



Duramax 6.6L LBZ/LMM DSP⁵ User Guide

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Duramax 6.6L LBZ/LMM DSP⁵





User Guide

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Prerequisites

Intended Audience

EFILive Customers using the V8 Scan and Tune Tool software.

Computer Knowledge

It is expected that readers have a basic understanding of:

- The Windows operating system;
- Starting and using Windows applications;
- Navigating folders using Windows Explorer.

Tuning Knowledge

It is expected that readers have a basic understanding of:

- Electronic Fuel Injection.
- On Board Diagnostics.



Introduction

What is EFILive?

EFILive is tuning software and hardware - it is not a tune. Together the software and hardware give users the tools to write tunes. EFILive does not provide tune files, tuning advice or support, but do provide software support and hardware support.

DSP² Support Retirement

This document was originally created for DSP⁵ and DSP² custom operating systems. Support for DSP² operating systems was retired in July 2018.

The DSP² custom operating system has not been migrated to V8 Scan and Tune software.

What is EFILive DSP⁵?

EFILive's DSP⁵ custom operating systems for Duramax controllers allows customers to be able to switch 'on the fly' between multiple tunes, all stored in the ECM's flash memory















Having multiple tunes instantly accessible means changing tunes to suit different driving conditions no longer requires the ECM to be reflashed each time you choose to run a different tune. (E.g. racing, towing, or power limiting.) Simply build multiple tunes to fill the DSP⁵ slots, flash the ECM once and then select your desired tune through via a hardwired switch at any time.

The ECM can be returned to GM factory condition at any time by reflashing a stock GM Operating System and calibration into the ECM using the Full Flash option.

Software Version Overview

This version of the Duramax LBZ & LMM DSP⁵ User Guide migrates all processes to EFILive V8 Scan and Tune software. Functionality is still available in V7.5 software, however software support and bug fixes will cease in 2021.

FlashScan/AutoCal V3 and AutoCal V2 are not compatible with V7 software. V7 functions are only supported by FlashScan V2. The following is a brief view of the activities that are performed with the different software versions:

Feature	V7	V8
Scanning		
OBDII Diagnostics		
Reading		
Flashing		
Tune Editing		
VIN License Management		
Firmware Management		

To upgrade to DSP⁵ exclusively in EFILive V8 Scan and Tune software you must be running the following (or higher) software versions.

1. EFILive V8.3.5 or later.
2. FlashScan V3 / AutoCal V3 Firmware – V3.00.060.
3. FlashScan V2 / AutoCal V2 Firmware - V2.08.170.

The latest software versions are available for download from EFILive's website.



DSP⁵ Upgrade

DSP⁵ Upgrade Checklist

DSP⁵ upgrades are only available on specific factory operating systems. Typically these are based on the latest factory update (at time of development). If you have a truck that has an OS not listed below, you will need to upgrade your base file first.

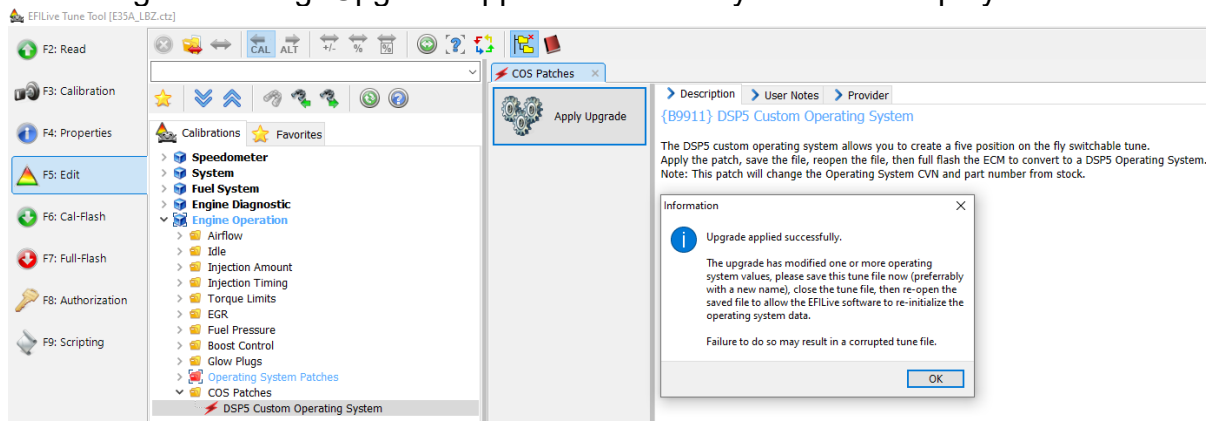
Supported DSP⁵ operating systems are listed in the table below. These were the latest factory updates as of 2015; released 9 years after this ECM type was introduced.

EFILive will not be offering DSP⁵ on older, obscure or obsolete OS's. No further EFILive development is scheduled for Duramax platforms.

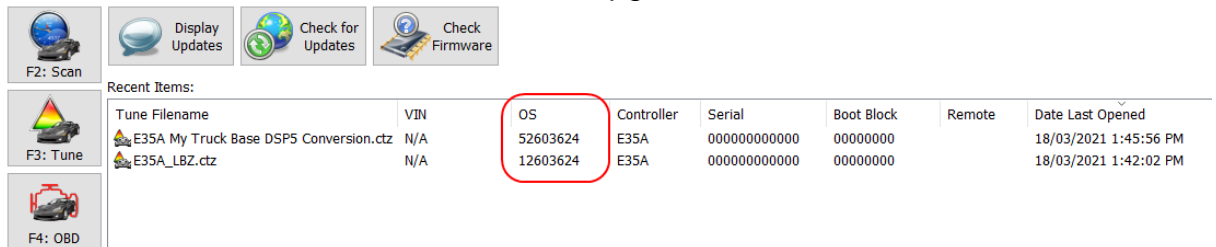
DSP ⁵ Supported Operating Systems	
E35A (LBZ)	E35B (LMM)
12603624	12617083
12604138	12617103
12606128	12628594
12616698	
12632483	

Upgrade Operating System to DSP⁵

1. Open V8 Scan and Tune software and your stock tune file.
2. Navigate to [F5: Edit].
3. Expand the Engine Operation -> COS Patches Folder and select DSP5 Custom Operating System.
4. Select the [Apply Upgrade] button.
5. Select [Yes] to the "This operation cannot be undone, continue?" dialog box.
6. A message indicating "Upgrade applied successfully." will now display.



7. Save the file with a new name using, **File > Save As**. As an example; 'My Truck Base DSP5 Conversion.ctz'.
8. Close the tune file.
9. In the EFILive V8 Scan and Tune Recent Items entries for the stock tune and your upgraded DSP⁵ tune will be listed. Confirm that the operating system number on the base file is different to the upgraded DSP⁵ converted file.



10. Reopen the tune file that was converted.
11. Edit the values on your individual tunes, and [Save] the changes to your tune file.
12. Flash the DSP⁵ tune into your ECM. Refer to pass-thru flashing, FlashScan V3/AutoCal V3 flashing or FlashScan V2 flashing for further instructions.

NOTE: DSP⁵ tunes cannot be read out of the ECM once flashed in.

Supported Switching Methods

EFILive's DSP⁵ custom operating system can be switched using hardwired switch. Users cannot switch tunes using EFILive hardware.

Important DSP⁵ Parameters and Tables

A9136, A9236, A9336, A9436 – DSP⁵ switching voltages

These parameters set up the switching points for each DSP⁵ program to become enabled.

It works by the voltage from the switch for each tune needing to fall between each adjacent parameter for a valid reading. So as an example only, if you set the parameters like so –

Table #	DSP Program #	Volts	Description
Non-DSP Program (stock)		>4.01V	For the non DSP Program (stock) to become enabled the switch voltage must be above 4.01V.
A9136	DSP Program #1	4.00V	To enable #1, the switch voltage must be between 4.00V and 3.01V
A9236	DSP Program #2	3.00V	To enable #2, the switch voltage must be between 3.00V and 2.51V.
A9336	DSP Program #3	2.50V	To enable #3, the switch voltage must be between 2.50V and 1.81V.
A9436	DSP Program #4	1.80V	To enable #4 the switch voltage must be between 0.00V and 1.80V

Monitoring DSP status in the Scantool

You can monitor the DSP switch data using the following PID's –

GM.E35DSP2_DMA (PC) or E35DSP2_M (BBL): This PID will show if the DSP² tune is enabled.

GM.E35DSP5_DMA (PC) or E35DSP5_M (BBL): This PID will show the current tune number the ECM is using for DSP⁵.

GM.E35DSP5V_DMA (PC) or E35DSP5V_M (BBL): This will show the measured voltage at the ECM pin when using DSP⁵, useful for setting up the DSP⁵ switching voltages, otherwise just use the previous PID to monitor the DSP⁵ program switching.



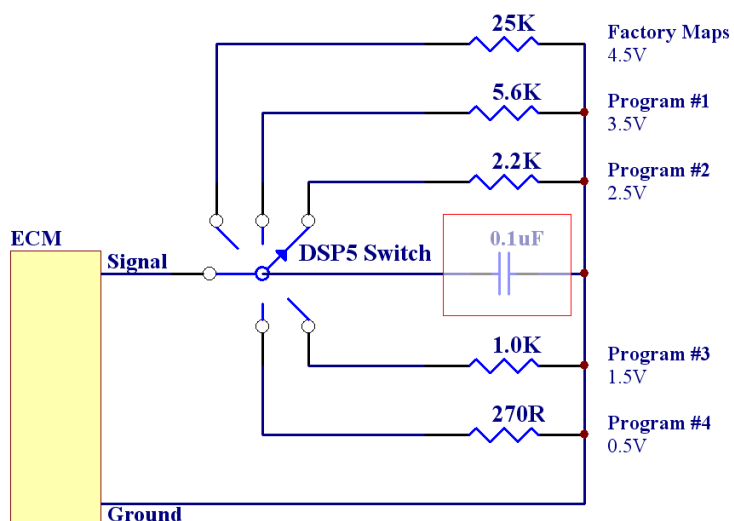
Installing a Hardwired switch

Wiring the DSP⁵ Switch

The DSP⁵ switch works by selecting different voltages for the ECM to measure, from these voltages the ECM can determine which program you wish to run.

Below is the suggested resistance to be used for any DSP⁵ switch you may wish to design. Also shown is the approx. voltage the ECM will measure for each resistance. The switching voltages are configurable within EFILive, however, the values below give a good even separation of switch points.

The 0.1uF capacitor shown in red is optional, it is used to reduce switch bounce.

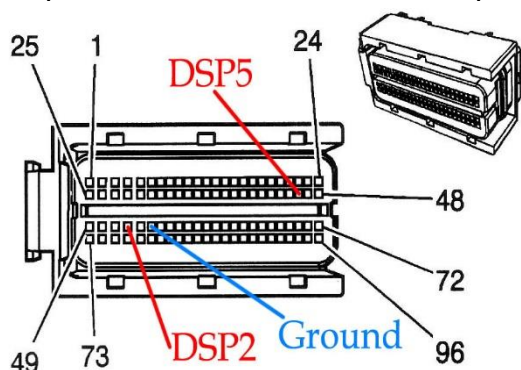


The connections to the ECM from the switch are made to the following pins –

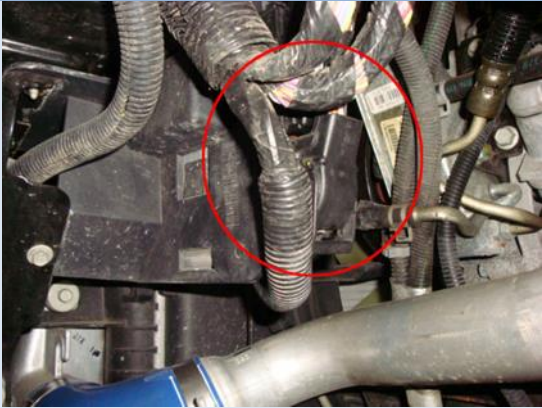




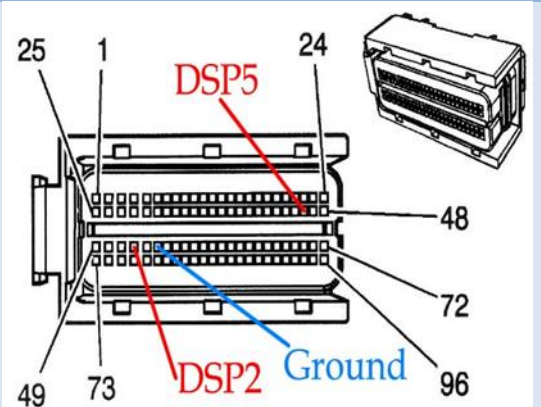
- Signal = Connector 1 (the larger plug), pin 46, (*next to Grey wire-LBZ, Tan wire-LMM*).
- Ground = Connector 1 (the larger plug), pin 54, (*next to Yellow/Black wire*).

Note: It may be possible to make the ground connection in the cab rather than the ECM.

The part number for the connector pins is – Tray #19, 1928498135.



LBZ / LMM ECM Connector Wiring Installation

<p>#1 – Locate ECM Plug</p> 	<p>#2 – Remove the Larger Plug</p> 
<p>#3 – Remove purple locking clip (don't lose it!)</p> 	<p>#4 – Remove top cover</p> 
<p>#5 – Insert new pins/wires Reverse procedures once done.</p> 	<p>Pin-out Reference (viewed looking at connector face).</p> 

LBZ / LMM – DSP⁵ pin install guide

Contributed by EFILive beta tester, Joe Harden

1. Remove the driver's side inner fender



2. Use the "throttle cable" port through the firewall as a way to route the wire from the switch to the ECM. (note that EGT and boost wires are already installed through this port in the pictures)



3. Press the grommet into the cab



4. This is an under-dash view of what's taking place



5. Pop the rubber centre out of the grommet. (It's been a while since the egt / boost install was done, but it seems like I had to make a cut into the rubber centre in order to remove it from the "throttle cable". It already had a slit in it during this install, but I don't remember if I did it earlier or not.)



6. Pull the grommet through the firewall (into the engine bay) where it is easier to feed the wire through it. I had the pin soldered to the wire, since I don't have the proper crimping tool. The crimping tabs on the pin need to be trimmed down and the solder can't be very thick, since the whole pin needs to fit down a hole about the size of the head of the pin.)



7. The grommet can be installed back into the firewall after the wire is fed through



8. Location of ECM.



9. At this point, the batteries need to be disconnected!

Locate the ratcheting lever on the lower connection of the ECM and pull upward (toward the sky). As the lever rotates upward, the plug will back out of the ECM. Assist the ratchet in backing out the connector. The ratchet will stop after about 90° of rotation.



10. This connection is referred to as C2 of the ECM. (We're interested in C1 above it, but C2 needed to be removed in order to make C1 available.)

Remove connector C1 (directly above C2). The same ratcheting lever is on this connector as C2, except the lever needs to be pulled down (toward the ground).



11. Here's C1 after being unplugged from the ECM.



12. There's a pink clip in the connector that holds the pins in place. This needs to be removed. I used a small allen-wrench to get down in the notch of the pink clip and applied pressure to the end of the connector to remove it.



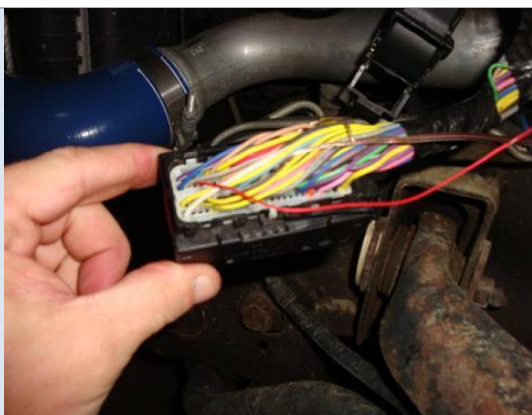
13. Remove the pink clip completely from the connector



14. Take the ratcheting mechanism / cover off the connector. First, pop up the end nearest the wire bundle.



15. The pin is to be inserted in location 46 (from this view with the wire bundle on the right side of the connector, it's the 3rd slot in from the beginning of the second row. If confused, follow the red wire across the picture.)



Referring to this view, the pin needs to be oriented such that the wider side of the head of the pin is closest to location 47 (grey wire).

It is a good idea to have a small piece of rigid wire (or a straightened out paper-clip) near by to help push the pin into location.

Reinstall the pink clip. If the clip won't slide completely through the connector, especially if it stops in the area of the new pin, then check that the pin has been seated in the connector with the rigid wire.

Once the pink clip is in place, press the sliding portion of the ratcheting mechanism back into the connector and attach the ratchet lever / cover back onto the connector (the lever is to be down in the "locked" position when this is carried out.) Having the slide pushed in and the lever down properly position the gear and slide.

C1 is now ready to be connected to the ECM, so pull the lever back to the fully open position and insert the connector into the top port until you feel the slide mechanism make contact with the ECM. Now begin pushing the lever up while helping the ratchet feed the connector into the port.

C2 can now be reinstalled into the lower port. Having the lever in the full open position, follow the same steps as C1, except the lever will be pulled toward the ground while the connector is being guided into the port.

The batteries can now be reconnected and the inner fender can be reinstalled.

This install didn't include a ground wire from the switch to the ECM. I currently have the switch grounded to the metal support under the steering column, and it works fine

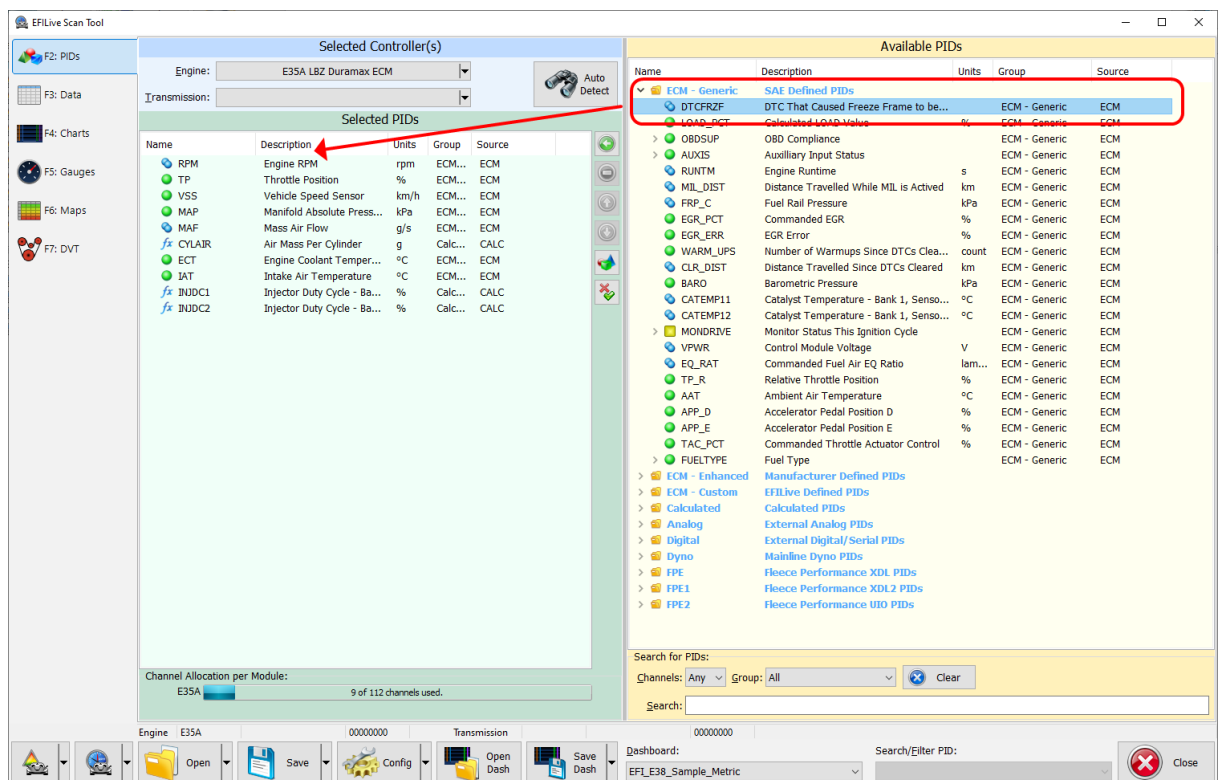


V8 Scan and Tune Scan

Pass-Thru Data Logging

To log data using FlashScan or AutoCal and V8 Scan and Tune software;

1. Open the Efilive V8 Scan and Tune.
2. Connect your FlashScan/AutoCal device to your PC and vehicle.
3. Turn the vehicle ignition to the *On* position.
4. Select an existing Dashboard configuration either by using the [Open Dash] button or using the Dashboard drop down, or configure after making controller and PID selections.
5. Navigate to the [F2: Scan] -> [F2: PIDs] menu option.
6. In the Engine field use the drop down list to select the E35A or E35B controller type or use Auto Detect.
7. Drag PIDs or PID folders from the Available PIDs window into the Selected PIDs window.



8. Navigate to the [F3: Data], [F4: Charts], [F5: Gauges] or [F6: Maps] tab and configure your dashboard to arrange data displays where a dashboard has not already been selected.
9. Users should [Save Dash] to save their custom configurations to reduce future configuration requirements.
10. Start the vehicle.
11. Select either Record or Monitor from the [F3: Data], [F4: Charts], [F5: Gauges] or [F6: Maps] screens.

12. Stop the vehicle and turn the ignition off prior to selecting Stop to stop the data logging session.
13. Save the log.
14. To replay the data log, navigate to the [F3: Data], [F4: Charts], [F5: Gauges] or [F6: Maps] tab and select the appropriate Playback buttons.

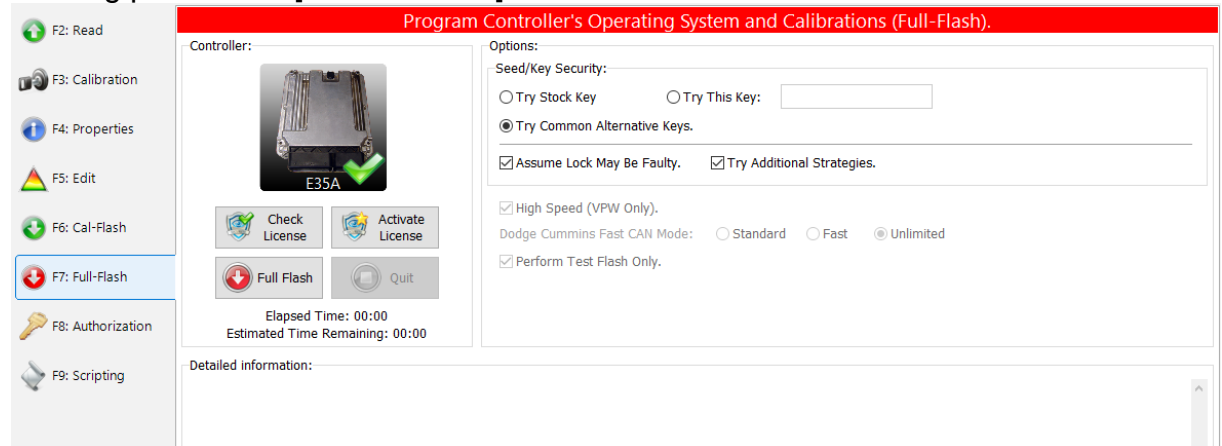


Pass-Thru Licence and Flash a Controller

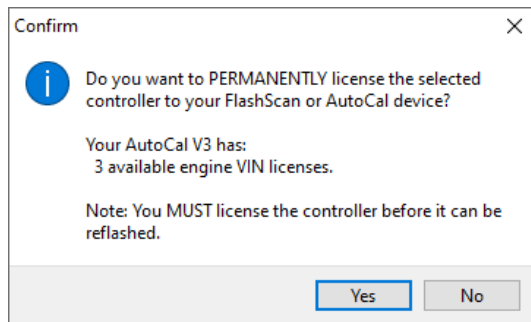
Follow these steps to license and flash the selected controller.

1. Open the EFILive Scan and Tune application.
2. Connect your FlashScan/AutoCal to your PC and your vehicle.
3. Turn the vehicle ignition to the *On* position, (not the Accessory position. Vehicle must not be cranked/running when flashing).
4. Select the [F3: Tune] option in the left-hand pane.
5. Click on the Open button and select the calibration file for the controller you wish to flash or license.
6. If tune file security has been applied to the tune file, review and accept the Security Warning.
7. Click on the [F7: Full Flash] options in the left-hand pane. A full flash is required to program a DSP⁵ into the ECM where a single tune is already programmed and to revert from a DSP⁵ to single tune. For all other tune file

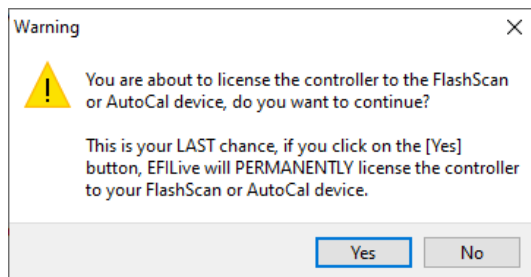
flashing please use [F6: Cal-Flash]



8. Click on the Check License button. This will indicate if the controller is already licensed or needs to be licensed.
9. Where the controller is NOT licensed, select Activate License to license the controller.
10. Select Yes to license the controller or No to close this window without licensing the controller.



11. Select Yes to license the controller or No to close this window without licensing the controller.



12. Select the Full Flash button to commence the flash.
13. While the ECM is flashing an Elapsed time indicator, an Estimated Time Remaining indicator, and a Progress bar will display tracking the Flash progress.
14. When the flash process is complete a countdown timer will be shown. When prompted perform the following actions:
 - a. Turn the vehicle ignition Off.
 - b. Click on the Start button to begin the countdown timer.
 - c. DO NOT turn the vehicle ignition on until the countdown timer expires. This time is critical to allow the ECM to perform internal functions after a read operation.



Configure FlashScan/AutoCal for BBX

There are a range of configuration files that must be installed on FlashScan and AutoCal devices before the device can be used in standalone mode (BBX).

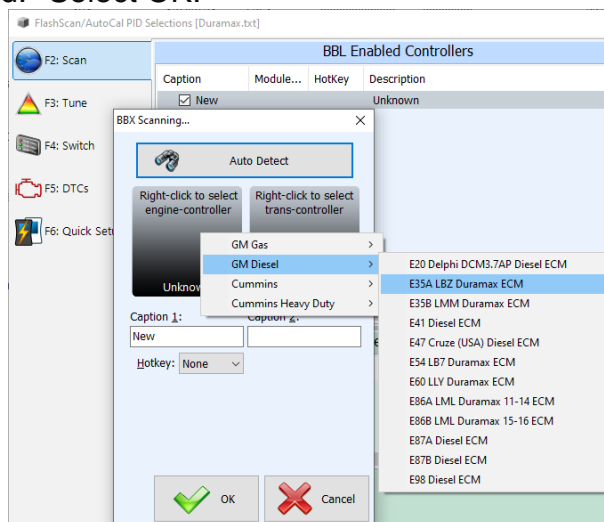
Follow these instructions to configure your FlashScan or AutoCal for BBX.

1. Connect your FlashScan or AutoCal to your PC.
2. Open the Efilive V8 Scan and Tune application.
3. Select the [F5: BBX] option in the left-hand pane.

Data Logging

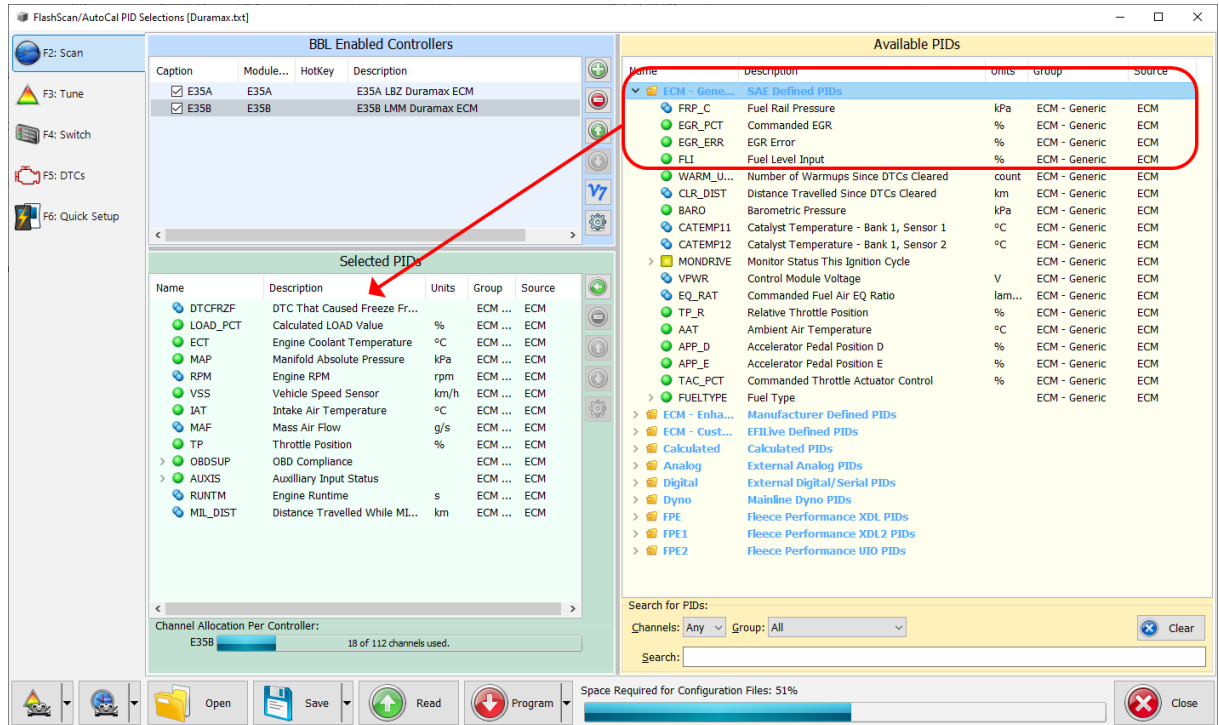
To configure data logging;

1. Select the [F2: Scan] option in the left-hand pane.
2. Remove any unnecessary controller configurations to ensure capacity restrictions are not exceeded.
3. Add your chosen controller(s) to your list;
 - a. Press the green '+' icon.
 - b. Right click on the Engine Controller box.
 - c. Navigate to Select E35A or E35B.
 - d. Select OK.



4. Click on the E35A or E35B controller in the “BBL Enabled Controllers” window.

5. Navigate and drag the PIDs or PID folders from the Available PIDs window into the Selected PIDs window.



Configure Tuning

To configure flashing of E35A or E35B controllers on your FlashScan/AutoCal device;

1. Select the [F3: Tune] option in the left-hand pane.
2. Remove any unnecessary controller configurations to ensure capacity restrictions are not exceeded.
3. Add your chosen controller(s) to your list;
 - a. Press the green '+' icon.
 - b. Right click on the Engine Controller box.
 - c. Navigate to Select E35A or E35B.
 - d. Select OK.

Tune File Switching

Not applicable for LBZ and LMM controllers. EFILive's DSP⁵ custom operating system can ONLY be switched using hardwired switch. Users cannot switch tunes using EFILive hardware.

Configure DTCs

To configure the display of trouble codes and descriptions onto FlashScan;

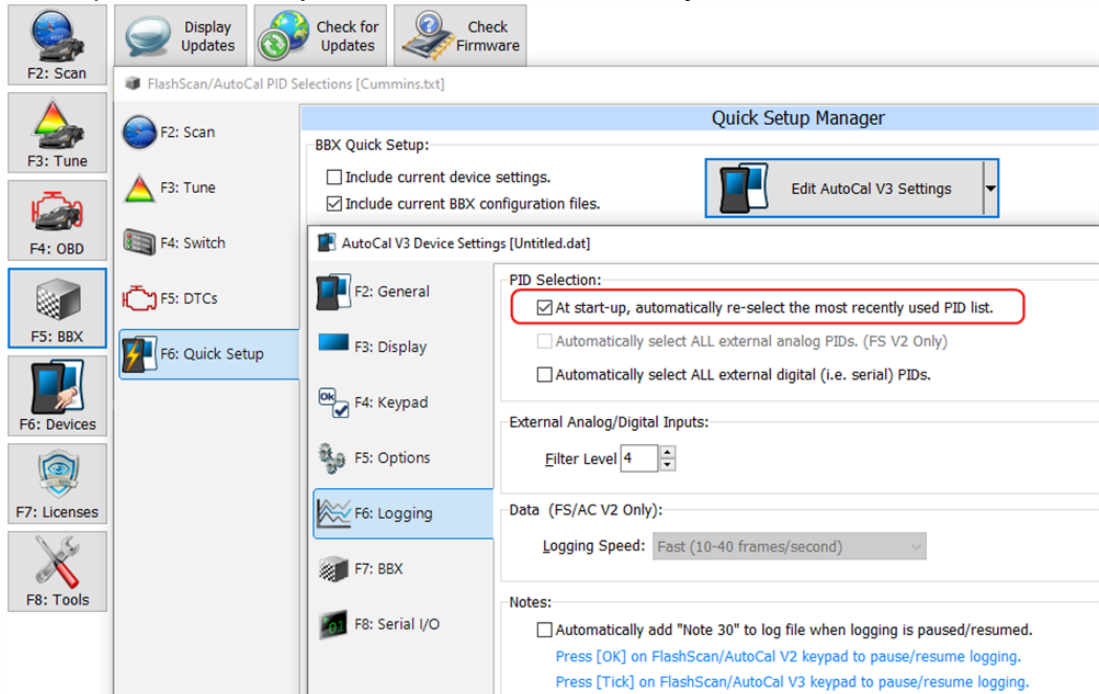
1. Select the [F5: DTC's] option in the left-hand pane.
2. Select appropriate DTC options.

Quick Setup

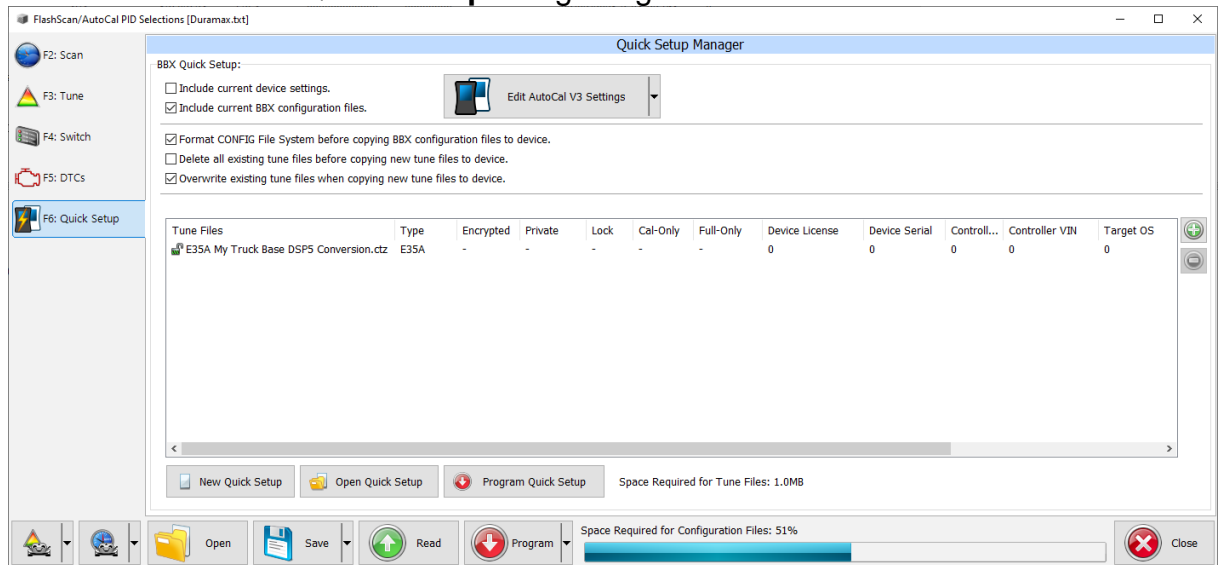
To configure BBX settings, device settings, and configure tune files for BBX;

1. Select the [F6: Quick Setup] option in the left-hand pane.
2. Select appropriate BBX configuration options.

3. Edit device settings as necessary. To prevent manually selecting your controller PID group each time FlashScan/AutoCal is powered, the most recent PID group selection can be automatically selected by:
 - a. Selecting the correct hardware on the [F6: Quick Setup] -> [Edit AutoCal V3 Settings] button.
 - b. In the Device Settings window, navigate to [F6: Logging] and tick the “At start-up, automatically re-select the most recently used PID list.”



4. Add tune files to the **Quick Setup** using the green '+' icon.



5. Write this configuration to FlashScan or AutoCal using the [Program Quick Setup] function. The [Program Quick Setup] programs all selected Scan, Tune, Switch, and DTC options, as well as selected device settings, BBX Quick Setup selections and tune files. Once the device is programmed, FlashScan or AutoCal is configured for BBX functions.

Each option can be programmed individually using the [Program] button on each tab, or collectively using the [Program Quick Setup] option.



FlashScan Menu Navigation

FlashScan/AutoCal V3

FlashScan/AutoCal V3 supports two menu structures; the EFILive standard menu and the user defined menu. Where a user defined menu is not installed, the EFILive standard menu will be displayed.

Data Logging

1. Configure FlashScan/AutoCal V3 for BBX features if not already setup.
2. Connect your FlashScan/AutoCal V3 device to your vehicle.
3. Turn the vehicle ignition to the *On* position.
4. Navigate to the Scan Tool -> F1 Select PIDs menu option.
5. Select correct controller type from BBX configured controllers.
6. Navigate to the F1 Scan Tool -> F2 Data Logging menu option.
7. Select F1: Record Data to commence the logging session.
8. The LCD will display recording status, elapsed time, frame count and the selected PIDs.
9. A range of options are available while the Log is recording:
 1. Select ✓ to pause/resume the log.
 2. Select the up and down arrows to navigate through selected PIDs.
 3. Select X, to stop data logging and save the logged data.
10. Start the vehicle and drive to record actual performance. Do not attempt to operate a FlashScan/AutoCal device while your vehicle is in motion.
11. Select X on FlashScan/AutoCal V3 to stop data logging and save the log file.

License and Flash a Controller

1. Configure FlashScan/AutoCal V3 for BBX features if not already setup.
2. Copy selected tune file(s) from your PC to FlashScan/AutoCal V3 if not already copied via Quick Setup during step 1.
3. Connect your FlashScan/AutoCal V3 device to your vehicle.
4. Turn the vehicle ignition to the *On* position, (not the *Accessory* position). Vehicle must not be cranked/running when flashing).
5. Navigate to the Tune Tool menu and select F1: Tuning -> F3 Program Full menu option.
6. Navigate to the folder your tune file is located in and select ✓ to commence the flash.
7. If the controller has not been licensed by this device previously, you will be presented with an "Unlicensed Controller" message. Select ✓ to proceed with licensing the controller, or X to exit without licensing the controller.
8. Select ✓ to confirm licensing the controller and commence the flash, or X to exit without licensing the controller.
9. When the flash process is complete, select X to close the flash completed message.
10. The Reset Controller notification will be shown, and the controller reset process will begin.

1. Turn the vehicle ignition Off.
2. Click on the Start button to begin the countdown timer.
3. DO NOT turn the vehicle ignition on until the countdown timer expires. This time is critical to allow the ECM to perform internal functions after a read operation.



Switch Tunes using FlashScan/AutoCal V3

Not applicable. EFILive's DSP⁵ custom operating system can ONLY be switched using hardwired switch. Users cannot switch tunes using EFILive hardware.

FlashScan V2

Data Logging

1. Configure FlashScan V2 for BBX features if not already setup.
2. Connect your FlashScan V2 device to your vehicle.
3. Turn the vehicle ignition to the *On* position.
4. Navigate to the F1 Scan Tool - F1 Select PIDs menu option.
5. Select correct controller type from BBX configured controllers.
6. Navigate to the F1 Scan Tool - F2 Data Logging menu option.
7. Select F1: Record Data to commence the logging session.
8. The LCD will display the elapsed time, frame count and the selected PIDs.
9. A range of options are available while the Log is recording:
 1. Select OK to pause/resume the log.
 2. Select F1..F4 or Ctrl+F1..Ctrl+F4 to add "user notes" 1 thru 8 to the log.
 3. Select Enter to toggle between Metric and US Customary units.
 4. Select the up and down arrows to navigate through selected PIDs.
 5. Select Cancel, to stop data logging and save the logged data.
10. Start the vehicle and drive to record actual performance. Do not attempt to operate a FlashScan/AutoCal device while your vehicle is in motion.
11. Select Cancel on FlashScan V2 to stop data logging and save the log file.

NOTE: When data logging is activated you cannot return to the menu until logging is stopped.

License and Flash a Controller

1. Configure FlashScan V2 for BBX features if not already setup.
2. Copy selected tune file(s) from your PC to FlashScan V2 if not already copied via Quick Setup in step 1.
3. Connect your FlashScan V2 device to your vehicle.
4. Turn the vehicle ignition to the On position, (not the Accessory position. Vehicle must not be cranked/running when flashing).
5. Navigate to the F2 Tune Tool -> F1 Tuning and select F3 Program Full menu option.
6. Using the arrow keys, navigate to the correct tune file and select OK.
7. If the controller has not been licensed by this device previously, you will be presented with the License this controller now? message. Select Yes to license the controller or No to exit without licensing the controller.
8. Select Yes to confirm licensing the controller and commence the flash, or No to exit without licensing the controller.
9. When the flash process is complete the Reset Controller notification will be shown. When prompted perform the following actions:
 - a. Turn the vehicle ignition Off.
 - b. Click on the Start button to begin the countdown timer.
 - c. DO NOT turn the vehicle ignition on until the countdown timer expires. This time is critical to allow the ECM to perform internal functions after a read operation.



Switch Tunes using FlashScan V2

Not applicable. EFILive's DSP⁵ custom operating system can ONLY be switched using hardwired switch. Users cannot switch tunes using EFILive hardware.



Support

Trouble Shooting

Should users encounter problems with the EFILive software, FlashScan or AutoCal hardware they should:

1. Confirm software, firmware and boot block versions are up to date.
2. Check that checksums are valid.
3. Check the base file matches the calibration for your vehicle.
4. Check to see if the NVRAM in the ECM is functional.
5. DSP⁵ tune files cannot be read from the ECM.
6. Confirm DSP⁵ file was upgraded to new operating system number, as sequenced above.
7. Check Voltage settings by monitoring the voltage PID and tune number using the EFILive Scan Tool.
8. Check wiring installation; specifically check that the pins are properly fitted to the ECM.
9. Remove/isolate all after-market devices including mobile phone adapters, after-market equipment (audio systems, security, remote start etc.) and any devices wired into the OBD port that may interfere with vehicle communications.
10. DO NOT operate any vehicle feature that may communicate on the data bus. This includes opening or closing of hood, doors, windows, as well as changing settings on radio, HVAC, connecting/removing charging devices etc.

Error Codes

If an error occurs while using AutoCal, users can look up the error code description in the EFILive V8 Scan and Tune software.

The [F8: Tools] -> [F8: Error Codes] menu item provides an error code lookup function, and the “EFILive Error Codes.pdf” document accessed by selecting the Windows Start Icon and navigating to Program Files->EFILive->V8->Documents->EFILive Error Codes.pdf is also available. Both options provide error code descriptions, causes and actions.

Should the issue not be resolved after reviewing the Error code list, end users should contact their Tuner for support.

Checksums

Checksums perform a vital role in ensuring the integrity of the data in the tune file. There are two main reasons that checksums display as invalid:

1. The data in the file is corrupt and MUST NOT be flashed into a controller.
2. The data in the file has been modified with a software package that did not update the checksums – such as a hex editor.

Do not correct the checksums unless you know the tune file was modified outside of the EFILive software and that the modifications are correct and accurate.

If you correct the checksums of a file with corrupt data you are merely masking corruption. If you flash a corrupt file into a controller, you risk damaging the controller and/or causing the vehicle to operate incorrectly.

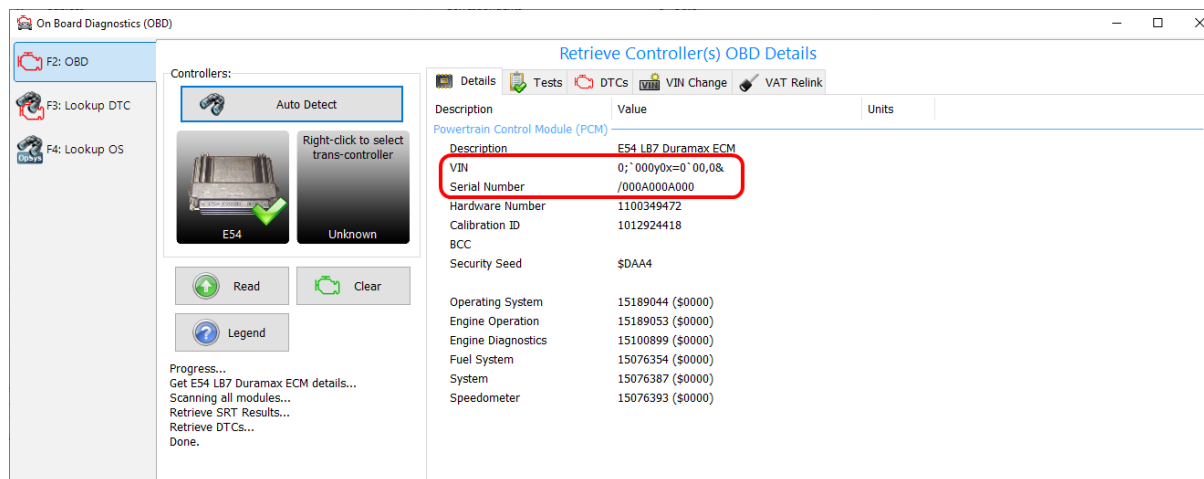
NVRAM Status

If the NVRAM area of the ECM is corrupted the vehicle may still run, however it may not be possible to read or flash the controller. Typically, if the VIN, Serial number, Hardware number and/or calibration ID do not contain valid data, the controller will need to be repaired to restore full functionality.

An error code received during reading and/or flashing may indicate a NVRAM issue.

To identify if the NVRAM is functional or corrupt:

1. Open the Efilive V8 Scan and Tune software.
2. Connect your FlashScan/AutoCal device to your PC and vehicle.
3. Turn the vehicle ignition to the *On* position.
4. Navigate to the [F4: OBD] -> [F2: OBD] menu option and select the [Details] tab.
5. Select your controller(s) by using the [Auto Detect] button, or;
 - a. Hover over the Engine Controller box, and right click on the "Right-click to select engine-controller" box and manually select the ECM.
 - b. Navigate and select the correct controller.
6. Click the [Read] button to populate controller data.
7. Where the VIN, Serial number, Hardware number and/or calibration ID either contain all zeros or non-numeric characters, the controller will need to be repaired to restore full functionality.



Controller repair requires the flash memory chip to be replaced in the ECM. A number of companies can perform this service including SoCal Diesel and Wait4Me Performance.

Test for Rogue Modules

For Customers with FlashScan/AutoCal V3 a range of test modes to check the network for rogue modules that may cause read or flash operations to abort are available.

Navigate to the Tune Tool -> F1: Tuning -> F4: Test OBD Network menu.

Select the Test CAN J1979 option.

Trace Files

V8 Scan and Tune *.htx files

When V8 Scan and Tune software reads or flashes a controller the details of the read/flash process may be saved in trace files for diagnostic purposes.

In addition, users can manually save trace files where options do not perform the desired outcome.

To manually generate a trace file, generate the error in V8 software, then open the EFILive Control Panel and navigate to [F8: Trace] and select [Save Trace]. Users can set the trace file and save location during this process.

Automatically generated trace files are created on your PC or laptop in the folder: \\Documents\\EFILive\\V8\\Trace and are named using the following naming convention:

YYYYMMDD_HHNNSS_T_CCC.htx, where:

- YYYYMMDD: is the year, month and day that the trace was recorded.
- HHNNSS: is the hour, minute and second that the trace was recorded.
- T: is the mode and is one of **R**=Read **F**=Full-Flash **W**=Cal-Flash.
- CCC: Is the controller type
- htx: is the file extension.

FlashScan/AutoCal V3 *.xalm files

Trace files are automatically saved where an error message is presented using the device in BBX mode. Users can manually save trace files where options do not perform the desired outcome, including for pass-thru functions.

To manually generate a trace file on FlashScan/AutoCal V3 navigate to Scan Tool -> F3: Scan Options -> F1: Save Trace.

FlashScan/AutoCal V3 maintains an internal buffer of the most recent messages sent to and received from the vehicle. That buffer is stored in RAM memory and is wiped clean each time the device is powered off or rebooted. Therefore you **MUST** save the trace file before powering off or rebooting the device.

Trace files are located in the EFILive -> Trace folder on FlashScan/AutoCal V3. Trace files are named using the following naming convention:

yyyymmdd_hhnnss_<desc>.xalm, where:

- yyyymmdd: is the year, month and day that the trace was recorded.
- hhnnss: is the hour, minute and second that the trace was recorded.
- <desc>: is the description where;
 - "User" means user generated trace files
 - "xxx._x_\$xxx" identifies the 3 character controller ID, the communication process upload/download, and the 4 digit error code.
- xalm: is the file extension.

FlashScan V2 Trace Files

Trace files are automatically saved where an error message is presented using the device in BBX mode. Users can manually save trace files where options do not perform the desired outcome.

To manually generate a trace file on FlashScan V2 navigate to F1 Scan Tool -> F3 Scan Options -> F1 Save Trace File.

FlashScan V2 maintains an internal buffer of the most recent messages sent to and received from the vehicle. That buffer is stored in RAM memory and is wiped clean each time the device is powered off or rebooted. Therefore you **MUST** save the trace file before powering off or rebooting the device.

Trace files are located in the Scan folder on FlashScan V2. It will be named USR_XXXX.efx, where XXXX is the unique file counter number.

Knowledgebase

The [EFILive Knowledgebase](#) provides a detailed resource on how to configure and use your EFILive software and hardware.

EFILive Authorized Dealer

If after reviewing this guide further assistance is required please contact the EFILive Authorised Dealer from whom you purchased your product. They are your first point of contact for EFILive support related inquiries.

How to Tune?

EFILive is tuning software and hardware - it is not a tune. Together the software and hardware give users the tools to write tunes. EFILive does not provide tune files, tuning advice or support, but do provide software support and hardware support.

If your question is in relation to the actual tuning of your vehicle (e.g. how to gain performance, economy etc.) then please ask these questions on the EFILive Forum (<http://forum.efilive.com/>).

EFILive Service Desk

Should you require additional assistance after using this support guide, please start a ticket on the [EFILive Service Desk](#). Please include the following information:

1. Dealer Name.
2. Device type.
3. Serial Number and Auth Code.
4. Your computer operating system.
5. Software and firmware versions.
6. Trace files.

Detailed information about your issue.