



**Dynamic Spectrum Tuner  
Quick Start Guide**

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## Introduction

The JET DST OBDII Tuner package includes a set of two programs that allow you to quickly and easily make calibration changes to your OBDII GM vehicle and the interface to connect your PC to the vehicle. The JET Flash program is used to read and program your vehicle's PCM (Powertrain Control Module) and the DST program is used to view and edit the various calibration parameters.

## Minimum PC Requirements

While the DST program will run on virtually any PC running Windows 98 or later, we recommend the following minimum PC specifications:

- Pentium 266
- Windows XP
- 64 MB RAM
- 600 x 800 display resolution
- 150 MB free hard drive space

## Program Installation

To install the DST program, insert your JET DST OBDII CD into your CD ROM drive and the setup program will run automatically. If the CD does not auto-start, navigate to your CD-ROM drive and double click on the application files named 'AUTORUN' (autorun.exe) to begin the installation process. Follow the on-screen instructions to complete the installation.

**Note:** If you are running Microsoft Vista, Windows 7 or Windows 8 please install the DS Tuner program as follows:

1. To install the program on a PC running Vista/Windows 7 you must be logged on as an administrator.
2. In order for the programs to install correctly the installation program must be run in Compatibility mode. To install the program on a PC running Vista/Windows 7 open the CD in Windows Explorer. (Do not use the auto run feature.) Locate the application file named 'dsCsetup.exe' in the DSTuner folder or if you downloaded the setup program from our web site then locate this file. Before running the setup program right click on it. Select Properties from the list and then click the Compatibility tab. From there, pick the default 'Windows XP SP2', click on the 'Apply' button and then click on the 'OK' button. -
3. Now double click on the file to run the setup program to install the DST Tuner program.
4. After completing the installation you'll also need to set the DST Tuner and JETFlash programs to run in compatibility mode. To do so, right click on the DST Tuner icon on your Desktop. Select Properties from the list and then click the Compatibility tab. From there, click on the 'Run the program in compatibility mode', select the default Windows XP SP2, check the 'Run as administrator' box, click on the 'Apply' button and then click on the 'OK' button.. Then locate the JETFlash icon on your Desktop and follow the same procedure as described above for the DST Tuner program.

## USB Driver Installation

If you have the new DST OBDII CAN interface that has a USB interface for connection to your PC you will also need to install the USB driver for your DST interface. This driver is included in the USB folder on your Dynamic Spectrum Tuner CD.

## Windows XP

1. Connect the DST interface to your PC (it does not have to be connected to the vehicle). The Windows 'Found New Hardware' Wizard will start up.
2. On the first screen select the 'No, not this time' option and click on the Next button.
3. Then select the 'Search for the best driver in these locations' option, check the 'Include this location in the search' check box and click on the Browse button.
4. Navigate to the JET DST USB driver folder (the USB folder on the DST CD).
5. If you receive a 'software has not passed Windows testing' message click on the 'Continue Anyway' button.
6. The wizard should now install the USB driver.
7. When the installation is completed you should receive a message that the installation was successful.

## Vista/Windows 7

1. Connect the DST interface to your PC (it does not have to be connected to the vehicle). Windows will connect to the Windows Update website and search for a suitable driver. Wait for this process to finish. A suitable driver will not be found and you will receive an error message.
2. Click on the Windows Start button and select 'Control Panel'
3. Select 'Hardware and Sound'
4. Then select 'Device Manager'
5. In the Device Manager window there will be a device under 'Other Devices' with a yellow warning symbol.
6. Right click on this device and select 'Update Driver Software...'
7. On the next screen click on 'Browse my computer for the driver software'.
8. Click on the Browse button and navigate to the USB folder on the DST CD. Click on the Next button.
9. The driver installation process should begin and when the installation is complete you should receive a message stating the installation was successful. Click on the Close button to close this screen.

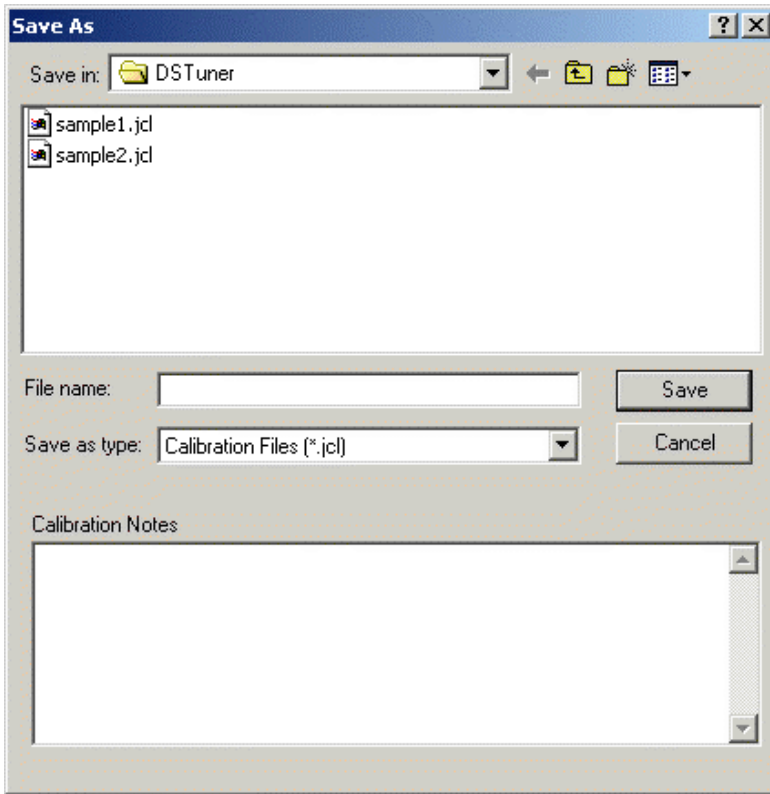
## Reading The PCM

The first step to tuning your OBDII vehicle is to obtain a copy of the stock calibration information. This information is stored in the vehicle's PCM so you need to read this information from the PCM. You'll use the JET Flash program to read the PCM.

To read the calibration currently stored in the PCM, select '*Read PCM*' from the '*Tools*' menu.

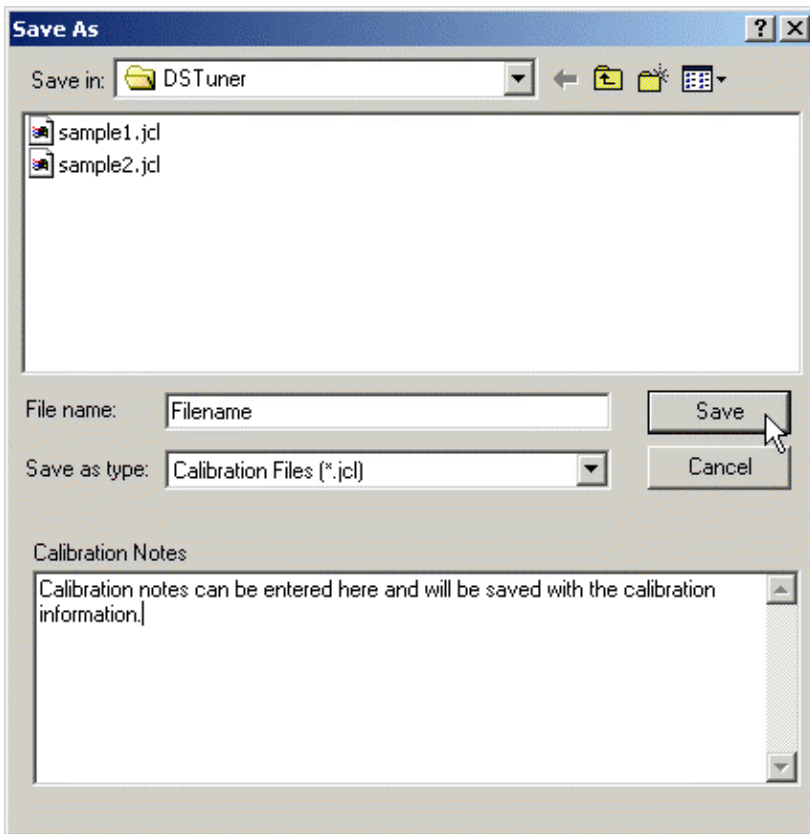


The program will then ask for a file name to give to the calibration file that will be created when the PCM is read.

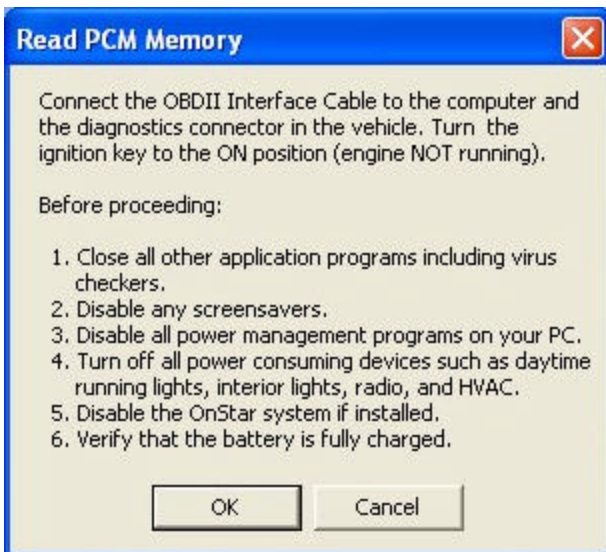


Type in a valid name for your calibration file into the '*File name:*' box and click on the '*Save*' button to continue.

You can add calibration notes to your calibration file by typing the notes into the '*Calibration Notes*' box in the lower half of the screen before clicking on the '*Save*' button. These notes will be saved with the calibration information and can be viewed in both the JET Flash OBDII and DST programs.



After clicking on the 'Save' button the read PCM start screen will appear.



Before proceeding, connect the DST OBDII interface to your PC. Connect the other end of the converter to the ALDL diagnostics connector on the vehicle. (The ALDL connector is located under the dash on the driver's side.)

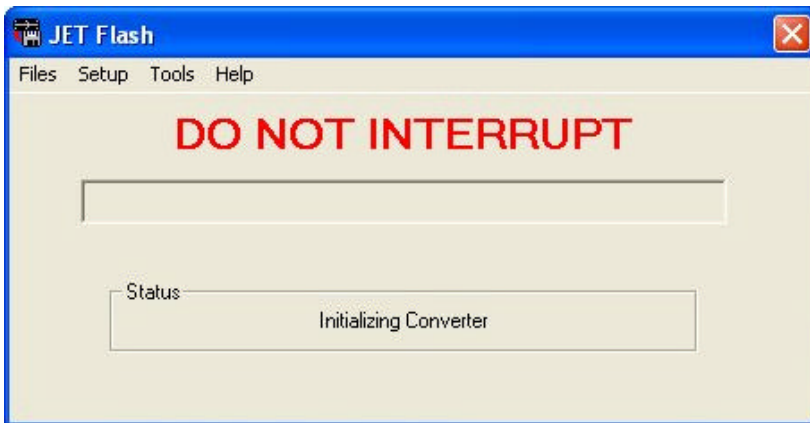
Once the cable is connected, turn the ignition key on but DO NOT start the engine. After turning on the ignition, wait about 10 to 15 seconds to clear the GM security delay before proceeding with reading.

Before proceeding:

1. Turn off all power consuming devices such as day time running light, interior lights, entertainment systems, etc.
2. Make sure your battery is fully charged. Do not attempt to read the PCM with a battery charger connected.)
3. Disable the OnStar system if installed

Now click on 'OK' to begin the PCM read process. If all the connections have been properly made, the program will begin communicating with the PCM, sending the necessary instructions to start the memory read process.

The following status window will be displayed during the read process:



The progress meter shows the progress on the reading of the PCM as it proceeds and the Status window describes what part of the process is currently underway. Depending on the type of vehicle and the PC you are using, the read will usually take about four minutes.

When the FLASH read process is complete, the message shown below will be displayed:



Click 'OK' to complete the PCM read and close the Read Complete message box.

The calibration information from your PCM will now be stored on your PC.


**NOTE:** Its a good idea to keep a copy of the original stock calibration. This way, you'll have a baseline to return to if necessary.

## Editing Calibration Files (Tuning)

Now that you have a copy of the stock calibration that you can view and edit as needed. You will use the DST program to view and edit your calibration files. To begin tuning, run the DST program.

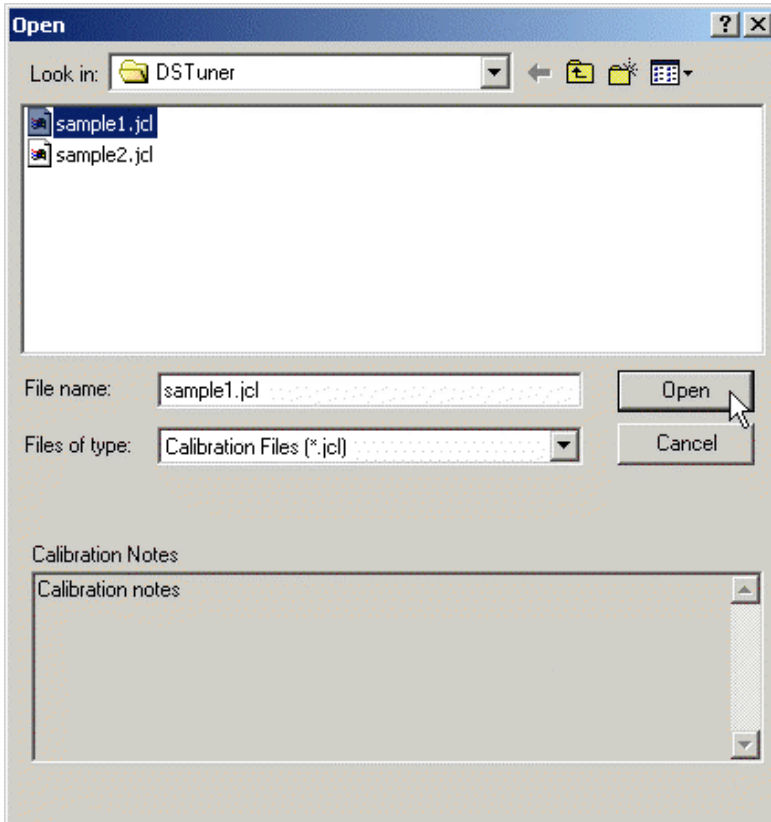


## Opening A Calibration File

To open a PCM Calibration file select '*Open File*' from the *File* menu or click on the Open File  button on the tool bar at the top of the screen.



This will display the '*Open File*' dialog box. Select the desired file and click the '*OK*' button.



Select a calibration file and click on the '*Open*' button to load the calibration file into the DST program. When you click on a calibration file name in the Open File screen, any notes that have been saved with the calibration file will be displayed in the Calibration Notes box at the bottom of the screen.

## Editing A Calibration File

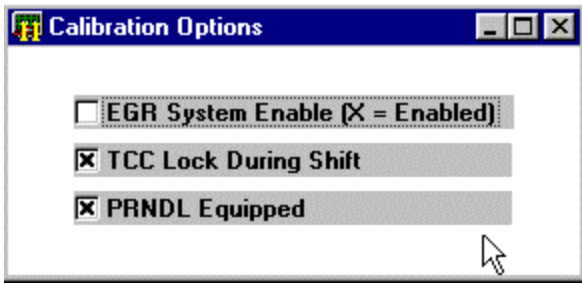
Once you have loaded a calibration file into DST program you are ready to begin tuning by editing the various calibration parameters.

### Calibration Parameters

The JET DST program uses four different formats of calibration parameters to display the various calibration values.

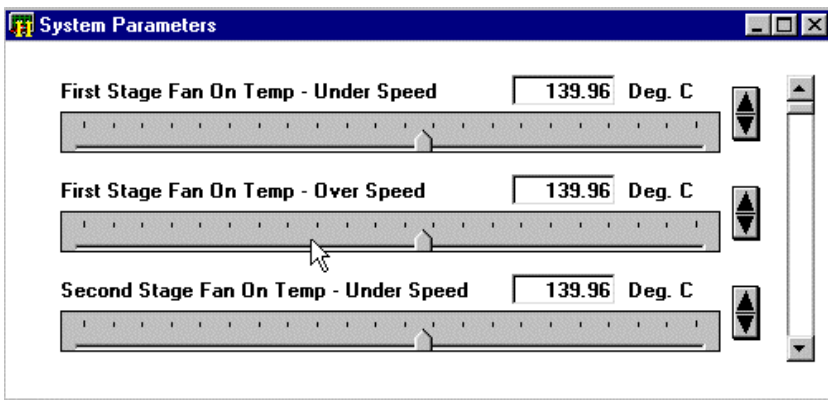
#### Switch Type Calibration Parameters

The switch type calibration parameters are values that have only two states such as on or off , Enabled or Disabled . This type of parameter will include calibration items such as 'EGR System Enable'.



### Constant Type Calibration Parameters

Constant parameters represent single values or calibration constants such as the fan on temperature.



### 2D and 3D Calibration Tables

Calibration Tables are used to display a series of values that depend on one (2D tables) or 2 other parameters (3D tables).

An example of a typical 2D table would be the Knock Attack Rate Vs. RPM.

**Knock Fast Attack Rate vs. RPM**

RPM	Deg/msec
0	0.213
400	0.222
800	0.240
1200	0.240
1600	0.249
2000	0.293
2400	0.311
2800	0.329
3200	0.329
3600	0.320
4000	0.320
4400	0.320
4800	0.391
5200	0.391
5600	0.391
6000	0.391
6400	0.391
6800	0.391
7200	0.391
7600	0.391
8000	0.391

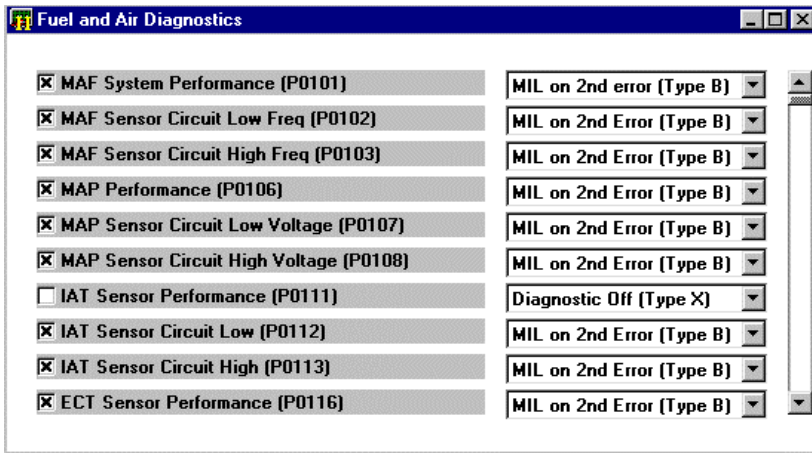
A good example of a common 3D table would be the Spark Advance versus Load versus RPM table.

**Spark Advance Vs. Load Vs. RPM, Open Throt, Low Oct.**

gm/cyl	RPM					
	400	600	800	1000	1200	1400
0.08	18.00	18.00	28.66	39.32	44.24	48.33
0.12	18.00	18.00	27.27	36.55	40.81	43.69
0.16	18.00	18.00	26.02	33.67	36.84	39.45
0.20	18.00	18.00	24.70	30.59	33.45	35.78
0.24	18.00	18.00	22.64	27.63	30.26	32.48
0.28	16.26	18.00	20.04	24.73	27.32	29.49
0.32	11.91	15.63	18.92	21.91	24.53	26.59
0.36	8.48	12.33	15.74	18.59	21.14	23.32
0.40	4.86	8.90	12.51	15.12	17.80	20.09
0.44	1.12	5.41	9.23	11.63	14.48	16.92
0.48	-2.64	1.89	5.91	8.20	11.21	13.85
0.52	-6.31	-1.60	2.57	4.86	8.02	10.81
0.56	-9.80	-5.05	-0.79	2.22	5.54	8.44
0.60	-13.08	-8.42	-4.20	-0.40	3.03	6.07
0.64	-16.11	-11.60	-7.63	-3.96	-0.64	2.40
0.68	-18.81	-14.73	-11.08	-7.74	-4.62	-1.71
0.72	-21.14	-17.74	-14.64	-11.74	-8.99	-6.35
0.76	-24.02	-20.89	-18.00	-15.41	-12.91	-10.24

## Diagnostic Type Calibration Parameters

The diagnostic type calibration parameters are parameters that control the operation of the OBDII diagnostics.

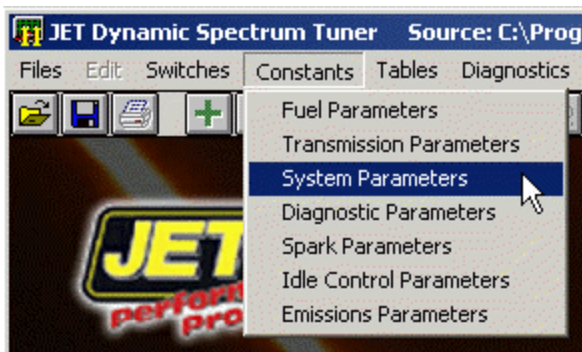


## Accessing Calibration Parameters

The calibration parameters are grouped by the parameter type as described above. To view and edit the various calibration parameters, select the type of parameter you want to work with by clicking on one of the calibration parameter menus at the top of the DST program screen.



For example, to view constant type parameters, click on the 'Constants' menu. The constant parameters are then arranged in sub-groups according to function. When you click on one of the calibration parameter menus the sub groups are then displayed.



To select the sub group you are interested in click on the sub group name to display all the parameters in that sub group.

To make the calibration parameters easy to understand and more convenient to edit, the JET DST program displays all table values in correct engineering units rather than the binary values actually stored in the calibration file.

You may view as many tables at once as you want. To view another table, simply select it from the menus.

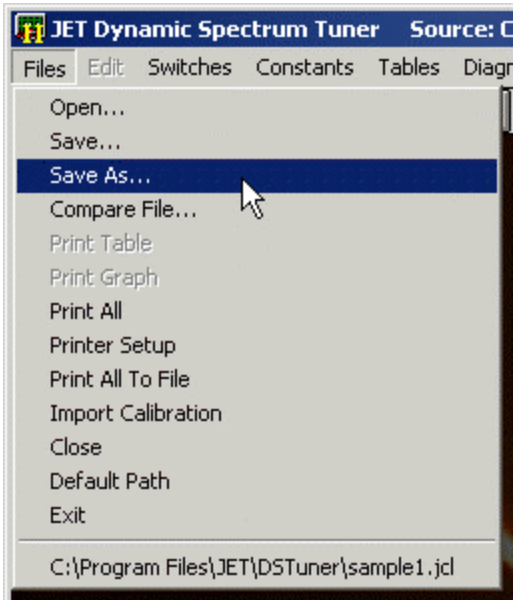
To close a table, click on the window close box (X) in the upper right hand corner of the table.

**Note:** You will **NOT** lose any changes that have been made to a table by closing it.

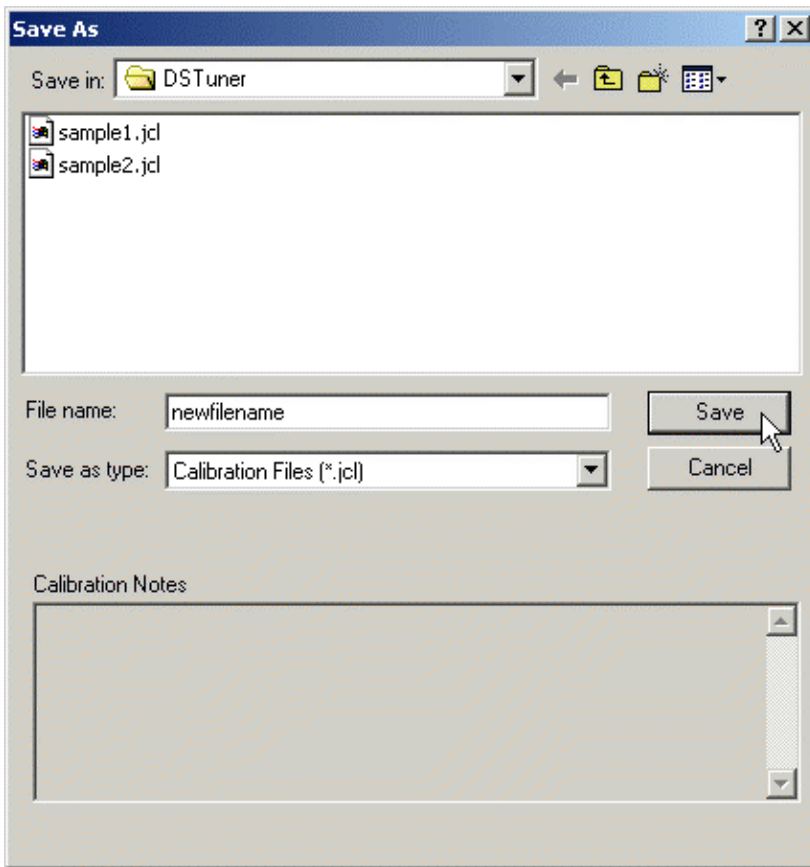
The displayed table can be sized in height or width by clicking on an edge and dragging it to the desired size. Use the 'Windows' menu to arrange the tables you have open.

### ***Saving a Calibration File***

Once you are finished editing the calibration file you need to save it. To save the edited calibration file to a different file so you don't over-write the original calibration file, select 'Save As' from the 'File' menu.



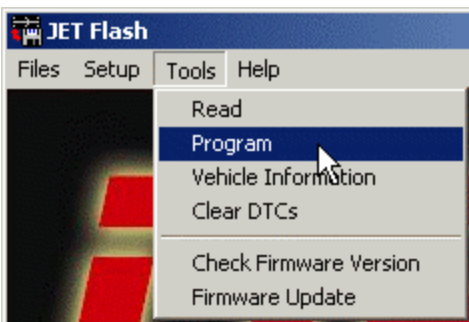
This will display the 'Save As' dialog box. Select another file or type in a new file name and click the 'Save' button.



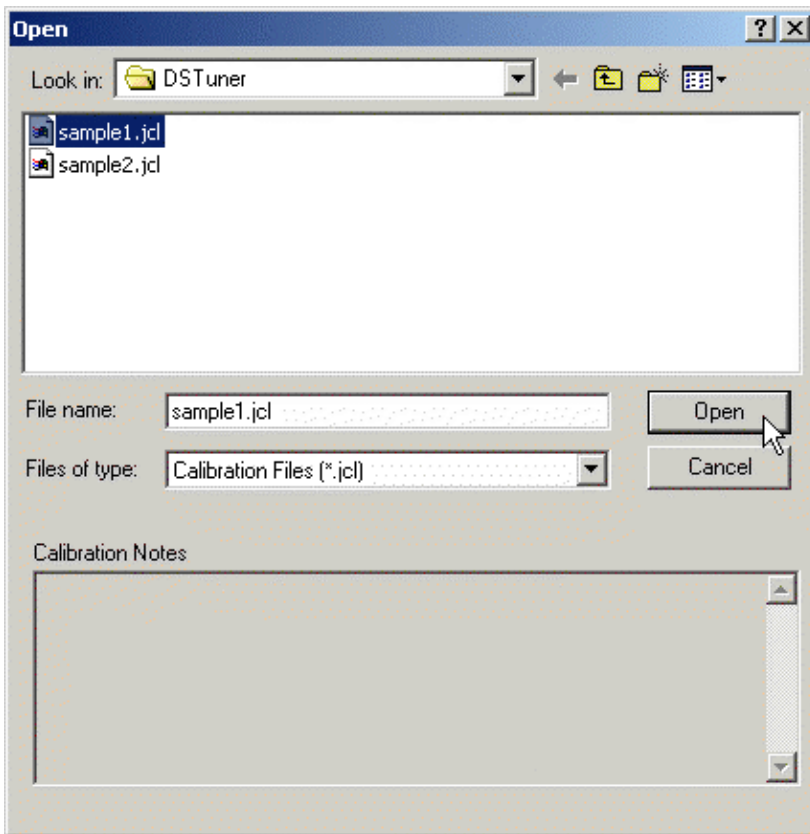
## Programming the PCM

To test your modified calibration you need to program the new calibration into your vehicle's PCM. This is done using the JET Flash program. Run the JET Flash program.

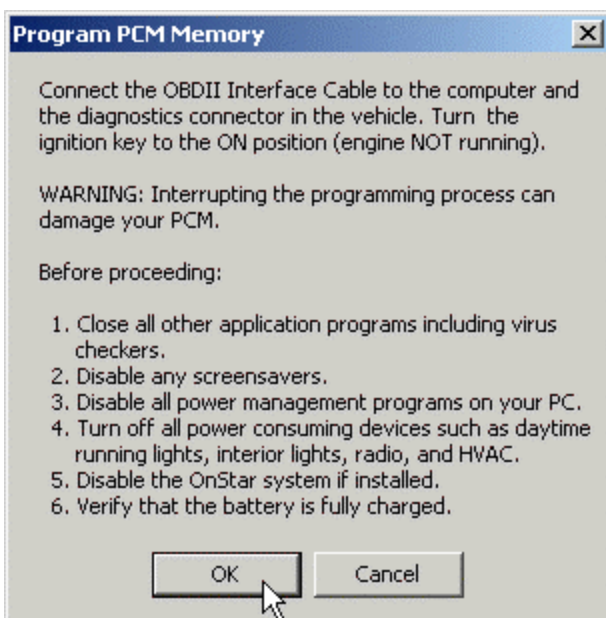
Click on the 'Tools' menu and select 'Program PCM' from the drop-down list.



An Open File dialog screen will then be displayed.



Click on the file you want to use to program the PCM and then click on the '*Open*' button. This will display the Program PCM connect message.



## **WARNING**

**If the programming process does not complete successfully it is possible to damage the PCM. Under no circumstances should you interrupt the programming process once it is started.**

The following are recommendations for the successful programming of your PCM:

- ?? Before programming the PCM, make sure you can successfully read the PCM. This is a very similar process and if that is successful, then the programming should also work fine. **YOU CAN NOT DAMAGE YOUR PCM BY READING IT.**
- ?? Make sure the car battery is in good condition and fully charged. **DO NOT** try to program the PCM with a battery charger connected to the car battery. The correct range of the battery voltage for PCM programming is relatively narrow.
- ?? If you're using a laptop, make sure the laptop battery is fully charged.
- ?? Make sure you have good connections between the PC, ALDL connector and the interface cable and that they are not likely to be unintentionally disconnected during the programming process.
- ?? Disable all power management functions on your PC.
- ?? Disable all screen savers on the PC.
- ?? Make sure there are no other applications (programs) running on your PC, including virus checkers.
- ?? Turn off all power consuming devices such as day time running light, interior lights, entertainment systems, etc.
- ?? Make sure your battery is fully charged. Do not attempt to program the PCM with a battery charger connected.
- ?? Disable the OnStar system if installed.

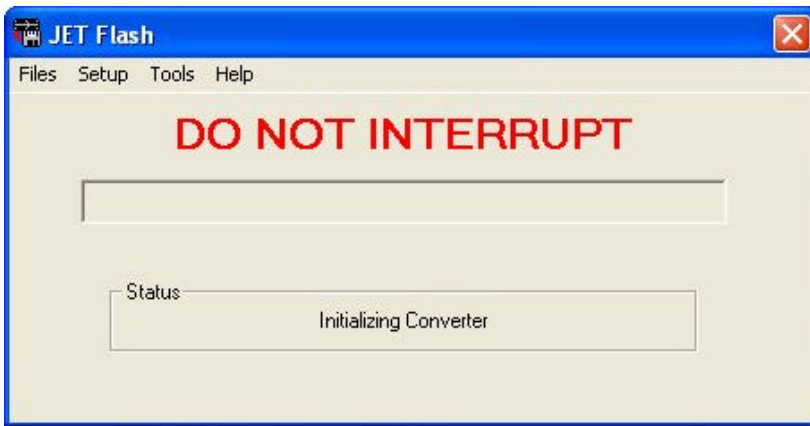
Before proceeding, connect DST OBDII interface to your PC. Connect the other end of the converter to the ALDL diagnostics connector on the vehicle. (The ALDL connector is located under the dash on the driver's side.)

Once the interface is connected, turn the ignition key on but **DO NOT** start the engine. After turning on the ignition, wait about 10 to 15 seconds to clear the GM security delay before proceeding with programming.

Now click on '*OK*' to begin the PCM programming process. If all the connections have been properly made, the program will begin communicating with the PCM, sending the necessary instructions to start the memory programming process.

The programming status screen will then be displayed.





The progress meter shows the progress on the programming as it proceeds and the Status window describes what part of the process is currently underway. Depending on the PC you are using, the programming will usually take a minute or two.

When the programming process is complete, the message shown below will be displayed:



Click 'OK' to complete the PCM programming and close the Programming Complete message box. Your PCM is now programmed with the new calibration and ready for testing.

### **Please Note:**

The JET Dynamic Spectrum Tuner is a powerful tool that makes quick and easy tuning of late model GM cars or trucks available to all auto enthusiasts. While JET Performance Products has made every effort to make the software as user-friendly as possible you will need a basic understanding of the operation of modern electronic engine control systems to successfully tune your vehicles. The DST program does not do the tuning for you.

There is a wide range of good tuning information available on some of the automotive web sites, forum and mail lists on the internet. There are also some excellent books covering the operation of these systems.

The JET technical support department can answer your questions regarding the installation and basic use of the Dynamic Spectrum Tuner, but can not help you with the tuning of your particular vehicle, so please do not contact JET regarding specific tuning questions. Every vehicle, depending on equipment installed, modifications that have been made and your performance goals presents a unique tuning task that must be addressed individually.

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