![Split Second logo] **SPLIT SECOND**

Split Second and TunerPro RT

Setup and operational tips for using TunerPro RT (see <http:tunerpro.net>) to tune and monitor the operation of Split Second calibrators. Be sure you are using version 5.00.8853 or later of TunerPro RT, and support the program's author by providing a donation to his efforts.

Preferences

When first using TunerPro RT it is important the Data Acquisition and the Emulation preferences include certain settings as illustrated here. Under the **Tools->Preferences** menu and Data Acq./Emulation tab, be sure the Data Acquisition & Logging interface is
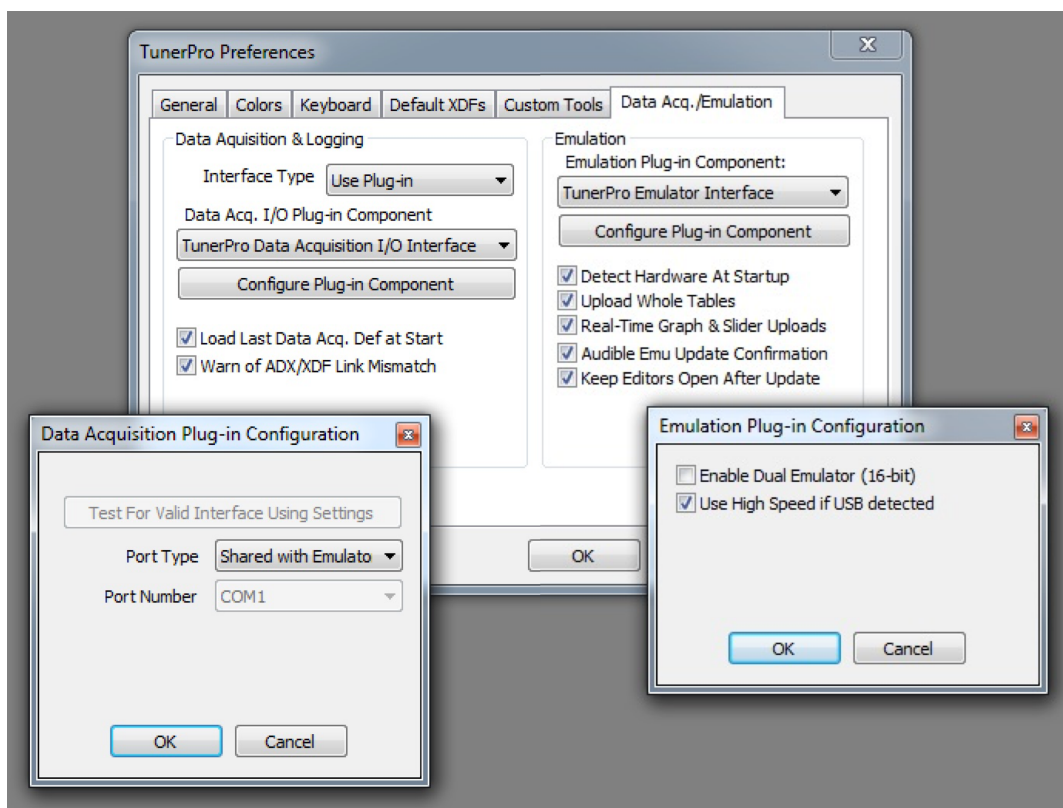
set to "Use Plug-in" and "TunerPro Data Acquisition I/O Interface" is the selected component. Configure the data acquisition plug-in's port type to be "Shared with Emulator".

Likewise under Emulation select the "TunerPro Emulator Interface" plug-in and in its configuration be sure to deselect "Enable Dual Emulator", and select "Use High Speed if USB detected". Also under the Emulation tab be sure "Upload Whole Tables" is selected.

Definition Files

Three files are required for full utilization of TunerPro RT with Split Second devices: A "Bin" binary image file; an "XDF" file for defining table, scaler, and flag parameters; and an ADX data acquisition definitions file for monitoring and table trace definitions.

Under the menu **File->Open Bin...** select the Bin file supplied with the device—or better, a copy that you can freely modify so the original can remain unchanged from its factory values. (If you received the files in a .zip archive then you automatically have original copies by simply re-extracting them.)

Under the menu **XDF->Select XDF...** select the XDF file supplied with the device. It will typically have a similar name as the Bin file, above.

Under the menu **Acquisition->Load Definition...** select the ADX file supplied with the device. It too will typically have a similar name as the XDF and Bin files, above.

Connect to the Device

With the Split Second device connected to your computer via USB, select the menu item **Tools->Initialize Emulation Hardware**. TunerPro RT should show an annunciator "Hardware:" followed by the device name and version in a box along the lower left edge of its window. (If the emulation preference "Detect Hardware At Startup" is checked then the device may already have connected. Reconnecting does not harm anything.)
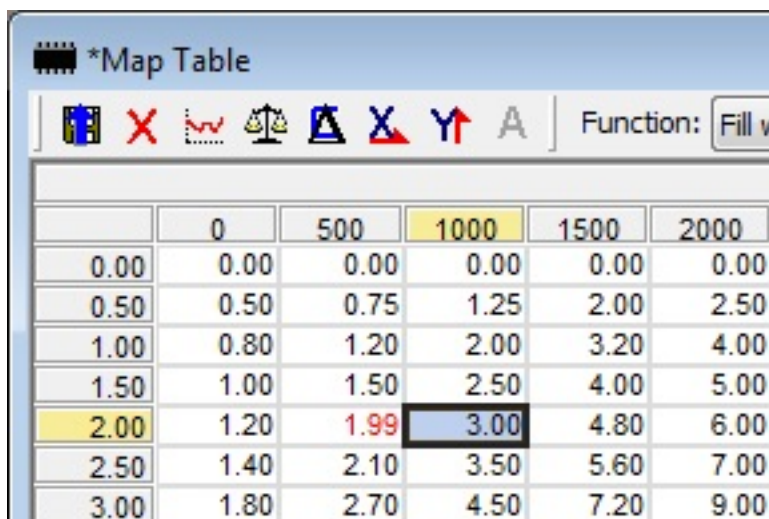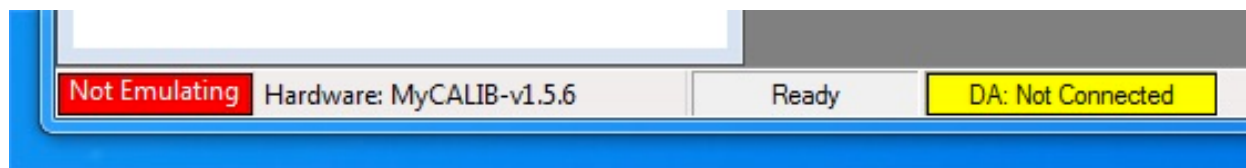

Next select the **Tools->Emulation->Enable Emulation** menu item, and also the **Acquisition->Start/Stop Data Scan** menu item. The annunciators should then look something like this showing both "Emulating" and "DA: Connected":
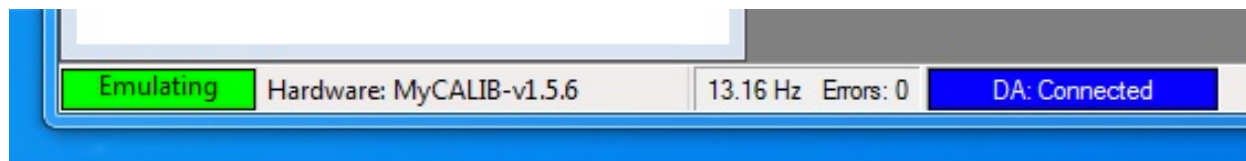
And finally select the **Tools->Emulation->Download Bin From Emulator** menu item to get all of the table, scaler, and flag contents from the device and store them in computer memory for editing and display. In this way you will be editing the current device's values as a starting point within TunerPro RT.

Editing Table Values and Uploading

To affect a change of value(s) to tuning parameters within the device you must edit it in their table in TunerPro RT and then upload just that table (*not* the entire Bin) to the device. Below is shown a table with one value altered ("1.99") and the cell selection moved out of the edited cell.

A table is not considered "changed" unless at least one value in it is different than what was last downloaded from the device or altered in the computer's memory (the local copy of the Bin). When the values have been edited—indicated as red characters —they can be uploaded to the device (and saved in the Bin image in memory) by clicking the disk icon with the blue up-arrow in the upper left of the table's window. The adjacent red-X icon closes the table *without* saving (or uploading) any changes.

Keep in mind:

- After altering a table value you must click a different cell, or move out of the altered cell with an arrow key, otherwise the cell is not marked as closed and won't get its valued uploaded.
- If a table is open and you re-download the Bin you have to close and reopen the table to show the latest Bin data.
- If a table upload fails you should attempt to re-upload the table. However, TunerPro RT may not consider the table as "changed" so you may have to edit a value in it so the (re)upload is triggered.

Trace and Dashboards

Most tuning tables that are driven by realtime variables (pressures, rpm, voltages, etc.) can have an indicator that follows or "traces" the value of the driving variables and highlights the location within the table those values select. To enable/disable tracing on such a table select the menu item **Acquisition->Toggle Data Tracing**.

Additionally, such realtime variables may also be assigned to gauges on a virtual dashboard that can be displayed by selecting the menu item **Acquisition->Show Dashboard...**

Save Your Tuning

After making changes to your Bin's tables/scalers/flags and uploading them you may wish to keep a copy of them for offline reference or to restore them to the device. It is recommended that you do not save changed Bin data back into the factory-supplied Bin file in case you need to get back to the original pre-tuned setup.

To save your tuning work select the menu item **File->Save Bin As...** (be careful to select "**Save Bin _As..._**", not simply "**Save Bin**").