

FrSky 2.4GHz ACCST Taranis X9D Manual

Introduction

Thank you for purchasing the FrSky 2.4GHz ACCST TARANIS X9D digital telemetry radio system. In order for you to make the best use of your system and to fly safely, please read this manual carefully. If you have any difficulties while using your system, please consult the manual, your hobby dealer, or FrSky technical support.

Due to unforeseen changes in production procedures, the information contained in this manual is subject to change without notice.

Meanings of Special Markings

Pay special attention to safety where indicated by the following marks:

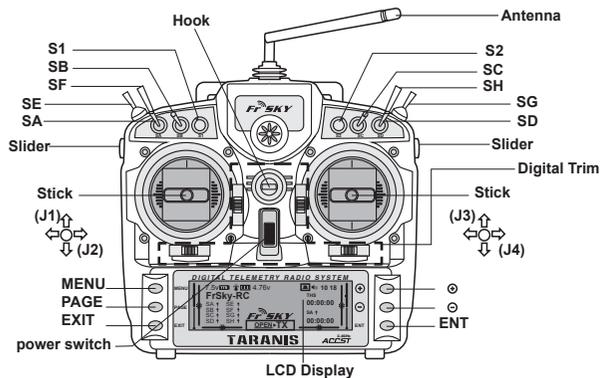
⚠ DANGER- Procedures which may lead to dangerous conditions and cause death/serious injury if not carried out properly.

⚠ WARNING- Procedures which may lead to a dangerous condition or cause death or serious injury to the user if not carried out properly or procedures where the probability of superficial injury or physical damage is high.

⚠ CAUTION- Procedures where the possibility of serious injury to the user is small, but there is a danger of injury, or physical damage, if not carried out properly.

ⓘ = Mandatory ⓧ = Prohibited

⚠ Warning: Always keep electrical components away from small children.

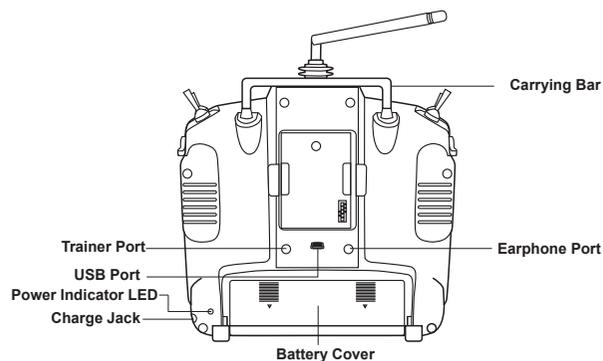


Overview

(Switch Default Settings)

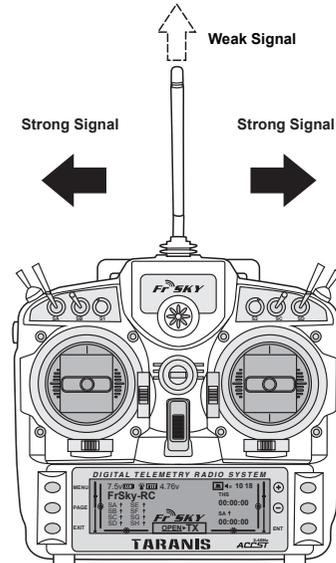
- SA: 3 positions, Alternate; Short Lever
- SB: 3 positions, Alternate; Long Lever
- SC: 3 positions, Alternate; Long Lever
- SD: 3 positions, Alternate; Short Lever
- SE: 3 positions, Alternate; Short Lever
- SF: 2 positions, Alternate; Long Lever
- SG: 3 positions; Alternate; Short lever
- SH: 2 positions, Momentary; Long Lever

You can choose the Switch and the ON/OFF position in the menu of Mixer.



⚠ Cautions on handling antenna

- ⓧ Do not touch the antenna during operation. There is the danger of erroneous operation causing a crash.
- ⓧ Do not carry the transmitter by the antenna. There is the danger that the antenna wire will break and operation will become impossible.
- ⓧ Do not pull the antenna forcefully. There is the danger that the antenna wire will break and operation will become impossible.



Rotating Antenna

The antenna can be rotated 180 degrees and angled 90 degrees. Forcing the antenna further than this can cause damage to the antenna. The antenna is not removable.

Angle adjustment of the antenna

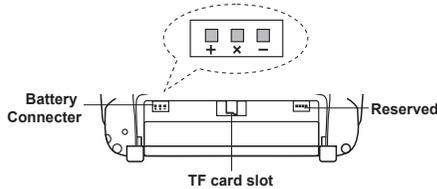
The antenna rotation and angle can be adjusted. The antenna features weak radio signal in the forward direction and strong radio signal directions. Adjust the antenna angle to match your flying style.

Specifications

Model Name: Taranis X9D
 Number of Channels: Up to 16 channels
 Operating Voltage Range: 6~15V (2S, 3S Lipos are acceptable)
 Operating Current: 260mA maximum (both RF module and backlight are on)
 Operating Temperature: -10~60°C
 Backlight LCD Screen: 212*64, monochrome
 Model Memories: 60 (extendible by SD card)
 Compatibility: FrSky X series, D series and V8-II series receivers

Features

- Quad Ball Bearing Gimbals
- Receiver Match
- Audio Speech Outputs (values, alarms, settings, etc.)
- Antenna Status Detection and Alerts
- Real-time Flight Data Logging
- Reception Signal Strength Alerts
- Super Low Latency
- Smart Port Supported



Battery Connector Polarity

Pay attention to the battery connector polarity when connecting other batteries than the provided 6cell NiMH battery into the battery compartment, otherwise the Taranis X9D could not be powered on.

Notes and Warnings for Battery & Charger

- ⊗ Please connect the provided battery in the battery compartment before use.
- ⊗ The NiMH battery is for your TARANIS X9D use only.
- ⊗ Be sure to use the provided battery charger to charge the battery.
- ⊗ Be careful not to drop the battery.
- ⊗ Don't pull the battery wirings. When it short-circuits, there may be danger of explosion ignition.
- ⊗ Never take out the battery from the TARANIS X9D transmitter while the voltage warning is blinking. Internal settings and memories can be destroyed.
- ⊗ Do not use the transmitter if a "Backup Error" warning occurs.
- ⊗ Be sure to turn off the Taranis X9D before power charging.
- ⊗ The Power Indicator LED will be on during charging, and be off after the charging is finished.

Model Setup for Taranis X9D Internal RF Module

The internal RF module of FrSky Taranis X9D is newly developed by FrSky under the name of XJT. Enter the MODEL SETUP menu (refer to the guide from the SD card for details, or download it from FrSky website).

```

MODEL SETUP                2/13
Internal RF
Mode                        DJT
Channel Range              CH1-16
Receiver No.               01 [Bind] [Range]
Failsafe mode              Hold
External RF
Module                      OFF
    
```

Step 1: Set the Mode for Taranis X9D Internal RF

Refer to the table below and set the Taranis X9D to corresponding mode (D8, D16 or LR12 mode) for your receiver.

Mode of Taranis X9D	Compatible Receivers	Number of Output Channels
D8	V8-II series in D mode (V8FR-II, V8R7-II, V8R4-II, VD5M, etc.) D series (D8R-II plus, D8R-XP, D6FR, D4R-II, etc.)	8 channels
D16	X series (X8R, etc.)	Up to 16 channels
LR12	L series (L9R, etc.)	12 channels

If you want to make full use of old V8 receivers, just plug DJT or V8JT to the external module slot.

Step 2: Set the Channel Range

The internal RF module of Taranis X9D supports up to 16 channels. The channel range is configurable, and needs double check before use.

Step 3: Set the Receiver No.

When you create a new model, the system will assign you a receiver No. automatically. The range of the receiver No. is 00-63. 01 is the default receiver No. and 00 is not recommended here. Once the receiver is set to your required receiver number and finishes the binding procedure with Taranis X9D, the binding procedure will not need to be repeated next time, unless the receiver number is changed to another different number. In this case, you need to either set the receiver number to the previous one, or do the binding procedure again.

Step 4: Bind

Bind refers to Taranis X9D binding mode. Move the cursor to "Bind", press ENTER button, the cursor will flash and the speaker will beep to remind you that the RF module has entered the bind mode. Then put your receiver into binding mode and finish the bind procedure (refer to the receiver's manual for details). Press Enter or EXIT to exit.

Step 5: Set Failsafe mode

There are 3 failsafe modes: No Pulse, Hold, Custom.

- No Pulse: no pulses output on lost signal, just choose, wait 9 seconds before the failsafe takes effect, and you are done.
- Hold: hold the last positions before signal is lost, just choose, wait 9 seconds before the failsafe takes effect, and you are done.
- Custom: pre-set to required positions on lost signal. Move the cursor to "Set" and press ENTER, you will see FAILSAFE SETTING screen below. Move the cursor to the channel you want to set failsafe on, and press ENTER. When moving the corresponding sticks or switches, you will see the channel bar moving. Move the channel bar to the place you want for failsafe and long press ENTER to finish the setting. Wait 9 seconds before the failsafe takes effect.

```

FAILSAFE SETTINGS
CH1  0.0  CH9  0.0
CH2  0.0  CH10 0.0
CH3  0.0  CH11 0.0
CH4  0.0  CH12 0.0
CH5  0.0  CH13 0.0
CH6  0.0  CH14 0.0
CH7  0.0  CH15 0.0
CH8  0.0  CH16 0.0
    
```

Notice:

- SBUS port always outputs, No Pulse could not perform properly on it. Set "Hold" or "Custom" for SBUS port.
- When the internal RF module of Taranis X9D is in D8 mode, failsafe could only be set on the receiver side.

Step 6: Range

Range refers to Taranis X9D range check mode. A pre-flight range check should be done before each flying session. Move the cursor to "Range" and press ENTER. In range check mode, the effective distance will be decreased to 1/30. Press Enter or EXIT to exit.

Model Setup for Taranis X9D External RF Module

```

Internal RF
Mode                        DJT
Channel Range              CH1-16
Receiver No.               01 [Bind] [Range]
Failsafe mode              Hold
External RF
Module                      OFF
    
```

The external RF module could be powered on or off by software. The setup is the same as that for the internal RF. If you use other brand RF module than FrSky, please choose PPM mode.

FCC Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

Make sure you set the country code to your corresponding country to match the regulations.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

CE

The product may be used freely in these countries: Germany, UK, Italy, Spain, France, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.

FLYING SAFETY

⚠ Warning:

To ensure the safety of yourself and others, please observe the following precautions:

① **Have regular maintenance performed.** Although your TARANIS X9D protects the model memories with non-volatile EEPROM memory (which does not require periodic replacement) and not a battery, it still should have regular check-ups for wear and tear. We recommend sending your system to the FrSky Service annually during your non-flying-season for a complete check-up and service.

Battery

① **Charge the batteries!** Always recharge the transmitter and receiver batteries for at least 8 hours before each flying session. A low battery will soon die, causing loss of control and a crash. When you begin your flying session, reset your transmitter's built-in timer, and during the session pay attention to the duration of usage.

① **Stop flying long before your batteries become low on charge. Do not rely on your radio's low battery warning systems, intended only as a precaution, to tell you when to recharge. Always check your transmitter and receiver batteries prior to each flight.**

Where to Fly

We recommend that you fly at a recognized model airplane flying field. You can find model clubs and fields by asking your nearest hobby dealer.

① **Always pay particular attention to the flying field's rules**, as well as the presence and location of spectators, the wind direction, and any obstacles on the field. Be very careful flying in areas near power lines, tall buildings, or communication facilities as there may be radio interference in their vicinity.

At the flying field

① To prevent possible damage to your radio gear, turn the power switches on and off in the proper sequence:

1. Pull throttle stick to idle position, or otherwise disarm your motor/engine.
2. Turn on the transmitter power and allow your transmitter to reach its home screen.
3. Confirm the proper model memory has been selected.
4. Turn on your receiver power.
5. Test all controls. If a servo operates abnormally, don't attempt to fly until you determine the cause of the problem. (For PCM systems only: Test to ensure that the Failsafe settings are correct by waiting at least 2 minutes after adjusting then, turning the transmitter off and confirming the proper surface/throttle movements. Turn the transmitter back on.)
6. Start your engine.
7. Complete a full range check.
8. After flying, bring your throttle stick to idle position, engage any kill switches or otherwise disarm your motor/engine.

If you do not turn on your system in this order, you may damage your servos or control surfaces, flood your engine, or in the case of electric-powered or gasoline-powered models, the engine may unexpectedly turn on and cause a severe injury.

① **While you are getting ready to fly, if you place your transmitter on the ground, be sure that the wind won't tip it over.** If it is knocked over, the throttle stick may be accidentally moved, causing the engine to speed up. Also, damage to your transmitter may occur.

① In order to maintain complete control of your aircraft it is important that it remains visible at all times. Flying behind large objects such as buildings, grain bins, etc. is not suggested. Doing so may result in the reduction of the quality of the radio frequency link to the model.

① Do not grasp the transmitter's antenna during flight. Doing so may degrade the quality of the radio frequency transmission.

① As with all radio frequency transmissions, the strongest area of signal transmission is from the sides of the transmitter's antenna. As such, the antenna should not be pointed directly at the model. If your flying style creates this situation, easily move the antenna to correct this situation.

① **Before taxiing, be sure to extend the transmitter antenna to its full length.**

A collapsed antenna will reduce your flying range and cause a loss of control. It is a good idea to avoid pointing the transmitter antenna directly at the model, since the signal is weakest in that direction.

① **Don't fly in the rain!** Water or moisture may enter the transmitter through the antenna or stick openings and cause erratic operation or loss of control. If you must fly in wet weather during a contest, be sure to cover your transmitter with a plastic bag or waterproof barrier. Never fly if lightning is expected.

Nickel-metal hydride Battery Safety and Handling instructions

IMPORTANT! The Nickel-metal hydride battery (NiMH) batteries included in the TARANIS X9D transmitter are not to be confused with Lithium-Polymer (LiPo) batteries, or any other type of rechargeable battery (including NiCd's and LiFe's). NiMH batteries require special charging criteria different than other rechargeable batteries. Use only the FrSky transmitter charger included with this set for, or other chargers approved by FrSky to charge the NiMH batteries in the TARANIS X9D transmitter.

It's important to understand the operating characteristics of Nickel-metal hydride battery (NiMH). Read the specifications printed on the label of your NiMH battery and charger prior to use. Failure to follow the preceding precautions can quickly result in severe, permanent damage to the battery and its surroundings and possibly result in a FIRE!

IMPORTANT PRECAUTIONS

- ⊗ Do not attempt to disassemble NiMH packs or cells.
- ⊗ Do not allow NiMH cells to come in contact with moisture or water at any time.
- Ⓜ Always provide adequate ventilation around NiMH batteries during charge, discharge, while in use, and during storage.
- ⊗ Do not leave a NiMH battery unattended at any time while being charged or discharged.
- ⊗ Do not attempt to charge NiMH batteries with a charger that is NOT designed for NiMH batteries, as permanent damage to the battery and charger could result.
- ⊗ Always charge NiMH batteries in a fireproof location. Do not charge or discharge NiMH batteries on carpet, a cluttered workbench, near paper, plastic, vinyl, leather or wood, or inside an R/C model or full-sized automobile! Monitor the charge area with a smoke or fire alarm.
- ⊗ Do not charge NiMH batteries at currents greater than the "1C" rating of the battery ("C" equals the rated capacity of the battery).
- ⊗ Do not allow NiMH cells to overheat at any time! Cells which reach greater than 140 degrees Fahrenheit(60°C) should be placed in a fireproof location.
- Ⓜ NiMH cells will not charge fully when too cold or show full charge.
- Ⓜ It is normal for the batteries to become warm during charging, but if the charger or battery becomes excessively hot disconnect the battery from the charger immediately!! Always inspect a battery which has previously overheated for potential damage, and do not re-use if you suspect it has been damaged in any way.
- ⊗ Do not use a NiMH battery if you suspect physical damage has occurred to the pack. Carefully inspect the battery for even the smallest of dents, cracks, splits, punctures or damage to the wiring and connectors. DO NOT allow the battery's internal electrolyte to get into eyes or on skin—wash affected areas immediately if they come in contact with the electrolyte. If in doubt, place the battery in a fire-proof location for at least 30 minutes.

MicroSD Card

The MicroSD card (TF Card) can store various files, such as model data, music, sound files and pictures. The card is locked when it is pushed in all the way in. To remove the card, push in on the card again, it will pop up allowing you to remove it.

⚠ Warning

- Ⓜ Be sure to turn off the power to the transmitter before inserting or removing the SD card.
- ⊗ As the SD card is a precision device, do not use excessive force when inserting.
- ⊗ If model data generated by a new software version transmitter is copied to an old software version transmitter, the transmitter may operate erroneously. Copy the model data after updating the copy destination transmitter to the new software version.
- Ⓜ Do not expose the SD card to dirt, moisture, water or fluids of any kind.
- ⊗ Never remove the SD card or turn off power while entering data.
- ⊗ Never store the SD card where it may be subject to strong static electricity or magnetic fields.
- ⊗ Do not expose the SD card to direct sunlight, excessive humidity or corrosive environments.
- ⊗ Be certain to insert the SD card in the correct direction.

Read data from a PC

Saving music and image files edited by a PC into the MicroSD card, you can use those files on your TARANIS X9D transmitter. Equipment for reading and writing MicroSD cards are available at most electronics stores.

Stored data

The life of the MicroSD card is limited due to the use of Flash memory. If you have a problem saving or reading data such as picture data after a long period of use you may need to purchase a new MicroSD card.

- We are not responsible for, and cannot compensate for any failure to the data stored in the memory card for any reason. Be sure to keep a backup of your models and data in your MicroSD card.
- No necessity for backup; TARANIS X9D transmitters and MicroSD cards are using non-volatile memory devices so that the data stored in those will not be destroyed even without a backup battery. The clock for the transmitter depends on the Lithium battery.

SD Card References

You could find videos, artworks for icons, voice files, detailed user guide, etc. from the pre-installed SD card in Taranis battery compartment.

Updates

FrSky is continuously adding features and improvements to our radio systems. The update (via mini-USB port on the back of Taranis X9D) is easy and free. To get the most from your new transmitter, please pay attention to FrSky website www.frsky-rc.com, download section for the latest update firmware and how-to guide.

FrSky Taranis X9D radio system has open source firmware, and abides by GPL license. The source code for Taranis can be found on FrSky website www.frsky-rc.com, download section, source code.

All FrSky radio systems will have open source firmware. Do not hesitate to contact FrSky if you have any ideas and suggestions for the current and future radio systems, or you are willing to join FrSky developing union to be part of the projects.

- * The currently pre-installed firmware of FrSky Taranis X9D is derived from openTX firmware, modified, improved and well tested by FrSky and the developing union.
- * More information about openTX can be found on: <http://openrcforums.com>.