Introduction

With the demand for further extending the legacy of the Horus Series Transmitters, the Horus X10/S Express version was born. With many new updates like applying the ACCESS protocol and hardware tweaks, Horus X10/S Express use the ACCESS communication protocol, it boosts 24 channels with a faster baud rate and lower latency equipped with a high-speed module digital interface. Along with the new spectrum analysis function and added FOS/OPEN TX firmware, it is now possible to check the airwaves for RF noise.

Both X10 and X10S Express support balancing charge for 2S Li-battery via a collateral USB cable. The accessible battery compartment design is another change worth mentioning, with two 18650 Li-ion batteries you can expect to be able to fly all day. The Express carries forward all of its predecessors’ features like the industrial LCD color screen, and the highly-accurate M5/MICRO2PAP sensor gimbals which offer the most precise control. Additionally, it features a remarkable PARA wireless trainer function which also makes them compatible with the FrSky Free Link App and AirLink S. All that makes the Express version an ideal transmitter for gliders, helis, multirotor and every type of fixed-wing imaginable.

Meanings of Special Markings

Pay special attention to safely 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.
- **Caution:** Always keep electrical components away from small children.

Overview


You can use the Switch and define its position in the input and output Map screen.

1. Micro SD card is not provided with shipment.
2. USB port is for upgrading, resetting micro SD cards and internal memory of radio contents and charging (Includes USB cable in package but without the adapter).
3. Smart Port is for firmware upgrade for all FrSky S.Port devices.

Infinity 24 Antenna

Recommended A-Sport optional high-gain antenna for achieving higher performance and further range.

ACCST D16

Choose the INT MODULE. Then turn ON INTERNAL RF, select the OUTSIDE or INSIDE ANTENNA.

Set the Mode for Horus X10 Express/Horus X10S Express internal RF corresponding to your receiver (ACCESS, ACCESS D16).

**Step 1:**

Use the navigation keys to enter the RF system menu.

Choose the INT MODULE. Then turn ON INTERNAL RF, select the OUTSIDE or INSIDE ANTENNA.

**Step 2:**

Configure the model channel and create the model name.

**Step 3:**

Set the Channel Range

The ISRM module supports 24 channels. The channel range is configurable, and it needs to be double checked before use.

**Step 4:**

Registration

The system will assign you the receiver a number automatically, when you create a new model, and this can be easily changed. The range of the Model ID is 00-63, with the default number being 01. Once the receiver is set to the desired number and is bound to the Horus X10 Express/Horus X10S Express, the bind procedure will not need to be repeated unless the receiver number is changed. At this point, set the receiving number to your preferred number and repeat the binding operation.

**Step 5:**

Automatic binding (Smart Match)

Move the cursor to Rx1 [BIND], and select it, power your receiver, and select the “RX Name XX” and [REGISTER] to complete the registration process then power down the receiver.

**Notes and Warnings for Battery & Charger**

- **About USB 2S Li-battery balance charging:**
  - The Green Power indicator LED states:
    - Led on: charging
    - Led off: charge end
    - Led flash: charge fault

  Please use the following type of battery if you do not want to use the battery slot.

  - Charge the battery with the USB adapter (Voltages: 5V±0.2V Current: 2.5A) when you use the USB charging function.
  - The lower the initial charging voltage, the better the charging effect is when the voltage difference between the two cells exceed 50 mV.

**ETHOS Operating System**

**Model Setup Procedure-Internal Module**

**Step 1:**

Use the navigation keys to enter the RF system menu.

Choose the INT MODULE. Then turn ON INTERNAL RF, select the OUTSIDE or INSIDE ANTENNA.

**Step 2:**

Configure the model channel and create the model name.

**Step 3:**

Set the Channel Range

The ISRM module supports 24 channels, the channel range is configurable, and it needs to be double checked before use.

**Step 4:**

Registration

The system will assign you the receiver a number automatically, when you create a new model, and this can be easily changed. The range of the Model ID is 00-63, with the default number being 01. Once the receiver is set to the desired number and is bound to the Horus X10 Express/Horus X10S Express, the bind procedure will not need to be repeated unless the receiver number is changed. At this point, set the receiving number to your preferred number and repeat the binding operation.

**Step 5:**

Automatic binding (Smart Match)

Move the cursor to Rx1[BIND] and select it, power your receiver, select the RX, and complete the process, the system will confirm “Bind Success” (Pressing the “F1S” button is not required in ACCESS to Bind. Please refer to the receiver manual for details).
Set Failsafe mode
There are 3 failsafe modes when enable: No Pulse, Hold, Custom.

★  No Pulse: in 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 position before the problem happens. To use this type, select it in the menu and wait 9 seconds for the failsafe to take effect.
★  Custom: pre-set required positions on lost signal. Move the cursor to the failsafe mode of channel and press Encoder, then choose the Custom mode. Move the cursor to the channel you want to set failsafe on, and press Encoder.

Step 7: Range
Range refers to Horus X10 Express/Horus X10S Express range check mode. A pre-flight range check should be done before each flying session. Move the cursor to "STATE", select the Encoder to select "RANGE" mode and press Encoder. In range check mode, the effective distance will be decreased to 1/30. Press the Encoder again, turn to normal state.

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.

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.
• 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.

FLYING SAFETY

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

• Have regular maintenance performed. Although your Horus X12S 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.
• Charge the battery! Using the standard Horus battery and charger, always recharge the transmitter and receiver batteries for at least 4 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 build-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.

Battery
• Charge the battery! Always charge the transmitter and receiver batteries for at least 4 hours before each flying session. A low battery will soon die, causing loss of control and a crash.

IMPORTANT!
Li-Ion batteries are not to be confused with any other type of rechargeable battery (including NiCd and LiFe). Li-Ion batteries require special charging criteria different than other rechargeable batteries.

IMPORTANT PRECAUTIONS
• Do not leave a Li-Ion battery unattended at anytime while being charged or discharged.
• Do not attempt to charge Li-Ion batteries with a charger that is NOT designed for Li-Ion batteries, as permanent damage to the battery and charger could result.
• Always charge Li-ion batteries at a fan/cooling location. Do not charge or discharge Li-Ion batteries on carpet, a cluttered workbench, near paper, plastic, vinyl, leather, or wood, or inside an RCC module-all full-sized automobile chargers expose the area with a short or fire risk.
• Do not charge Li-ion batteries at currents greater than the "1C" rating of the battery ("C" equals the rated capacity of the battery). Never charge Li-ion cells to overcharge at any time! Cells which reach greater than 140 degrees Fahrenheit (60°C) should be placed in a fireproof location.
• Li-ion cells will not charge fully when hot or 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 use if you suspect it has been damaged in any way.
• Do not use a Li-Ion 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 wire 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.

Updated
FrSky continuously adding features and improvements to our radio systems. Updating (via the Micro SD card in Horus X10 Express/Horus X10S Express Micro SD Slot) 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.

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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.
• 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:
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