

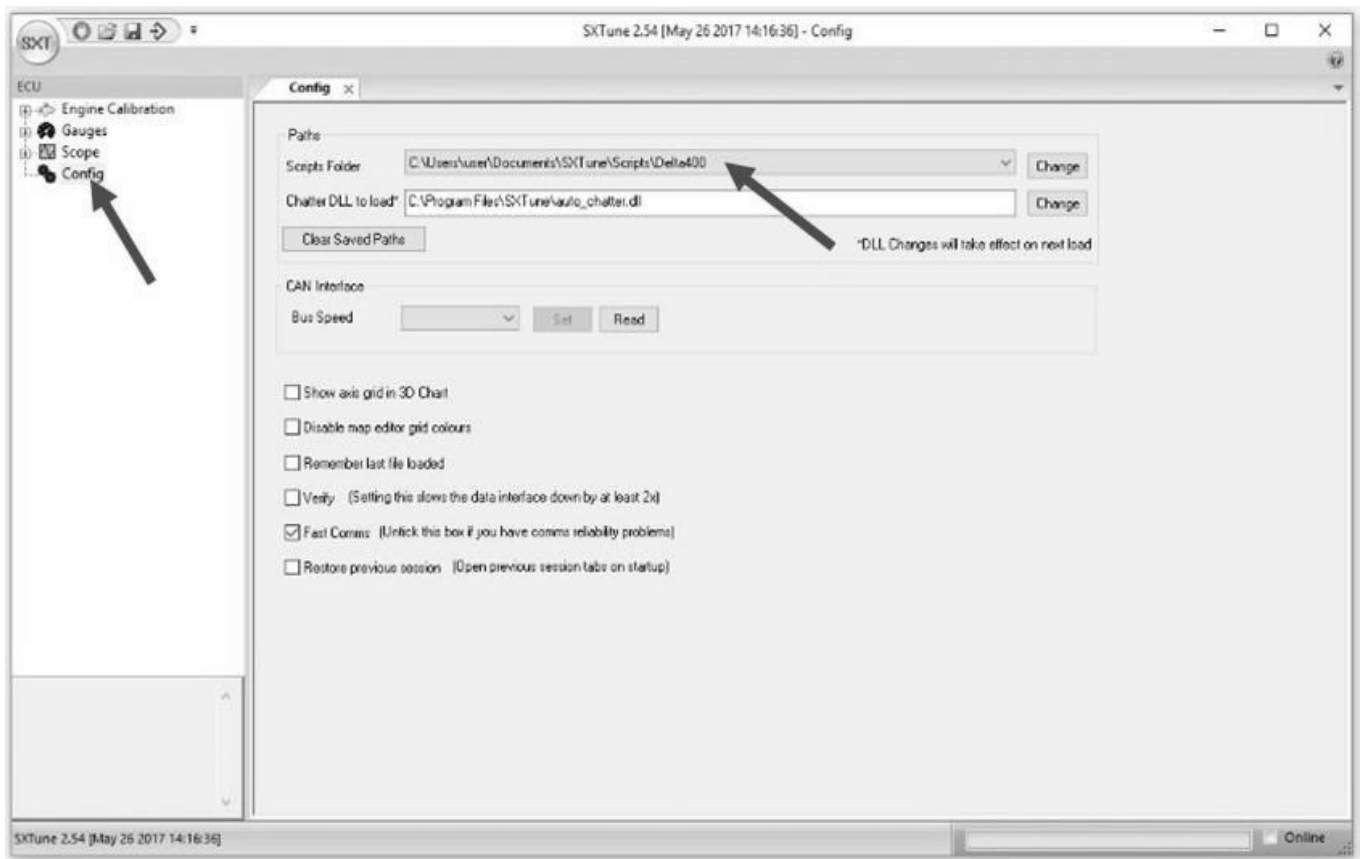
# Loading Firmware and Calibration Files

This page describes how to load new firmware and/or load a new calibration file into the ECU.

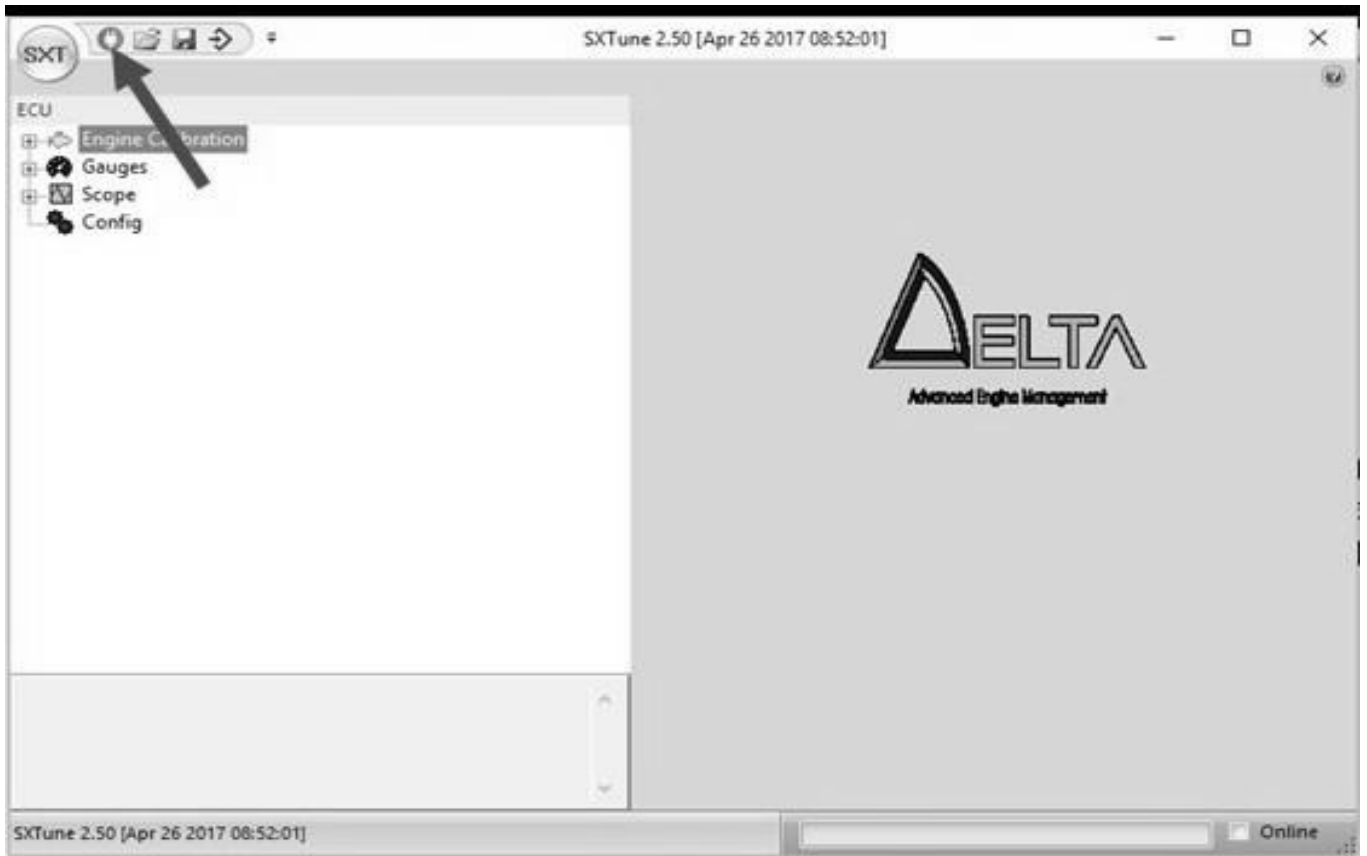
## Loading Firmware

### Procedure

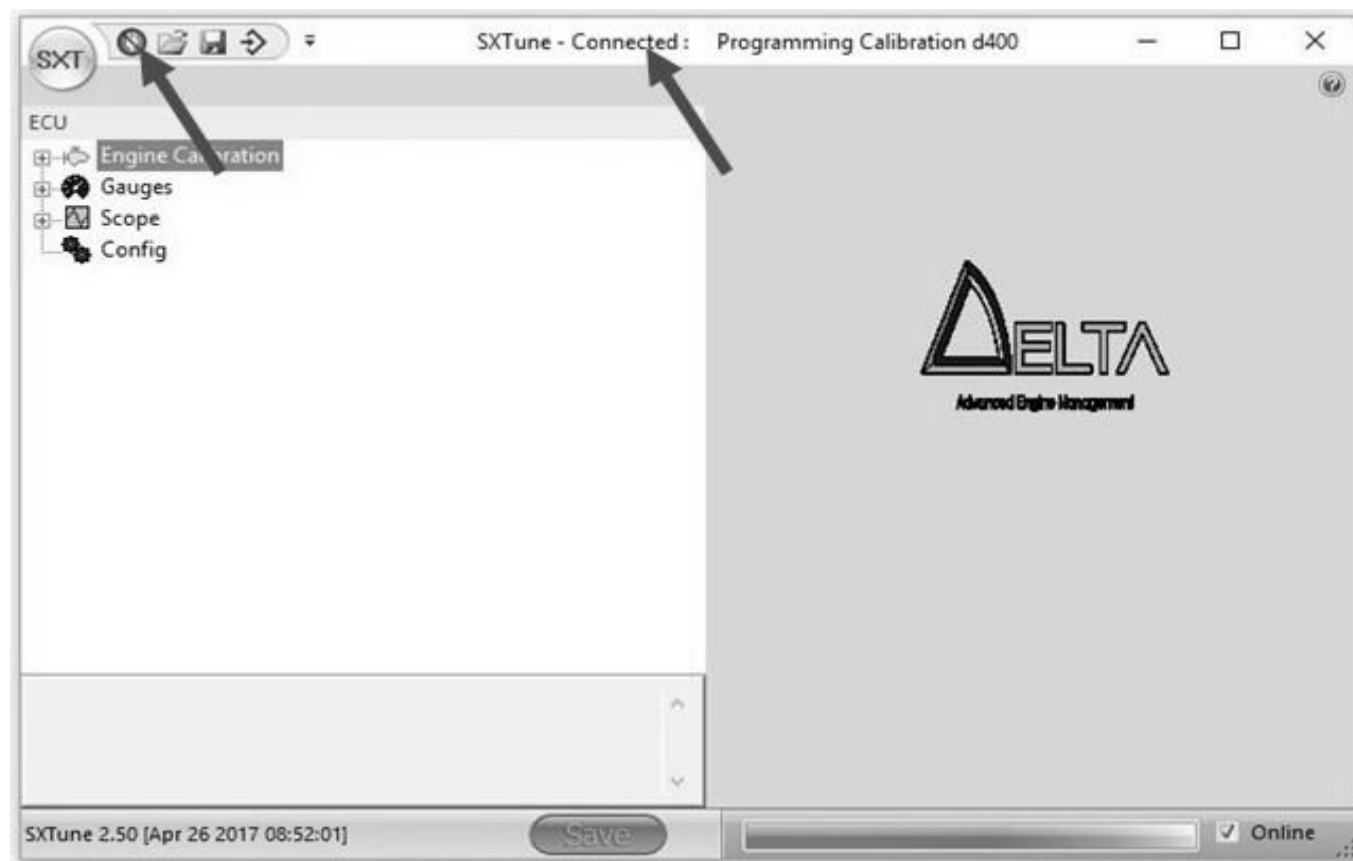
1. Ensure that the ECU is powered with the 12 volt supply, ground and that the switched ignition is supplied to the ECU according to the procedure detailed in the main menu item "Installing SXTune and Wiring". Make sure the ignition (or switch) is on. At this point there should be approximately 12 volts on pins 1 and 2 of the AMPSEAL connector and ground on pin 3.
2. Ensure you have the latest version of SX Tune installed. During installation make sure you choose the correct ECU from the dropdown list.
3. Start SX tune. Click 'Config' and confirm that the name of the script file matches your ECU model (in case it wasn't chosen correctly during installation). If it doesn't match, select a matching script file from the dropdown menu.



4. Connect to the ECU by pressing the green connect button.



5. When SXT has connected successfully the green button will have a red circle with diagonal line as shown and the top information bar will say "Connected".

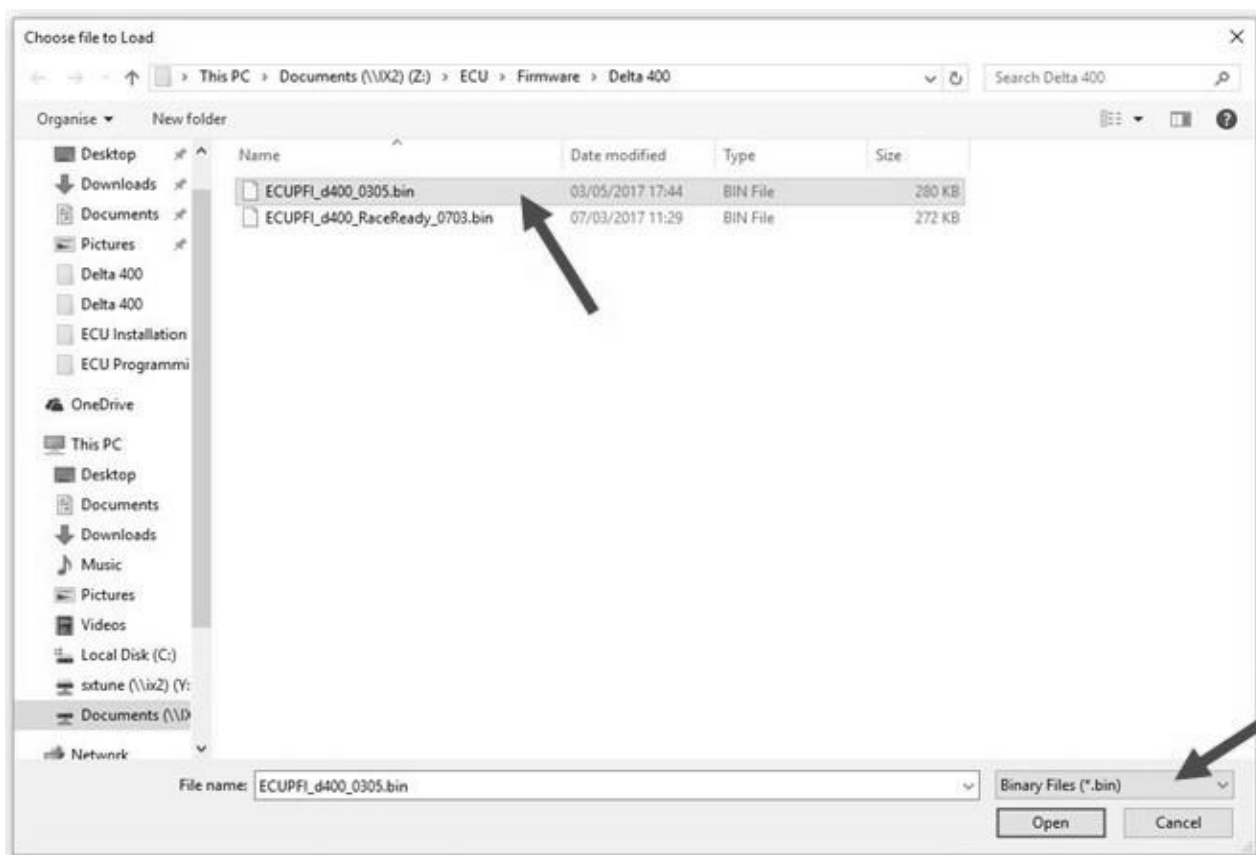


(Ignore the information after the words "programming Calibration" (d400 in the image above) as this may change when you have reprogrammed the ECU.)

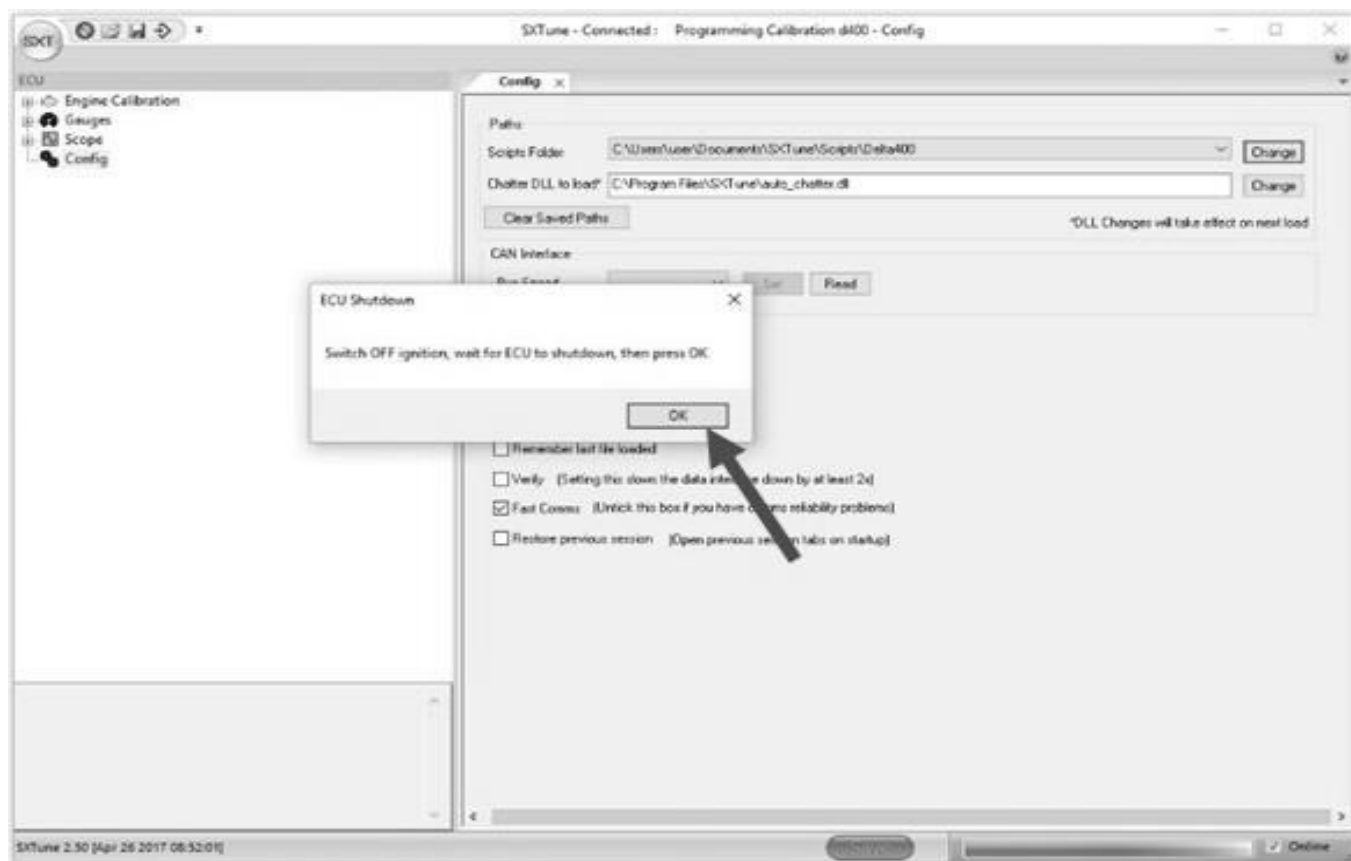
6. Now SXT is connected to the ECU, the new firmware can be loaded. Press the "Program ECU from file" button. *NOTE: It is not essential for SXTune to be connected to the ECU in order to load firmware. Making a successful connection does, however, show that the CAN interface is communicating correctly with the ECU and it is therefore preferable to attempt to connect before loading firmware.*



7. Next choose “Binary Files” from the dropdown menu in the bottom right corner and then click on the file you wish to load and press “Open”.



8. Turn off the switched 12 volt ignition when instructed to do so by SXT, then press “Ok” on the dialogue box.



9. Turn the ignition back on when instructed to do so by SXT. The binary firmware file will then be loaded into the ECU and a dialogue box will inform you when programming is complete.

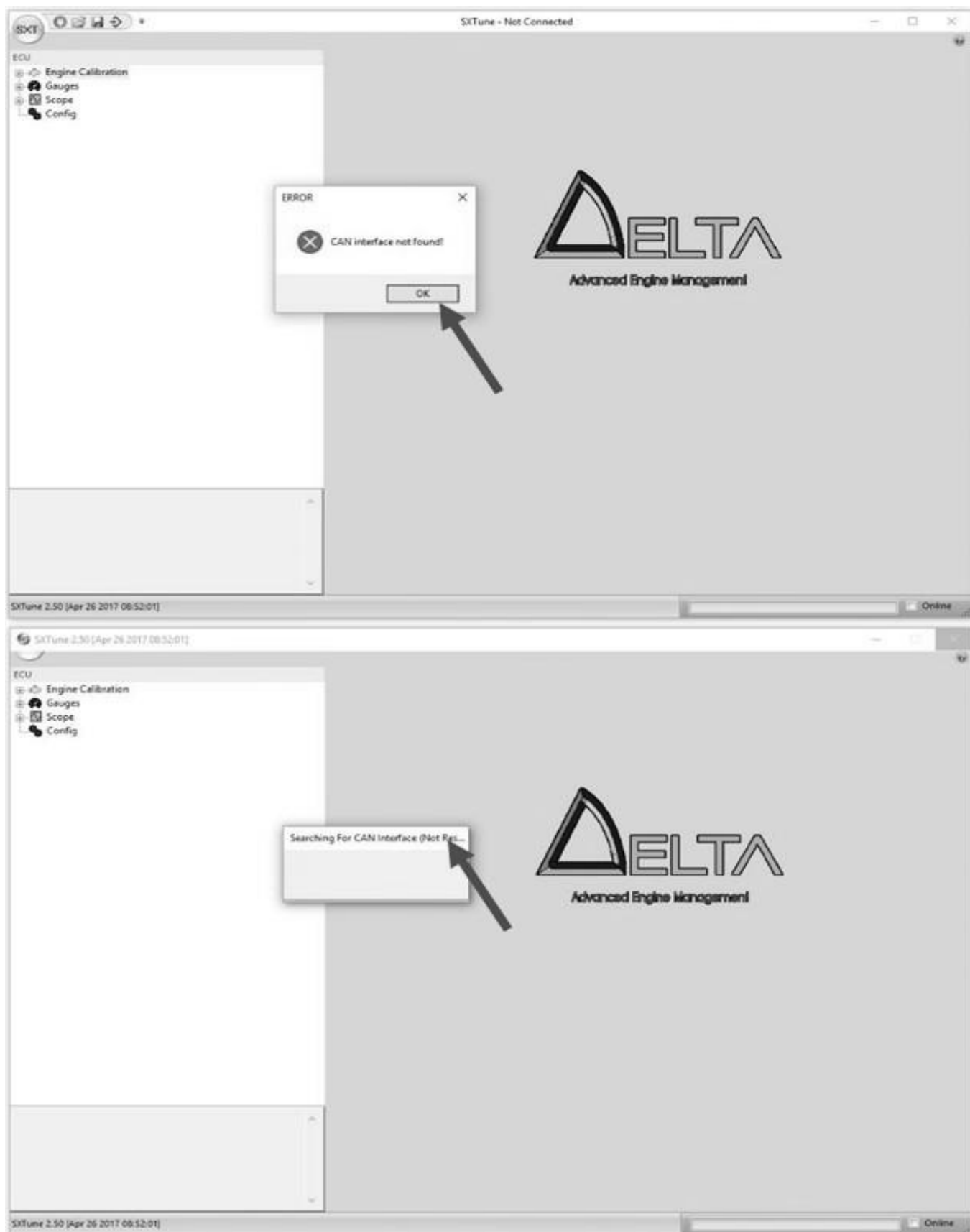
10. SXTune will automatically restart and connect to the ECU.

## Troubleshooting

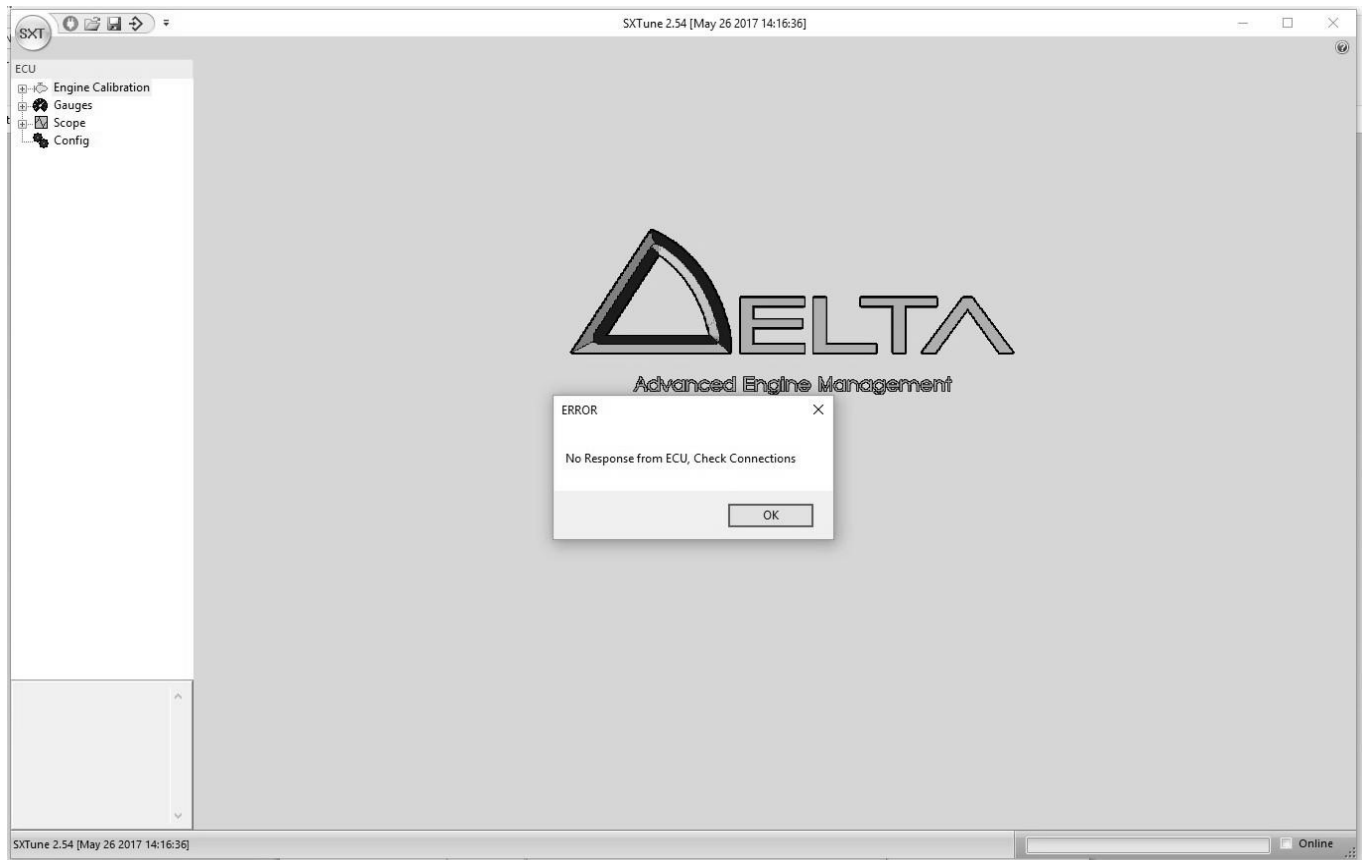
If a problem occurs whilst programming then the procedure should be followed again. Before trying the procedure again the CAN interface must be disconnected from both the PC and the D-SUB 9 connector. This will ensure that the CAN interface fully powers down and will be reset before attempting to reprogram the ECU. Also make sure that the ECU is powered with 12 volts and that the switched 12 volts (ignition) is on.

## Recovering Communication with the CAN Interface

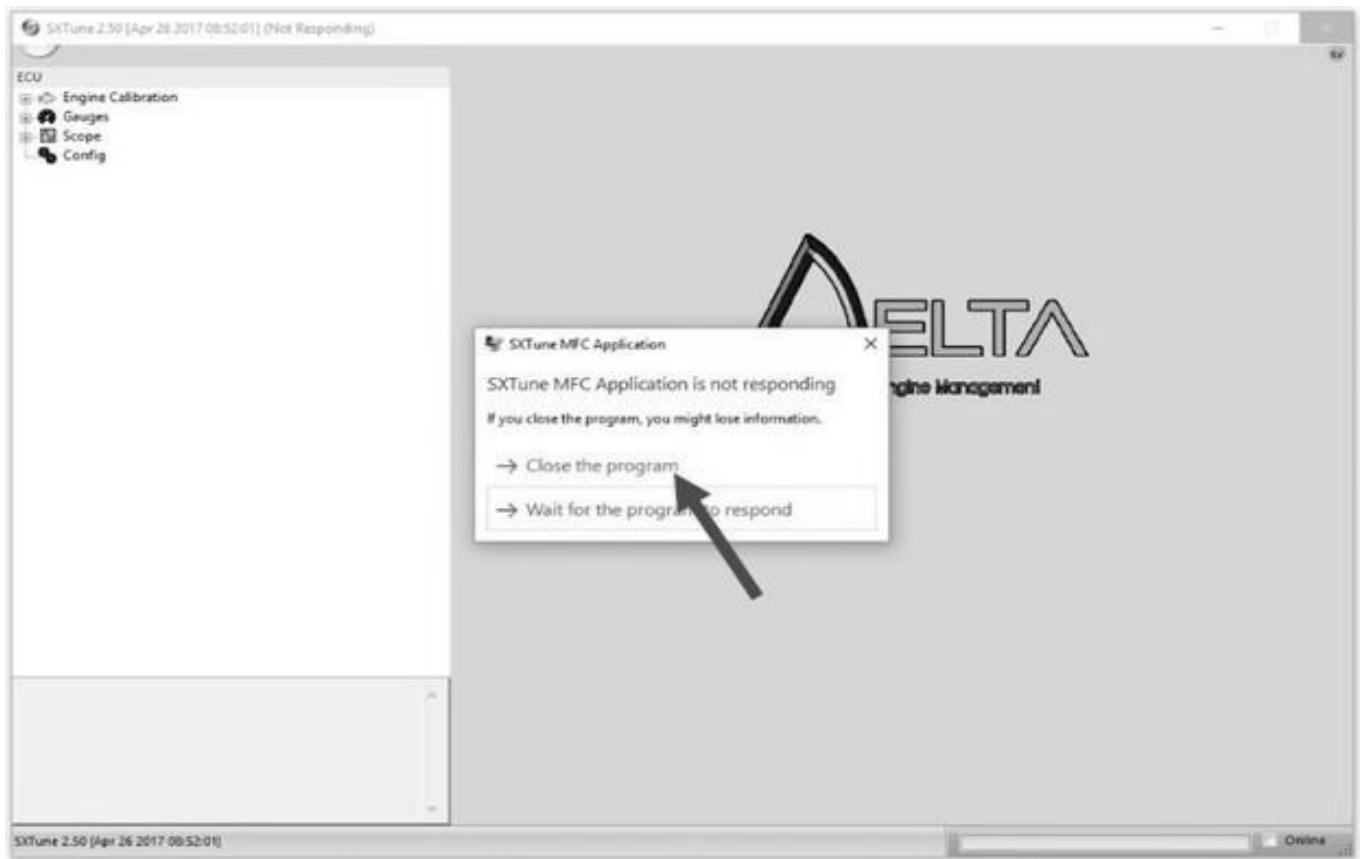
On rare occasions, communication between SXT and the CAN interface can lose synchronisation due to incompatible bus speeds. This creates a situation where SXT becomes unresponsive and may produce an error message which, depending on your PC operating system, looks like one of the images below.



Additionally, it is possible for the existing firmware in the ECU to become corrupted, if for example a reliable ignition switch was not used for the switched supply or the cabling between the PC and the ECU was disturbed during programming. If this has happened the ECU will respond with the message below.



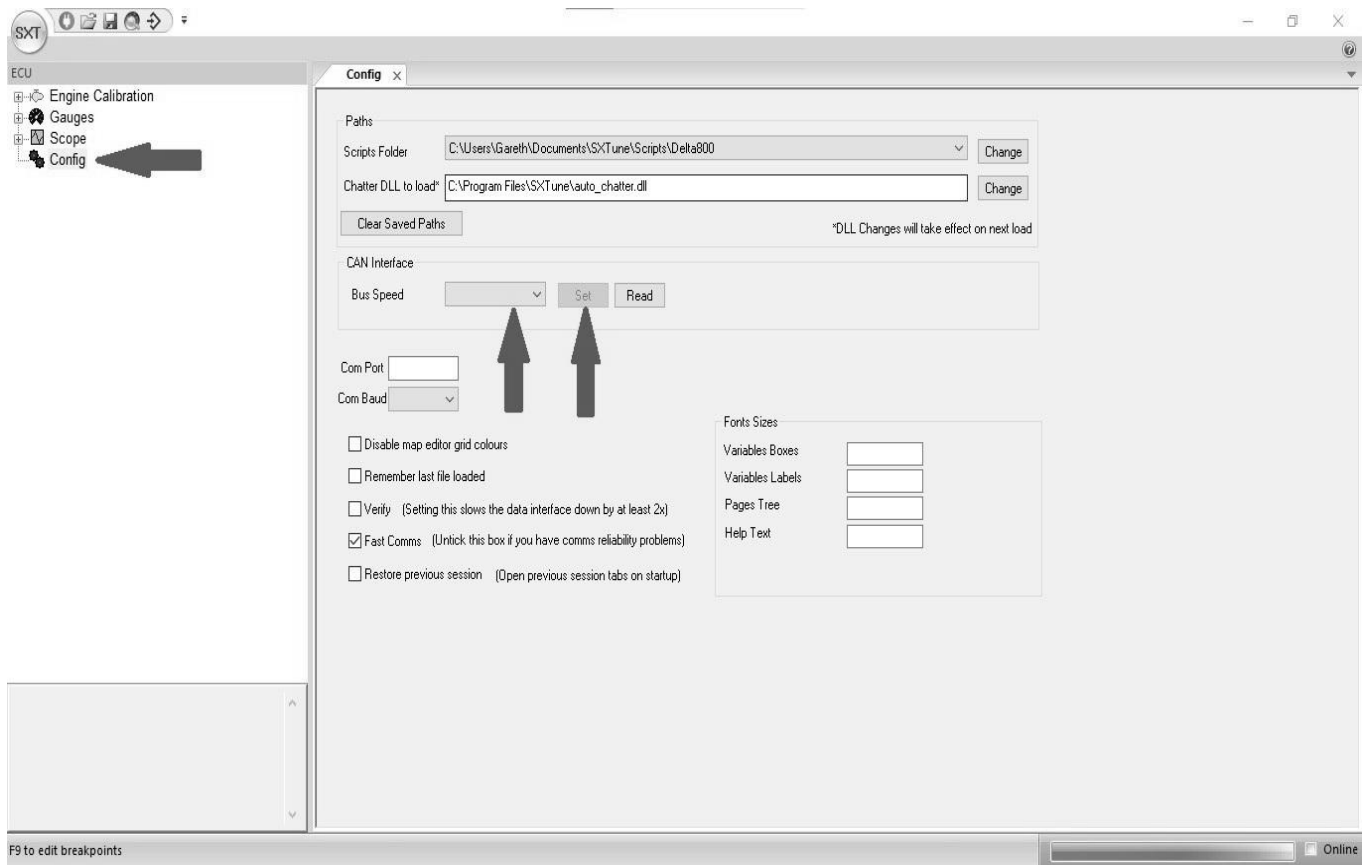
If any of the above problems are encountered then the three possible CAN bus speeds may be manually tested to find the correct one to allow your CAN interface to operate correctly. Following this, firmware can be loaded **without connecting to the ECU via the green connect button**. Follow the procedure below. First, try to close SXT by clicking the standard X in the top right corner of the program. If that doesn't work then click anywhere within the SXT window to make Windows produce a popup with the option to close the program. Click "Close the program". Alternatively, the program can be closed using windows task manager.



## PROCEDURE:

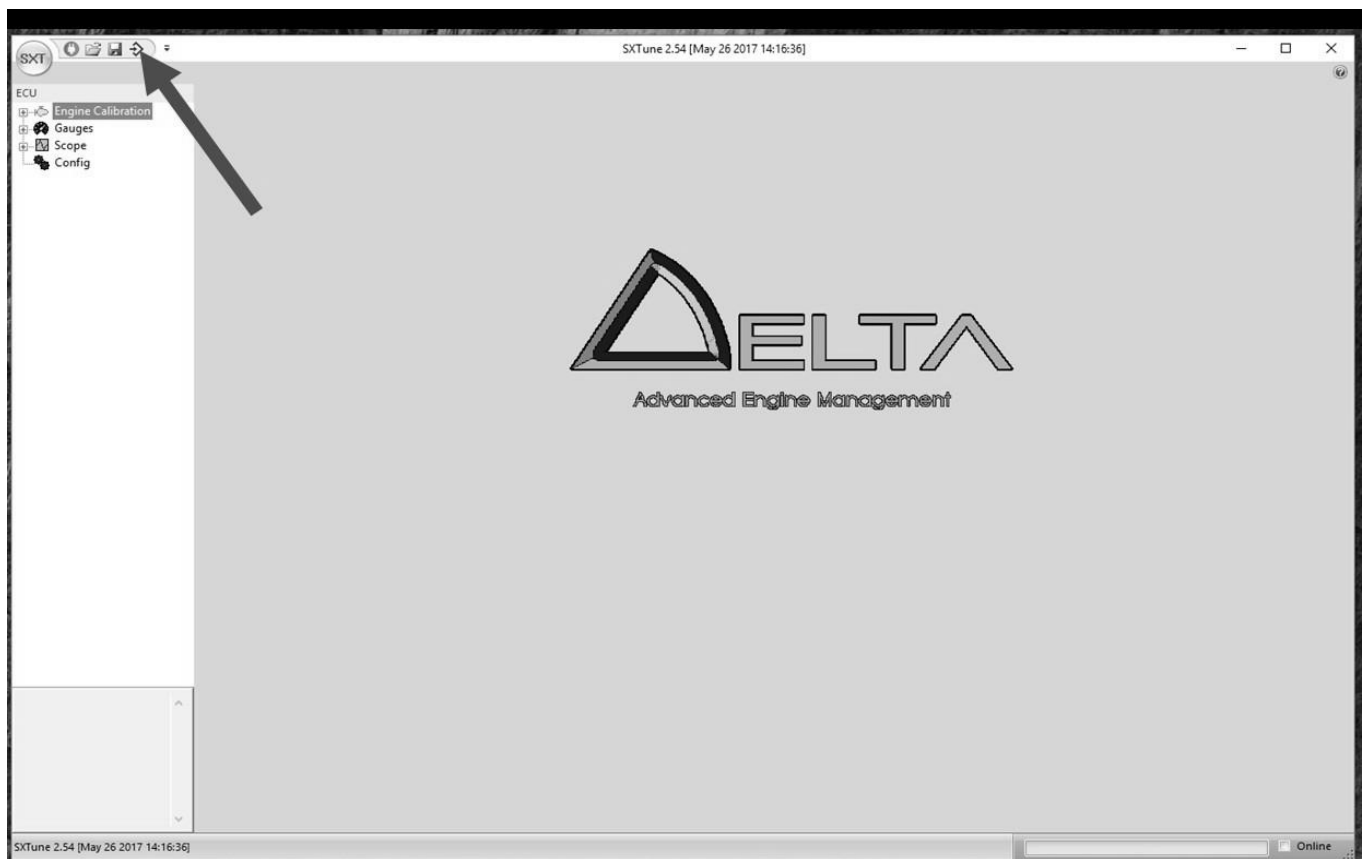
1. Now with SXT closed, disconnect both the D-SUB 9(or OBD) and the USB cables from your CAN interface
2. Wait 2 seconds and then reconnect only the USB cable between your PC and the CAN interface. Do not reconnect the D-SUB 9(or OBD) cable yet.
3. Open SXT, but **do not try to connect**. Instead, select "Config" from the menu and then, in the section "CAN interface" select 1Mbit/s from the "Bus Speed" drop down. Press "set".





4. Reconnect the D-SUB 9 (or OBD) cable

5. **Do not** connect to the ECU. Instead click the “program ECU from file” button.



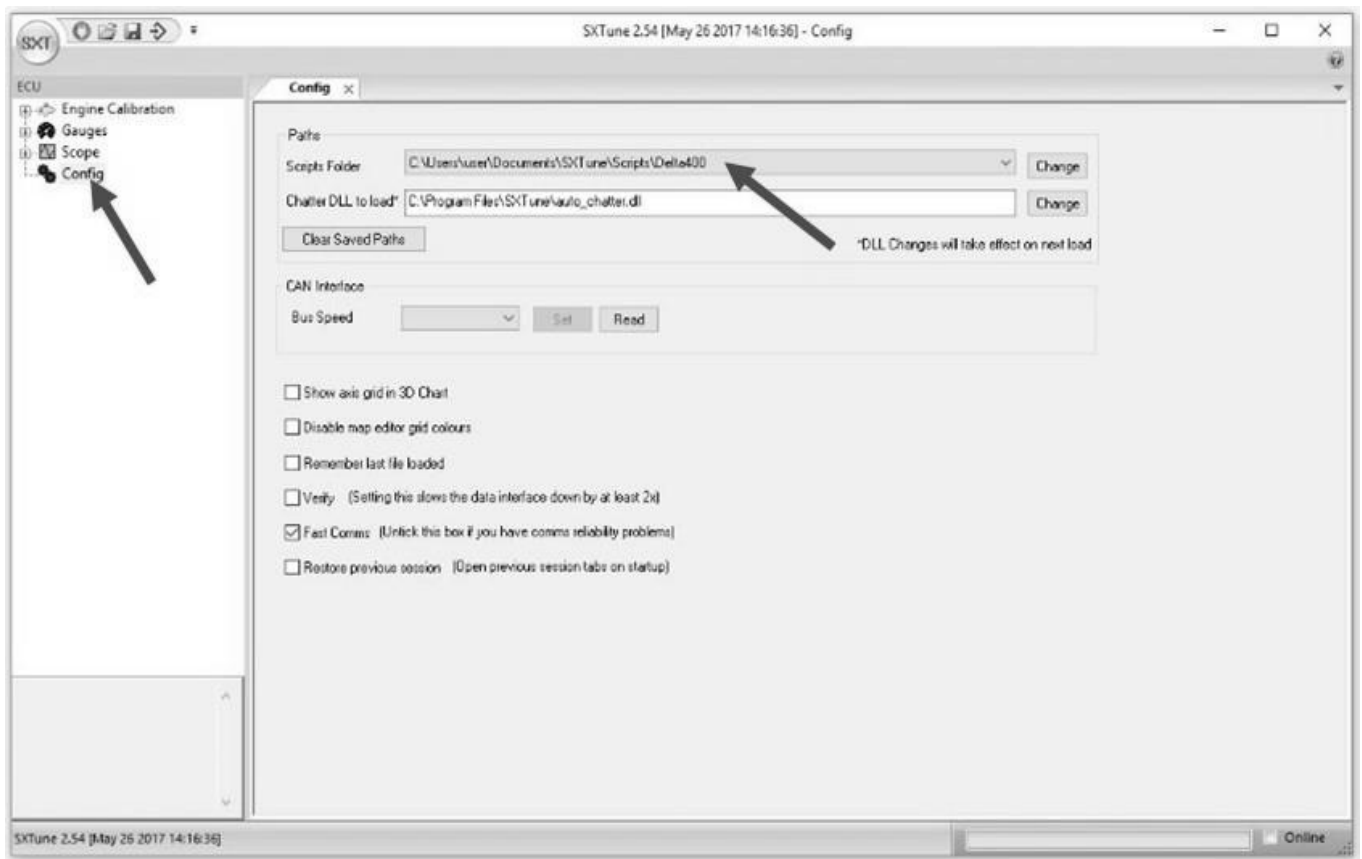
6. Now continue with steps 6, 7 and 8 of "LOADING FIRMWARE" above. (note: the ECU will not be connected while it loads the firmware). If those 3 steps complete correctly, STX will automatically restart and connect to the ECU.

7. Finally, if neither 500kbits/s nor 1Mbps/s achieve connection, then go through this section again choosing 250kbits/s at step 3

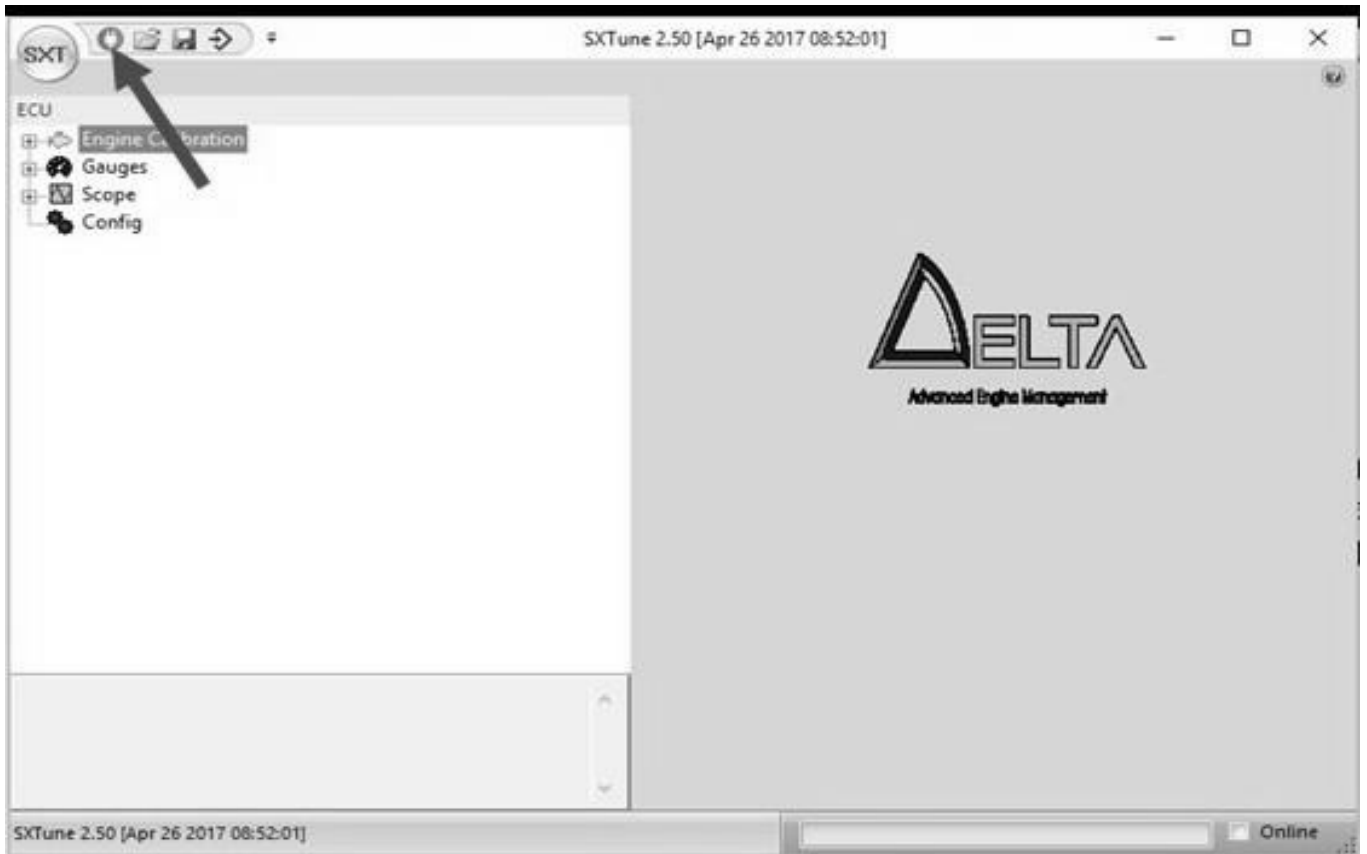
## Loading a calibration into the ECU

### Procedure

1. Ensure that the ECU is powered with the 12 volt supply, ground and that the switched ignition is supplied to the ECU according to the details in section 1.2 above. Make sure the ignition (or switch) is on. At this point, there should be approximately 12 volts on pins 1 and 2 of the AMPSEAL connector and ground on pin 3.
2. Ensure you have the latest version of SX Tune installed. During installation make sure you choose the correct ECU from the dropdown list.
3. Start SX tune. Click 'Config' and confirm that the name of the script file matches your ECU model (in case it wasn't chosen correctly during installation). If it doesn't match, select a matching script file from the dropdown menu.



4. Connect to the ECU by pressing the green connect button.



5. When SXT has connected successfully the green button will have a red circle with diagonal line as shown and the top information bar will say "Connected".

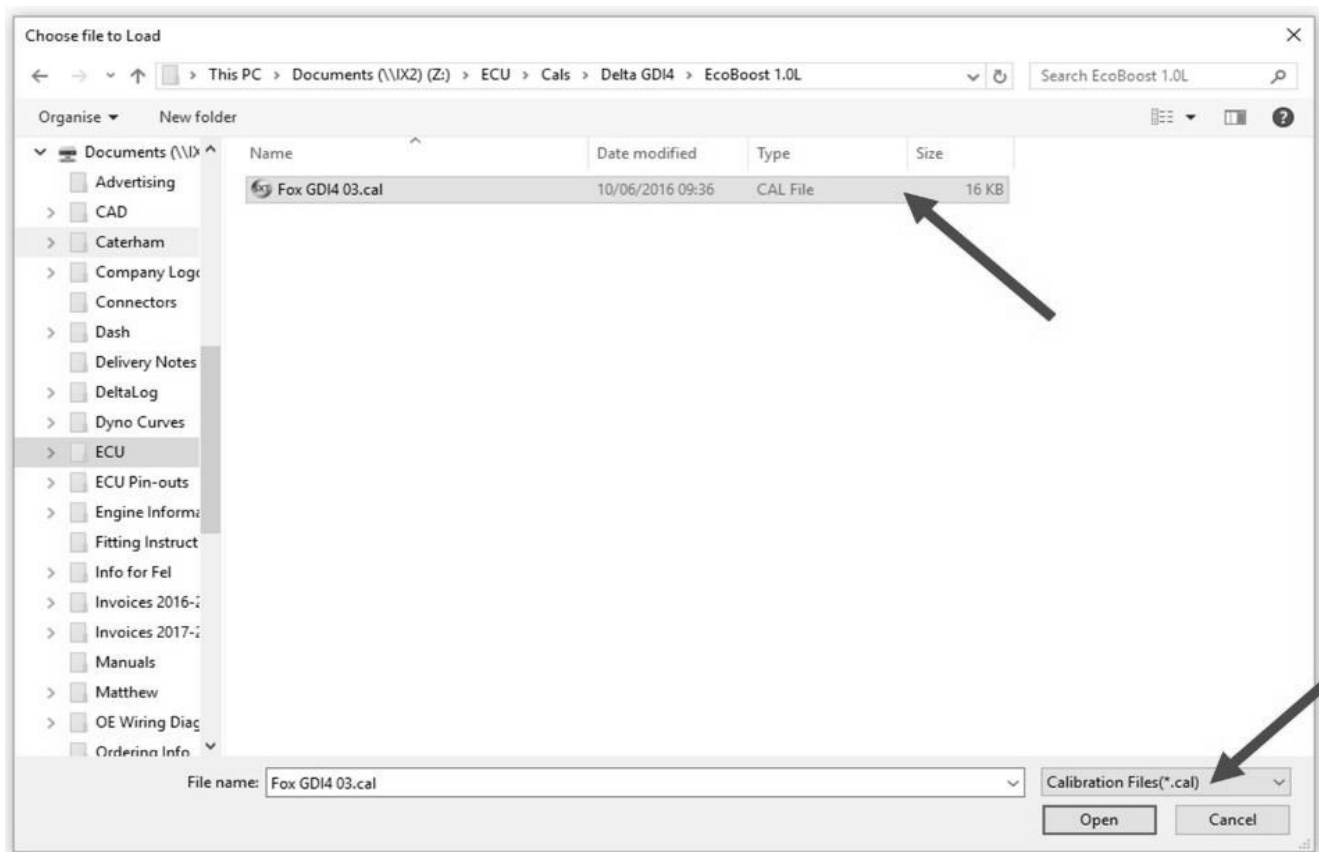


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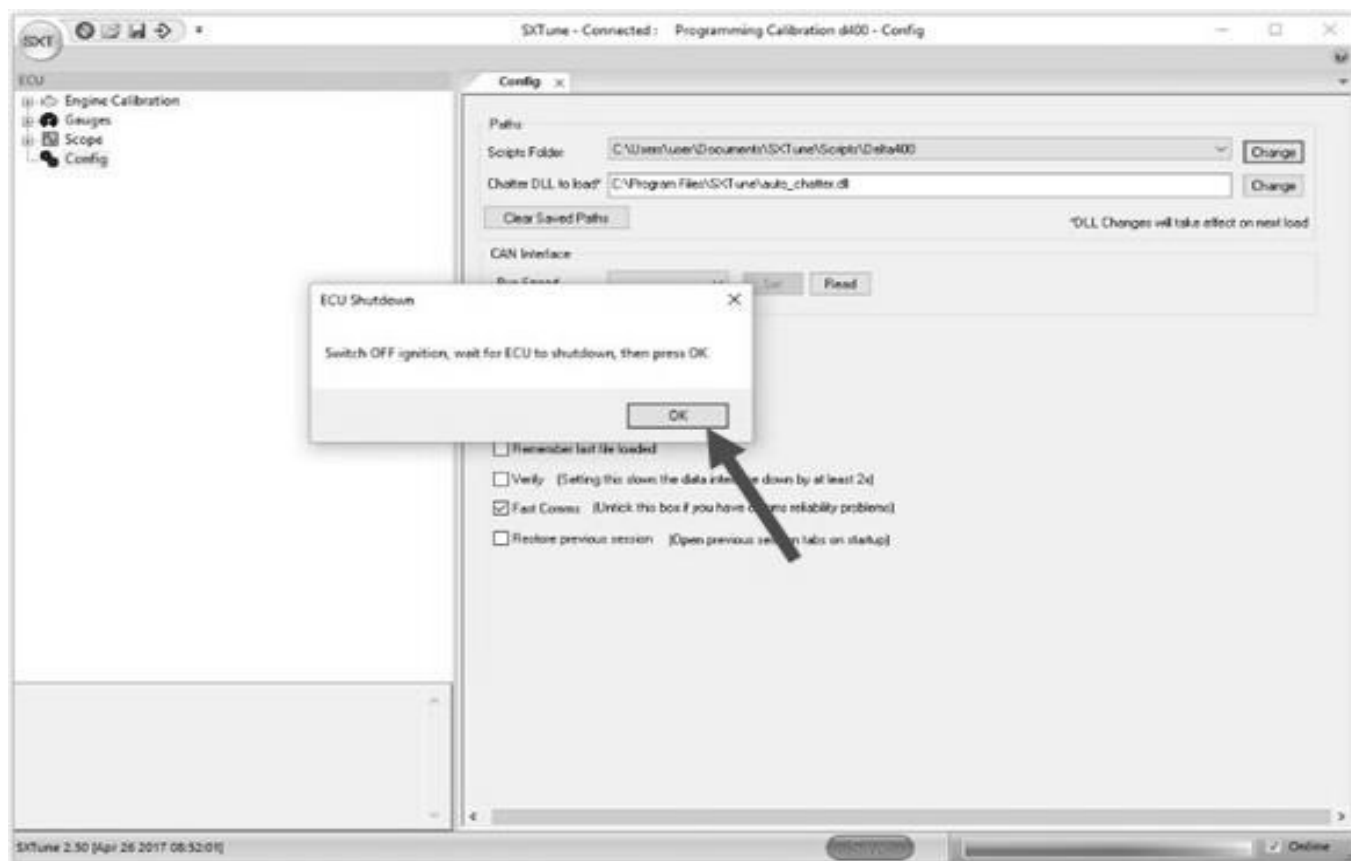
6. Now SXT is connected to the ECU, the new calibration file can be loaded. Press the "Program ECU from file" button. *NOTE: It is not essential for SXTune to be connected to the ECU in order to load a calibration. Making a successful connection does, however, show that the CAN interface is communicating correctly with the ECU and it is therefore preferable to attempt to connect before loading a calibration.*



7. Next choose “Calibration Files” from the dropdown menu in the bottom right corner and then click on the file you wish to load and press “Open”.



8. Turn off the switched 12 volt ignition when instructed to do so by SXT, then press “Ok” on the dialogue box.



9. Turn the ignition back on when instructed to do so by SXT. The calibration file will then be loaded into the ECU and a dialogue box will inform you when programming is complete.

10. SXTune will automatically restart and connect to the ECU.

## Troubleshooting a Calibration Loading

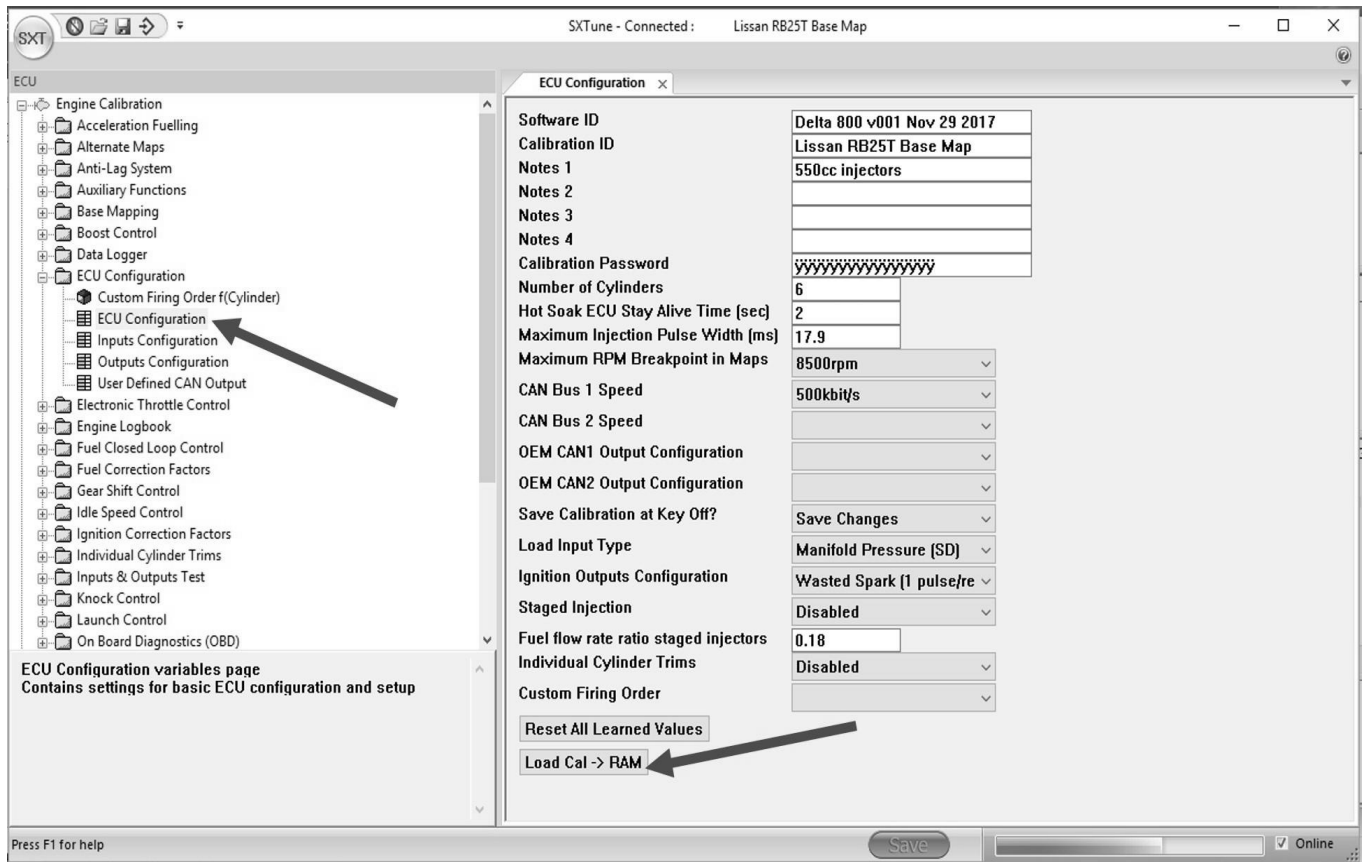
If a problem occurs while loading the calibration file, it could be possible that there is a CAN interface problem or that power was lost to the ECU whilst programming. The possible problems are similar to those encountered when loading firmware and therefore the steps detailed in the firmware section above should be followed..

## PDM Users

If you are using a power distribution module (PDM), its ignition switch signal may cause problems when loading cal files using the procedure detailed above. An alternative procedure for PDM users is described below:

1. Connect to the ECU.

2. Open the **ECU Configuration** group and select the **ECU Configuration** pane. Click the **Load Cal -> Ram** button and then select the cal file you wish to load.



3. At the end of program loading you may see a message saying "programming failed SB". This is a temporary message at the Windows level and not related to the actual ECU programming, so this message can be ignored. Finally, click **save** at the bottom of the window. This will copy the cal from the SXTune software into the ECU. Disconnect and reconnect to the ECU and SXTune will load the new cal back from the ECU and into SXTune where you should be able to see the changes

