

FrSky Horus X10S and X10 Systems

**SD Card Setup, Backup, FrOS Flashing,
Sounds and Images**

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Warning

These instructions assume the user has knowledge and experience with copying files with their Windows computer. Significant caution must be used with connecting and disconnecting the X10S and X10 from the windows computer and the file copy process. Accidentally copying the wrong file or deleting system files from the internal X10S and X10 USB Flash Memory drive can cause the system to be inoperable. Recovering an inoperable system can be difficult because the system must be operable to access the USB Flash Memory drive.

X10S and X10 Storage

The X10S and X10 have two user accessible storage mediums, a 16 meg internal USB Flash Memory drive and an external SD drive.

The Flash Memory drive stores the system configuration files, system sound files, model files, model images, model sounds, and user defined custom sounds. The SD card stores the FrOS firmware when doing system firmware updates, data logs, screen prints and extra user defined custom sounds.

Using The SD Card

The X10S and X10 have a SD slot in the bottom of the case. The SD card is used for FrOS firmware updates, data logs and extra storage space for sound files. SD card is not supplied with the system. A 16 gig card is more than adequate and I prefer to use a class 10 card.

Prepare the card by formatting it as fat 32. Then create the following directories.

Name	Date modified	Type	Size
FIRMWARE	3/19/2016 9:45 AM	File folder	
LOGS	9/16/2017 5:41 PM	File folder	

The SD card is inserted into the slot in the bottom of the system with the card contacts facing up. Use caution because the SD card mechanism is spring loaded and can launch the card a significant distance. When the card latches it will be below the surface of the case.



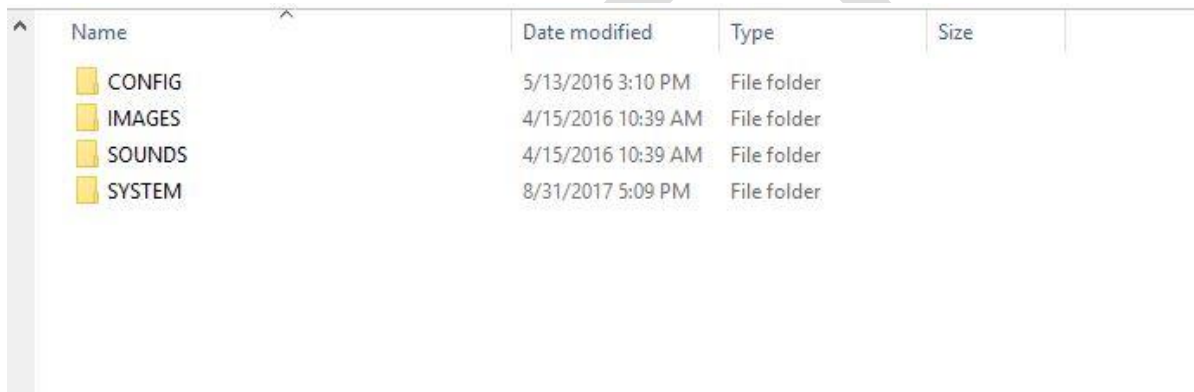
If more than a few custom sounds are planned rather than using up space on the internal USB Flash Memory drive the least used sound files can be stored on the SD card. The files need to be in a path on the SD card that is the same path that is used on the Flash Memory drive. The path on the SD would be SOUNDS\en\Track. When

programming a sound in Special Functions the system looks for the sound on the Flash Memory drive first and then the SD card.

Backing Up - USB Flash Memory Drive

Before copying files to the Flash Memory drive it is best practice to make a backup.

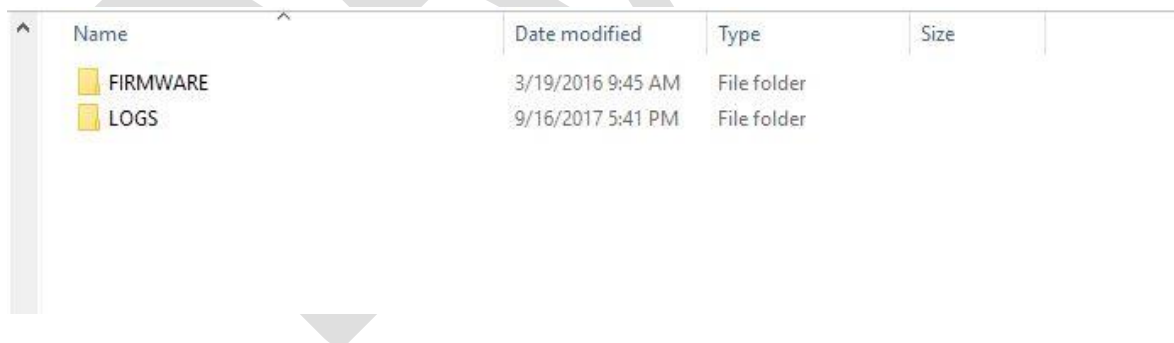
With the system powered on plug a USB mini data cable into the USB connector on the back of the system. The connector is under the rubber cover. Plug the other end of the USB data cable into the USB connector on a Windows computer. The Windows computer will automatically detect the Horus and two File Explore screens will appear.



A screenshot of a Windows File Explorer window showing the contents of a USB flash memory drive. The window displays a list of folders with columns for Name, Date modified, Type, and Size. The folders listed are CONFIG, IMAGES, SOUNDS, and SYSTEM.

Name	Date modified	Type	Size
CONFIG	5/13/2016 3:10 PM	File folder	
IMAGES	4/15/2016 10:39 AM	File folder	
SOUNDS	4/15/2016 10:39 AM	File folder	
SYSTEM	8/31/2017 5:09 PM	File folder	

One for the Flash Memory drive.



A screenshot of a Windows File Explorer window showing the contents of an SD card. The window displays a list of folders with columns for Name, Date modified, Type, and Size. The folders listed are FIRMWARE and LOGS.

Name	Date modified	Type	Size
FIRMWARE	3/19/2016 9:45 AM	File folder	
LOGS	9/16/2017 5:41 PM	File folder	

And one for the SD card.

Copy the Flash Memory folders to a folder on your Windows computer. After models are built, sound files and model images are added it is best practice to make more backups to protect your data.

Caution. Always use the “Safely Remove USB Hardwar” eject feature on your computer to close each of the USB ports.

FrOS Firmware Update – Using Firmware Bin Files

This process is for performing a FrOS **bin** file update on systems that are currently operating with the FrOS.

1. From the FrSky Firmware Download Website, X10S <https://www.frsky-rc.com/x10s/> and X10 <https://www.frsky-rc.com/x10/> . Download the X10S/X10 firmware zip file and un-zip the file. Usually the builds are named X10_EU_XXXX_frtx for EU systems and X10_NEU_XXXX_Frtx (N=NOT EU).
2. Be sure to read the firmware “read me” document for information on the update changes, fixes and new features. There can be new files that need to be added to the flash memory drive, or new features that need folders to be created, etc.
3. The firmware **bin** file copy function can be done by connecting the powered on X10X to your Windows computer with a data USB cable or removing the SD card and writing directly to the SD card.
4. When the powered on X10X is connected with the data USB cable two Windows File Explores will appear within a minute, one for the SD card and one for the Flash Memory Drive.
5. Copy the correct FrOS firmware **bin** file for your system to the SD FIRMWARE folder. Caution. Only **ONE** file can be in this folder. If computers other than Windows computers are used trash files might be copied with the firmware file and the update will not work
6. Caution. Always use the “Safely Remove USB Hardwar” eject feature on your computer to close the USB ports.
7. Disconnect the X10X from the USB

8. Press and **hold** the rotary encoder down (the enter knob) and **at the same time press and hold** the power switch until the first text is displayed on the screen.

See below:



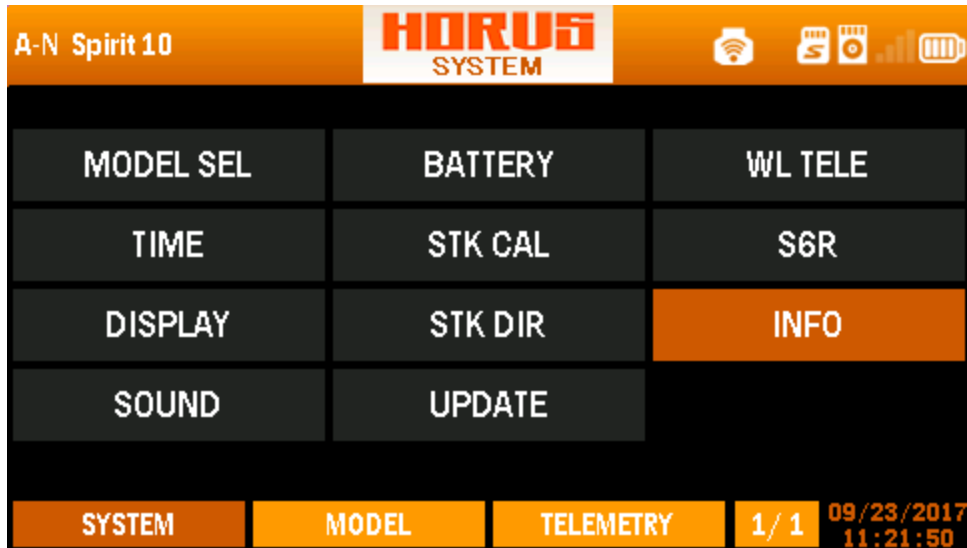
The firmware flashing process will run and finish with a “Successful” press the power off button briefly and the system shuts off.

9. Next. Press hold the power switch until the first text is displayed on the screen.

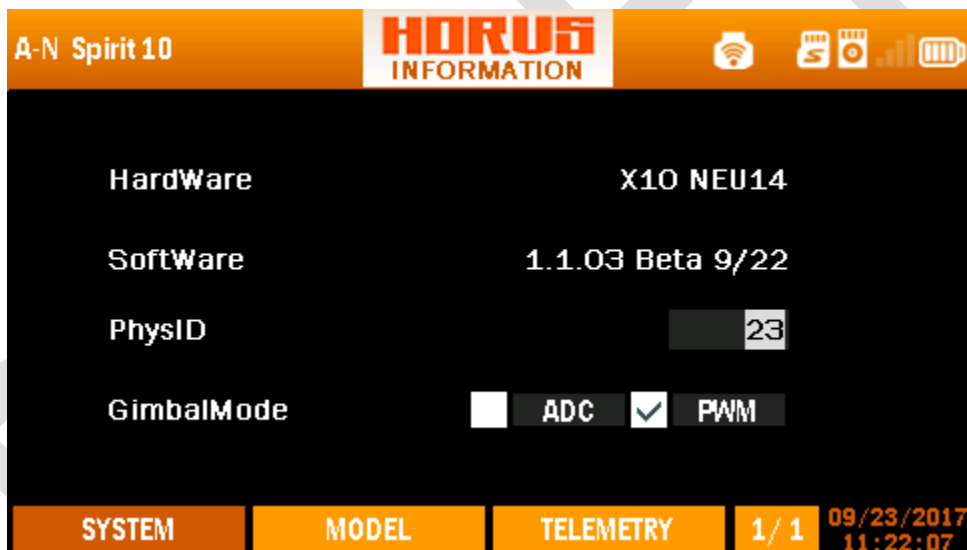
See below:



10. The IXJT firmware flashing process runs with an ending message to “restart system please” and shuts off automatically.
11. Press the power switch to start the system. The system should have the normal FrOS screen with all models, etc.
12. The version number of the firmware is displayed on the info screen. Press SYS to select the System screen.



At the System screen select INFO.



INFO screen.

Sound and Image Files

Audio Files

WAV -TRACK FOLDER - Flash Memory Drive. Size < 100K; Number <100; name length <10 chars (.wav not included); format should be .wav. Track wav files are the user created files that are used with Special Functions.

If more than a few custom sounds are planned rather than using up space on the internal USB Flash Memory drive the least used sound files can be stored on the SD card. The files need to be in a path on the SD card that is the same path that is used on the Flash Memory drive. The path on the SD would be SOUNDS\en\Track. When programming a sound in Special Function the system looks for the sound on the Flash Memory drive first and then the SD card.

Model Sounds - Size < 50k ,format should be .wav;, name length < 30. path: SOUNDS/en/model. Model sounds are the user created files that speak the model name when models are selected.

OpenTX Speaker is an easy way to create WAV files <http://www.open-tx.org/2014/03/15/opentx-speaker>

Image Files

Size 50K or less, max number <100, name length up to 30 chars (.jpg extensions not included), format jpg 155x100 (larger or smaller size will not display as well, cut off, etc..)

The Model images go in the folder IMAGES/modelimages on the Flash Memory drive.

Starting with 1.1.04 firmware model images can also be stored on the SD card by creating a folder IMAGES/modelimages and placing images in the folder.