



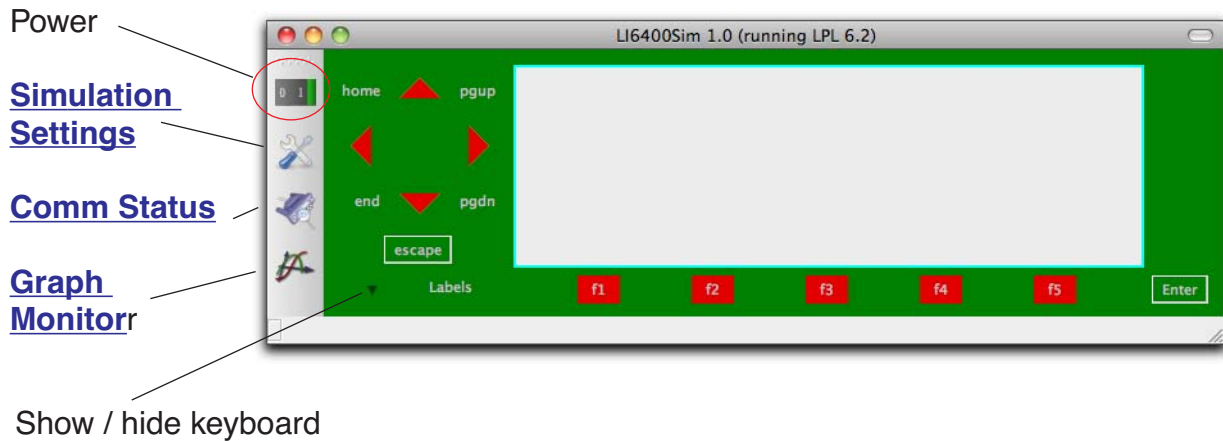
LI6400Sim


Simulating LI-6400 / LI-6400XT

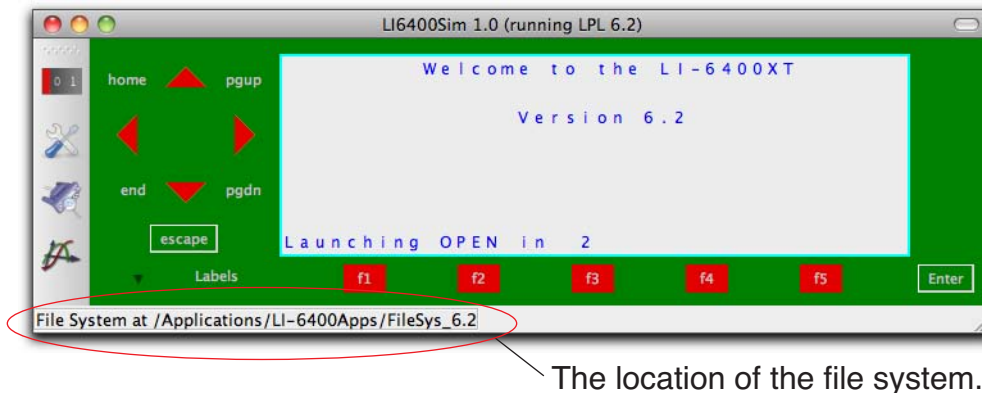
LI6400Sim is a cross-platform application (Windows™, Mac OS X, and Linux) for simulating and LI-6400 or LI-6400XT.

A Quick Tour

Double click the LI6400Sim icon to run the program.



To run the simulator, click the power button  in the tool bar. You should see the LI-6400 Welcome screen.



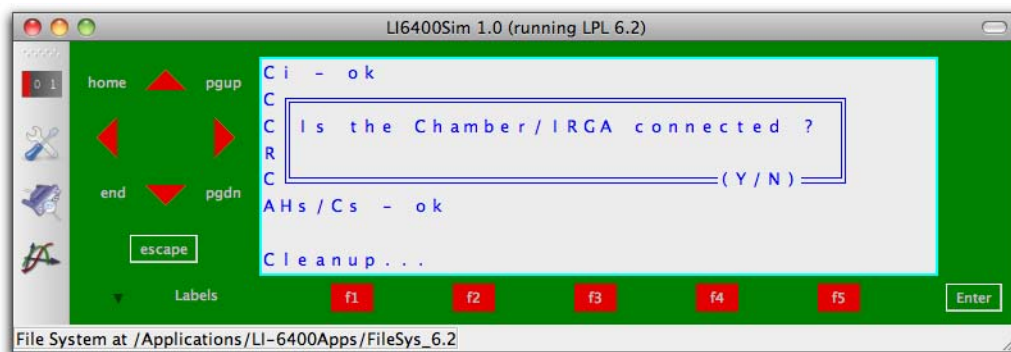
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If, instead, you get the LPL screen,

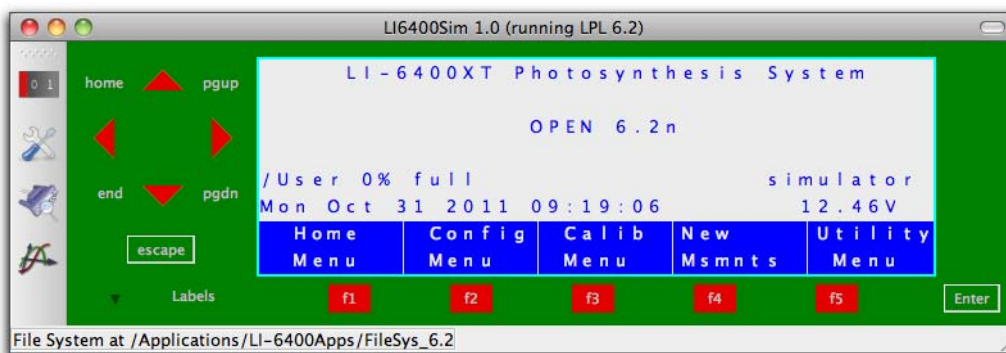
```
Editor Filer Lterm Net Run Shell Xchg  
LPL 6.2.0  
Copyright 1995 - 2012 LI-COR, inc  
  
/ 976 kbytes
```

it means the program could not find an OPEN file system to run. See [Preferences](#).

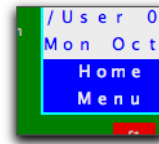
Once OPEN loads and runs, you will eventually get to where the simulation is looking for keyboard input from you, such as



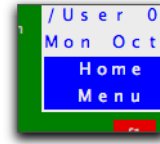
or



The simulator will accept keyboard input whenever there is a cyan border around the display. The border will be there when LI6400Sim is the active window.

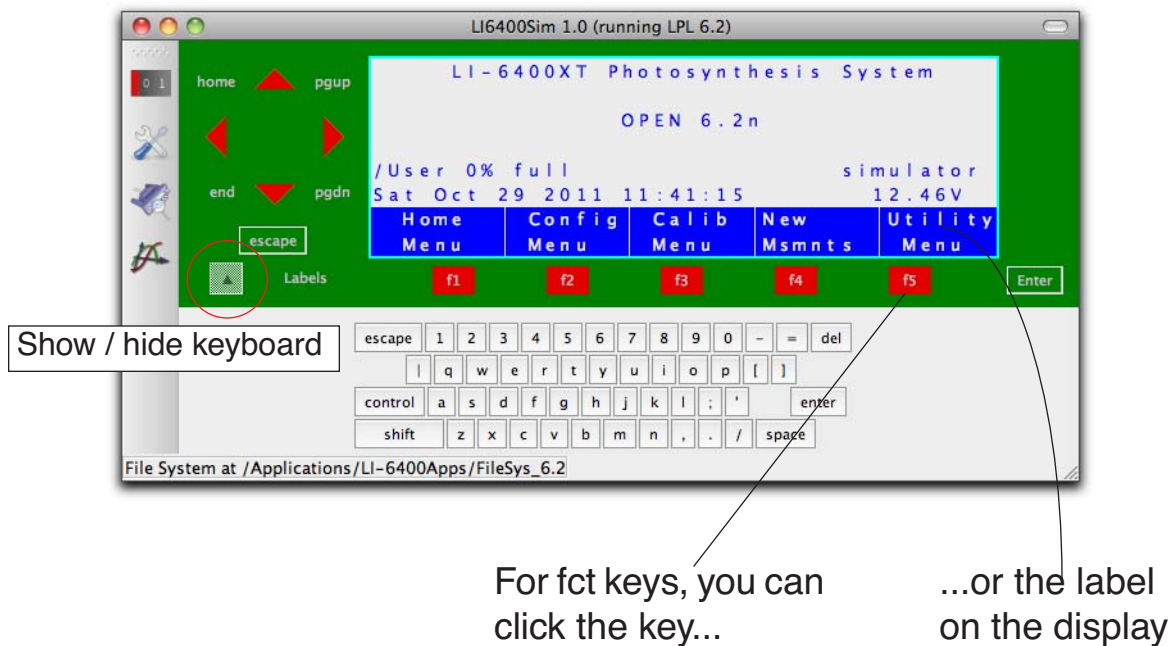


Border




No border

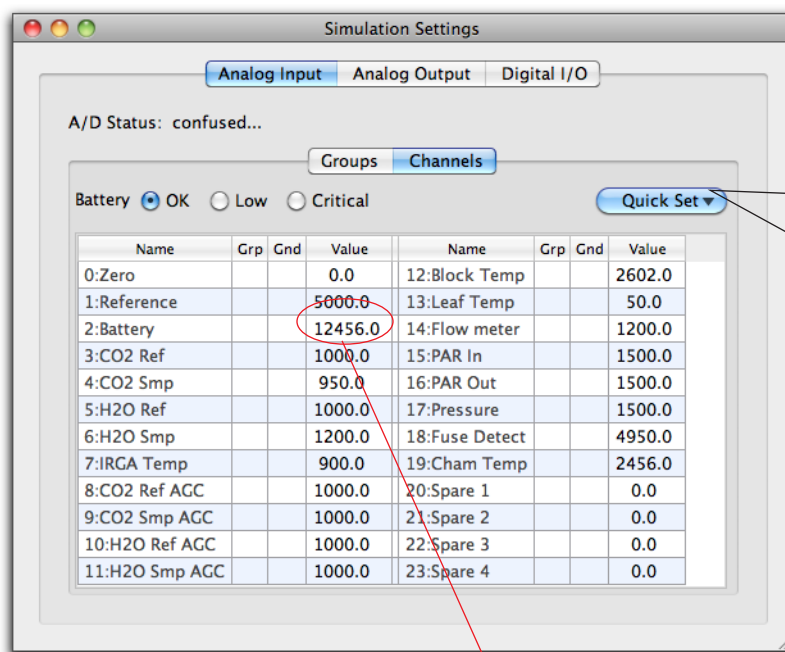
You can also use the on-screen cursor control keys, function keys, and keyboard to interact with LI6400Sim.



Simulation Settings

Click the Settings button  in the tool bar. The Settings window shows the state of the analog inputs, analog outputs, and digital I/O.

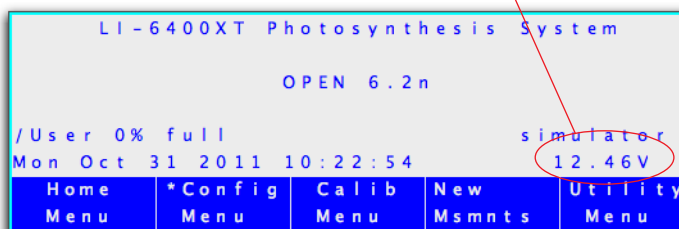
The Analog Input tab sheet shows the current signal (can be set by you) on each of the 24 analog input channels.



You can change the values (mV) all at once...

Zero all
Typical values

...or edit them individually.

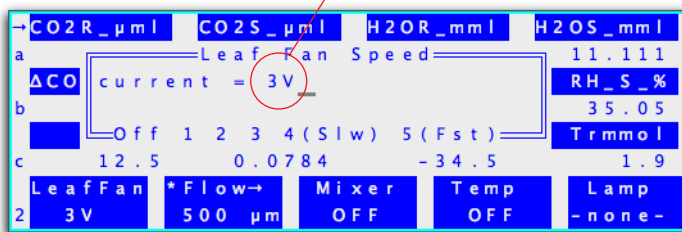


You can set battery voltage, for example.

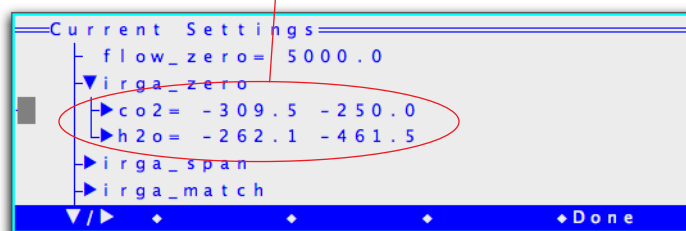
Note that in the simulator, low battery warnings are tied to the battery state radio buttons, not the analog value of battery voltage.

The Analog Output tab sheet shows the state of the 20 D/A channels.

Name	Value	Name	Value
0:Flow Control	1333.69	10:(LCF Far Status)	0
1:CO2 Control	0	11:LCD Contrast	0
2:Lamp Control	0	12:CO2 Ref Zero	-309.5
3:	0	13:CO2 Sample Zero	-250
4:Cooler Set Pt	0	14:H2O Ref Zero	-262.1
5:	0	15:H2O Sample Zero	-461.5
6:Pump Speed	4500	16:Flow Meter Zero	5000
7:Chamber fan	3000	17:(LCF Msr)	0
8:	0	18:(LCF Blue)	0
9:	0	19:(LCF Far Red)	0

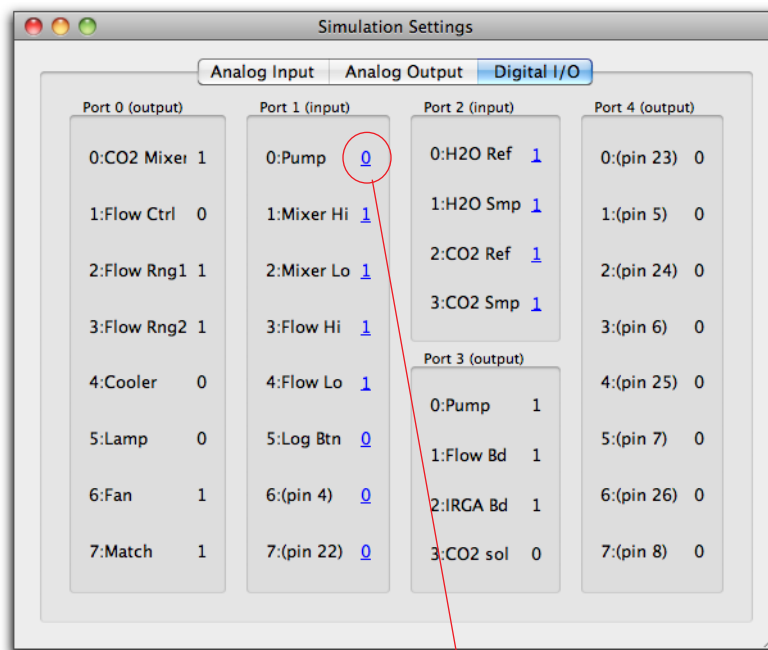


Changing the fan speed in New Measurements mode will change DAC channel 7.

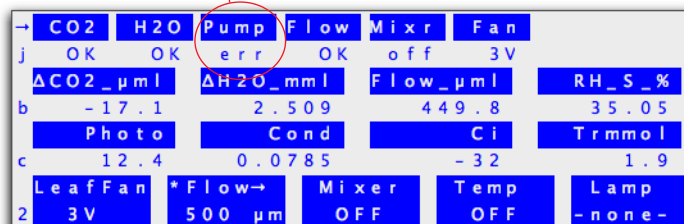


The current IRGA zero parameters can be viewed in Calib Menu | View Settings | View Current.


The Digital I/O tab sheet displays shows the state of all digital inputs and output. You can change the inputs (blue underlined) by clicking on them.

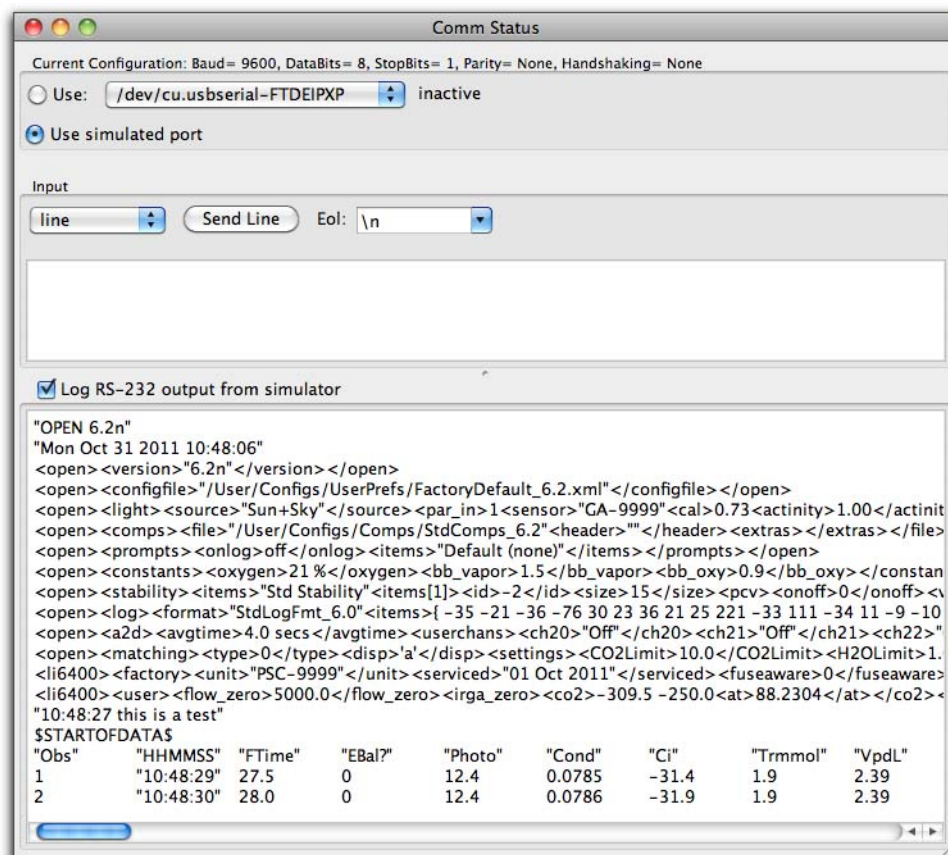


For example, click the Port 1 Pin 0 value to 0, and see a Pump status error created.



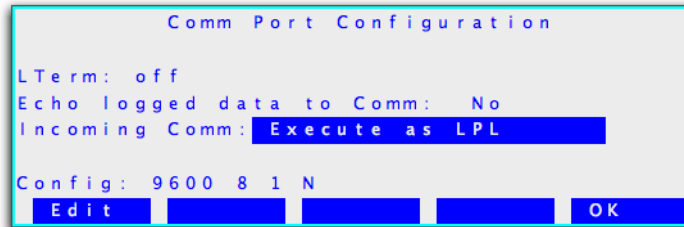
Comm Status

Press the Comm Status button  in the tool bar. The Comm Status window controls what's done with RS-232 output from the simulator. It can be shown in a window (as below), or sent to an actual RS-232 port.

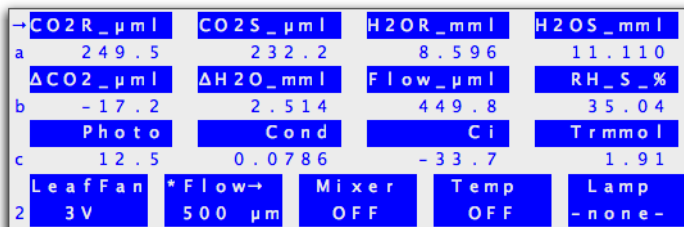


The Comm Status window can also be used to test incoming RS232. The example below shows a test of interpreting incoming data as LPL commands.

1. Utility Menu | Config Comm Port to treat incoming RS-232 as LPL commands.

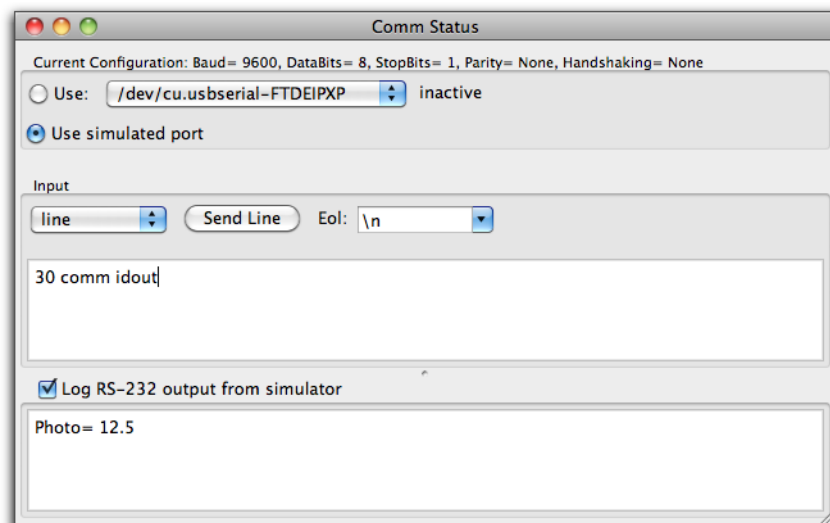


2. Go to New Measurements mode



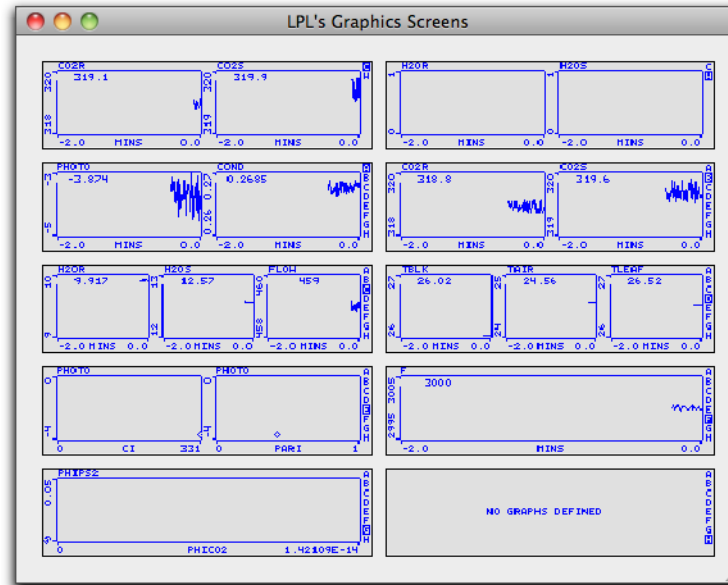
3. Send a command

4. View the response.



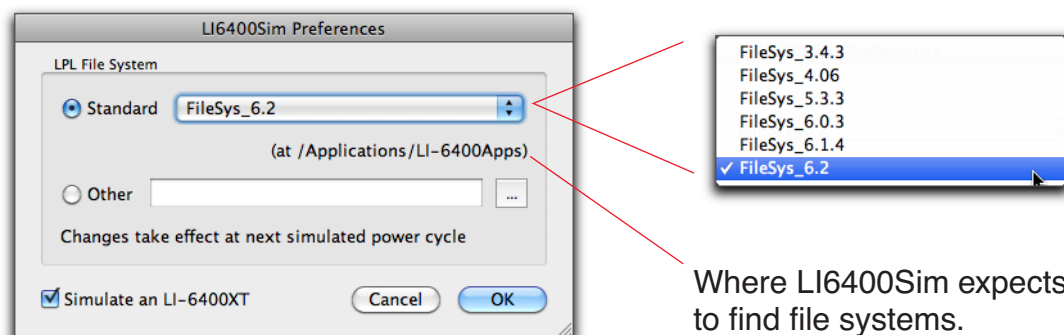
Graph Monitor

The Graph Monitor button  in the tool bar shows all 10 graphics screens at once.

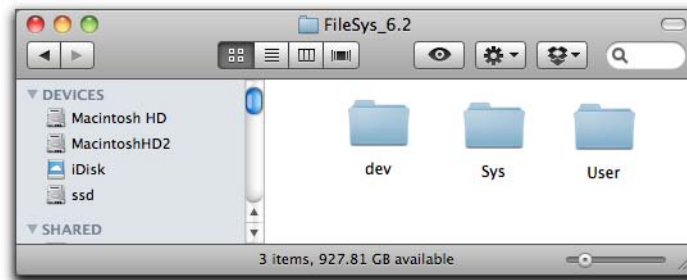


Preferences

The Preferences window allows you to select the file system to be used by the simulator.



A “file system” for LI6400Sim is simply a folder that contains three other folders: /dev, /Sys, and /User.



LI6400Sim will list the file systems it finds in the drop down box labelled “Standard”. Where it looks to find them depends on the platform:

Mac OS and Windows: In the directory containing the application (.app or .exe file).

Linux: in the directory /usr/share/li6400/.

You can also specify that LI6400Sim use a file system located anywhere else.