

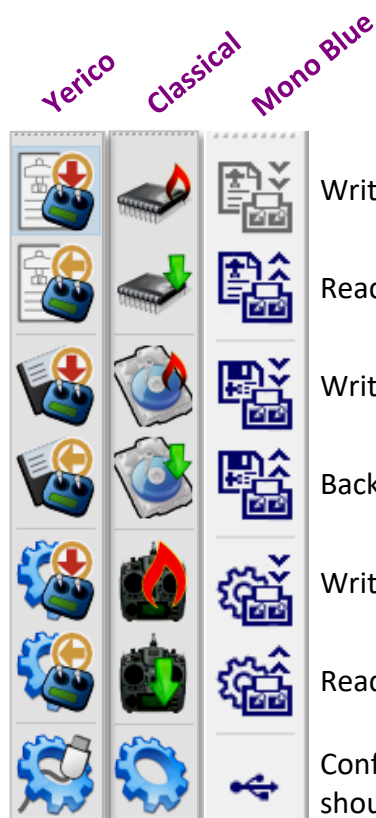
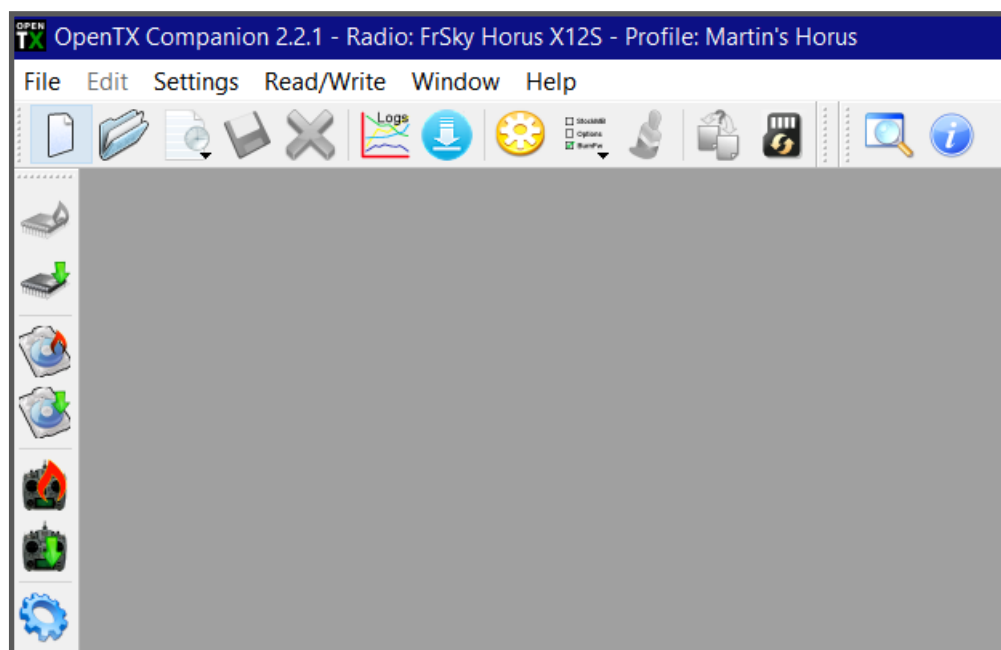
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It is the sole responsibility of the user to ensure that the setting up of their transmitter functions as expected on the model.

The OpenTX Companion

This is the opening screen of **OpenTX Companion**. Using the **Companion** one can load and save models from the transmitter to the computer and back again. It also allows copies of these model memories to be stored on the computer. Different “themes” can be used on the screen. The screen below is using “Classical”. The other themes are Yerico, and three monochrome screens:



Write models and settings to radio.

Read models and settings from radio.

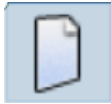
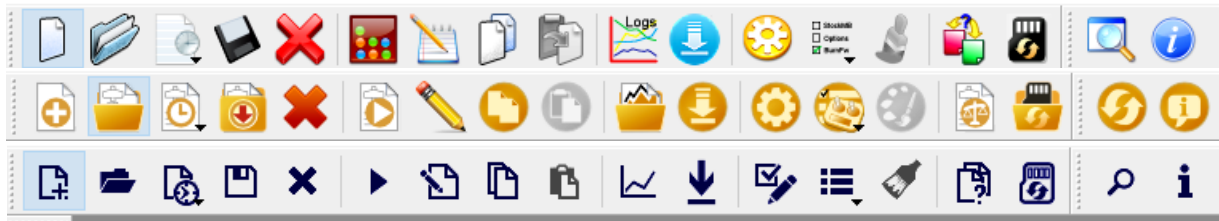
Write backup to radio.

Backup radio to file.

Write **OpenTX** firmware to radio.

Read **OpenTX** firmware from radio.

Configure communications. This is normally set automatically so should not need altering.



Start new model file. The model file is the file that saves all the model settings data. This data file has the file extension **.OTX**



Open an existing model file stored on the computer.



Lists recent model files saved on disk. The default is a list of 10. This can be changed in the **Companion Settings**.



Save the model file to the computer. Thus one can quickly have a copy of every model setting on the transmitter stored on the computer as a backup. Save with a different filename (e.g. add the date to the filename) to have regular restore points if a problem arises with the model settings.



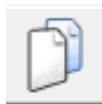
Closes the current model file.



The simulator. (Greyed out if no model selected.)



Edit radio settings.



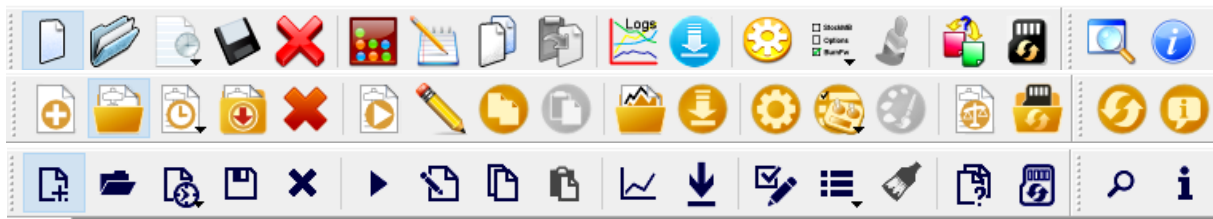
Copy radio settings.



Paste radio settings.



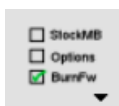
The telemetry logging page.



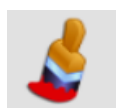
Check for newer versions of **OpenTX**.



The **Companion Settings Menu**. This stores the settings needed to run the **Companion** correctly.



Radio profile. This feature allows the user to set up different profiles if, say, they have more than one transmitter.



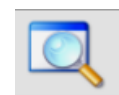
Edit radio splash image. This is the image that first appears when the transmitter is switched on.



Compare models. This brings up a screen which lets the user drag two models from the model select screen for comparison.



Synchronise SD. With the transmitter connected, just click 'Synchronize SD'. It compares the SD card and the SD card folder on your hard drive, and copies files which are only on one to the other. i.e. if a file is on the SD but not your computer's copy, it will be copied across. The opposite is also true so if you add a new file to your computer's version of the SD card, it will be copied to the SD card.



Check for updates to **OpenTX Companion**.

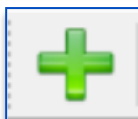


Information about **OpenTX Companion** version.

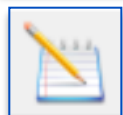
Once a model file is opened, more icons appear along the top bar of the **Companion** window. These icons all relate to the categories and models.



Add category. This and the next icon can be confusing as they are the same. Hold the mouse over the icon to get a description of use if unsure. (Horus only)



Add model.



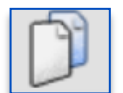
Rename category. (Horus only)



Delete 1 (or more) categories. (Horus only)



Cut the selected model.



Copy model. Copies the selected model.



Paste a previously copied model. (Will be greyed out if no model already copied.)



Insert a previously copied model. This is useful for copying from one model file to another. (Will be greyed out if no model already copied.)



Duplicate a model. (Will be greyed out if no model selected first.)

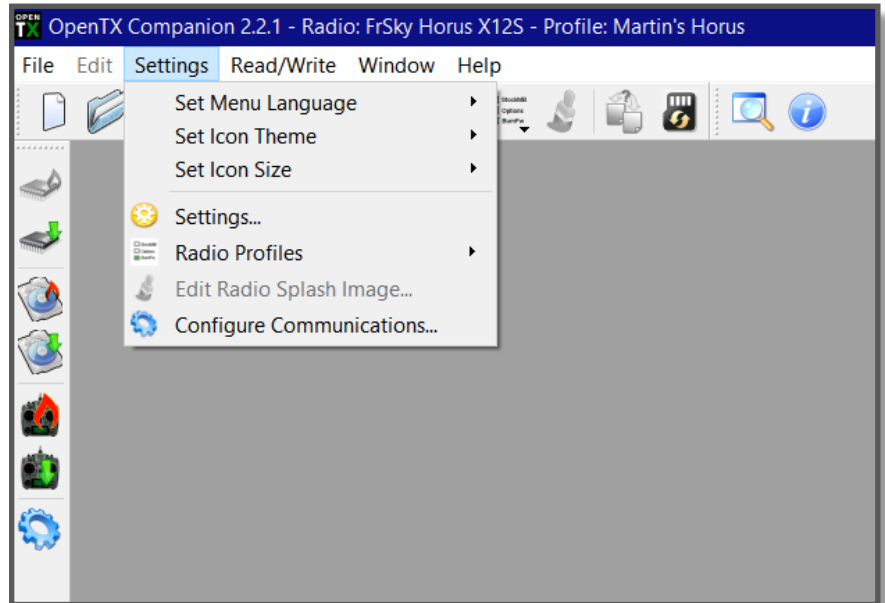


Move a model to a new category. (Horus only)

The OpenTX Companion Screen

The menu headings at the top of the screen largely match the icons displayed below these headings and down the side. However, this **Settings** drop-down menu is different and has several unique options. These are:

- ★ Set Menu Language
- ★ Set Icon Theme
- ★ Set Icon Size



If you don't like the screen layout, the icon bars can be moved. Hover the mouse pointer over the dotted bars next to an icon group, and when the screen pointer changes, drag and move the icon group. If the horizontal groups are moved to either side of the screen they will change to vertical groups.



Radio Profiles

These allow the storing of setting for different transmitter sets and easily switching between them. For example, if you have 2 different radios (say a Taranis 9XD and a Horus X10) with different firmwares or board types it is not convenient to have to redo all the settings (firmware selection, ticking options, etc.) every time you want to do operations on the other radio. So you can configure all settings, choose an empty profile with the number box, type a name to identify the particular radio, and click save. Do the same for the second radio. You will now be able to select the correct profile for the radio you are about to work on with the profile selector button and menu entry on **OpenTX Companion's** main window. Note that the profiles can also store and retrieve each radio's joystick calibration and hardware settings (voltage alarms, audio modes, etc.) from the **General Settings** page of an open document. This allows copying a document from one radio to the other without needing recalibration or re-entering the hardware settings.

The Three Settings Menus

There are actually three settings menus and they can become very confusing. They are the:

★ **The Companion Settings menu**

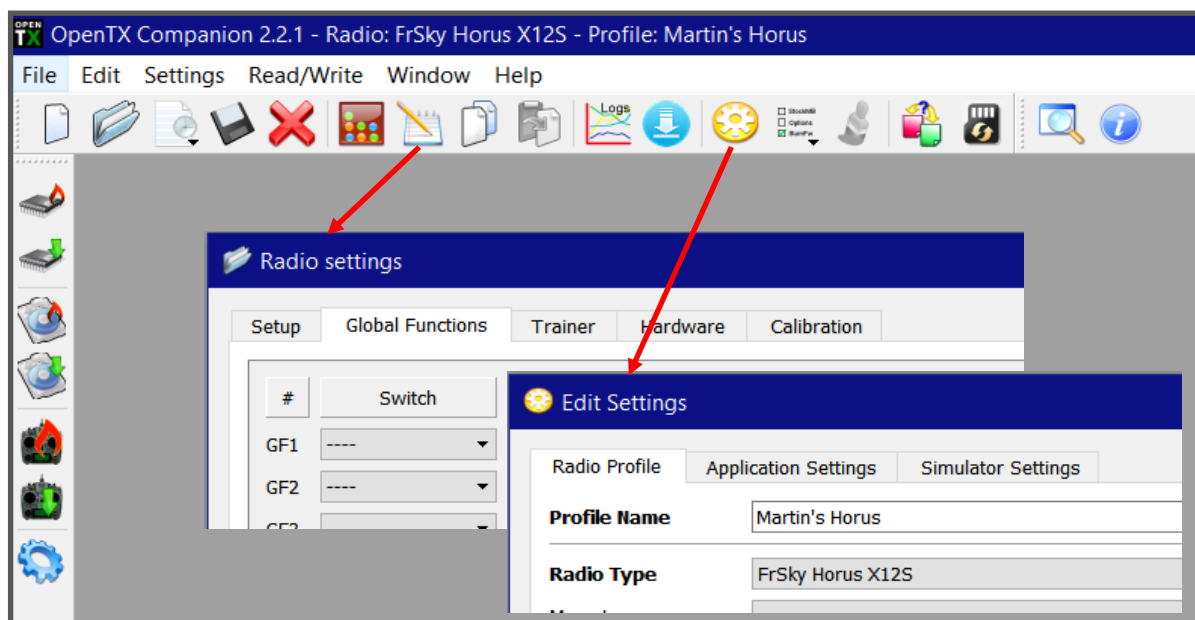
This is to set up features for the **Companion**, and there is no equivalent menu on the radio. On the Companion, the Window title is simply **Edit Settings** as can be seen in the screenshot below. This menu is cover in more detail later in this section

★ **The Radio Settings menu**

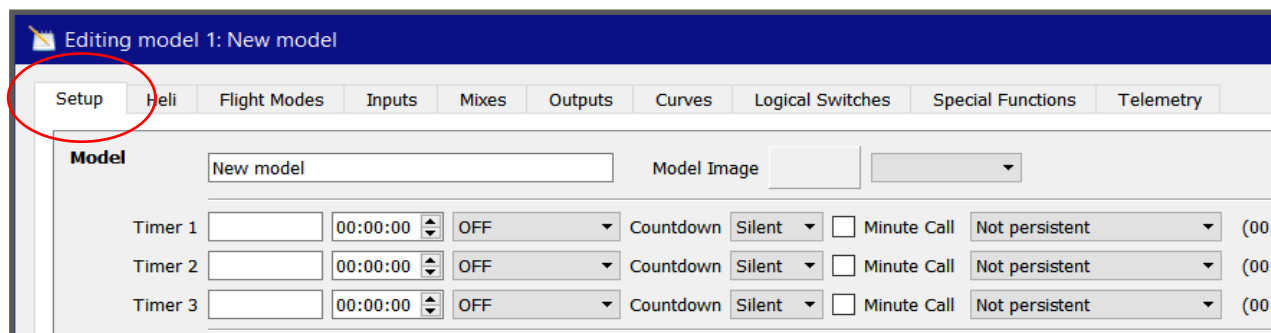
This menu sets up all the features for the radio itself. Some settings in this menu are only available on the radio, such as calibrating the radio and setting the date and time.

★ **The Models Setting menu**

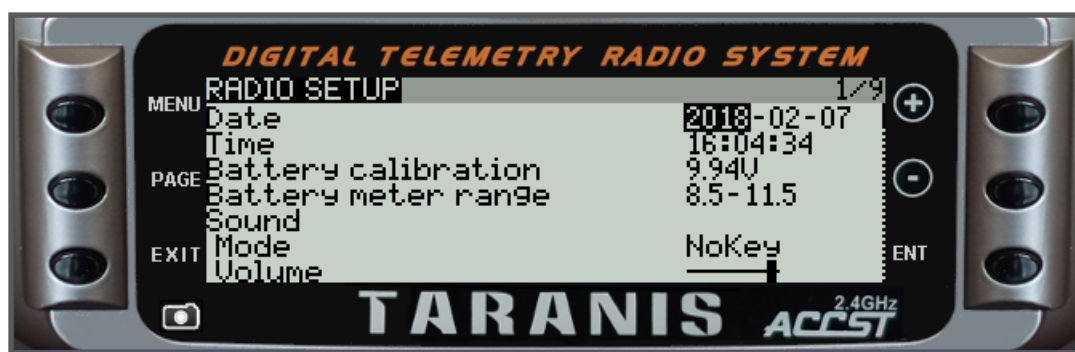
This is the main menu for setting up each model. Again most, but not all, features are the same on the radio and the **Companion**.



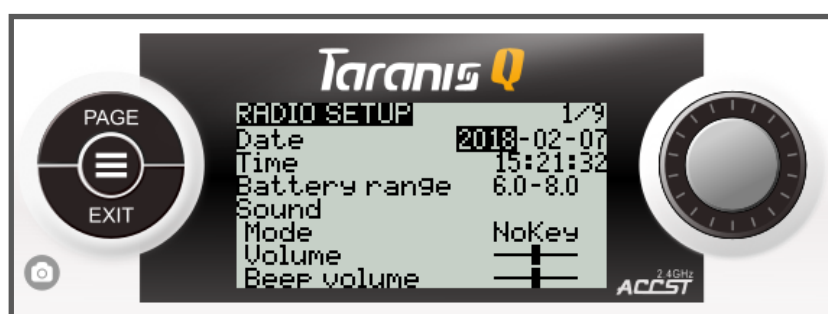
The **Radio Settings Menu** is accessed from the **Companion** when a model file is opened or a new model file is started. This is the settings menu where all the basic settings for the transmitter can be changed.



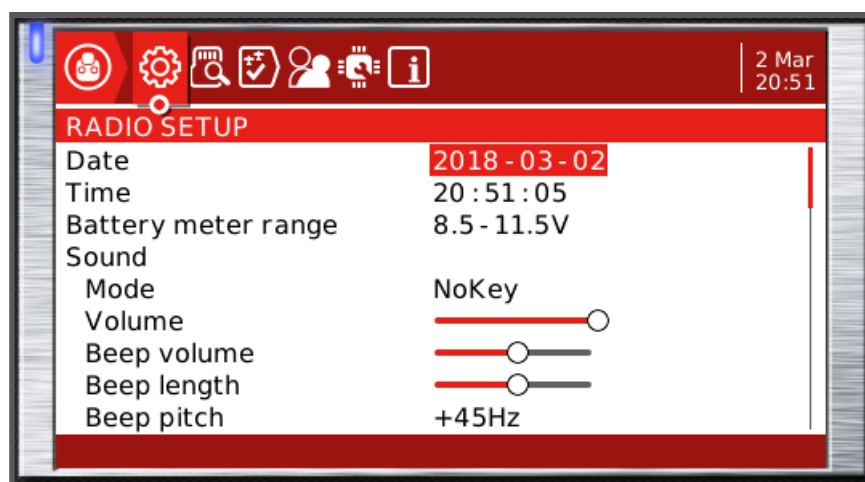
On the transmitter menu system, this almost identical menu is called the **Radio Setup**.



The Taranis Radio Setup Screen

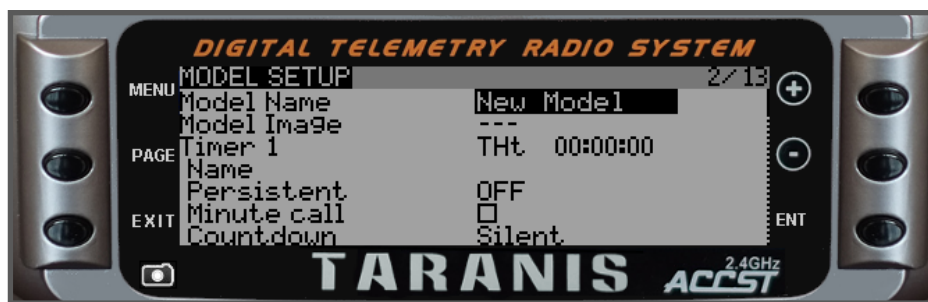


The Q X7 Radio Setup Screen

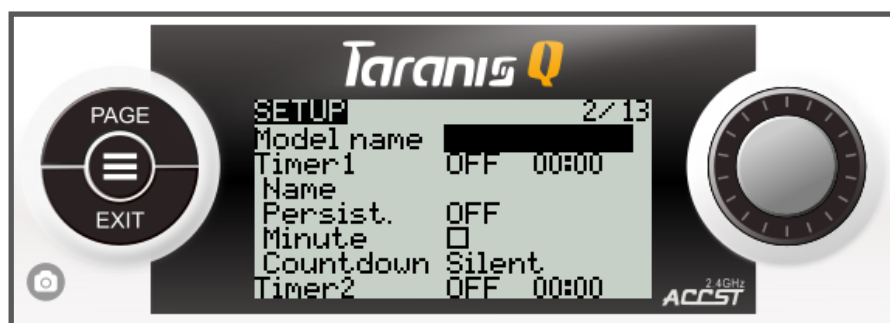


The Horus Radio Setup Screen

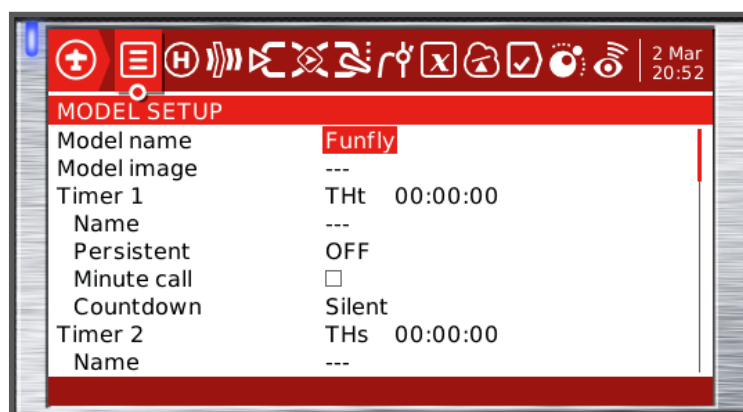
Finally there is the **Model Settings** menu for each model, this is the first screen on the **Model Editor** on each of the transmitters and the **Companion**.



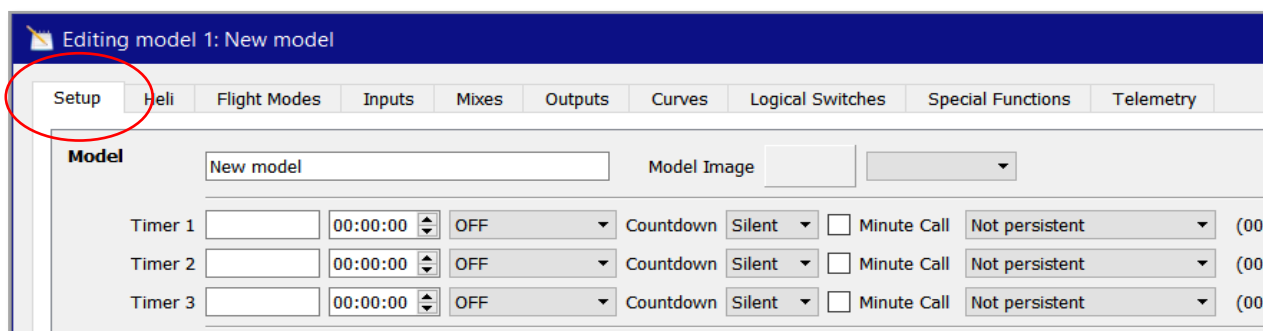
The Taranis Model Setup screen



The Q X7 Model Setup screen



The Horus Model Setup screen



The Companion Model Setup Screen

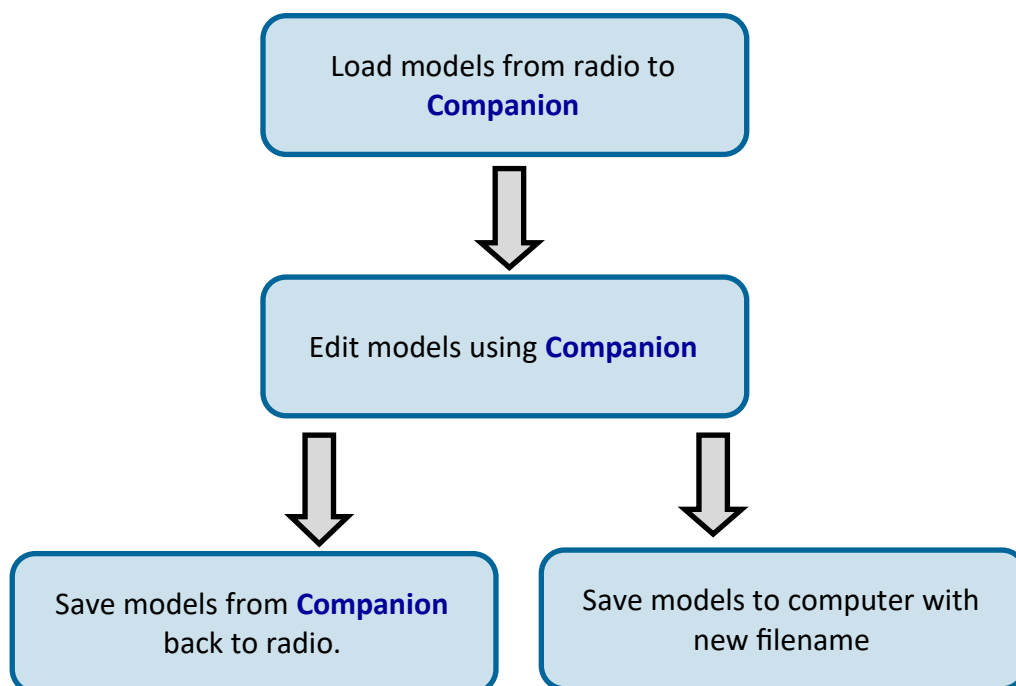
Managing Models on OpenTX Companion

The normal sequence of use of the **Companion** is to load any models from the transmitter onto the **Companion** using the read icon. This ensures that any changes made in the field are not lost. Once the models have been read into the **Companion**, any editing or changes can be made and then “written” back to the transmitter. At the same time, the changed model file can be saved to the computer. Always save the file with a new filename, that way any previous files can be reloaded back onto the transmitter if a problem is found. The easiest way to save with a new filename is to always include the full date in the filename. Using this procedure every time means that if any model settings are changed during a flying session these will appear on the **Companion** too.



Write models and settings to radio

Read models and settings from radio



Hint:

For users with more than one **OpenTX** transmitter one must set up a separate profile and model file for each transmitter. If one relies on the same model file for both, some of the transmitter settings, such as the calibration will be lost.

For two transmitters, either keep a separate set of models on each transmitter. If one transmitter is a backup of the other, and changes are made to a model whilst flying then copy any updated model files first from that transmitter to the Companion and save, and then use the Companion model copy facility to copy from one model file to the other.

Compare Models



Clicking on the **Compare Models** icon brings up a new window that allows several models to be compared. There is also a print facility to enable a printed copy to be obtained.

Compare Models

General Model Settings

Magician	Sir Crashalot
Name: Magician	Name: Sir Crashalot
EEPROM Size: -1 bytes	EEPROM Size: -1 bytes
Timer1: Name(Timedown), 08:00, THt	Timer1: Name(Time), 08:00, THt
Timer2: Name(Timeup), 00:00, THt	Timer2: Name(Timeup), 00:00, THt
Timer3: 00:00, OFF	Timer3: 00:00, OFF
Module1: FrSky XJT (D16), Channels(1-8) Receiver number(5)	Module1: FrSky XJT (D16), Channels(1-16) Receiver number(15)
Module2: OFF	Module2: OFF
Trainer port: Master/Jack	Trainer port: Master/Jack
Throttle Trim: Disabled	Throttle Trim: Disabled
Trim Increment: Exponential	Trim Increment: Exponential
Center Beep:	Center Beep:

Flight modes

Flight mode	Switch	Fade	IN	Fade	OUT	TrmR	TrmE	TrmT	TrmA	TrmS	Trm6
FM0	----	0	0	0	0	8	0	8	0	0	0
FM1	----	0	0	0	0	FM0	FM0	FM0	FM0	FM0	FM0
FM2	----	0	0	0	0	FM0	FM0	FM0	FM0	FM0	FM0
FM3	----	0	0	0	0	FM0	FM0	FM0	FM0	FM0	FM0
FM4	----	0	0	0	0	FM0	FM0	FM0	FM0	FM0	FM0
FM5	----	0	0	0	0	FM0	FM0	FM0	FM0	FM0	FM0
FM6	----	0	0	0	0	FM0	FM0	FM0	FM0	FM0	FM0
FM7	----	0	0	0	0	FM0	FM0	FM0	FM0	FM0	FM0
FM8	----	0	0	0	0	FM0	FM0	FM0	FM0	FM0	FM0

Global GV1 GV2 GV3 GV4 GV5 GV6 GV7 GV8 GV9

To compare models, drag and drop them anywhere in this window.

Close Print Print to file

Compare Models

Mixers

Magician	Sir Crashalot
CH1:Thr I1:Thr Weight(+100%) [RUD]	CH1:Ail I4:Ail Weight(+100%) [AIL1]
CH2:Ele I2:Ele Weight(+80%) [ELE]	CH2:Ele I2:Ele Weight(+100%) [ELE]
CH3:Rud I3:Rud Weight(+80%) [Rud]	CH3:Thr I1:Thr Weight(+100%) [Thr]
CH4:Ail I4:Ail Weight(+100%) [AIL]	CH4:Rud I3:Rud Weight(+100%) [Rud]
CH5:Ail2 I4:Ail Weight(-100%) [AIL2]	CH5 I4:Ail Weight(-100%) [AIL2]
CH7	CH7:Nose I3:Rud Weight(+100%) NoTrim [Nosewh]
CH9	CH9 LS Weight(+50%) NoTrim Offset(50%) [Gain A]
CH10	CH10 MAX Weight(+75%) Flight mode(Stabilise)
	+ = MAX Weight(0%) Flight mode(Off)
	+ = MAX Weight(+75%) Flight mode(Auto level)
CH11	CH11 MAX Weight(0%) Flight mode(Off)
	+ = MAX Weight(0%) Flight mode(Stabilise)
	+ = MAX Weight(+75%) Flight mode(Auto level)
CH17	CH17 Ail Weight(+100%) NoTrim Function(x)
	+ = Ele Weight(+100%) NoTrim Function(x)
CH20	CH20 TrmT Weight(+100%)

Outputs

Channel	Subtrim	Min	Max	Direct	Curve	PPM	Linear
CH1:Thr	+0.0%	-100.0%	+100.0%	NOR	----	1500	N
CH2:Ele	+0.0%	-100.0%	+100.0%	INV	----	1500	N
CH3:Rud	+0.0%	-100.0%	+100.0%	INV	----	1500	N
CH4:Ail	+0.0%	-100.0%	+100.0%	NOR	----	1500	N
CH5:Ail2	+0.0%	-100.0%	+100.0%	INV	----	1500	N
CH7	+0.0%	-100.0%	+100.0%	NOR	----	1500	N
CH9	+0.0%	-100.0%	+100.0%	NOR	----	1500	N
CH10	+0.0%	-100.0%	+100.0%	NOR	----	1500	N

To compare models, drag and drop them anywhere in this window.

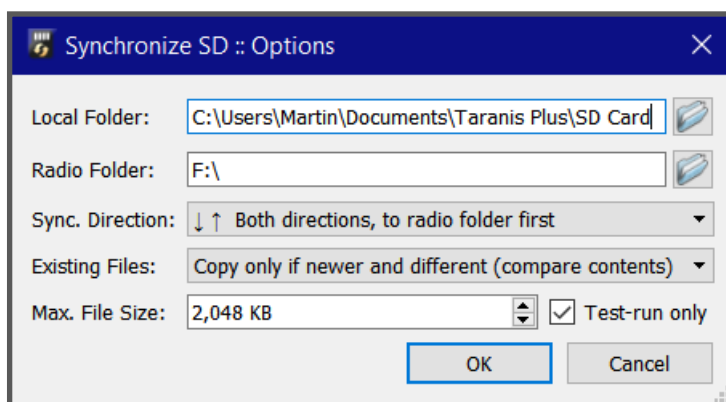
Close Print Print to file

Synchronise SD

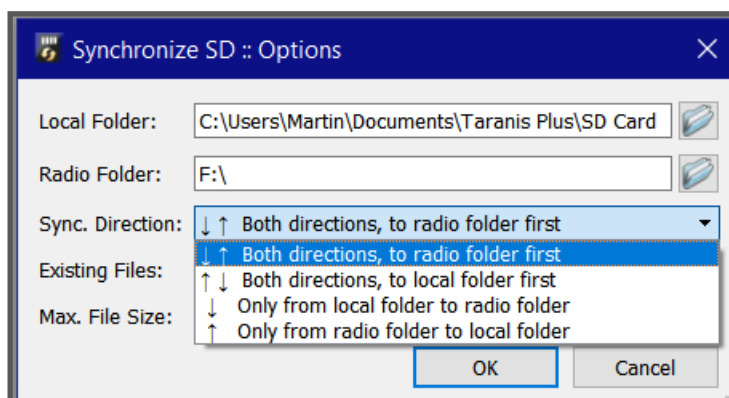


Clicking on the **Synchronise SD** icon brings up a new window that allows the radio SD card to be synchronised with the mirror copy held on the computer.

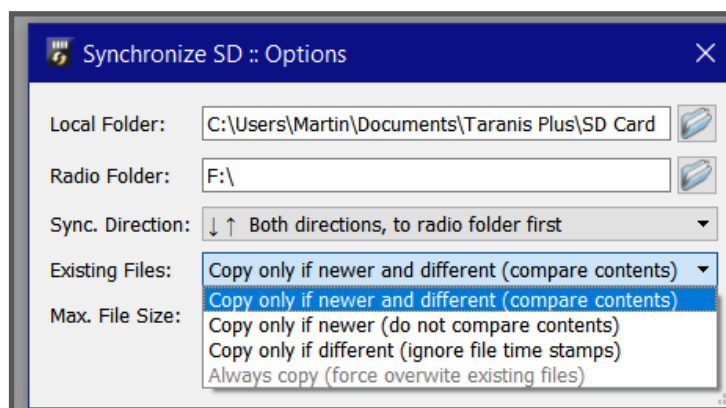
The **local folder** is the folder on the host computer, the **radio folder** is the location of the radio SD card.



The **Sync. Direction** offers different ways of synchronising the two folders.



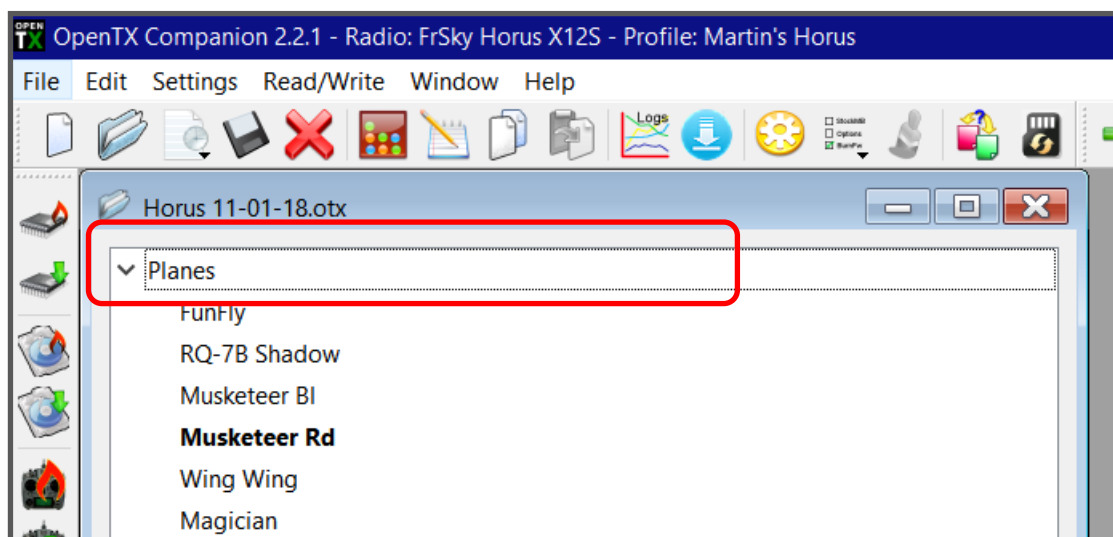
Existing files offers different ways of copying files from one folder to another.



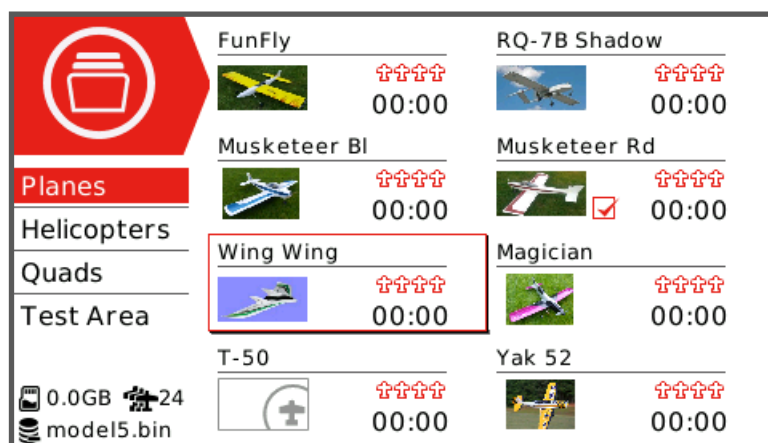
Finally, if unsure, do run a test file to ensure the routine does what you expected it to do. It will give a screen printout of the files copied or changed.

Model Categories

This feature is only available on the Horus radios. It allows models to be grouped into categories to save scrolling through, perhaps, a large number of models when selecting a model. On the Companion, after creating a new model, or opening a model file a window will open up listing the model(s).



The heading at the top of this window is the first category. Right clicking on this line will allow it to be renamed, or a further category added. On the radio this comes up as:



The categories are listed on the left hand side when a new model option is selected.

Edit Radio Profile

Before using the **Companion**, the user must go the **Companion Settings Menu** to customise the **Companion** for their transmitter.

Edit Settings

Radio Profile | Application Settings | Simulator Settings

Profile Name Martin's Horus

Radio Type FrSky Horus X12S

Menu Language en

Build Options

<input type="checkbox"/> ppmus	<input type="checkbox"/> nooverridech	<input type="checkbox"/> faichoice	<input type="checkbox"/> faimode
<input type="checkbox"/> multimodule	<input checked="" type="checkbox"/> eu	<input type="checkbox"/> noheli	<input type="checkbox"/> nogvars
<input checked="" type="checkbox"/> lua	<input type="checkbox"/> luac	<input type="checkbox"/> pcbdev	

Other Settings

SD Structure path C:/Users/Martin/Documents/Horus/SD Card **Select Folder**

Backup folder C:/Users/Martin/Documents/Horus/Backup of firmware **Select Folder**

☒ Enable automatic backup before writing firmware

General Settings AVAILABLE: Radio settings stored 2017-09-01 13:54

Default Stick Mode Mode 2 (RUD THR ELE AIL)

Default Channel Order T E R A

☐ Append version number to FW file name

☒ Offer to write FW to Tx after download

OK **Cancel**

Here the radio has been set to the Horus 12S.

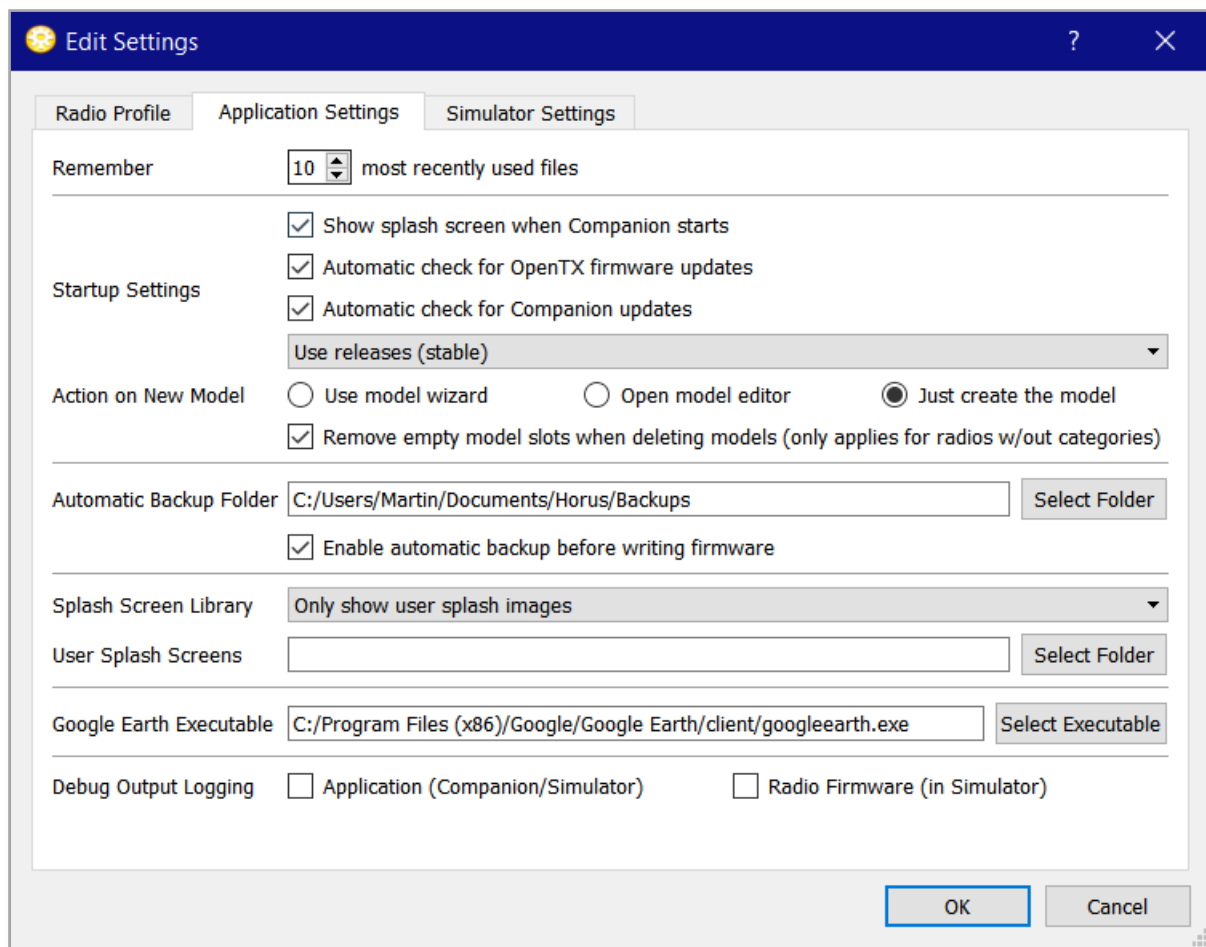
The Companion: Edit Radio Profile

Function	Options	Notes
Profile Name		It is possible to have different profiles if using more than one radio (even of the same type).
Radio Type		It is very important to select the right radio.
Build Options	ppmus	Displays PPM signals in microseconds (as in PWM modulation) instead of %.
	nooverridech	Disables Override Channel functions.
	faichoice	Allows FAI mode to be left OFF for practice to be turned ON for competition.
	faimode	Ticking this will prevent most telemetry being available.
	multimode	When enabled this provides support for using multimode modules in the radio module bay.
	EU	When selected it removes the DR8 FrSky protocol option (but not the associated firmware).
	noheli	Disables and hides the helicopter editing screen.
	nogvars	Disables and hides the global variables screen. Use with caution, in rare cases it can cause problems.
	lua	Enable the use of LUA scripts. Use of LUA scripts are outside the scope of this guide.
	luac	Enable use of compiled LUA scripts.
	Sq5font	A heavier weight font which some think shows up better on Taranis screen. (Not available for the Horus.)
	pcbdev	Option only available for the Horus. This is ONLY for those users with a pre-release version of the Horus. For normal production models (the vast majority) you must not tick this box.

The Companion: Edit Radio Profile

Function	Notes
SD Structure Path	This path must be given for the Companion to be able to access splash screens, model picture files, LUA files and sounds. There needs to be a copy of the SD card stored on the computer.
Backup folder	The file location of where firmware backup files will be stored on the computer
General Settings	Indicates whether the radio settings (e.g. calibration data) have been saved with this profile, and the date it was stored.
Default Stick Mode	Modes 1 to 4 allowed.
Default Channel Order	JR/Spektrum channel order: TAER Hitec/Futaba channel order: AETR FrSky S6R/S8R channel order: AETR Other FrSky receivers, no pre-defined order, just choose your own to suit your own needs.
Append version number to FW filename	This can create very unwieldy filenames, but nevertheless useful!

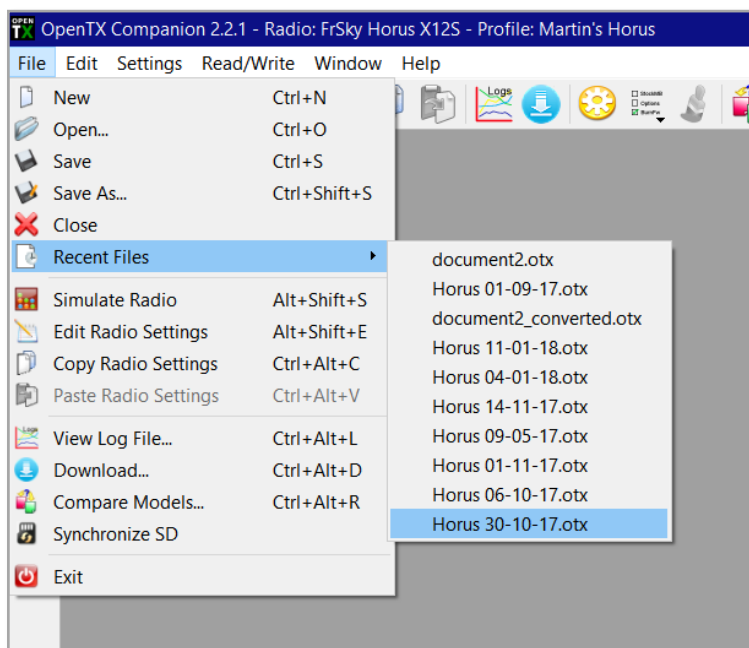
The Companion: Edit Application Settings



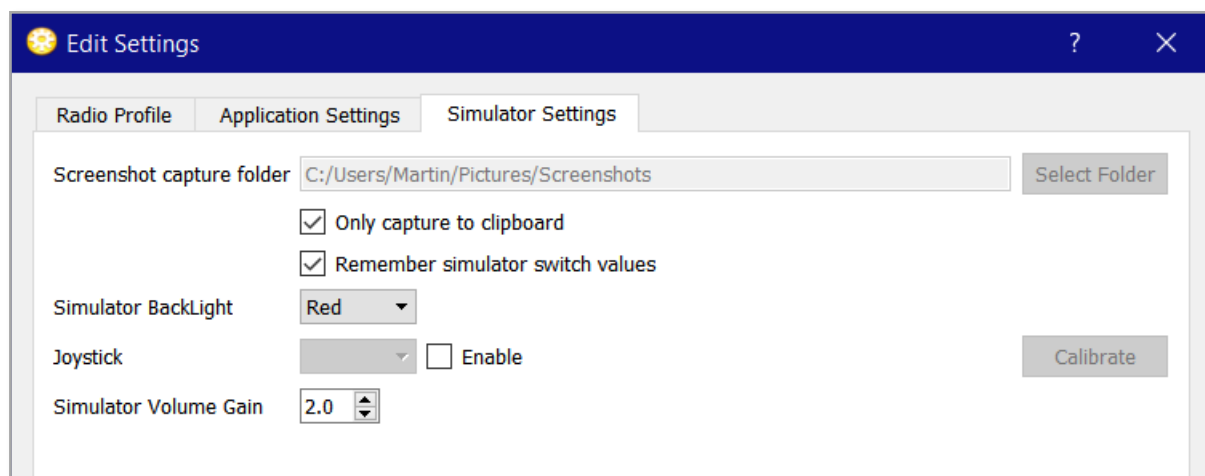
The above screen is mostly self-explanatory.

The **Google Earth Executable** file path is needed if using GPS telemetry to be able to display track of flight using Google Earth. It is the file path of where Google Earth is located on the computer. (See telemetry section).

Files to keep is a little misleading. It actually means the number of model files that will be displayed in the drop down box when you go to **File** and the **Recent Files** as shown here:



The Companion, Edit Simulator Settings

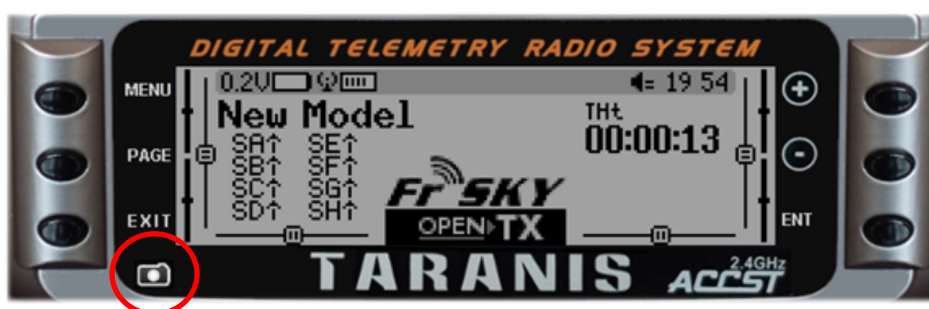


Screenshot Capture Folder Identifies the file path for screenshot captured pictures used on the simulator. See below.

Simulator Backlight Changes the colour of the simulator transmitter screen.

Simulator Volume Gain This allows the volume of the simulator to be adjusted to suit the computer being used. The simulator will give all spoken warnings, bleeps and messages in exactly the same way as the transmitter does.

It is possible to “capture” the Simulator screen shot and save to disk. Simply select a folder for the screen shots to be saved to. To capture a screen, click on the small camera icon in the bottom left hand corner of the Taranis or Horus screen on the simulator:



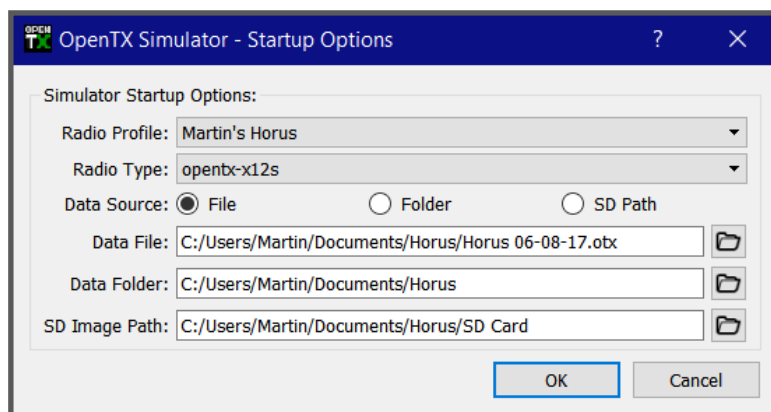
and you will save the following:



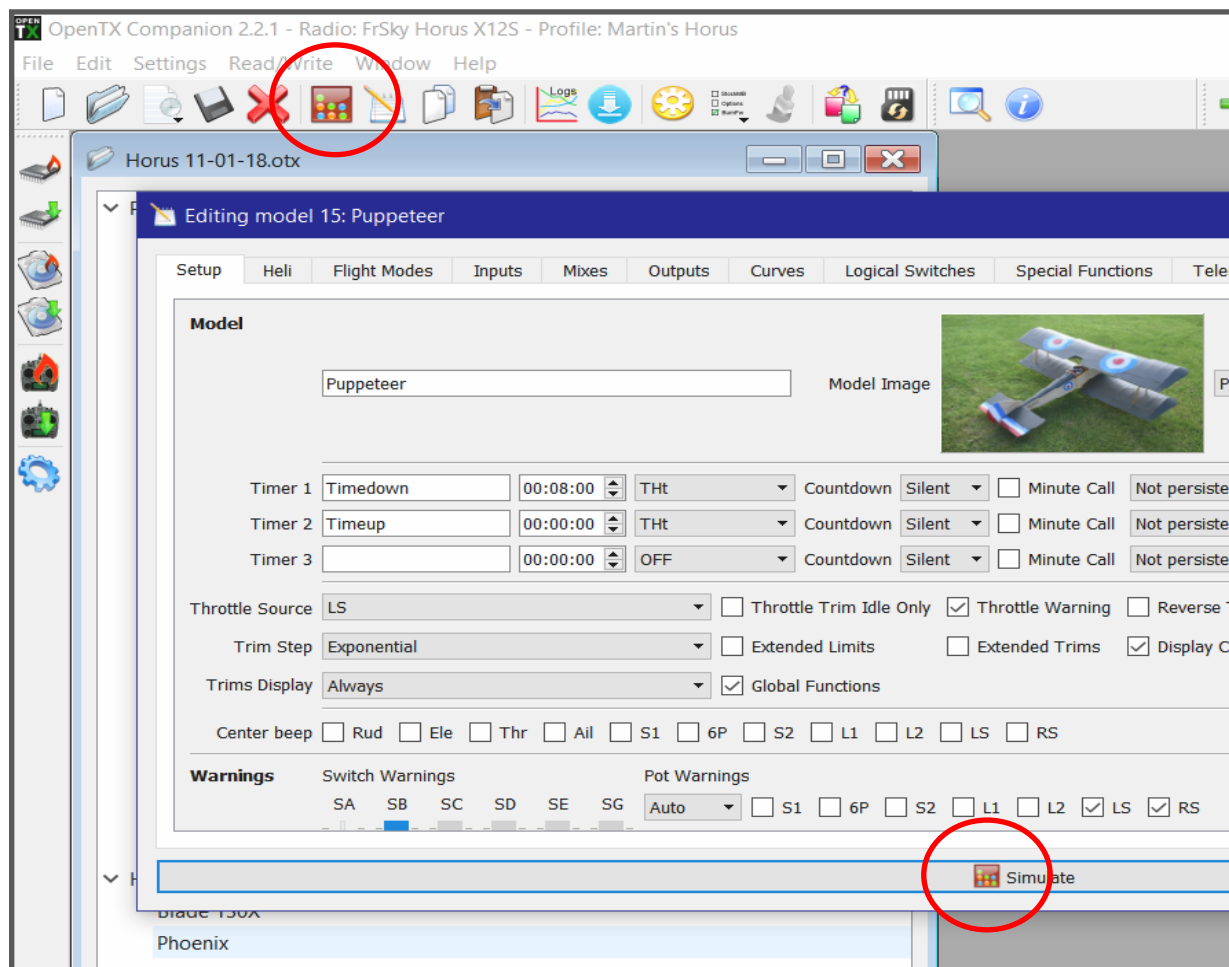
The OpenTX Simulator

There are three ways of accessing the simulator. It is now available as a separate program which is included when **OpenTX** is downloaded. On Windows 10 it should show up on the recently added list of the sidebar. Otherwise it can be found in the directory where **OpenTX** is stored on the computer.

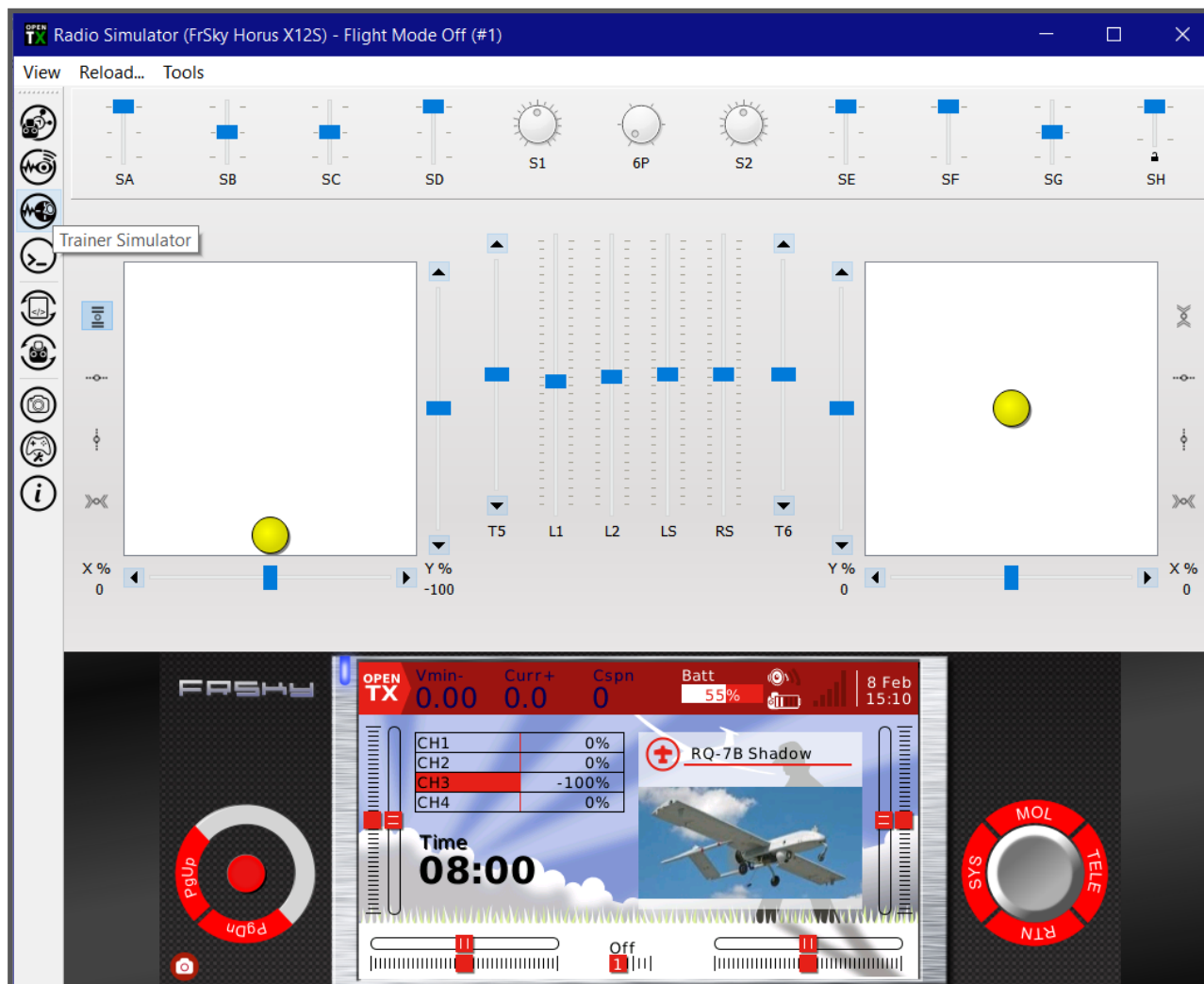
When opened, a dialogue box appears. Here you can select and identify the location of the correct data file - the model file to be opened.



The second and third methods are available from the **Companion** window:



Why two ways of opening the simulator? If the simulator is opened from the menu bar, it operates as if you have just switched on the radio, and you will get all the warning messages and any text file loaded. If the simulator is opened from the **Model Settings** window, then it skips these warning messages and the text file.



The “look” of the simulator will depend on which radio is being used. Only those controls appropriate for the radio will be displayed and the simulation of the radio screen will change. To see which each of the symbols does, hover the mouse over the symbol or icon and it will give a brief description as can be seen above. .



Radio outputs

Telemetry simulator

Trainer simulator

Debug output

Reload the LUA environment

Reload all radio data without restarting the simulator

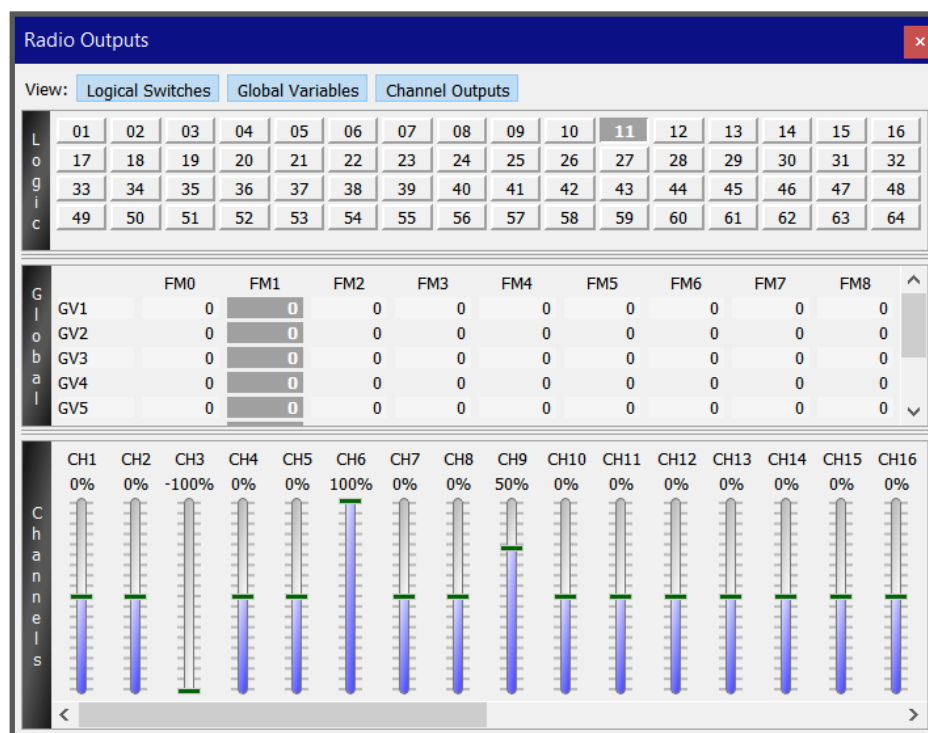
Save a screenshot of the radio screen

Configure joystick

Simulator controls using the keyboard.

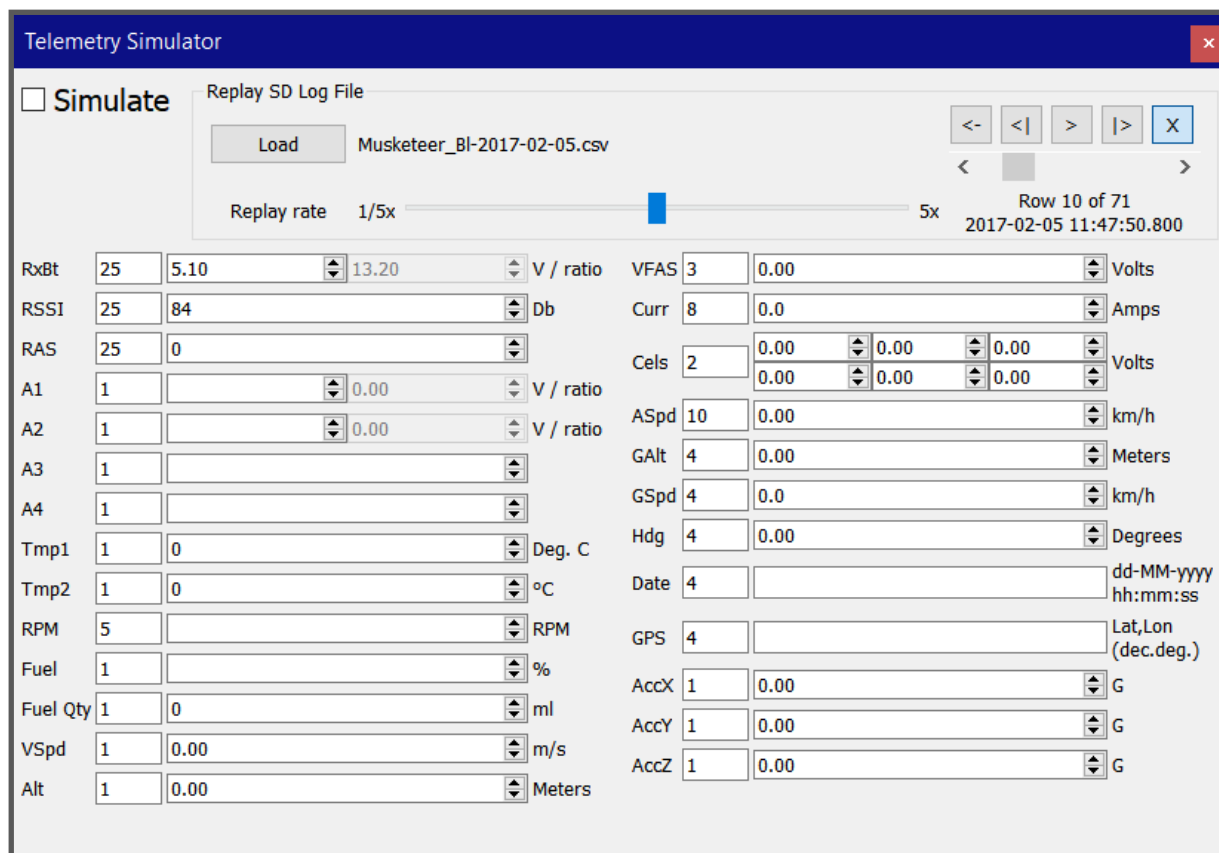
Radio Output

This displays the channel outputs, logical switches and global variables. Not all the information has to be displayed at once, click on the tabs at the top to change. If the window is made wider, all 32 channels can be displayed.



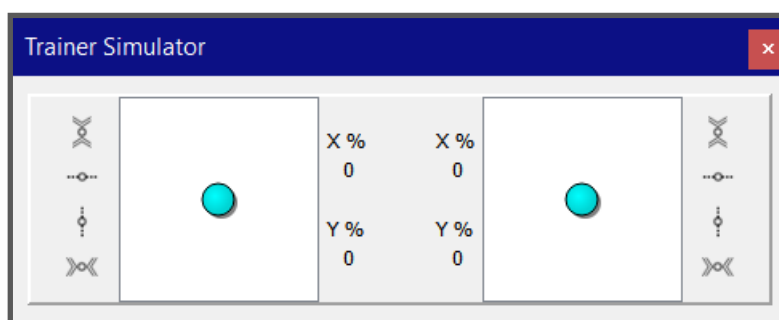
Telemetry Simulator

This window enables a **Log** file to be loaded and run.

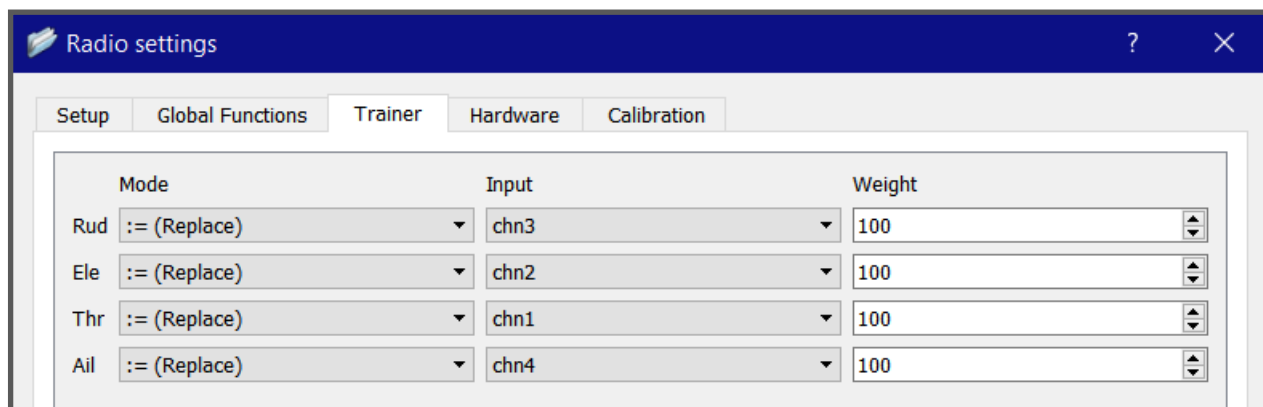


Trainer Simulator

This is a simulator for checking the function of the trainer. Of course, it is no substitute for an actual ground check using the model, but it is very useful for testing out the programming to see if it functions as desired.



For the trainer simulation to work correctly, the trainer settings must be correctly entered in the **Radio Settings** menu and should mirror the settings on the slave radio.



Debug Output

This is for advanced users and is outside the scope of this documentation.

Reload LUA/Reload radio

These simply reload scripts and settings for the radio without having to close and restart the simulator.

Save a Screenshot

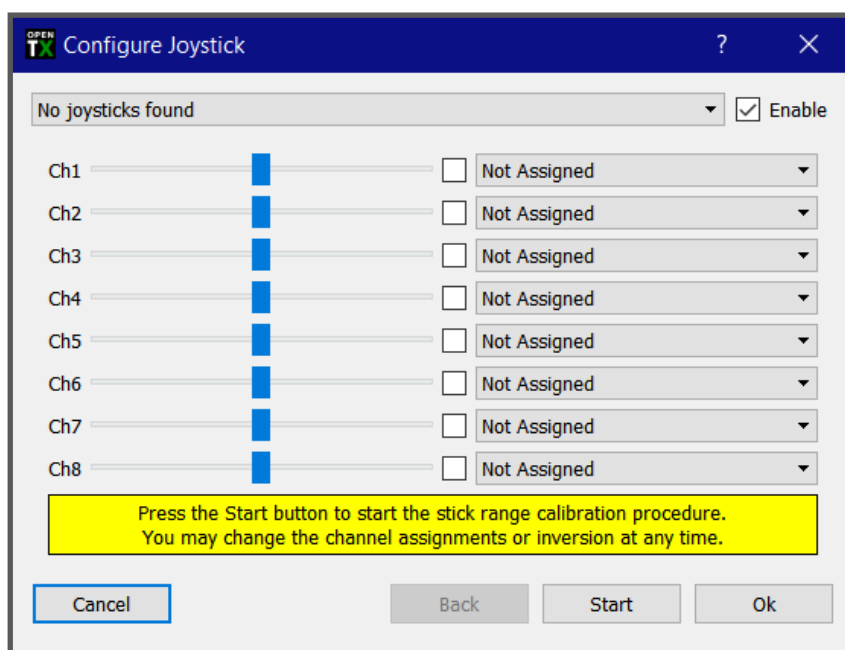
This is exactly the same as clicking on the camera icon in the bottom left hand corner of the radio screen simulation, and makes/saves a copy of the simulator screen. This facility can be configured in the **Radio Settings** menu on the **Companion**. (See also page 15 in this section.)

Simulator Controls

Displays a list of which key combinations can be used with the simulator.

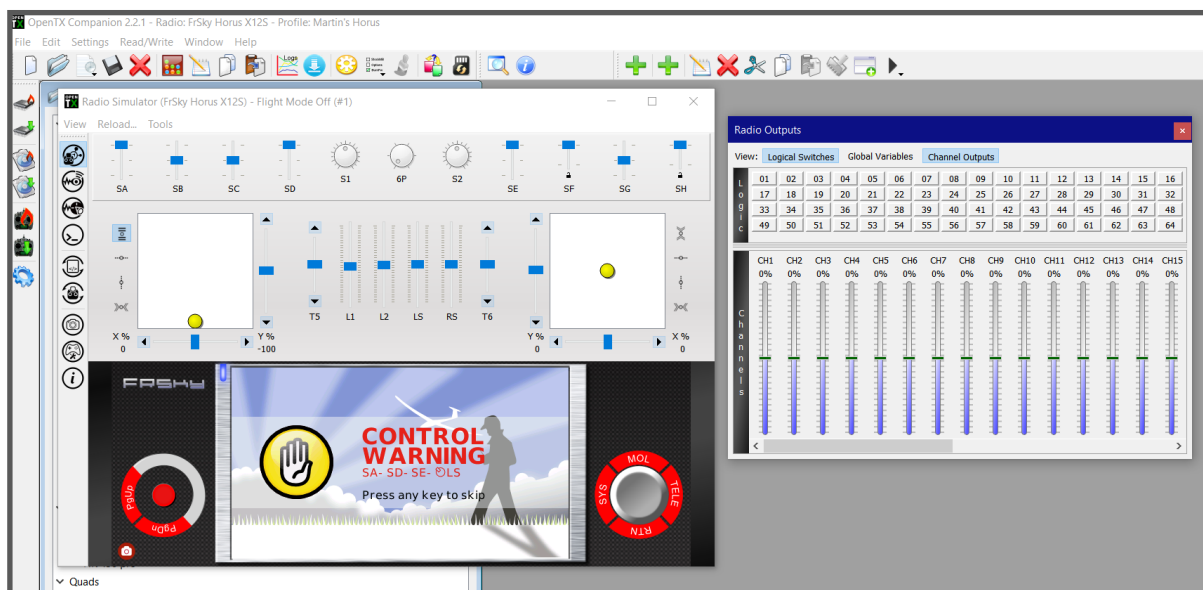
Configure Joystick

This enables the joysticks to be calibrated.

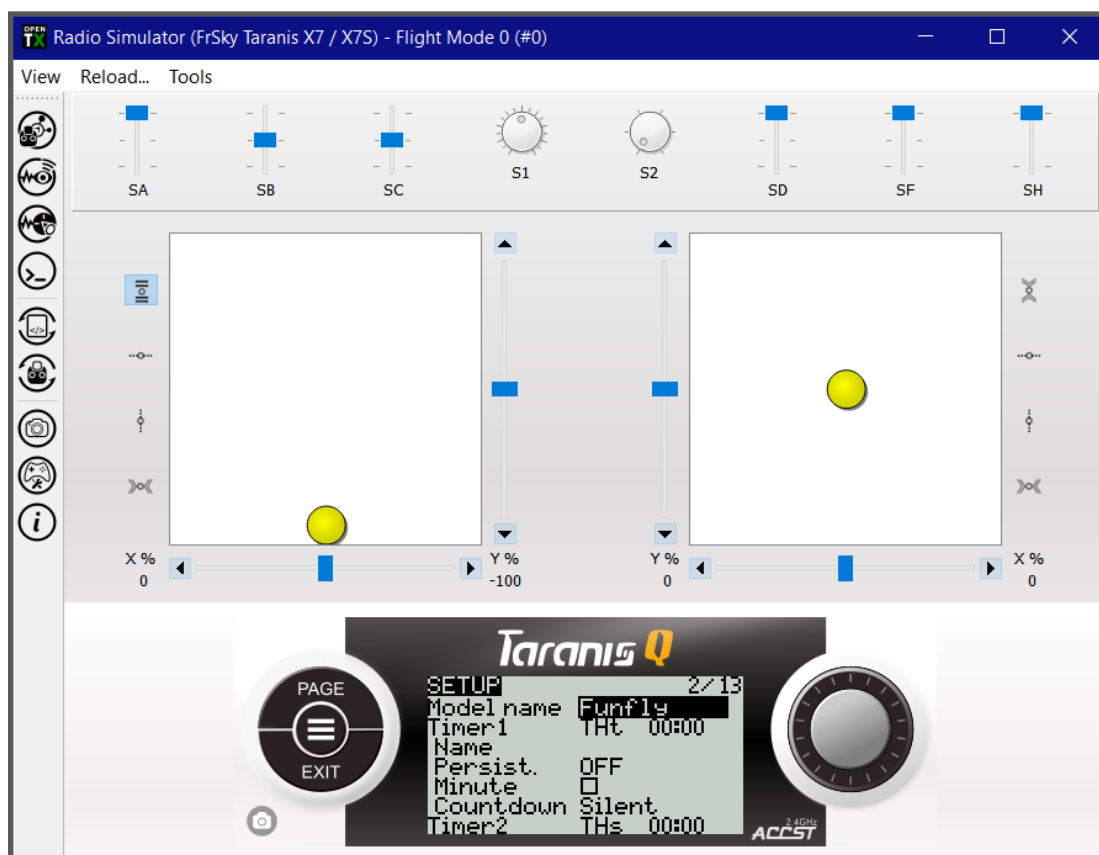


Working with the Simulator

The simulator consists of a number of windows. Therefore it is often necessary to resize each window and arrange them carefully on the screen for best effect. One will almost always need the **Radio Outputs** window. E.g.



Surprisingly, the simulator can also be used to replicate the functions of the buttons on the radio and see all the radio menus. Thus:



The computer mouse is used to “click” the appropriate buttons and the scroll wheel is used instead of the rotary encoder on the Horus transmitters and the Q X7. A long press on the radio button is a long press on the radio simulator button, etc.

A word of caution: Do note that it is also possible to set up telemetry screens widgets, etc on the simulator. However, unlike the rest of the Companion, these are not saved to the model file. Indeed while all sorts of things can be changed through the radio simulator screen, they are not changed in the model file. No doubt this feature is some way down the list of desirable additions to the program that the program developers are currently working through.

However, this feature is very useful in learning to move from setting up and editing models on the Companion, and learning to do the same on the radio.

