FrSky 2.4GHz ACCST Taranis X9E Manual

Introduction

Thank you for purchasing the FrSky 2.4GHz ACCST TARANIS X9E digital telemetry radio system. In order 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, 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:

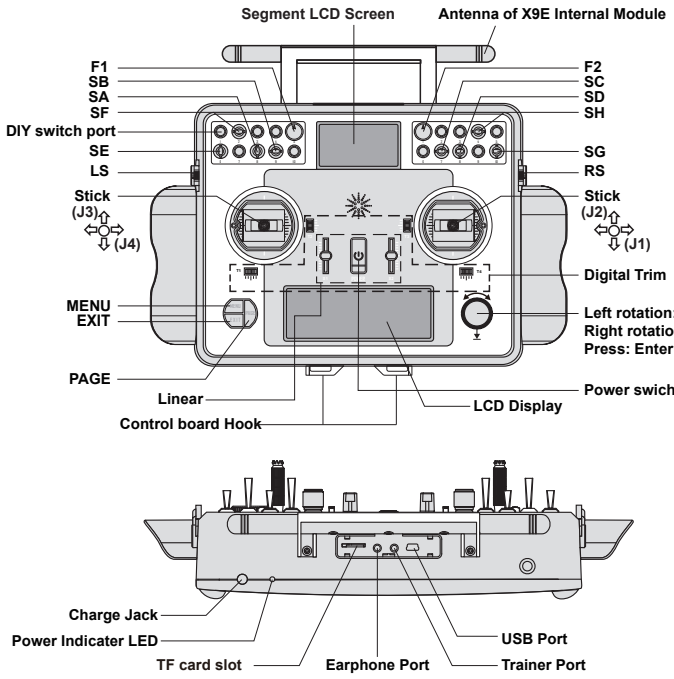
⚠ **DANGER** - Procedures which may lead to dangerous conditions and cause death/serious injury if not carried out properly.

⚠ **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

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

Notice: You can choose the Switch and define its positions in the Mixer menu.
The DIY switch port is a free replacement switch position .
The number of switches can be extended by the DIY switch port.

⚠ Cautions on handling antenna

⃠ Do not touch the antenna during operation. Doing so could interfere with transmission, causing a crash.

⃠ Do not carry the transmitter by the antenna. The antenna wire could break and prevent transmission.

⃠ Do not pull the antenna forcefully. The antenna wire could break and prevent transmission.

Specifications

Model Name: Taranis X9E
Number of Channels: 47 Channels
Operating Voltage Range: 6~15V (2S, 3S Lipos are acceptable)
Operating Current: 260mA maximum (both RF module and backlit are on)
Operating Temperature: -10~60 ℃
Backlight LCD Screen: 212*64
Model Memories: 60 (extendable by SD card)
Compatibility: FrSky X series, D series and V8-II series receivers

Taranis X9E-EU version is only compatible with X series receiver EU version.

Features

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

Battery Connector Polarity

Ensure that the battery connector polarity is correct when connecting batteries other than the provided 8cell NiMH battery into the battery compartment, otherwise the Taranis X9E might not be powered on.

⃠ Please connect the provided battery in the battery compartment before use.

⃠ The eight-cell NiMH battery is for use only in your TARANIS X9E.

⃠ Be sure to use the built-in battery charger to charge the battery.

⃠ Be careful not to drop the battery.

⃠ Don't pull the battery wires as this could produce, short-circuits and cause the battery to explode.

⃠ Do not remove the battery from the TARANIS X9E transmitter while the voltage warning is blinking as this could cause internal settings and memories to be destroyed.

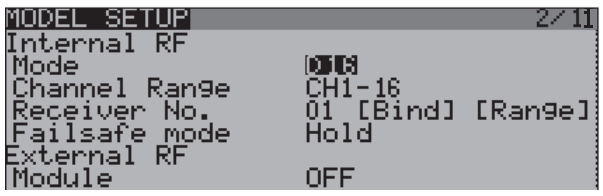
⃠ Do not use the transmitter if a “Backup Error” warning occurs.

⃠ Be sure to turn off the Taranis X9E before charging the battery.

⃠ The Power Indicator LED will be on during charging, and be off after the charging is finished.

Model Setup for Taranis X9E Internal RF Module

The internal RF module of FrSky Taranis X9E is newly developed by FrSky under the name of XJT.
Enter the MODEL SETUP menu (for details, refer to the Guide included on the SD card, or download it from FrSky website)



Step 1: Set the Mode for Taranis X9E Internal RF
Refer to the table below and set the Taranis X9E to the mode corresponding to your receiver (D8, D16 or LR12).

Mode of Taranis X9E	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

Mode of Taranis X9E-EU version	Compatible Receivers	Number of Output Channels
D16-EU	X series-EU version	Up to 16 channels

Notice: Older V8 receivers are not supported by the internal module
The EU version of Taranis X9E only has FrSky D16-EU Mode.

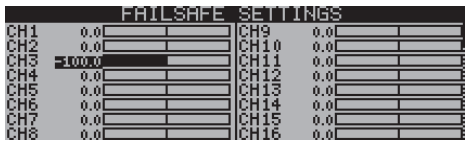
Step 2: Set the Channel Range
The internal RF module of Taranis X9E supports up to 16 channels. The channel range is configurable, and needs double check before use.

Step 3: Set the Receiver Number
When you create a new model, the system will assign you a receiver number automatically, but this can be easily changed. The range of the receiver number is 00-63, with the default number being 01 (use o 00 is not recommended). Once the receiver is set to the desired number and is bound to the Taranis X9E, the bind procedure will not need to be repeated unless the receiver number is changed, In this case, either set the receiver number to the previous one, repeat the bind procedure.

Step 4: Bind
Bind refers to Taranis X9E 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 4 failsafe modes: No Pulse , Hold , Custom,Receiver(this mode only used above opentx-v2.0.0 firmware).

- No Pulse: on loss of signal the receiver produces no pulses on any channel. To use this type, select it in the menu and wait 9 seconds for the failsafe to take effect.
- Hold: the receiver continues to output the last positions before signal was lost. To use this type, select it in the menu and wait 9 seconds for the failsafe to take effect.
- 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.
- Receiver: set the failsafe on the receiver(see receiver instructions) in D16 mode, select it in the menu and wait 9 seconds for the failsafe to take effec.



Notice:

- SBUS port always outputs, No Pulse could not perform properly on it. Set “Hold” or “Custom” for SBUS port.
- The above instructions do not apply to D-series receivers, which require the internal RF module of Taranis X9E to be in D8 mode. For these receivers, failsafe must be set on the receiver side (see receiver instructions).

Step 6: Range
Range refers to Taranis X9E 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.

FCC Caution.

§ 15.19 Labelling requirements.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

§ 15.105 Information to the user.
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. 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 for Portable device:
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, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.
France: the law permits the emission band 2400 to 2483.5 MHz with the limitation of transmission power of 100 mW (reduced to 10 mW between 2454 and 2483.5 MHz for outdoor flying).

FLYING SAFETY

⚠ **Warning:**
To ensure the safety of yourself and others, please observe the following precautions.
ⓘ **Have regular maintenance performed.** Although your TARANIS X9E protects the model memories with non-volatile EEPROM memory (which does not require periodic replacement) and of a battery, it still should have regular check-ups for wear and tear. We recommend sending your system to your FrSky Service Center annually during your non-flying-season for a complete check-up and service.

Battery
ⓘ **Charge the batteries!** Using the standard Taranis battery and charger, 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. Also, if your model uses a separate receiver battery, make sure it is fully charged before each flying session.

ⓘ **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.

ⓘ **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

ⓘ 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 the throttle stick to idle position, engage any kill switches or otherwise disarm your motor/engine.

If you do not turn on your system on and off 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.

ⓘ **Make sure your transmitter can'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.

ⓘ 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. must be avoided. Doing so may interrupt the radio frequency link to the model, resulting in loss of control.

⊘ Do not grasp the transmitter's antenna during flight. Doing so may degrade the quality of the radio frequency transmission and could result in loss of control.

⊘ 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.

ⓘ **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.

ⓘ **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 X9E transmitter are not to be confused with Lithium-Polymer (LiPo) batteries, or any other type of rechargeable battery (including NiCd and LiFe). 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 X9E transmitter.

⊘ 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 for potential damage any 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.

Secure Digital (SD) Memory Card Handling Instructions

MicroSD Card

The MicroSD card (TF Card) in Taranis X9E can store various files, such as model data, music, sound files, pictures and text. 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 out allowing you to remove it.

⚠ **Warning**

ⓘ Be sure to turn off the power of the transmitter before inserting or removing the MicroSD card.
⊘ As the MicroSD card is a precision device, do not use excessive force when inserting.
ⓘ If model data generated by a transmitter with a new software version is copied to an one with older software, the transmitter may not operate correctly. Before copying the model data, update the destination transmitter to the new software version.
ⓘ Do not expose the MicroSD card to dirt, moisture, water or fluids of any kind.
⊘ Never remove the MicroSD card or turn off power while entering data.
⊘ Never store the MicroSD card where it may be subject to strong static electricity or magnetic fields.
⊘ Do not expose the MicroSD card to direct sunlight, excessive humidity or corrosive environments.
⊘ Be certain to insert the MicroSD card in the correct direction.

Read data from a PC

Music and image files edited by a PC can be transferred onto the MicroSD card and used on your TARANIS X9E transmitter. Equipment for reading and writing MicroSD cards is 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.
- TARANIS X9E transmitters and MicroSD cards use non-volatile memory devices so that the data stored is retained, even without a backup battery. Nevertheless, it is good practice to back up the data in the transmitter to the MicroSD card. The clock for the transmitter does depends on the lithium battery, which may need to be replaced occasionally.

SD Card References

You will find a variety of files such as videos, artworks for icons, voice files, detailed user guide, etc. on the pre-installed MicroSD card in the top of Taranis X9E.

Updates

FrSky is continuously adding features and improvements to our radio systems. Updating (via the pre-installed MicroSD card in the top of Taranis X9E) is easy and free. To get the most from your new transmitter, please check the download section of the FrSky website www.frsky-rc.com, for the latest update firmware and how-to guide.

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

* The currently pre-installed firmware of FrSky Taranis X9E is modified openTX firmware, improved and well tested by FrSky and the developing union.
* More information about openTX can be found on: https://github.com/opentx/opentx