



Dennis Andreas

RC REPORT



TX Software Updates

Today's RC equipment is light years ahead of what I had when I started. In my early engineering days, if you wanted a waveform to have a particular shape, like an exponential curve, you needed first to know the math. Then you needed to know the various discrete components' functions. Then you had to figure out what devices to use that would transform the waveform as needed. Like with the early transmitters, there were small adjustable potentiometers on the back to tweak each channel for the desired effect. If you were lucky, you had an oscilloscope to verify your settings.

Today, with the microcontroller, we can create discrete components in software. I view software or code as reconfigurable hardware. With these innovations, capability goes up, and cost usually goes down. Besides, it enhances the end user's experience when it's done correctly.

That sets up this month's topic: upgrading or flashing and programming RC hardware. Understanding the technological growth in discrete components can help as you begin these processes. There is no way we can cover all the hardware out there, but I will cover two of the more popular products I have. They are the Spektrum line and the FrSky line. There are also Futaba transmitters and another application called BetaFlight, used to program flight controllers for drones and aircraft. The last two we will cover at a later time. One way or another, you will be exposed to all these options, which will help you educate your customers.

Starting with Spektrum, you will need to have the product registered to access the download page on Spektrumrc.com. This also means that you will have to have already created an account there. Once the product is registered, it will show in the Your Products List. Also, note that it will no longer display the registration message on the

COMMUNITY

CLICK ON THE TABS BELOW FOR UPDATES, DOWNLOADS AND MORE.

AIRWARE™ SOFTWARE UPDATES

SOFTWARE UPDATE INSTRUCTIONS:

1. Download the file SPNTX_SAX by clicking the "Download" button.
2. Save or copy the file from the PC or the SD card. Note: do not change the SPNTX_SAX filename or file extension.
3. Power up the TX with the SD card installed.
4. You should see the Spectrum logo on the main screen and a progress bar while the new software loads.
5. Verify the new version number in the System Settings. Serial Number screen in the menu right corner.

Note: All software files are unique to the serial number registered on the device and will only work with the matching transmitter. Using an SD card created from a different account or serial number will fail.

SPEKTRUM™ DX8E AIRWARE™ VERSION 2.07.03 (11 SEPTEMBER 2020)

All AirWare™ updates have been extensively tested by our internal and external test teams prior to public release.

Due to the complex nature of the software and the nearly endless combination of settings that are possible, the first public exposure of a new version to thousands of customers in the sport hobby may uncover any unforeseen issues. As always, the pilot should ensure that all programming behavior is intended in the model.

This version should not erase models on your radio. You should always take the precaution of backing up models to the SD card prior to an update.

It may take up to 2 minutes for the AirWare update to be completely executed. The progress bar will flash and move and pause several times as part of the update process, and the display may be dim or light.

The "Software Update Reader" PDF file below includes instructions and descriptions of all changes in this version. Please download and read it thoroughly.

The "How To" PDF file below includes instructions for SD card usage, including troubleshooting tips.

HINT: Sometimes you may need to hold down the power button for about 10 seconds to get the update process started properly.

DOWNLOAD

Download the Software Updates Here: [Link To](#)

MY PRODUCTS / FILTER LIST BY TYPE

3 Devices New Product

	DXE 2.4GHZ DSMX RADIO Model Number: SPM1000 Serial Number: SPM1000 Date Registered: 11/03/2019 16:45:19	<ul style="list-style-type: none"> • Register Product • Report an Issue • Update Nickname • Download Updates
	DXE 2.4GHZ DSMX RADIO Model Number: SPM1000 Serial Number: SPM1000 Date Registered: 11/03/2019 16:45:19	<ul style="list-style-type: none"> • Register Product • Report an Issue • Update Nickname • Download Updates
	DXE 2.4GHZ DSMX RADIO Model Number: SPM1000 Serial Number: SPM1000 Date Registered: 11/03/2019 16:45:19	<ul style="list-style-type: none"> • Register Product • Report an Issue • Update Nickname • Download Updates
	AR9235 6-CHANNEL AS3X NANOLITE RECEIVER Model Number: SPM9235 Serial Number: SPM9235 Date Registered: 03/18/2019 15:17:47	<ul style="list-style-type: none"> • Register Product • Report an Issue • Update Nickname • Download Updates
	AR9235 6-CHANNEL AS3X SPORT RECEIVER Model Number: SPM9235 Serial Number: SPM9235 Date Registered: 11/03/2019 15:28:55	<ul style="list-style-type: none"> • Register Product • Report an Issue • Update Nickname • Download Updates
	AR1550 3-CHANNEL AS3X RECEIVER Model Number: SPM1550 Serial Number: SPM1550 Date Registered: 01/03/2018 21:01:00	<ul style="list-style-type: none"> • Register Product • Report an Issue • Update Nickname • Download Updates

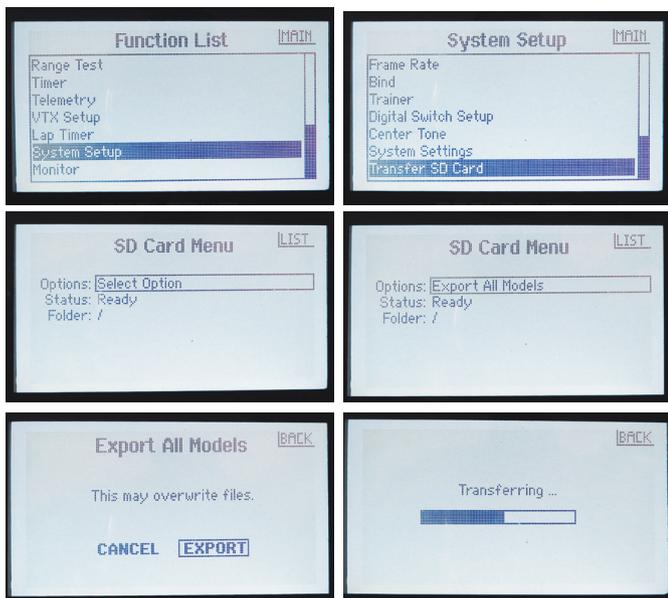
Some of the free Spektrum software updates available on their site.

screen on Spektrum's site once the process is complete.

Then, you can select downloads next to the product you wish to update. The Community Screen then displays details and instructions on how to proceed.

You will have to download the update file you need, and then you will have to transfer the file to an SD memory card at the root (beginning) of the card file structure. When you start the update process, it will look for the update file there. With any update, it is good practice to back up the device first. Using another memory card, hit Transfer All Models to the memory card. Murphy's Law may bite you if you skip this

step even though updating the radio “should not” alter the model files. Here are the screens to transfer your models.



Follow the steps on these screens to back up model setups to an SD card before updating the software.

To be sure the models were saved to the SD card, read it on your PC and verify it. Again, following safe backup practices will keep you out of a sticky situation with your customers. Here is my list of models viewed on my PC. Imagine trying to recreate this, and this is a small list compared to some modelers!

name	Date modified	type	size
MISC	5/3/2011 11:28 PM	File folder	
001~SKYHACK.SPM	1/1/2008 1:21 AM	SPM File	18 KB
002~2 Acro.SPM	1/1/2008 1:21 AM	SPM File	18 KB
003~Torrent.SPM	1/1/2008 1:21 AM	SPM File	18 KB
004~MINI D7.SPM	1/1/2008 1:21 AM	SPM File	18 KB
005~4 MicroCUB.SPM	1/1/2008 1:21 AM	SPM File	18 KB
006~NlgHt.SPM	1/1/2008 1:21 AM	SPM File	18 KB
007~QX70.SPM	1/1/2008 1:21 AM	SPM File	18 KB

This long list is an example of why you back up the model settings.

With the Models saved and the new Transmitter file on the memory card, it is time to perform the update. Shut down the transmitter first. Insert the memory card into the transmitter. To start the update, press and hold the power button for about five seconds, then release. The loading screen will be displayed and may repeat a few times. Also, the orange vertical bar lights will flash as the process completes, and the transmitter will shut off.

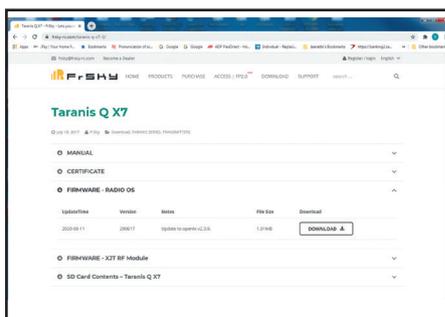
Next, power up the transmitter and check your models and version. In System Settings, advance to Serial Number and highlight the Version Number below Export and click roller. This will give you the details of the transmitter software, which should match the files you selected from the Spektrum website.

The other brand of radio that we will be covering is the FrSky Transmitter. The FrSky brand is a mainstay with the quad community and has gained popularity in the fixed-wing community. The FrSky uses OpenTX as its base operating system. What makes FrSky unique is that it is not only supported by FrSky but also by its user community. Additionally, FrSky supports multiple transmission protocols so you can, in some cases, use one brand's transmitter to control multiple manufacturers' equipment.

As radios are constantly evolving, updates are necessary if you need the added capability in the latest software load. I have a FrSky

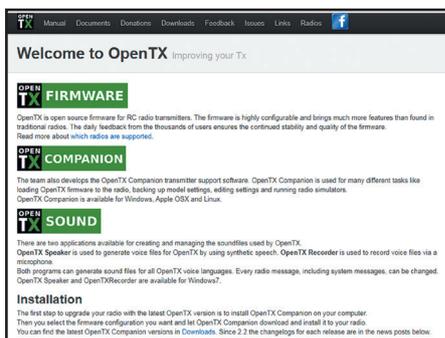
Taranis Q X7 and use it not only with its native receivers but also on quads and many other fixed-wing models from various manufacturers. Since I have not updated my transmitter in a while, the timing of this article was perfect.

To update a FrSky, you will need the latest version of OpenTX Companion loaded on your PC. This is an application to set up, back up and load files to your transmitter. FrSky transmitters also have a MicroSD card slot; however, I prefer the application for visibility and ease. The first step is to visit FrSky-RC.com and locate your radio and download the files.



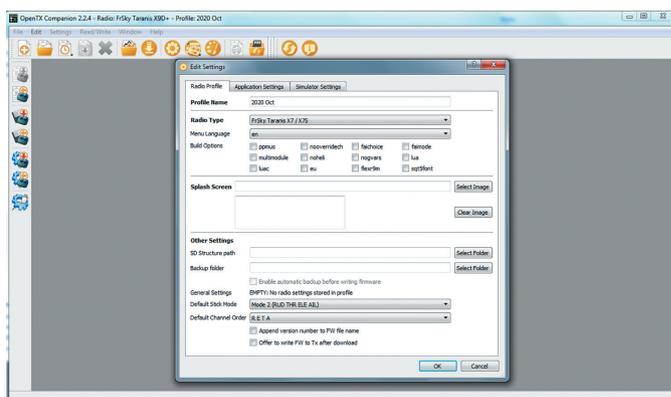
Frsky firmware page offers downloads for many TX models.

If you don't have the Open-TX software, visit <https://www.open-tx.org/> and install the Companion software appropriate for your PC.



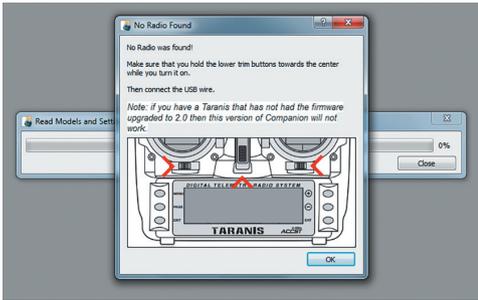
Visit the OpenTX page to download the Companion software to update FrSky transmitters via PC.

Upon launching the software, take care of any necessary updates. This depends on your version. Then, click on the settings menu icon, and the settings menu pops up. This menu is where you set the model transmitter you want to update. I selected X7/X7s. Click OK.



Designate the model of FrSky radio you want to update.

As before, always back up the present transmitter files before you start. To do this, select the Backup Radio to File icon. To connect the FrSky radio to your PC, you will need a Mini-USB cable. It plugs into the radio on the bottom under a rubber protector. Before connecting the USB cable and turning on the transmitter, first press and hold trim switches toward the center as shown on the pop-up screen and press power on the transmitter.



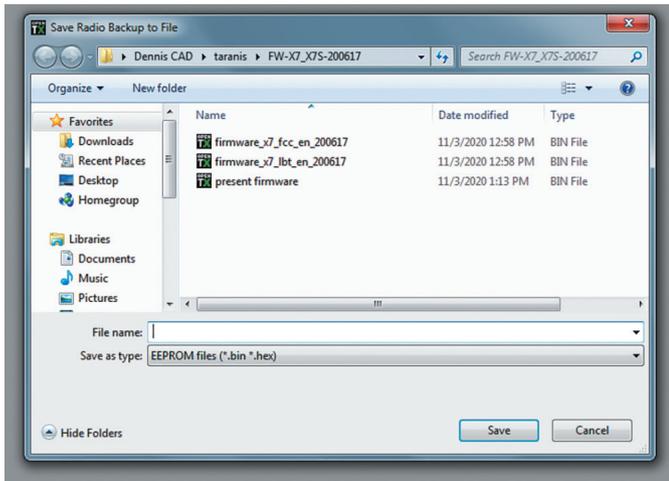
Follow these steps to connect the FrSky TX via a USB cable.

This step will make the transmitter accept control from the PC and software. The transmitter display will indicate the transmitter is connected to the PC when the USB cable is plugged in.



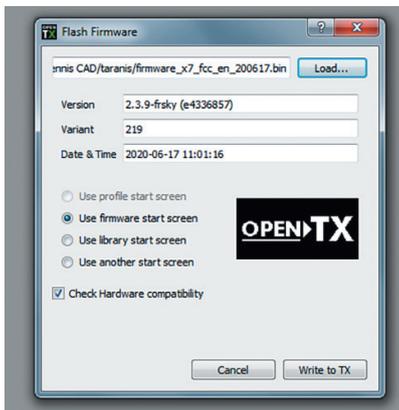
You'll see this confirmation screen when the USB is connected.

First, we will back up the files before proceeding. Click on the Save Radio icon with the red arrow in the menu on the left side. The Save Radio box is displayed. Name the file and save it. Double-check that you have it; now we can update.



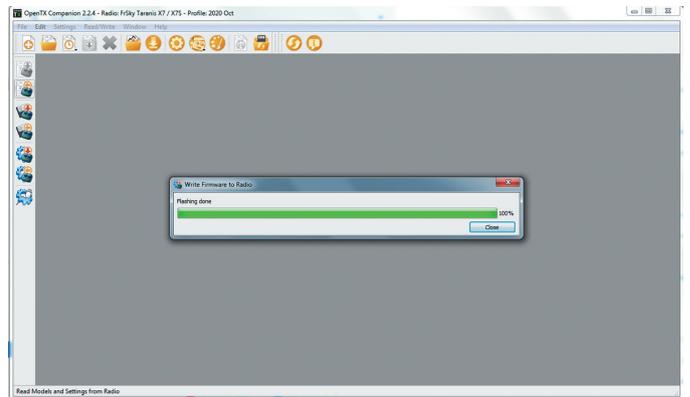
Click on Save Radio icon and save the settings.

First, will select the Write Firmware icon. Use the LOAD button to locate the file on your PC that you'll need for the Write Firmware box. I check the "Check Hardware Compatibility" box for safety.



Click on the Load button to load the file downloaded previously from the FrSky site. Then click on the Write to TX button.

All is set to send the new software to your Transmitter. Finally, click the Write to TX button, and the process will begin.



The confirmation bar shows the software has been loaded.

There should be no errors, and the screen confirms the operation is complete. There is still one more step to commit the new software to the transmitter's internal memory. Disconnect the USB cable, and the firmware confirmation screen will show up on the transmitter.



Click on Write Firmware and the TX will restart and use the new firmware.

Using the right side roller, choose Write Firmware and press the center-roller button. The new software is committed to the radio and it will restart. The process is complete, there is new software, and there are no changes to existing models.



Click on Firmware Options to confirm the updated version was installed.

To confirm the operation, press the left-center button on the FrSky transmitter and go to page 7, where you will see the versions of the software now in use. The update process is not difficult. Remember always to check equipment (charged batteries, etc.) and back it up before any update. The backup should include models and current firmware. Update applications if needed and then update transmitters. Then check that all the models and settings made it through the update without any changes.

Performing this for your customers is a way to make a few extra dollars. Not all customers are comfortable with the process. Offering your customers' equipment updates and model archiving could be the leverage needed to get them to purchase new equipment. Note that all the software is free of charge at the respective websites. **HM**



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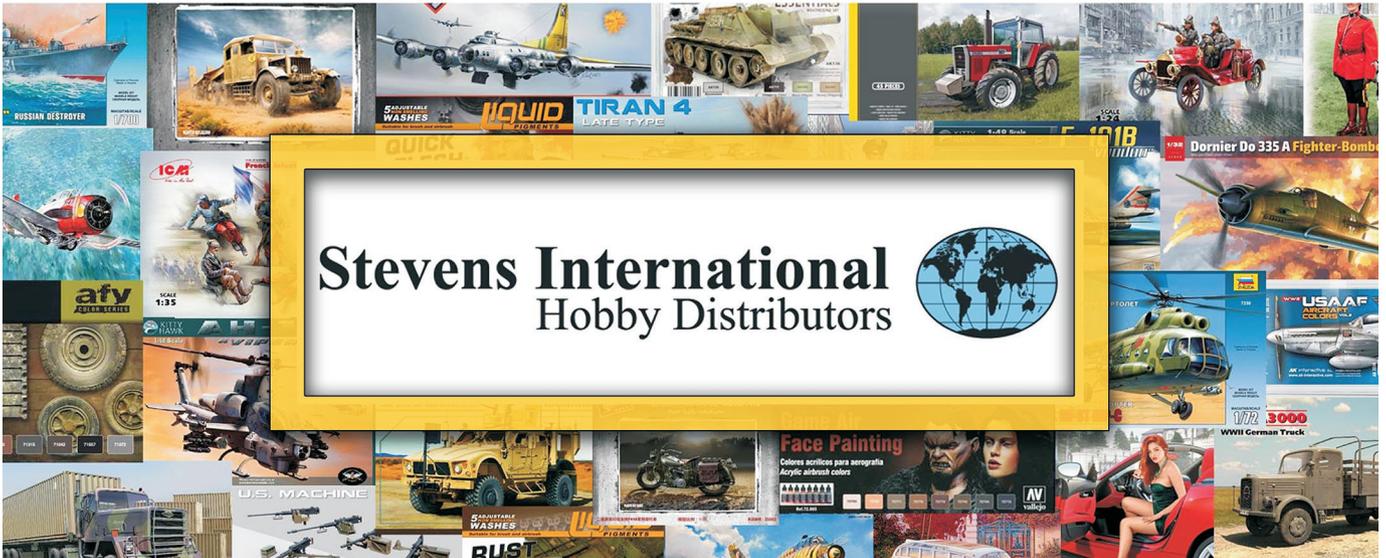
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