer to the website to modify the throttle hand and return to the center position joystick:
https://www.youtube.com/watch?v=b-97TUi3_Rw
- 12) Any loss caused by the use of this product shall be borne by the user.

1.2 T8S+R8EF introduction

1.2.1 Specification

T8S Transmitter	
Size	162.5*95.5*57mm(6.4"*3.76"*2.24")
Weight	140g(5.0oz)
Channel Quantity	8 channels
Control Range	about 2000 meters in the air (actual distance depends on the flight environment)
Operating Current	<80(±5)mA
Operating Voltage	3.7- 4.2V
ACPR	>36dbm
Frequencies Band	2.4GHz ISM band (2400MHz~2483.5MHz)
Modulation Mode	GFSK
Bandwidth	400KHZ
Spread Spectrum Mode	FHSS 67 channels pseudo-random frequency hopping
Compatible receivers	R8EF(Standard), R8SM, R8FM, R8F, R7FG, R6FG, R6F, R4FGM, R4F

R8EF Receiver	
Size	41.5*21.5*11.5mm (1.63" *0.85" *0.45")
Weight:	14g
Channel Quantity	8 channels
Control distance	about 2000 meters in the air (actual distance depends on the flight environment)
Operating Current	38-45mA@5V
Operating Voltage	4.8V-10V DC
Signals Output	SBUS&PPM&PWM
Compatible transmitter	T8FB/T8S/RC6GS V2/RC4GS V2/RC6GS/RC4GS

1.2.2 Recommended accessories

The following accessories are not the standard accessories of the T8S remote controller. You can scan the QR code below to buy them on AliExpress, and visit our official website www.radiolink.com for more products and details.



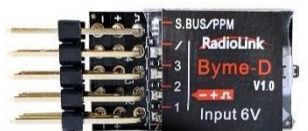
R8SM Mini receiver (2 gram)



F121 Pro FPV Training Drone



Wireless Trainer Cable



Byme-D Delta Wing Flight Controller

1.2.3 Transmitter Hardware



Mode 2

Power button: Long press to turn it on or off; or press it to confirm the connection when upgrading the firmware.

Throttle/Rudder/Aileron/Elevator Stick: The default Channel 1 to Channel 4 controls the roll, pitch, throttle and yaw of the aircraft.

Trimmer buttons: T8S has 4 groups trimmer buttons (two for each group), which can trim roll, pitch, throttle and yaw respectively. The trimmer buttons are used to quickly adjust the model during flight. When debugging the model, please adjust it through SUB function in the parameter setting APP.

Three-way switch: CH7 (SWA) and CH5 (SWB) are three-way switches, which can be assigned to the auxiliary channel through APP to control the equipment connected to this channel. (Note: If you have purchased Radiolink RTF with a T8S transmitter, the three-way switch CH5 (SWB) controls the switching of the flight mode by default.)

Knob switch: CH8 (VRA). This switch can be set by parameter setting APP according to your needs, and is mostly used for Pan/Tilt/Zoom adjustment.

Push button: CH6 (VRB). This switch can be set by parameter setting APP according to your needs, and it is mostly used to control camera shutter.

1.2.4 Transmitter Battery Charging

The built-in battery of T8S is 1S lithium. When the voltage is low, the green indicator will flash with a DD warning sound. Make sure to charge the battery in time to avoid the possible damage by over discharge.

T8S charging is simple, only need an android USB data cable. It takes approximately 40 minutes to fully charge T8S with 4 green Indicator lights on. It can be used for 5 hours when fully charged.

1.2.5 T8S Gimbals Calibration

When the transmitter power is off, set both joysticks at the central point. Then press the rudder trimmer button (it marked as No.1 in below picture) and the power button simultaneously. When four green indicators start flashing, it means T8S is ready to be calibrated.

Range Calibration: Toggle both sticks (CH1-4) to the highest point/maximum and the lowest point/minimum. Then back to the central point.

Central Point Calibration: When the joysticks are back to the central point, press the rudder trimmer button (with an arrow to right and marked as No.2 in below picture) once. Two short DD sounds will be heard and the green indicator becomes steady on, meaning the stick calibration is complete.



1.3 R8EF Receiver

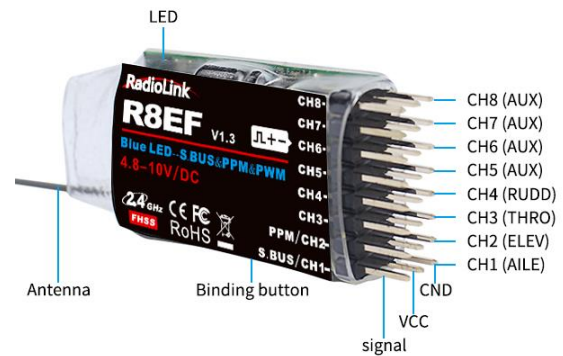
1.3.1 Receiver Mode and Signal Switch

The R8EF receiver supports two modes: PWM single signal output and SBUS&PPM&PWM multi-signal output. Short press the ID SET button twice (within one second) to complete the PWM signal output mode or SBUS&PPM&PWM multi-signal output mode switch.

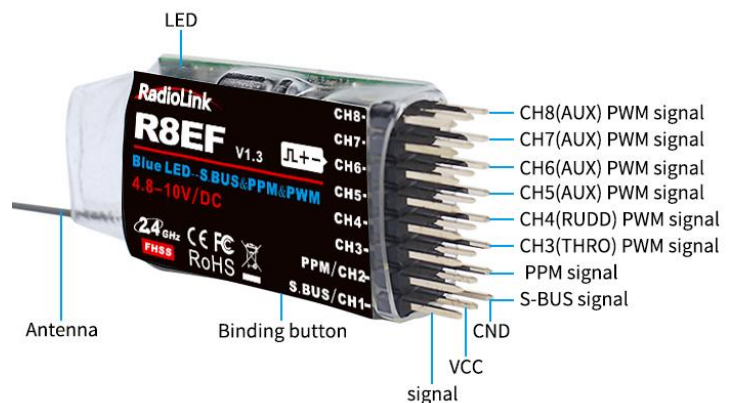
PWM signal is red light, SBUS&PPM&PWM multi-signal is blue light.

- PWM mode:

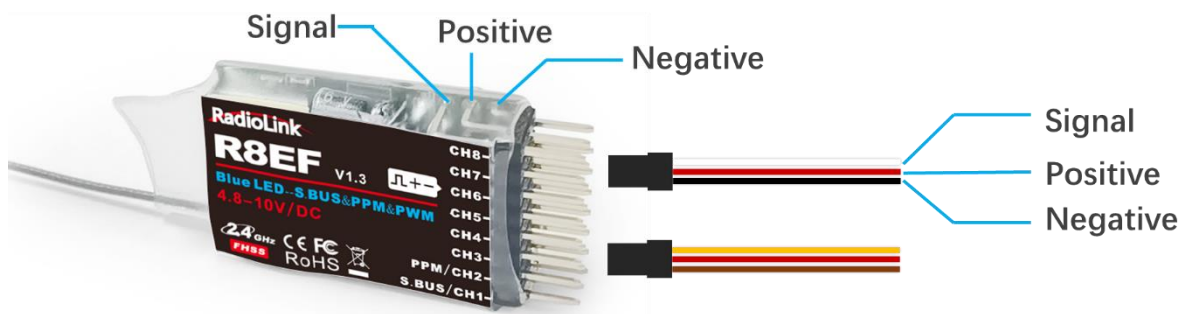
All 8 channels of R8EF receiver output PWM signals



- SBUS&PPM&PWM mode: The channel 1 of R8EF outputs the SBUS signal, and channel 2 outputs the PPM signal. Channel 3-8 output the corresponding PWM signal.



1.3.2 Receiver Connection



The connection wire for receiver is shown in the picture above. The common ones are white/red/black wire or yellow/red/brown wire. The two types of servo cables both are the light-colored wire as the signal wire, the dark-colored wire as the ground wire, and the middle is 5V power supply, and the three wires correspond to “ $\text{JL} + -$ ”.

Note:

1. Radiolink receivers are all designed with anti-polarity connect protection. When the servo cable is plugged reversely, the receiver will not work.

2. The receiver operating voltage is 4.8V-10V. When the receiver uses a separate battery for independent power supply, the receiver will not be damaged if the battery polarity is reversed, but if the servo is connected at this time, it will cause damage to the servo.

1.3.3 Guide of Receiver Install

① Keep antennas as straight as possible, or the effective control range will reduce. PS: Generally, the receiver's antenna is longer than the body of drone, but also shouldn't break or shrink the antenna into it.

② Big models may contain metal parts that influence signal emission. In this case, antennas should be positioned at both sides of the model to ensure the best signal status in all circumstances.

③ Antennas should be kept away from metal conductor and carbon fiber at least half inch away and no over bending.

④ Keep antennas away from motor, ESC or other possible interference sources.

⑤ Receiver contains some electronic components of high-precision. Be careful to avoid strong vibration and high temperature.

⑥ Special vibration-proof material for R/C like foam or rubber cloth is used to pack to protect receiver. Keeping the receiver in a well-sealed plastic bag can avoid humidity and dust, which would possibly make the receiver out of control. Putting the receiver into a plastic bag can also prevent fuel and residue from entering.

1.3.4 Binding

Every transmitter has a unique ID code. Before using, binding transmitter to receiver on aircraft is a must. When binding is finished, ID code will be stored in the receiver, no need to rebind, unless the receiver is going to work with another transmitter. If you purchase a new compatible receiver, binding needs to be done before using.

Binding steps of all transmitters and receivers from RadioLink are the same as follow:

① Put the transmitter and the receiver close to each other (about 50 centimeters).

② Long press the Power Switch to make the T8S power on.

③ Power on the R8EF, the LED of R8EF will start flashing slowly.

④ There is a binding button(ID SET) on the side of receiver. Press the button until the LED flashing quickly and release, binding process is ongoing.

⑤ When the LED stops flashing and turns to always on, binding is complete. If not succeed, the LED will keep flashing slowly to notify, repeat the above steps.

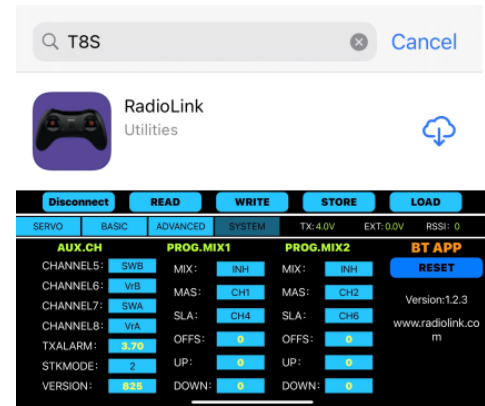
Chapter 2 Parameters Setup APP

2.1 Mobile phone APP

2.1.1 APP Installation

Android APP: Visit https://www.radiolink.com/t8s_APPS to download the android APP to setup T8S parameters by Bluetooth connection.

NOTE: The APP will not collect any user's information, you can even use this APP without Internet connecting. The APP asked for Location Permission only used for connecting and telemetry function.

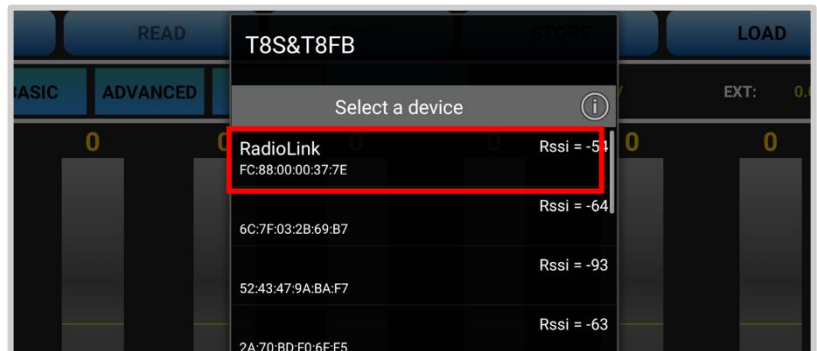


Apple APP: Search Radiolink or T8S in Apple store and then click it to download.

2.1.2 APP Connection

Connection of both Android APP and Apple APP to T8S are the same as below:

- ① When the installation of parameter setup APP is complete, press the power button to turn on T8S.
- ② Click to enter the APP, a message will pop out to ask for permission to turn on the Bluetooth function.
- ③ Click CONNECT on the top left of interface, a list of devices will pop out for selection.
- ④ Select Radiolink device, the two LED indicators at rightmost will flash with DD sounds.
- ⑤ Press any of the trimmer buttons to stop the DD sounds and the servo range will display on the APP, meaning connection between the APP and T8S succeed (Go to [page 3](#) to see the location of trimmer buttons).

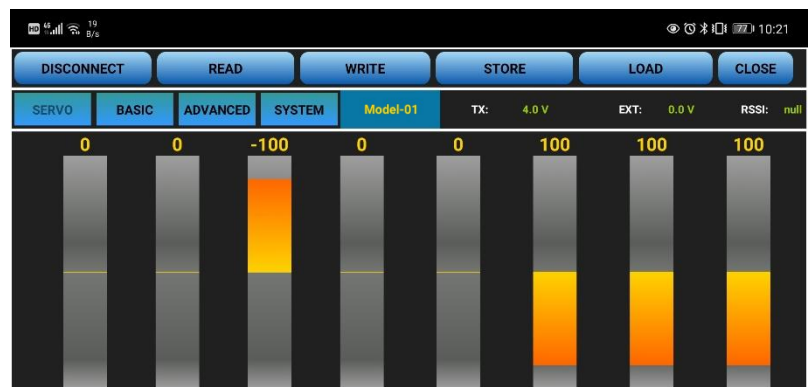


Note:

If there is no servo range display in APP, it means the connection is unsuccessful and you need to reconnect.

If you cannot find the Bluetooth device with the name "Radiolink" after clicking "CONNECT". Please check whether the "Location Information" of your phone is turned on, if not, please open the "Location Information";

If the "Location Information" is on, but you still can't find "Radiolink Bluetooth device". Please open the application in the phone --settings-application management--T8S&T8FB permissions--location

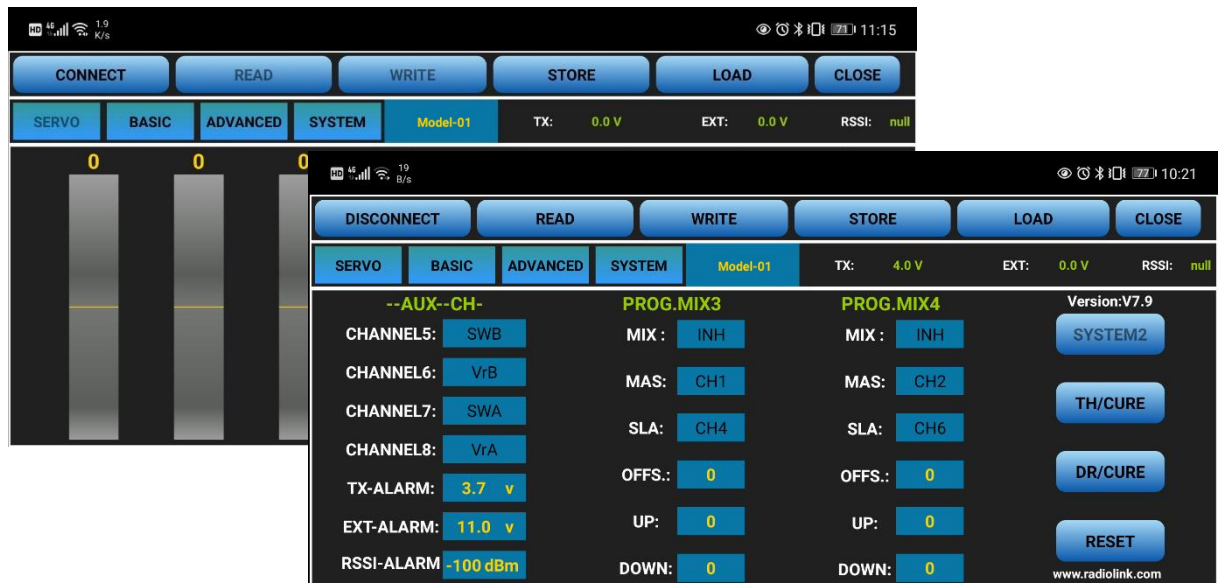


information, change the location information from “only allowed during use” to “Prohibited”, and then change to “allowed only during use” again.

If all the steps above have finished, but the mobile phone parameter setup APP still cannot connect the transmitter success, please download the version V603.

2.1.3 Parameters Setup Menu

The parameter setting phone APP only displays four interfaces by default: “SERVO”, “BASIC”, “ADVANCED”, “SYSTEM”.



(DIS)CONNECT: When APP is opened and T8S is powered on, click CONNECT and a list of Bluetooth devices will pop out and select the RadioLink device to make connection. The two LED at the rightmost will flash with DD sounds, press any of the trimmer buttons to stop the DD sounds and the servo range will display on the APP. If fails, press DISCONNECT and CONNECT again.

READ: Click READ, two short D sounds will be heard and the APP starts reading the data in T8S. Every time the APP is reopened, the data displayed is the initial default value. If the parameters are modified, you need to click to “READ” again to display the modified data.

WRITE: Click “WRITE” and three slow D sounds mean the modified data have been written successfully. If no D sound means written failure, please reconnect T8S to the APP and re-write. Click “WRITE” each time parameter is modified to make sure it’s well input to the T8S.

LOAD (Load/New/Delete model) :

There are three functions can be set by press LOAD, that is load or select model data that have set already and add a new model.

① Load model: A tooltip will pop out when Click LOAD, and then click “SELECT” to load the model data from this tooltip. If there is no model data have stored successfully, the tooltip will show blank.

② Create new model: Click “NEW” and name the new model, for example, “RacingDrone1”. Click “YES” to save the new model’s name, then click the model’s name, the gray title bar on the top of tooltip will change to RacingDrone1, click “SELECT” to select the model’s name, and then set up all the parameters

depends on your drone, click “STORE” to save the settings, “/mode/RacingDrone1.txt” pop out means the new model have set successful.

③ Delete model: choose a model’s name from the tooltip, for example, still the “RacingDrone1”, the gray title bar on the top of tooltip will change to RacingDrone1, then click “DELECT”, an alert box will pop out, click “YES” to delete the model data.

STORE: Click to save the APP data as a file in the mobile.

Note:

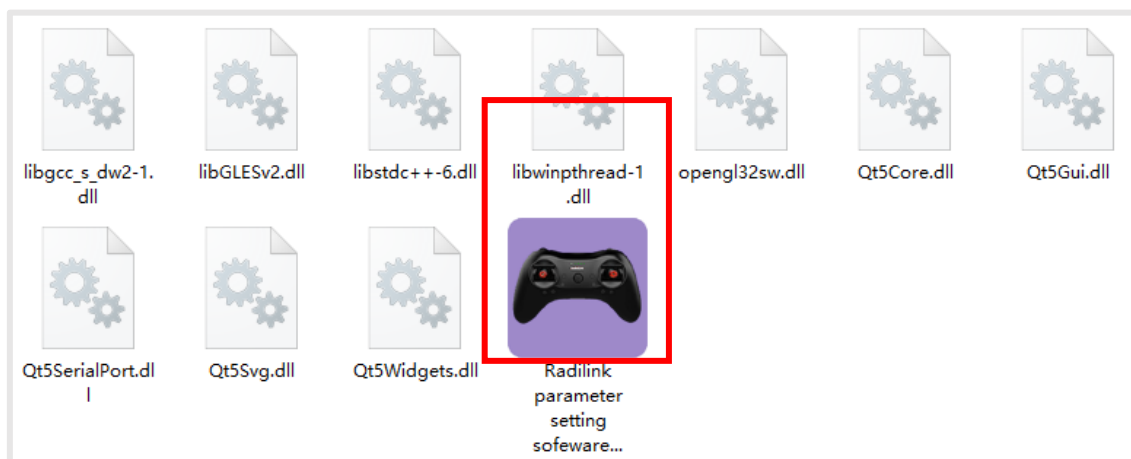
T8S support unlimited number of model data to store, and easy to search in the phone.

If the new file created is forgotten to rename, but STORE as Model-New, the data in this file will be cleaned automatically when trying to create another new file sharing the same file name.

2.2 Software APP on Computer

2.2.1 Software APP Installation

Go to the official website https://www.radiolink.com/t8s_apps to download the computer software APP, and run the program below.

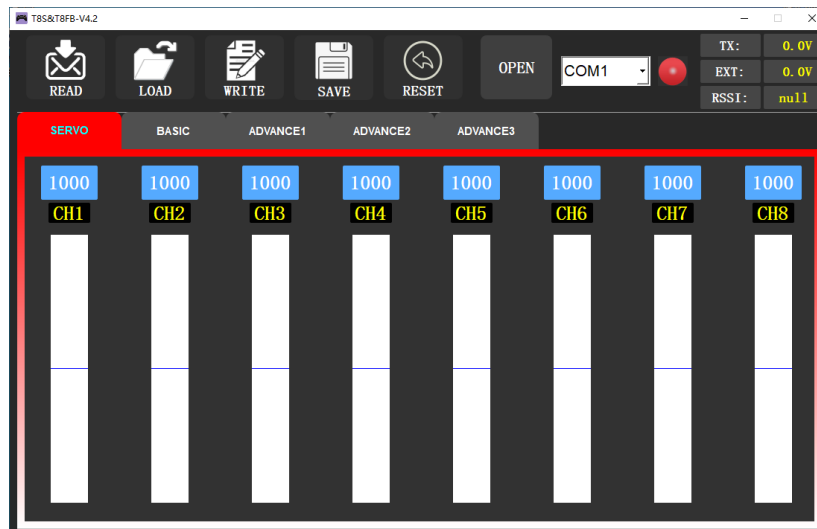


If it's your first time to use computer parameter APP, you need to install the driver before using it. Please click the link below to download and install driver: <http://radiolink.com/filedownload/51482> or contact us by email at: after_service@radiolink.com.cn

2.2.2 Software APP Connection

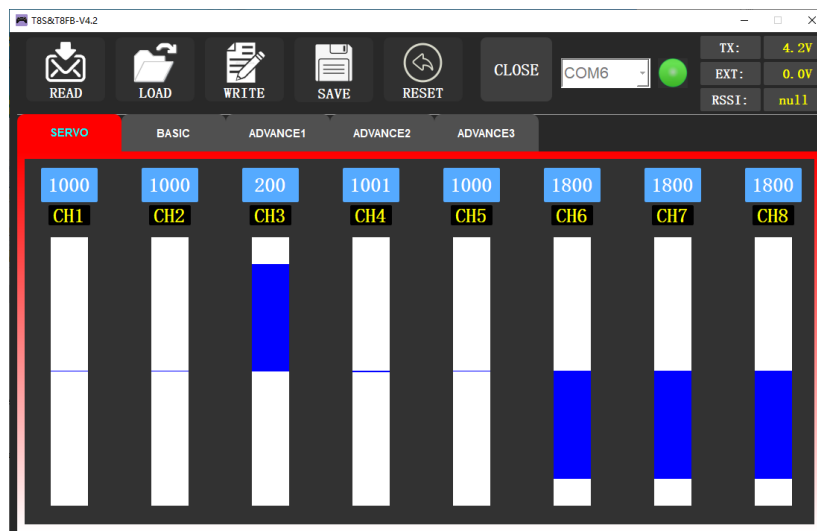
After the driver is installed, T8S transmitter can connect to computer parameter software.

- ① Turn on T8S transmitter, and connect it to the computer with a USB data cable.
- ② Open the parameter software in the downloaded file. Choose Port Number (The COM port of different computers will be different), click OPEN to connect.



Note: If the driver is installed normally, but the COM port connected to T8S cannot be detected, you could try to another USB data cable. Do not use USB charging cable.

- ③ T8S will continuously make D sounds, press any of the trimmer buttons (Go to [page 3](#) to see the location of trimmer buttons) to stop the DD sounds.



READ: Click READ, two short D sounds will be heard and the APP starts reading the data in T8S. Every time the APP is reopened, the data displayed is the initial default value. If the parameters are modified, you need to click to “READ” again to display the modified data.

WRITE: Click “WRITE” and three slow D sounds mean the modified data have been written successfully. If no D sound means update failure, please reconnect T8S to the APP and re-write. Click “WRITE” each time parameter is modified to make sure it’s well input to the T8S.

LOAD: Click LOAD and a pop out of ‘Model Select’ will display. If there is no successfully stored data, there will be no display. Besides, user also can create a new file or select among the saved files.

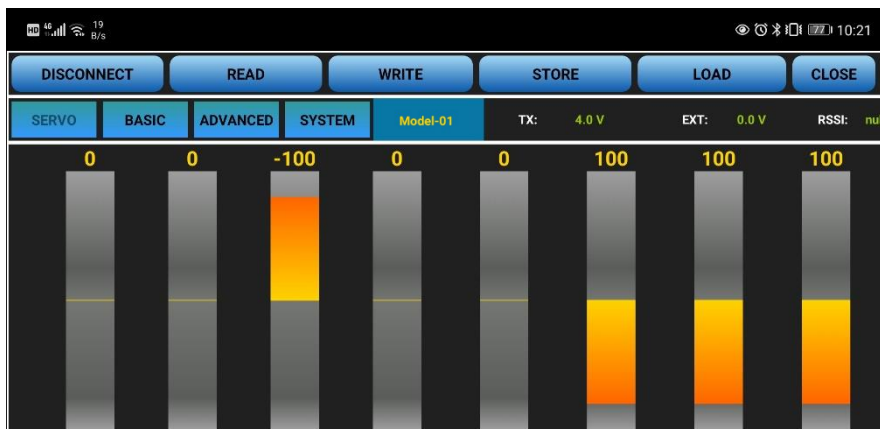
SAVE: Click to save the APP data as a file in the computer.

Chapter 3 Function Setup Menu on APP

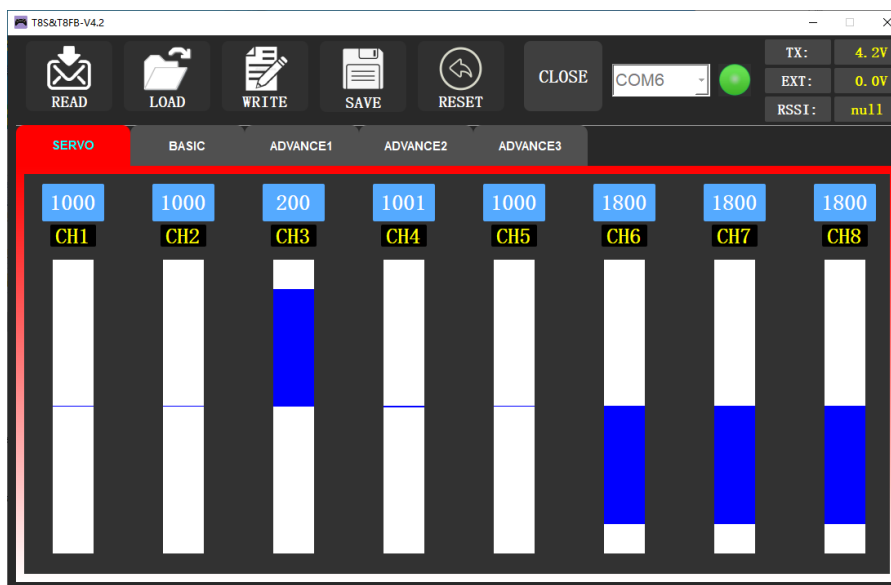
3.1 SERVO Menu

The 8 rectangles show the CH1-CH8 servos range instantly (4 basic channels and 4 auxiliary channels) from left to right. CH1--Aileron, CH2 - Elevator, CH3 - Throttle, CH4--Rudder, CH5 to CH8--Auxiliary channels.

There is a real-time display when you are toggle any channel switch, it is suitable for set up complex mix control functions.



The interface of parameter setup APP on phone.



The interface of parameter setup software on computer.

3.2 BASIC Menu

3.2.1 REVERSE

This function is to change the direction of the servo in response to the remote controller input. Make sure to check all servos move to the correct direction as wish under control.

Note: If programmable mix control function is used to control several servos for fixed wing/gliders, e.g. V-TAIL mix control, make sure to set the phase in advance to avoid possible confusion.



The interface of parameter setup APP on phone.



The interface of parameter setup software on computer.

After changing the channel phase, please check the control of the corresponding channel on the model, to make sure the response direction of the channel is correct. Make sure that the response of each servo with the operation of transmitter is correct.

3.2.2 SBU-TRIM

Makes small changes or corrections to the neutral position of each servo. The default is 0 setting by factory setting. That is, no SUB-TRIM. The range is from -100 to +100 and can be modified with actual need.



The interface of parameter setup APP on phone.



The interface of parameter setup software on computer.

This function is used to set the neutral position of the servo, not to set the servo surface to be horizontal.

This function is used to set the neutral position of the servo, not to set the servo surface to be horizontal.

So, the recommended steps are as follows:

- Zero out the SUB-TRIM when the servo is not connected to servo surface, and adjust the neutral position of the servo through SUB-TRIM.
- Zero out the SUB-TRIM.
- Mount servo arms and linkages so that the control surface's neutral is as correct as possible.
- Modify with SUB-TRIM small range value to make fine corrections.

3.2.3 END POINT ADJUSTMENT (EPA)

This function is used to set travel range of the servo connected to the channel.

When setting the model or after the first flight, if you feel that the movement of the model is still relatively small when you move the joystick to the maximum position. You can increase the travel range percentage of the corresponding channel of the servo (the maximum can be adjusted to 120, The default is 96).



The interface of parameter setup APP on phone.



The interface of parameter setup software on computer.

EPA-L and EPA-R respectively represent the travel range on two sides of the neutral point. You can choose the side you want to modify to adjust travel range percentage.

3.2.4 FAIL SAFE (F/S)

If the flight has reached the limit control distance, there is strong interference in the flight area, there are obstacles between the transmitter and the receiver, or T8S low voltage it will cause loss of control. At this time, you can set the Fail-Safe, so that the model can maintain working at the F/S value you set after loss of control. F/S needs to be set in advance. Each channel can be set independently.

According to your needs, set the servo travel range output by the channel. After setting it, the receiver will continue to output the servo travel range according to the value you set when the receiver loses the control of transmitter.



The interface of parameter setup APP on phone.



The interface of parameter setup software on computer.

Note:

1.The setting of the throttle F/S also applies to the low battery voltage. F/S value 0 means throttle stick at the lowest point while 50 means at the central point.

2.The F/S (Fail-safe) function can be used in certain competitions to ensure safe landing of the model prior to flying away and dropping. Besides, it can also be used make all servos neutral to maximize the flight time.

3.2.5 DELAY

Adjusts the synchronous ratio between the servos position and the actual operation. The default value is 100 by factory setting meaning no delay.

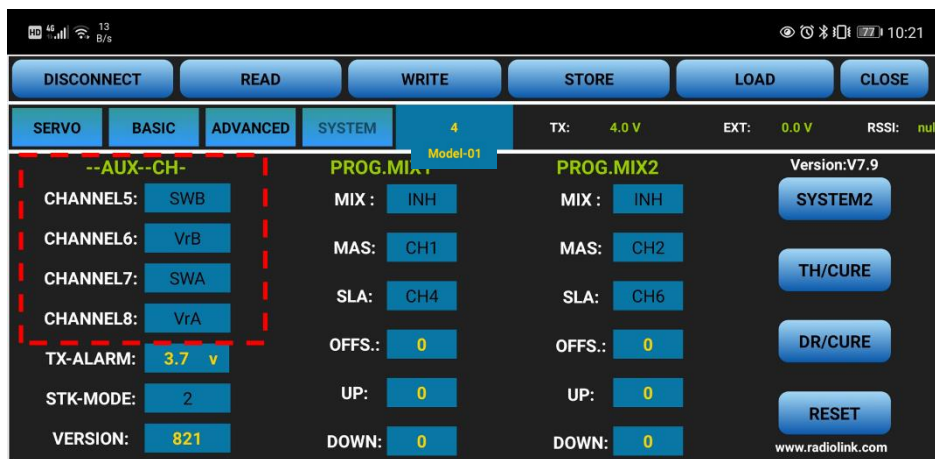
3.2.6 AUX.CH

The CH1/2/3/4 of the T8S transmitter are 4 basic channels, and CH5/6/7/8 are auxiliary channels. The switch of the basic channel cannot be modified. But different switches can do some auxiliary functions by setting CH5/6/7/8, such as control the opening and closing of the bait hopper, control whether the machine releases smoke or not etc.

Each auxiliary channel can be customized with one of three-way switch, toggle-switch or push-switch. Any one of three-way switch, toggle-switch or push-switch can also be set to control different channels.

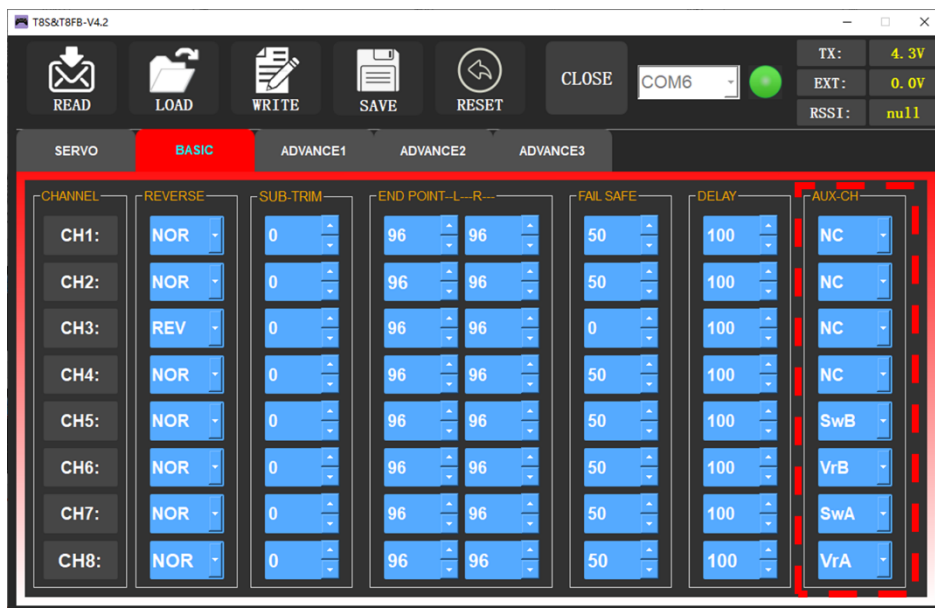
And the final effect can be seen on the “SERVO MENU” interface.

Note that If you flip any switch and two channels will change, please check whether the two auxiliary channels are set to the same switch.



The interface of parameter setup APP on phone.

Click the auxiliary function of CH5/6/7/8, there will be five options of “SWA”, “SWB”, “VrA”, “VrB” and “NULL” for selection.” NULL “means no switch control.



The interface of parameter setup software on computer.

3.3 ADVANCED Menu

3.3.1 D/R (Dual Rate)

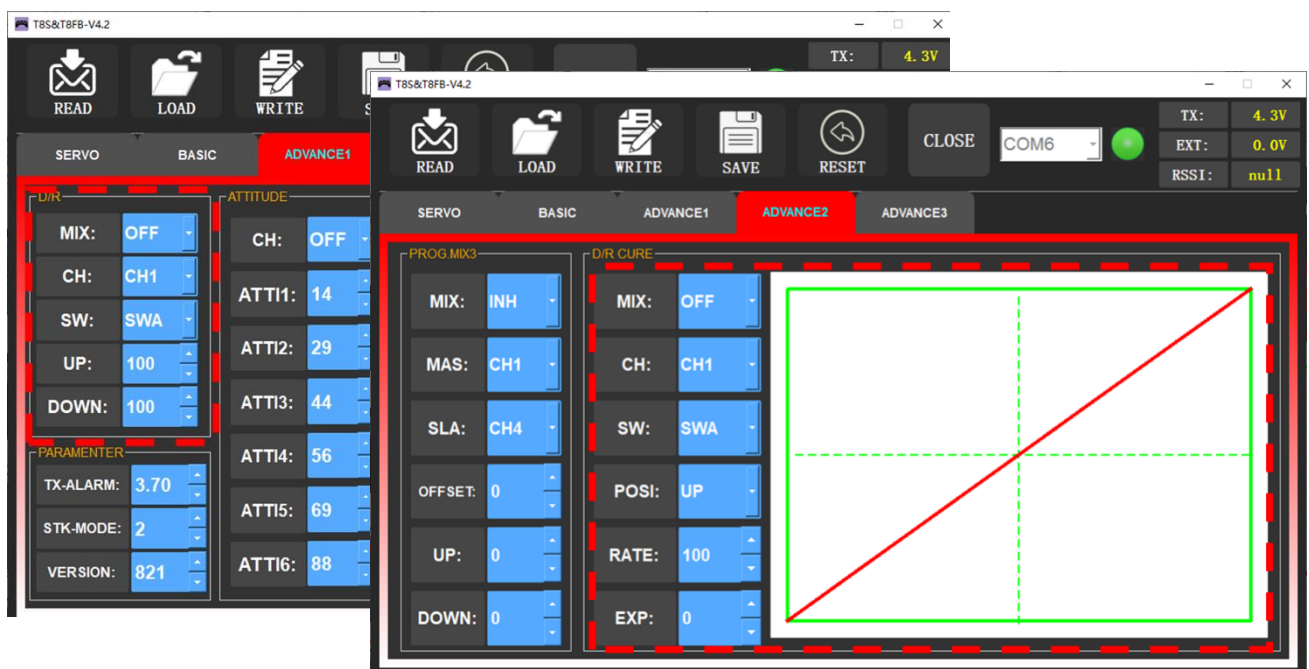
The model can be controlled to work on different servo travel range by a switch. Before using this function, set the state of "Mix" from "INH" to "ON". CH1/2/3/4 can be chosen to set separately. the switch can be set to SWA or SWB. "Up" and "Down" correspond to the positions of switch. The value of "Up" and "Down" is maximum servo travel range you set.

DR/CURE: It's an index. When it is not set, the value defaults to 0, and the output servo travel range of the corresponding channel will be output in proportion to the move of the joystick. The value can be set from -100% to +100%. The change of the index will not change the maximum and minimum servo travel range. When controlling the aircraft, the index setting value is usually negative.

- When the index is a negative value, the greater the negative value, the lower the sensitivity of the joystick in the neutral position and the higher the sensitivity at both ends position.
- When the index is a positive value, the greater the positive value, the higher the sensitivity of the joystick in the neutral position, and the lower the sensitivity at both ends position.



The interface of parameter setup APP on phone.



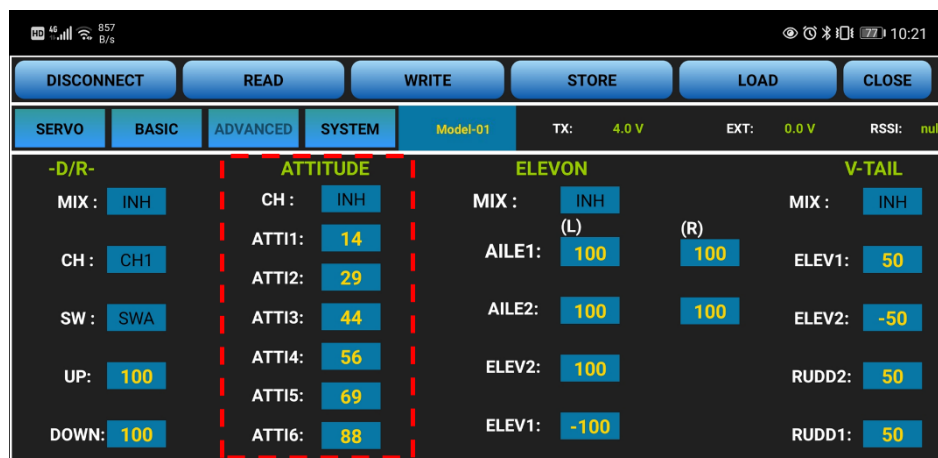
The interface of parameter setup software on computer.

3.3.2 ATTITUDE

Select the preferred channel from CH5 through CH8. CH5 is always the default switch to change attitude when connect to flight controller PIXHAWK/MINI PIX/APM/TURBO PIX while CH7 is default when connect to DJI flight controller. For the default channel to switch attitudes, please refer to the flight controller user manual.

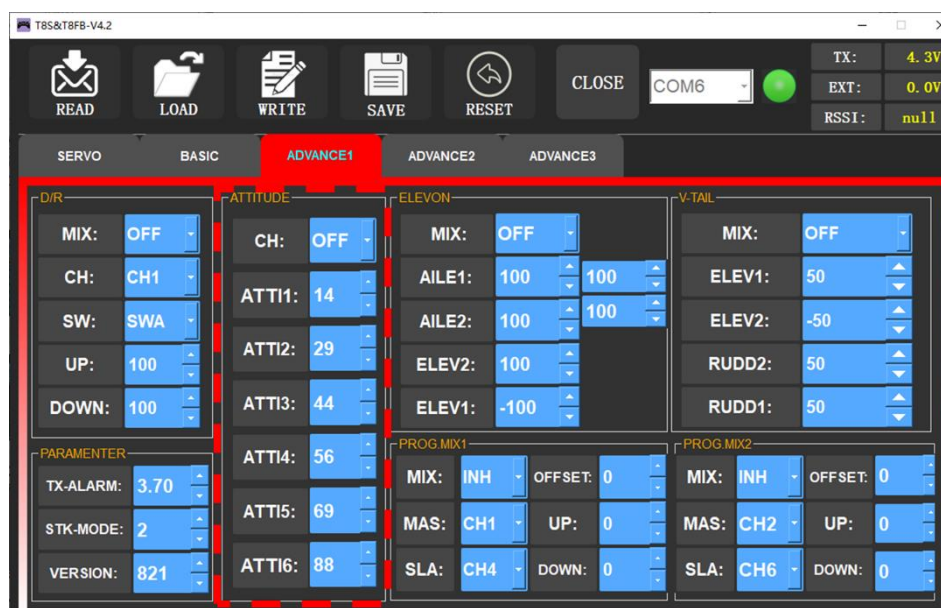
Note: After open the “Attitude” function, the switch of CH5 and CH7 will be used by default to control the output of the “attitude channel”.

The values behind each channel means different control percentage output different control signals. The default values of T8S of each attitude is corresponding to the values of flight controller PIXHAWK/MINI PIX/APM/TURBO PIX. That is, when the above flight controllers are used with T8S, attitude can be selected on the Mission Planner and no need to setup specific parameter.



The interface of parameter setup APP on phone.

Different values can be set for ATTI 1 to ATTI6. Then you can change the flight attitude by press CH5/CH7.



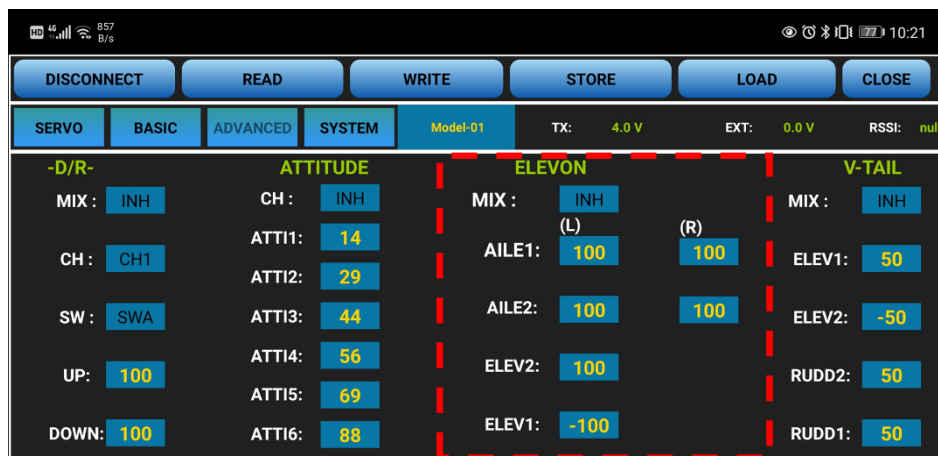
The interface of parameter setup software on computer.

3.3.3 ELEVON

“Elevator mix” is also known as “delta wing mix”. It is often used for delta wing aircraft. Two servos can control two servo surfaces that on the left and right sides of the aircraft separately, and operate aileron function and elevator function.

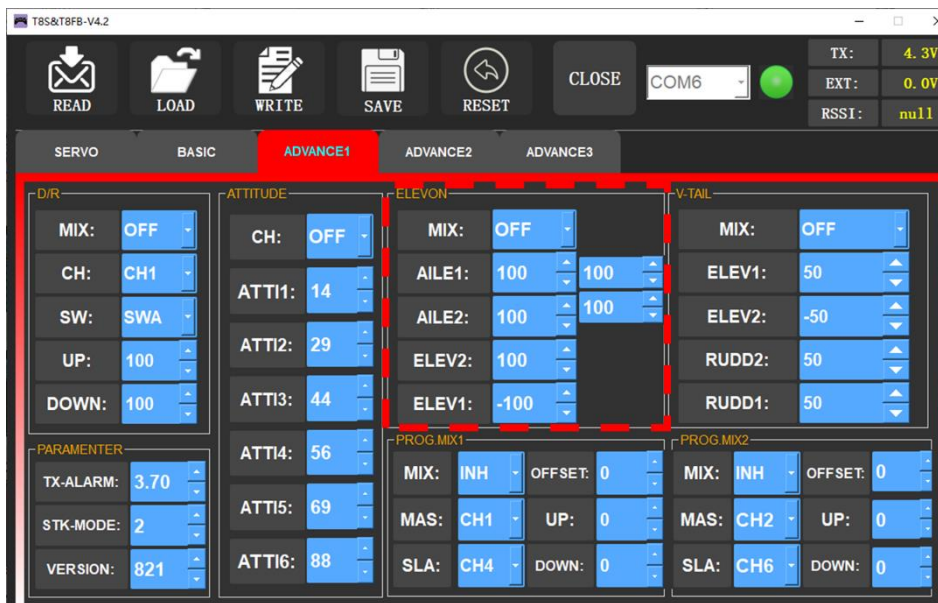
When “MIX” is set from “INH” to “ON”, the “AILE” and “ELEV” function is turned on. When this function is turned on, then both CH 1 and CH2 will respond, and servo travel range can be adjusted individually.

- AILE 1 and ELEV 2 correspond to the response rate of channel 1 when performing aileron operation and elevator operation.
- AILE 2 and ELEV 1 correspond to the response rate of channel 2 when performing aileron operation and elevator operation.



The interface of parameter setup APP on phone.

The specific value is the amount of servo travel range when the corresponding channel performs the aileron or elevator operation. Positive and negative values represent different directions of movement.



The interface of parameter setup software on computer.

3.3.4 V-TAIL

V-TAIL used for fixed wing with v-tail. Two servos can control two servos surfaces that on the left and right sides of the aircraft separately, and operate aileron function and elevator function.

When "MIX" is set from "INH" to "ON", the "ELEV" and "RUDD" function is turned on. When this function is turned on, then both CH2 and CH4 will respond, and servo travel range can be adjusted individually.

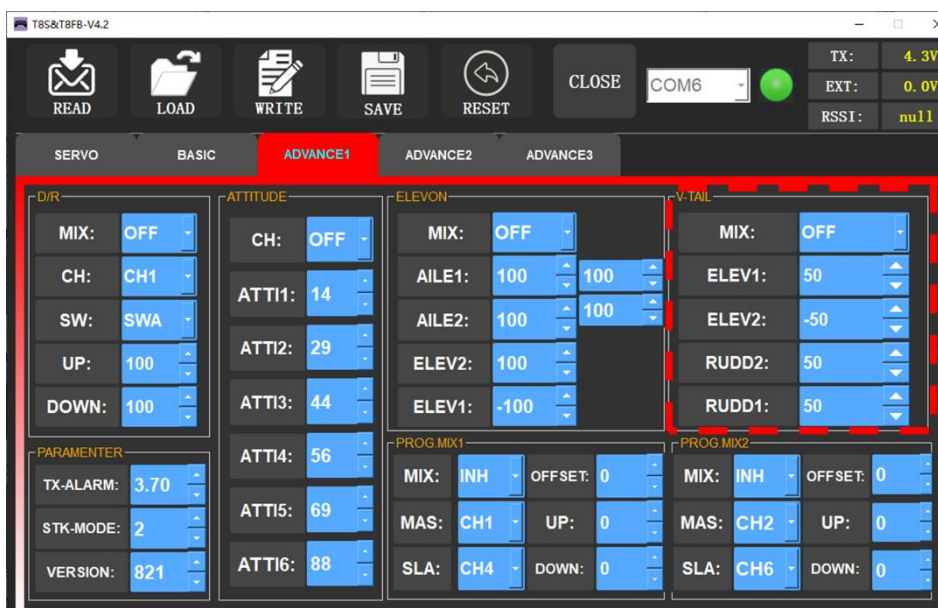


The interface of parameter setup APP on phone

ELEV 1 and RUDD 2 correspond to the response rate of channel 2 when performing elevator operation and rudder operation.

ELEV 2 and RUDD 1 correspond to the response rate of channel 4 when performing elevator operation and rudder operation.

The specific value is the amount of servo travel range when the corresponding channel performs the elevator or rudder operation. Positive and negative values represent different directions of movement.



The interface of parameter setup software on computer

3.3.5 PROG.MIX

Programmable mix control is custom mix settings, which can independently select the master channel and slave channel. It is often used to compensate for the attitude changes of the aircraft.

Programmable mixing controls are to:

- ① Diversify attitude changes of aircraft (e.g. Rolling to realize when rudder is commanded);
- ② Control a certain axis with two or more servos (e.g. 2 rudder servos);
- ③ Correct special movement automatically (e.g. Lower FLAP and ELEVATOR servos at the same time);
- ④ Control the second channel to respond to the movement of the first channel (e.g. Increase smoke oil to respond to high speed, but only when the smoke switch is activated);
- ⑤ Turn off the main control under certain circumstances (e.g. For dual-engine aircraft, turn off a motor or speed up/down one motor to assist rudder to turn).

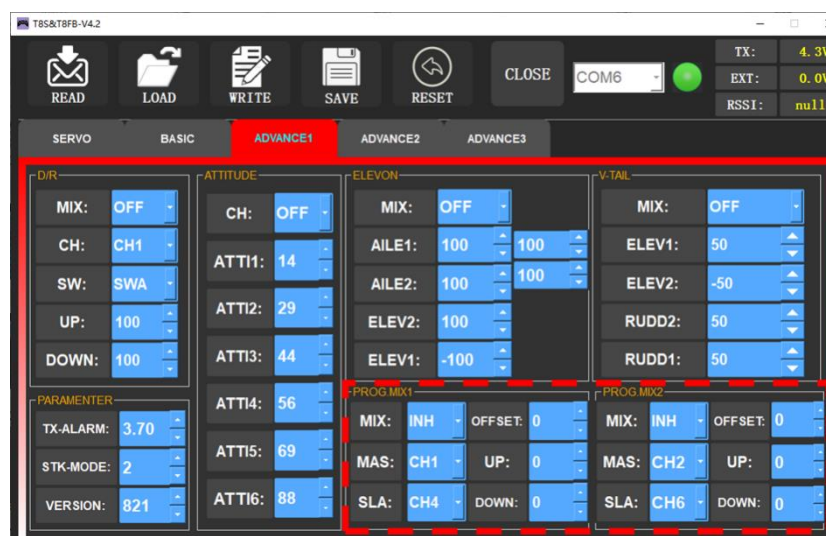
MAS: Master channel. Other channels need to cooperate with movements of the master channels.

SLA: Slave channel. Many mix controls are controlled by one master channel.

You can turn the "MIX" from "INH" to "ON", and set master channel, slave channel. Set "UP" and "DOWN" to the same value. This value determines the servo travel range and movement direction of slave channel.



The interface of parameter setup APP on phone. There are 4 groups of programmable mix control that can be set in the mobile phone APP. It can be found in "SYSTEM" and "SYSTEM 2".



The interface of parameter setup software on computer. There are also 4 groups of programmable mix control that can be set in the computer parameter software. It can be found in "Advanced Menu 1", "Advanced Menu 2" and "Advanced Menu 3".

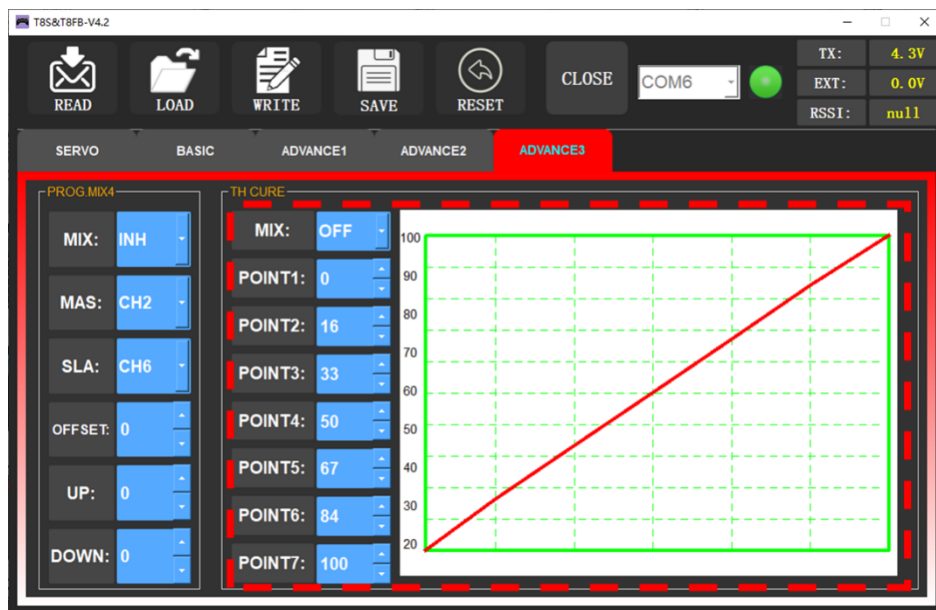
3.3.6 TH/CURE

Throttle curve (TH/CURE) is the set output travel by throttle. It is to coordinate the motor response and the throttle operation. The horizontal ordinate is the joystick position while the vertical ordinate is the throttle output.

When “TH-SW” is set from “OFF” to “ON”, the throttle curve function is turned on. Adjust the value of 7 points. The adjustable range is from 0 to 100. The larger the value it is, the larger the output throttle is when the throttle joystick moves to the corresponding position.



The interface of parameter setup APP on phone(SYSTEM)



The interface of parameter setup software on computer (Advanced Menu 3)

3.4 SYSTEM Menu

3.4.1 ALARM SETTINGS

TX-ALARM (SYSTEM and SYSTEM 2)

The transmitter alarm voltage can be set in the SYSTEM and SYSTEM 2. The default remote controller alarm voltage of the T8S transmitter is 3.7V and cannot be modified. When the transmitter voltage is lower than 3.7V alarm value, T8S will make D sound to warn.

EXT-ALARM(SYSTEM2)

The default EXT battery alarm voltage of the T8S is 11V. You can set different alarm voltages value for batteries with different number of cells to protect EXT-battery.

We suggest that 7.4V set for 2S lithium battery, 11.1V set for 3S lithium battery, 14.8V set for 4S lithium battery. When the model voltage goes lower than the set value, T8S will make D sound to warn.

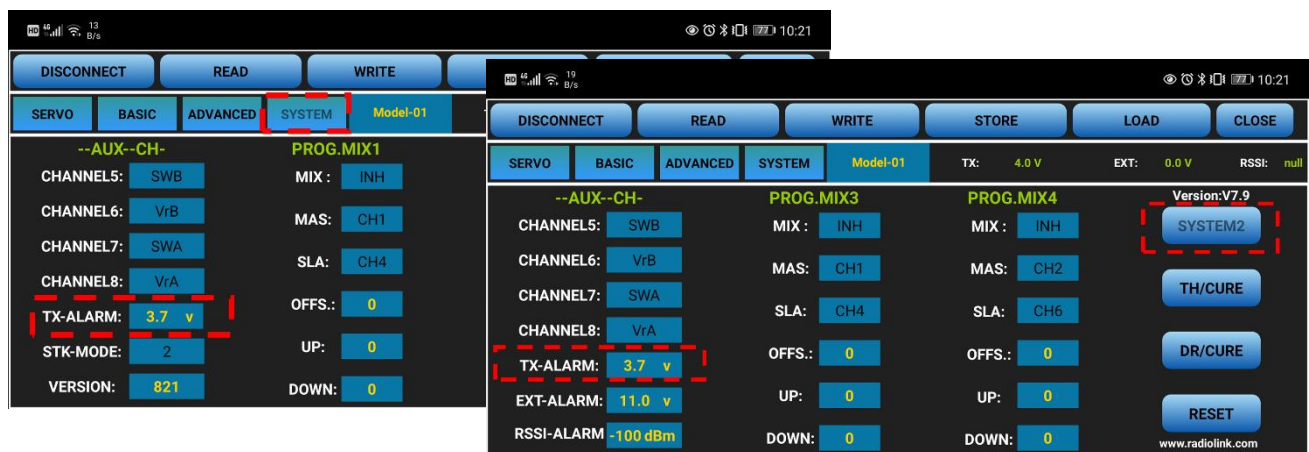
Note To use this function, Radiolink R7FG or R8F receiver that supports voltage return function is required.

RSSI-ALARM(SYSTEM2)

The default signal strength alarm value of the T8S is -100dBm. You can set a reasonable value according to the actual situation to prevent the model from losing control due to weak signal. When the RSSI goes lower than value you set, T8S will make D sound to warn.

The best RSSI-ALM is depends on the control range test at your flying area. For example, you have tested the control distance of your T8S is 2000 meters at your flying area, and the RSSI shows -86dBm at this time, then you can set the RSSI alarm data is -86dBm.

If you have no time to have a range test, the 80-86 dBm is suggest to set for RSSI-ALM.



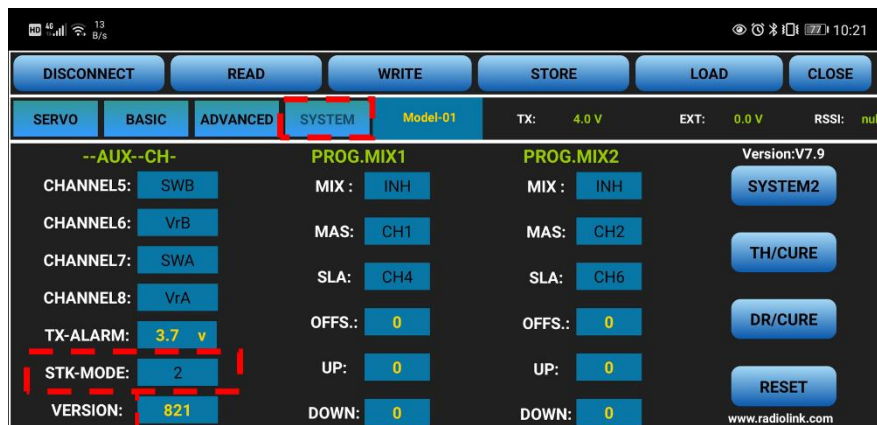
The interface of parameter setup APP on phone (The EXT-Alarm and RSSI-Alarm only can be set on the mobile phone APP.)



The interface of parameter setup software on computer

3.4.2 STK-MODE(SYSTEM)

The T8S transmitter has 4 STK-MODES, Mode 1 (Japanese hand), Mode 2 (American hand), Mode 3 (Chinese hand) and Mode 4 (others). The factory default of T8S transmitter is mode 1 or mode 2, you can also modify it according to your habits.



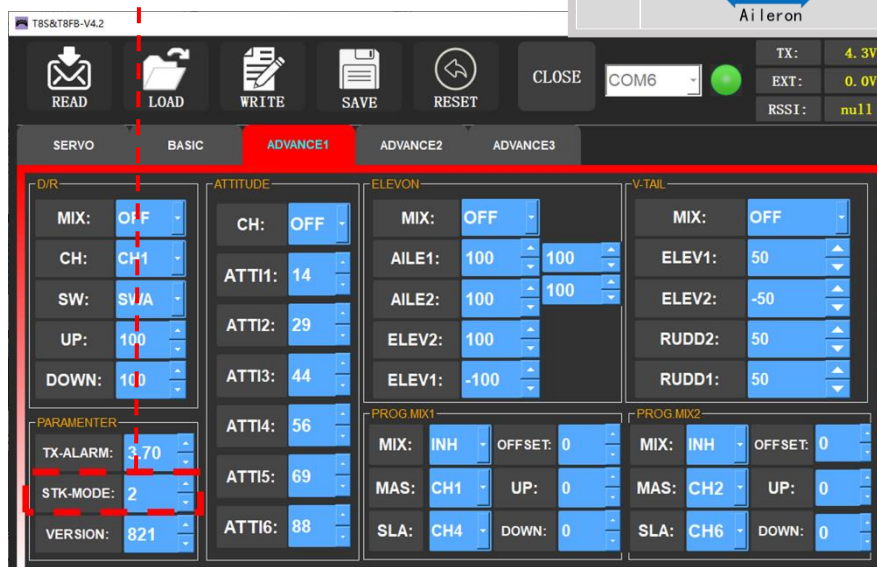
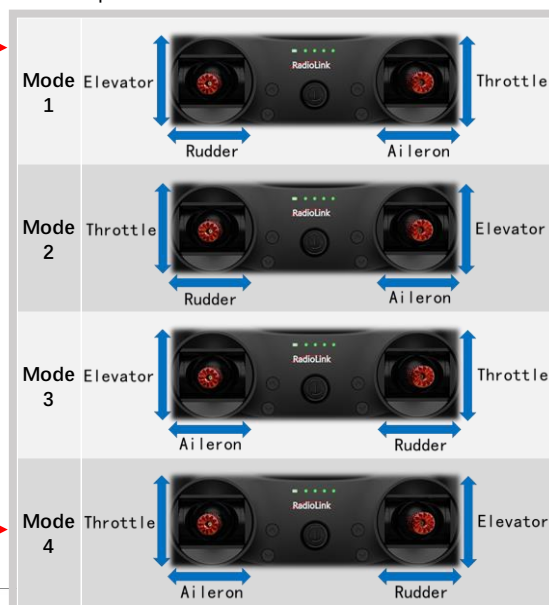
The interface of parameter setup APP on phone.

Mode 1: left joystick-Rudder and Elevator; right joystick-Aileron and Throttle

Mode 2: left joystick-Rudder and Throttle, right joystick-Aileron and Elevator

Mode 3: left joystick-Aileron and Elevator, right joystick-Rudder and Throttle

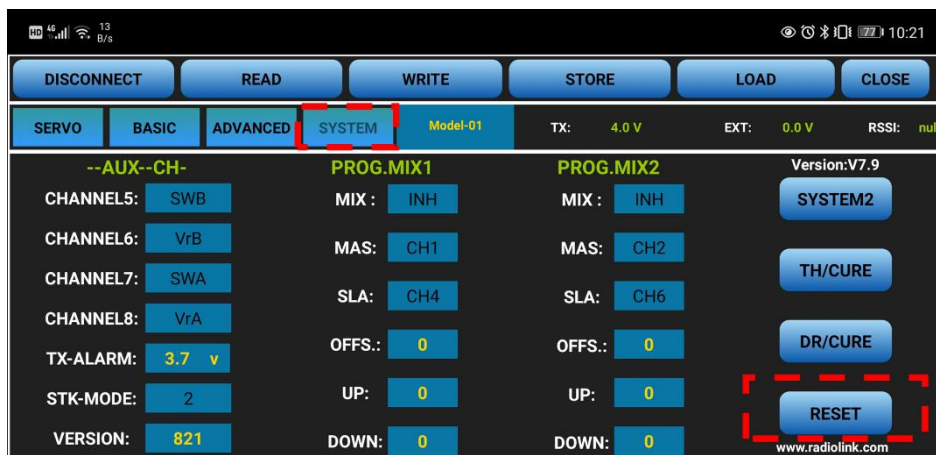
Mode 4: left joystick-Aileron and Throttle, right joystick-Rudder and Elevator



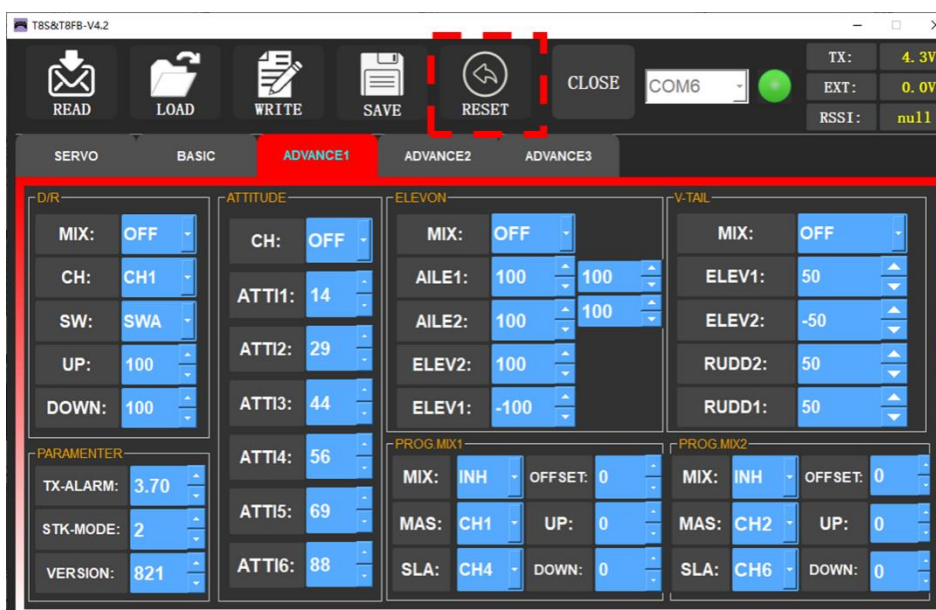
The interface of parameter setup software on computer.

3.4.3 RESET

This function is to restore the factory setting when necessary. When press this “RESET” button, T8S will make three slow D sounds, meaning default setting is set.



The interface of parameter setup APP on phone

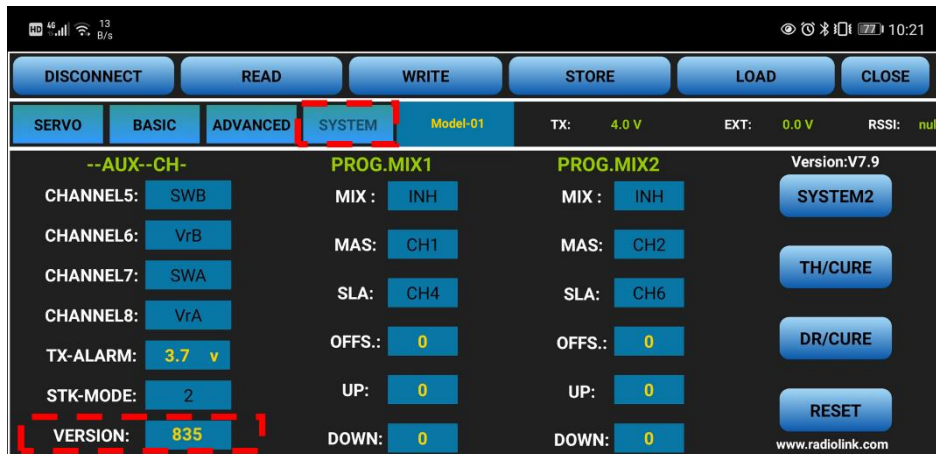


The interface of parameter setup software on computer

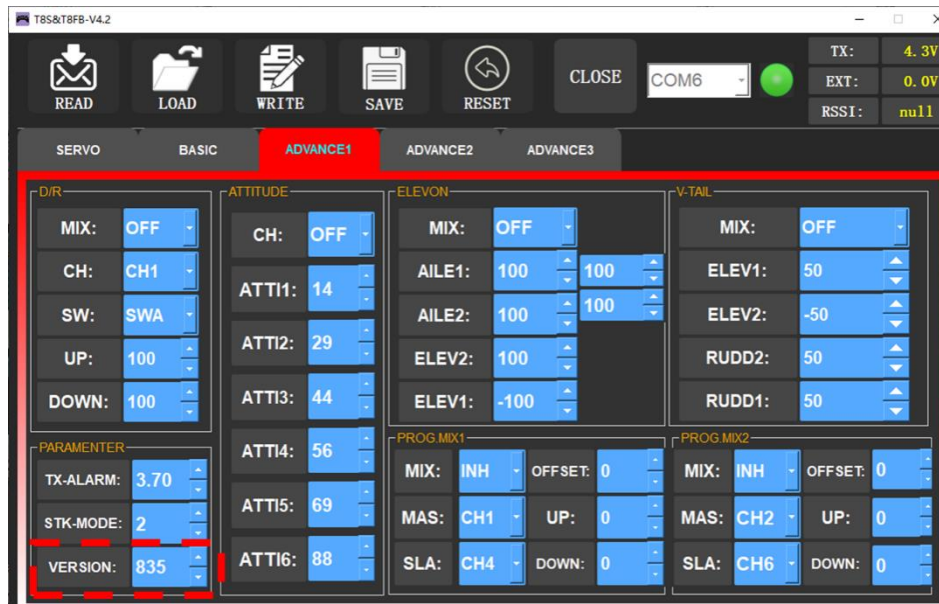
Chapter 4 Firmware Upgrade

4.1 Firmware Version

The firmware version can be checked through mobile phone or computer, and you can judge whether it is necessary to upgrade the firmware according to the current T8S version number. Since T8S was updated multiple versions before, the new firmware is not fit for all versions of T8S. Therefore, please check your current firmware version before upgrading the firmware. If the firmware is not necessary and the T8S transmitter can be used normally, then there is no need to upgrade.



The interface of parameter setup APP on phone (SYSTEM 1)



The interface of parameter setup software on computer (ADVANCED MENU 1)

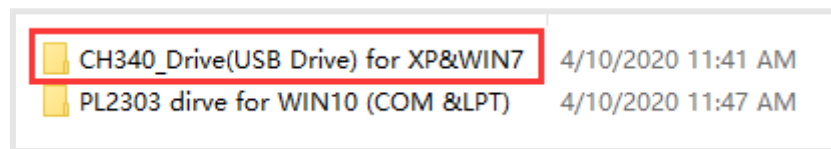
4.2 Firmware Upgrade Steps

4.2.1 Driver Installation

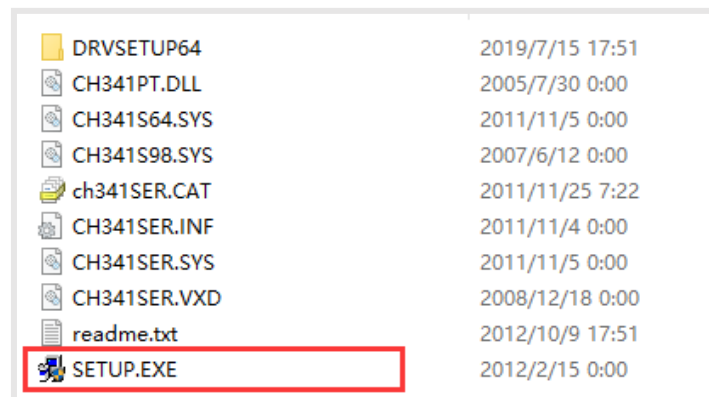
Go to https://radiolink.com/t8s_firmwares to download "UpgradeDriver.zip", unzip and install.
 If the driver is not installed successfully, after T8S connect to the computer, the computer will not be able to recognize COM port, then you can't upgrade firmware. If you have already installed the driver when using the computer parameter software, you can skip this step.

Note:

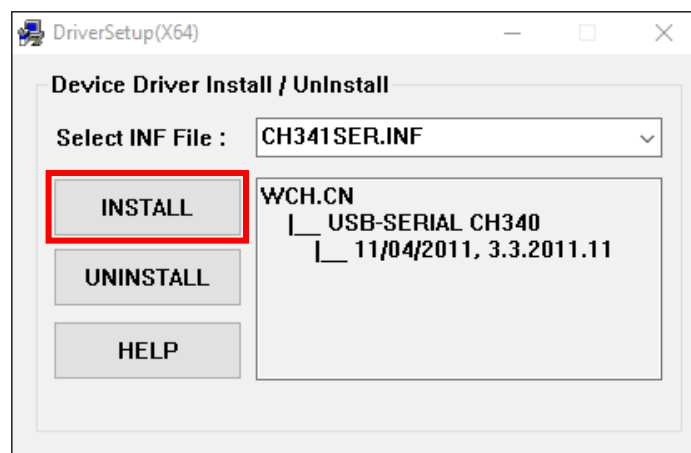
- 1) When the firmware upgrade tool fails to detect the COM port, it may be caused by not installing the driver, or because you use USB charging cable wrongly instead of a USB data cable. The T8S remote controller packing list is equipped with a USB data cable, which can be charged, and it can also use for computer parameter setting and firmware upgrade.
- 2) Please note that there are two drivers in this zip file. When using the T8S transmitter, you only need to install the driver marked out below. (This driver can use for Windows10 system)



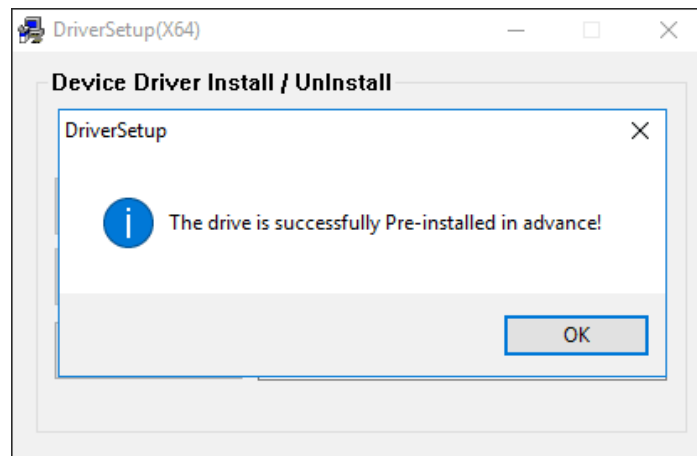
Click on the "SETUP.EXE" program in this folder.



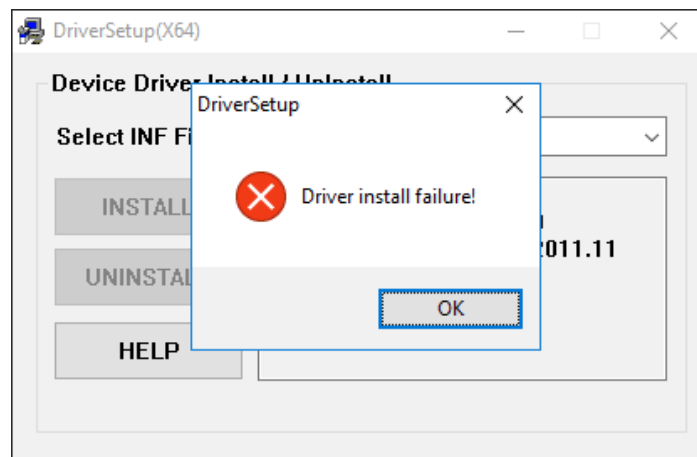
Click "INSTALL".



After the installation is complete, "The drive is successfully pre-installed in advance!" will pop up.

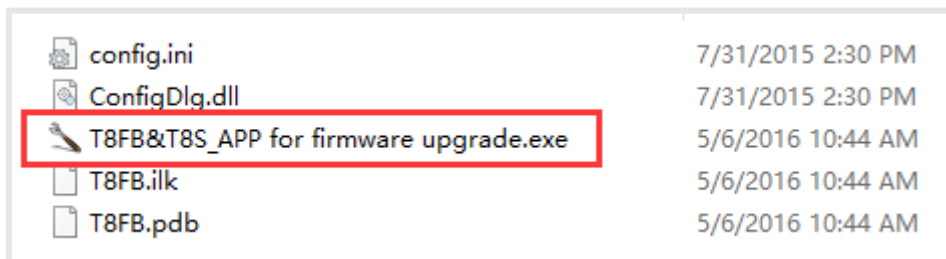


If "Driver install failure!" appears, please uninstall the driver and reinstall the driver.



4.2.2 Download Software and Upgrade Firmware

Go to https://radiolink.com/t8s_firmwares to download "T8FB-T8S_APPForFirmwareUpgrade-ComputerOnly.zip" and unzip it, connect T8S transmitter connect to the computer via a USB data cable, then open the unzipped folder. Click the "T8FB&T8S_APP for firmware upgrade.exe" program.



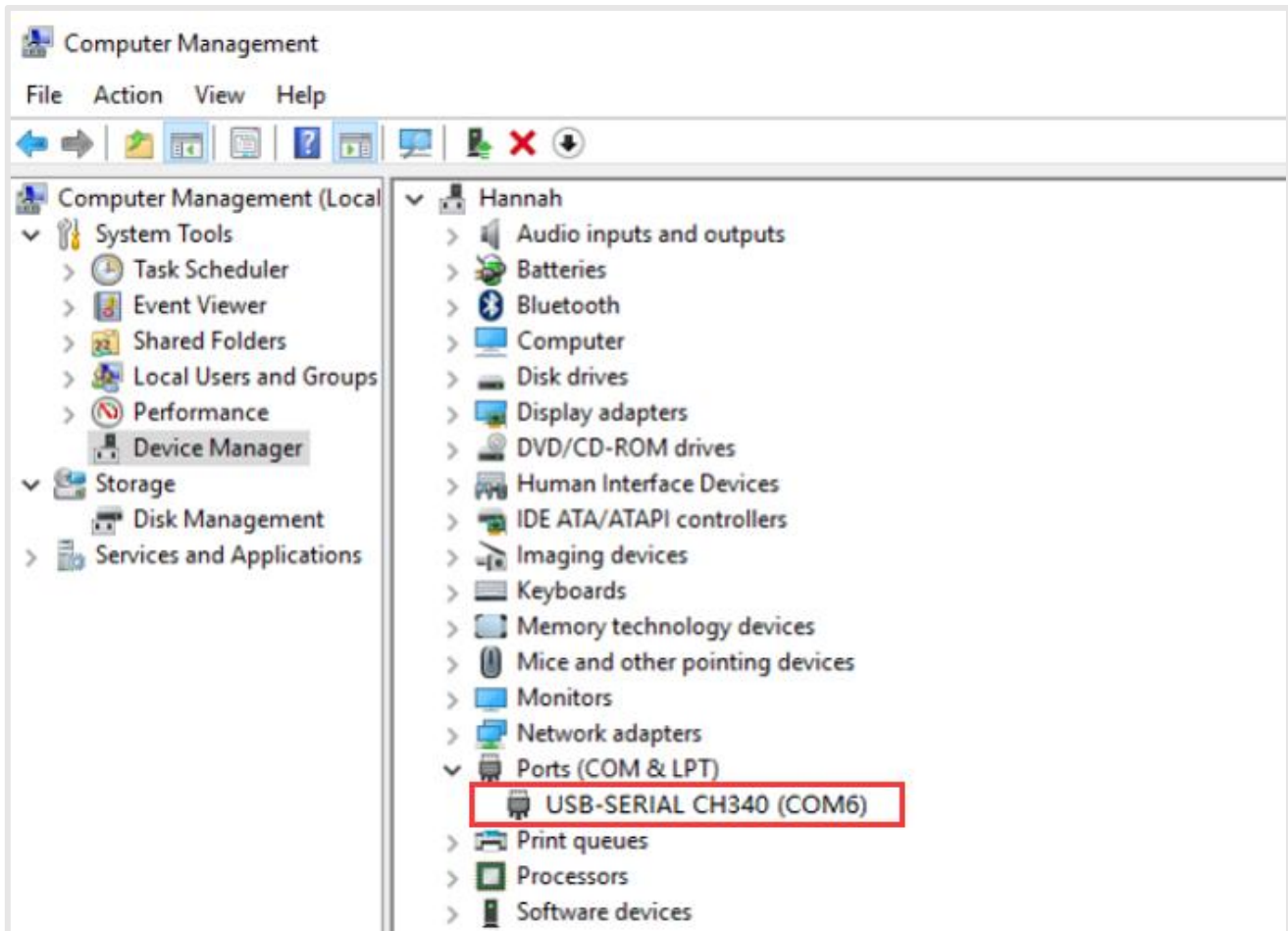
Choose correct COM port.



After computers are connected to T8S via a USB data cable, there may appear many selectable COM ports. The COM port can be found according to the following methods:

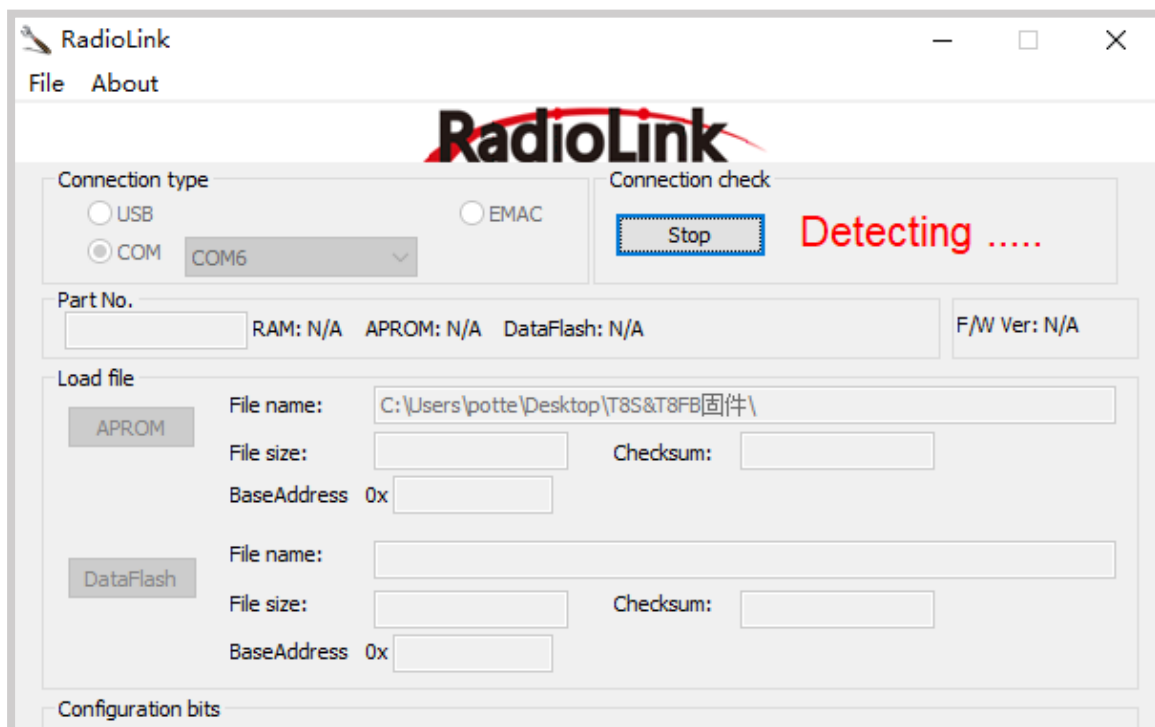
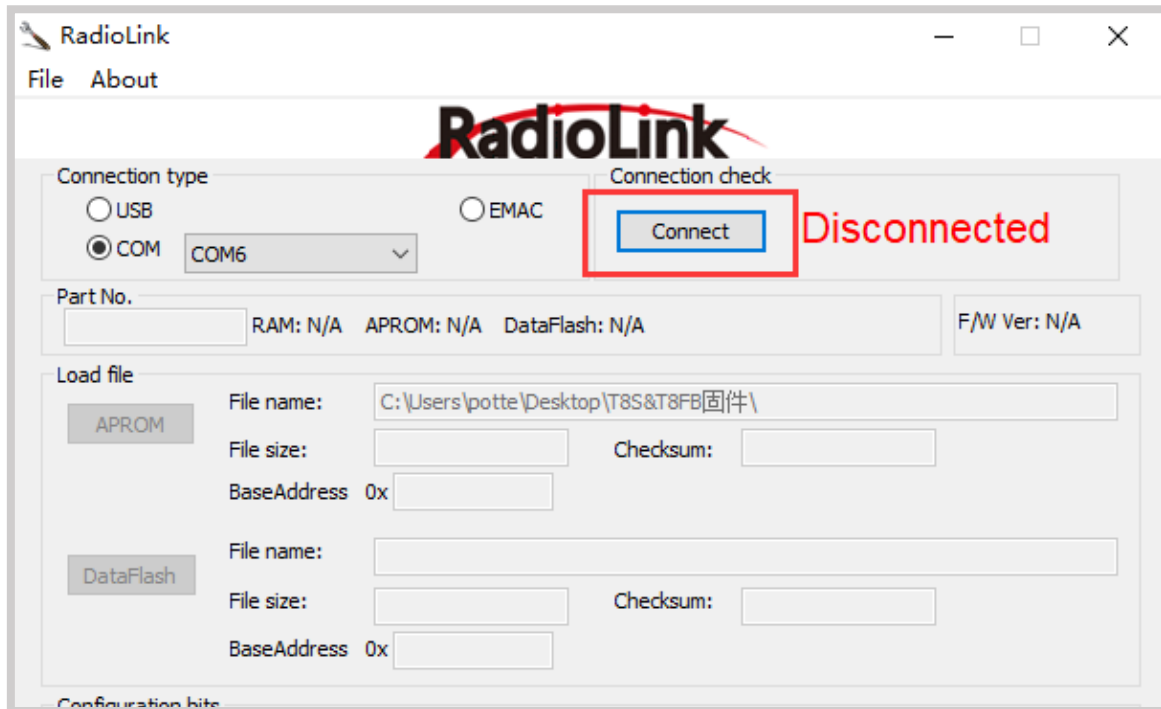
- 1) Press "win+R" on the keyboard;
- 2) Type "devmgmt.msc", and type "ENTER";
- 3) In device manager, click on "COM AND LPT", then you can find the correct COM port.

After computers are connected to T8S via a USB data cable, there may appear many selectable COM ports.



Note: If you had found COM port in the device manager, but the corresponding COM port is not displayed on firmware upgrade software. Then you can try to close this firmware upgrade software and reopen it.

After choosing the correct COM port, click the “Connect”, and then the “Disconnected” will change to “Detecting....”. This indicates that the firmware upgrade software has entered the detection state.

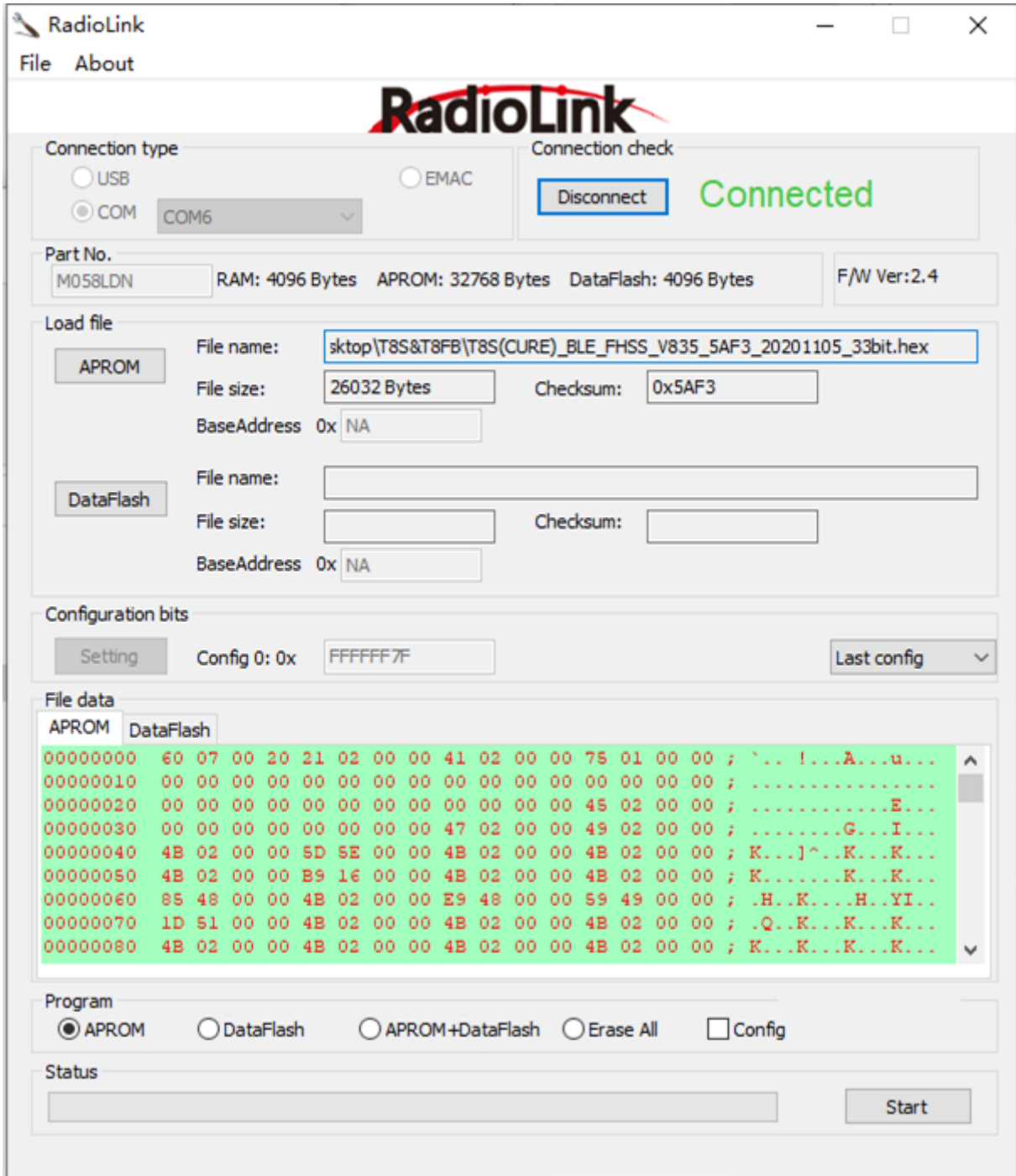


After entering the detection state, short press the T8S power button, then “Detecting....” will turn to “Connected”, which means that the firmware upgrade software is successfully connected to T8S.

Note:

1. You need to open the upgrade software and click Connect before you can press the power T8S button. If the T8S is turned on when or before you click "Connect", it will cause connection failed.
2. If you press T8S power button, but T8S cannot be turned on, this may be caused by firmware error. This problem can be solved by connecting the firmware upgrade software and upgrade the V835 or higher version firmware.

If this still doesn't work, please open the shell of T8S, disconnect the battery of the T8S, and then upgrade correct firmware. After the firmware is upgraded successfully, then connect the battery.

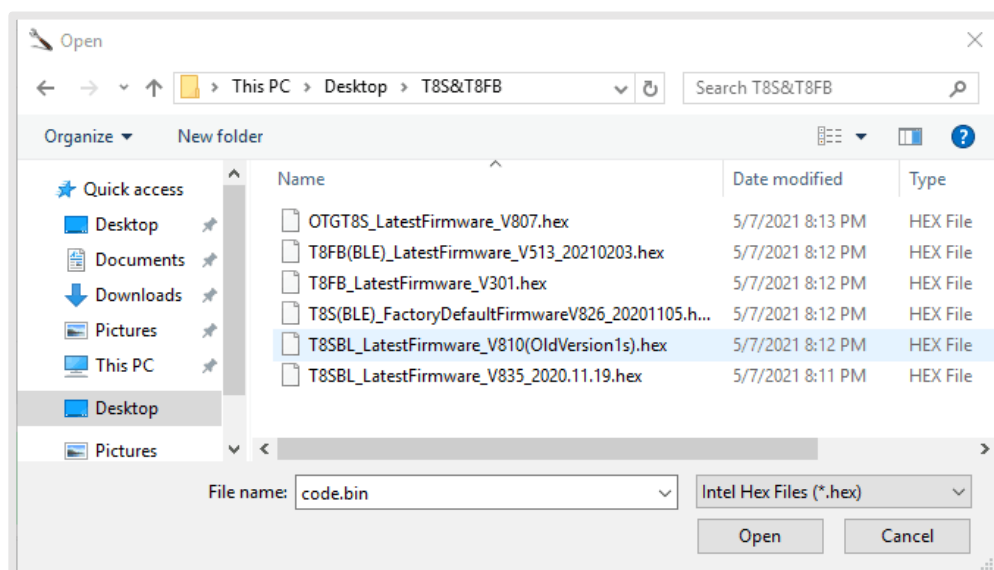
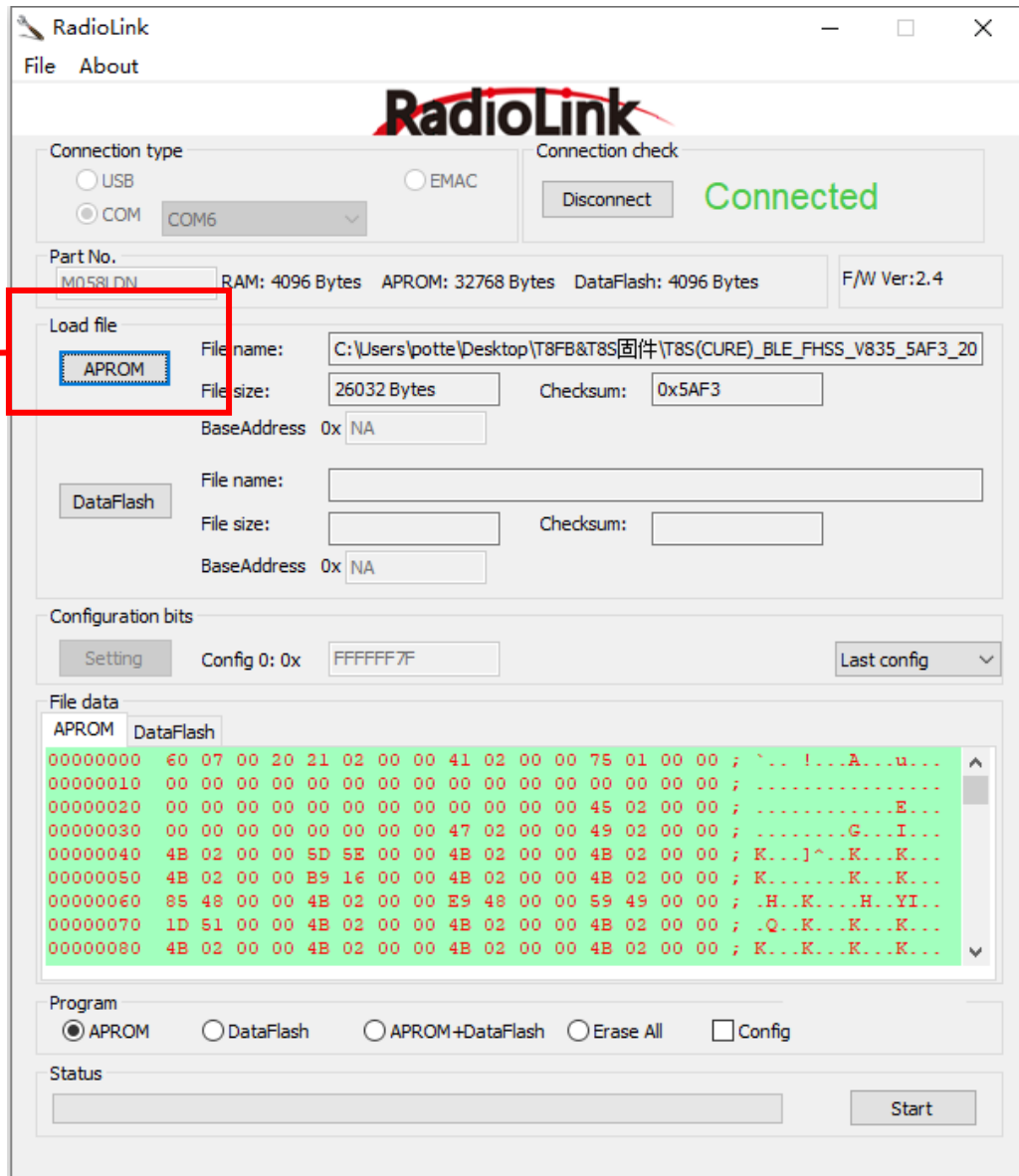


The screenshot shows the RadioLink Firmware Upgrade Software interface. The window has a title bar with the RadioLink logo and standard window controls. The main area is divided into several sections:

- Connection type:** Radio buttons for USB, COM (selected), and EMAC. A dropdown menu shows 'COM6'.
- Connection check:** A 'Disconnect' button and a green 'Connected' status indicator.
- Part No.:** A text box containing 'M058LDN'. To its right, hardware specifications are listed: RAM: 4096 Bytes, APROM: 32768 Bytes, DataFlash: 4096 Bytes, and F/W Ver: 2.4.
- Load file:** Two sections for loading firmware files.
 - APROM:** File name: 'sktop\T8S&T8FB\T8S(CURE)_BLE_FHSS_V835_5AF3_20201105_33bit.hex', File size: '26032 Bytes', Checksum: '0x5AF3', BaseAddress: '0x NA'.
 - DataFlash:** File name, File size, Checksum, and BaseAddress fields are empty.
- Configuration bits:** A 'Setting' button, 'Config 0: 0x' followed by 'FFFFFF7F', and a 'Last config' dropdown.
- File data:** A table showing the contents of the loaded files.

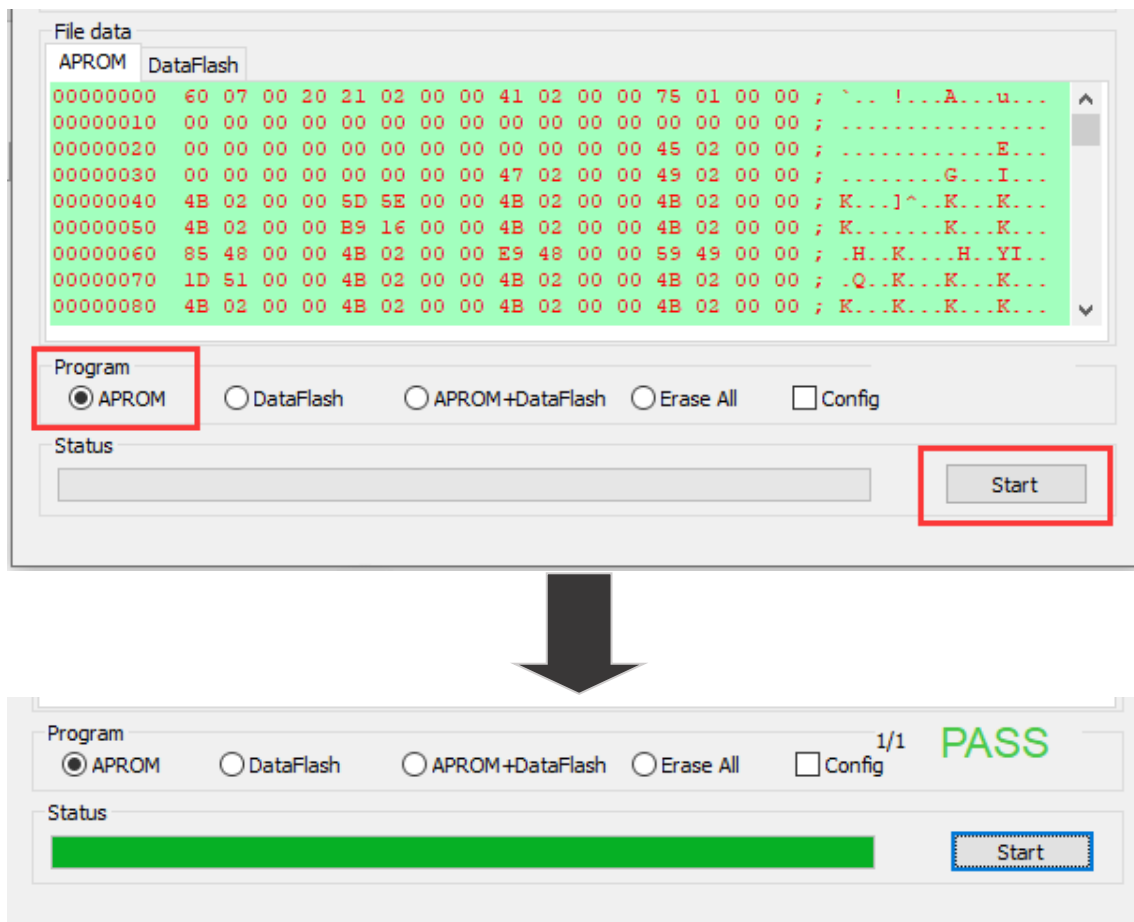
Address	APROM	DataFlash
00000000	60 07 00 20 21 02 00 00 41 02 00 00 75 01 00 00	; . . . ! . . . A . . . u . .
00000010	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	;
00000020	00 00 00 00 00 00 00 00 00 00 00 00 45 02 00 00	;
00000030	00 00 00 00 00 00 00 00 00 00 00 00 47 02 00 00	;
00000040	4B 02 00 00 5D 5E 00 00 4B 02 00 00 4B 02 00 00	; K . . .] ^ . . . K . . . K . . .
00000050	4B 02 00 00 B9 16 00 00 4B 02 00 00 4B 02 00 00	; K
00000060	85 48 00 00 4B 02 00 00 E9 48 00 00 59 49 00 00	; . H . . K H . . . Y I . .
00000070	1D 51 00 00 4B 02 00 00 4B 02 00 00 4B 02 00 00	; . Q . . K K . . . K . . .
00000080	4B 02 00 00 4B 02 00 00 4B 02 00 00 4B 02 00 00	; K . . . K K . . . K . . .
- Program:** Radio buttons for APROM (selected), DataFlash, APROM+DataFlash, Erase All, and a checkbox for Config.
- Status:** A progress bar and a 'Start' button.

After T8S connected with the firmware upgrade software successfully, click the “APROM” button to select the correct firmware.



The firmware can be downloaded from https://radiolink.com/t8s_firmwares.

After selecting the correct firmware, make sure that “APROM” is selected in the “Program”, and then click “Start”.



When the green “PASS” appears, it means that the firmware flashing is successful.

Thanks

Thank you for purchasing RadioLink 8-channels remote controller T8S. Please read the manual carefully and set up the device as instructed steps.

If any problems found during the operation process, contact your local dealer or contact us by e-mail at: after_service@radiolink.com.cn.

Visit our website at: www.radiolink.com to get online support.