

VCM
SUITE

**GETTING
STARTED
GUIDE**

REVISION HISTORY

Date	Revisions
May 2022	Getting Started Guide: Initial Release
August 2022	Updates for MPVI3. Added instructions for reading and clearing DTCs.

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INTRODUCTION

Thank you for purchasing HP Tuners products.

All of our hardware and software designs undergo rigorous testing to provide years of trouble free service. All products are individually tested before they ship to ensure you receive a working product. Please read all of the associated documentation to get the most out of your unit. We hope you enjoy using VCM Suite.

- *What is VCM Suite?* (Page 5)
- *What is a VCM?* (Page 8)

WHAT IS VCM SUITE?

Typical late model vehicles use **computers** to control all aspects of engine operation (and in many cases, transmission operation). For such vehicles, VCM Suite is a comprehensive tuning tool that allows performance tuning and diagnostics, whether you want to increase the fuel economy of your daily driver or maximize your performance on the race track.

The suite has two components:

- **VCM Editor** allows users to adjust many of the parameters that control the operation of the engine and transmission.
- **VCM Scanner** allows users to monitor, log, and review key data that provides insight into the effectiveness of the vehicle's current tune. With such insight, a skilled tuner can return to VCM Editor and further refine the tune.

VCM EDITOR

VCM Editor allows the user to adjust a broad variety of engine and transmission parameters. Those familiar with any form of engine and transmission tuning will already understand the relevance of parameters such as:

- Ignition timing
- Fuel curve (Air Fuel Ratio)
- Fuel Injector sizes
- Mass Airflow sensor (MAF)
- Volumetric Efficiency
- Idle control
- Automatic transmission shift speeds
- Automatic transmission shift pressures

However, the modern vehicle controller also includes various protection mechanisms designed to prevent abuse and premature component failure. These items are of little value in a racing application and some folks are quite surprised to find out they even exist. Some examples are:

- RPM limiters
- Speed limiters
- Torque reduction during transmission shifts
- Various engine and transmission abuse modes
- Electronic throttle (fly by wire) torque management
- Over boost protection
- Fuel octane learning
- Various transmission torque limits

In addition, VCM Editor does not overlook the simple (and often forgotten) things such as changing cooling fan operation, recalibration of speedometer for final drive ratio changes, and disabling of anti-theft systems for retro installs.

VCM SCANNER

Knowing what to change is only half the story. Being able to accurately and conveniently record key data that reflects the current tune is paramount to any tuner's ability to extract that extra bit of performance.

VCM Scanner's comprehensive scanning capabilities allow you to record important parameters while the engine is running. Data, such as RPM, spark advance, inlet air temperature, and coolant temperatures can be logged, saved and reviewed to determine how well the current tune is functioning.

However, VCM Scanner is not limited to data that can be collected through the vehicle's diagnostic port. When used with an MPVI2/2+ with the Pro Feature Set or with an MPVI Pro, VCM Scanner can incorporate Wideband O2, Exhaust Gas Temperature, and other sensor output directly into the data stream.

Additionally, VCM Scanner can be used for a variety of diagnostic functions such as reading DTCs, checking for misfires, and making sure sensors are functioning and reading correctly.

WHAT IS A VCM?

Vehicle Control Module (VCM)

The VCM Suite and this document use the term Vehicle Control Module (VCM) to mean the computer that is primarily responsible for engine and transmission operation. In some vehicles, there are actually two modules, an Engine Control Module (ECM) and a Transmission Control Module (TCM). In general, the number of modules required to be read or written will be transparent to the end user or become obvious during the read/write process.

In certain applications, VCM Editor supports configuring the following additional modules:

- Fuel System Control Module (FSCM)
- Fuel Injection Control Module (FICM)
- Body Control module (BCM)

Most vehicles also contain many other modules that control different aspects of the vehicle's operation. At this time, VCM Suite does not allow modification of these other modules. Some examples are:

- Anti-lock Braking System (ABS) module
- Instrument Panel Cluster (IPC)
- Active Handling module
- Radio module
- Heater, Ventilation and Air Conditioning (HVAC) module
- Navigation system module

OVERVIEW

Follow these steps to get started with the VCM Suite:

1. If you don't already have an account on hptuners.com, **create one now**.
2. Download and install the VCM Suite. See *Installing The Software* (Page 12) for more information.
3. The VCM Suite connects to vehicles using an **interface device** from HP Tuners. If you do not already have such a device, follow these steps to obtain one and prepare it for use:
 - a. Purchase a device. See *Obtaining A New Interface Device* (Page 39) for more information.
 - b. When you receive the device, prepare it for use. See *Preparing a New Interface Device for Use* (Page 43).
 - c. Register the device at hptuners.com. See *Registering Your Interface Device* (Page 46).



NOTE: Certain vehicles may require modifications to their VCM or special cables to allow reading and writing of tuning files. See *Manufacturer Locked Control Modules* (Page 50).

4. Before you get started tuning vehicles, you may want to familiarize yourself with our licensing system. The VCM Suite is licensed on a "pay as you go" basis. You will only need to pay for the vehicles you actually tune and payment is not required until you flash your changes back to the vehicle. See the following topics for more information:
 - *Licensing Vehicles* (Page 15)
 - *Credits* (Page 20)
5. When you are ready to begin tuning, ALWAYS check the vehicle for diagnostic trouble codes (DTCs) before you do anything else. If there is a mechanical issue with the vehicle, it may affect performance and any performance data you want to

monitor could be impacted. This makes it very difficult to tune the vehicle effectively. See *Reading and Clearing DTCs* (Page 53) for instructions.

! **IMPORTANT:** Reading a vehicle will clear all DTCs, resulting in the loss of the troubleshooting information they contain. **DO NOT** proceed to the next step until you have resolved as many DTCs as possible and made note of those issues that cannot be resolved.

6. Once you have resolved as many DTCs as possible, the next step is usually to read of the vehicle's current sensor output using VCM Scanner. Obtaining this "data log" will often provide valuable information in understanding the vehicle's current behavior.
7. In VCM Editor, read the current tune of the of the vehicle. See *Reading a Vehicle* (Page 56) for instructions.



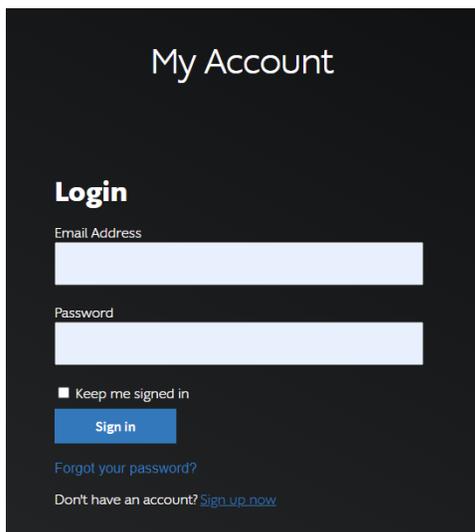
CAUTION: Improperly tuning a vehicle can cause serious engine damage. Do not attempt to make any change to a vehicle's tune without thoroughly researching the potential impacts of the change.

8. Tune the vehicle. This process usually has the following steps:
 - a. Edit the tune file using VCM Editor.
 - b. Write the modified tune file back to the vehicle.
 - c. Use VCM Scanner to check the impact of your changes and verify that all performance and emissions characteristics of the vehicle remain within limits acceptable to the vehicle owner and required by law.
 - d. Repeat steps a through c until your desired tuning goals have been met.

CREATING AN ACCOUNT

If you do not already have an HP Tuners account, create one now:

1. Go to <https://www.hptuners.com/my-account/>.
2. The My Account page appears. Click the **Sign up now** link at the bottom of the page.



The screenshot shows the 'My Account' page with a 'Login' section. It includes an 'Email Address' input field, a 'Password' input field, a 'Keep me signed in' checkbox, a 'Sign in' button, and links for 'Forgot your password?' and 'Don't have an account? Sign up now'.

3. The My Account Sign Up Page appears. Enter your email address and click **Send Code**. A verification code will be sent to the email address entered.
4. Once you receive the code, enter the verification code in the space provided and fill out the remaining fields on the page.
5. Click **Create**.

INSTALLING THE SOFTWARE

The VCM Suite is a free download that can be installed on as many computers as you like without additional charges.

SYSTEM REQUIREMENTS

The VCM Suite is designed to be resource-friendly, suitable for desktop PCs and laptops. However, these applications are also capable of complex mathematic computations. In some cases, resource demand and battery usage will increase.

- 2 GHz x86 CPU (ARM processors are NOT supported)
- 4 GB RAM
- Microsoft Windows 7 or newer running on Windows-based PC or laptop. (Running Windows on Mac or Linux computers is NOT supported)
- Microsoft .NET Framework 4.6.1

INSTALLATION INSTRUCTIONS

Follow these steps to install the latest version of the VCM Suite on your computer:

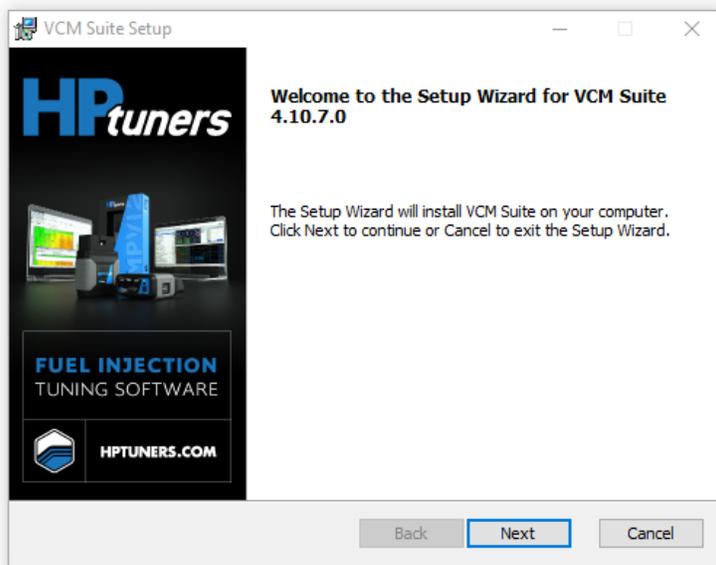
1. Navigate to <https://www.hptuners.com/downloads/>.
2. Select the icon shown below to download the latest stable version of the VCM Suite.



 **NOTE:** The Downloads page also has a similar panel that downloads the latest BETA version of the VCM Suite. The beta is useful when you want to work on a vehicle we've recently added support for or you need to use a feature that is relatively new.

 **NOTE:** The stable version and the beta can both be installed on the same computer. Both versions will peacefully co-exist on the same PC without interfering with one another.

3. Open the downloaded file. The installation wizard will appear.

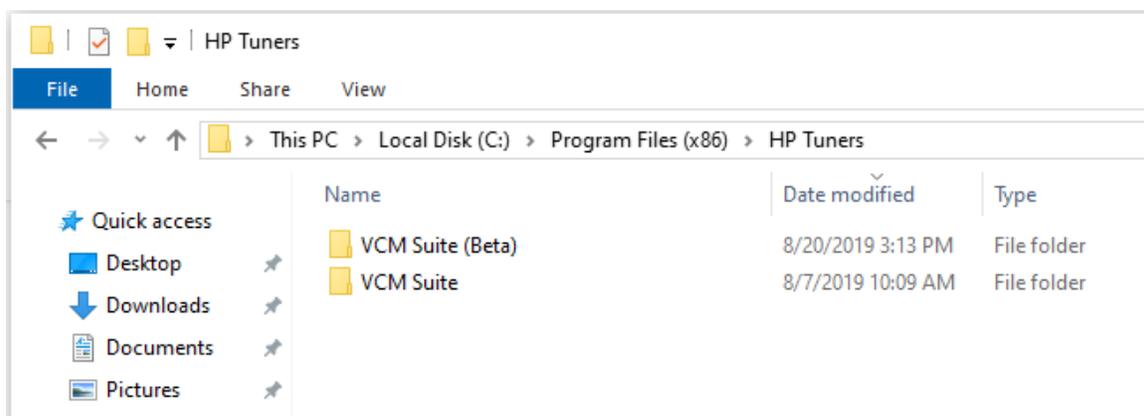


4. Follow the instructions on screen to complete software installation.

ADDING SHORTCUTS

The installer does not put shortcuts on your computer's desktop. If you wish to add a them, follow these steps:

1. Navigate to the folder in which VCM Suite was installed:
 - VCM Suite is found in: C:\Program Files (x86)\HP Tuners\VCM Suite
 - VCM Suite BETA is found in: C:\Program Files (x86)\HP Tuners\VCM Suite (Beta)



2. Right-click on either the **VCM Editor** icon or the **VCM Scanner** icon and drag it to your desktop. A popup menu appears.
3. Select **Create shortcuts here**.



NOTE: DO NOT move these icons out of the installation folder. The software will no longer function if you do so.

LICENSING VEHICLES

The VCM Suite is licensed based on the vehicles you are actually tuning (or plan to tune in the future). A license is tied to a vehicle's VIN, as well as the serial number and operating system version of its VCM.

A separate license will be required for each **HP Tuners interface device** you use to flash vehicles. Vehicles that are not licensed on a particular interface device cannot be flashed by that device.

Currently, two types of license can be purchased:

- A **Single Vehicle License** allows you to tune the individual vehicle which has been licensed. This is likely the best option for a small tuner shop or enthusiast that is tuning a very small number of vehicles.



NOTE: For some vehicles, you will be offered the option to license the ECM and TCM separately, rather than licensing the whole vehicle.

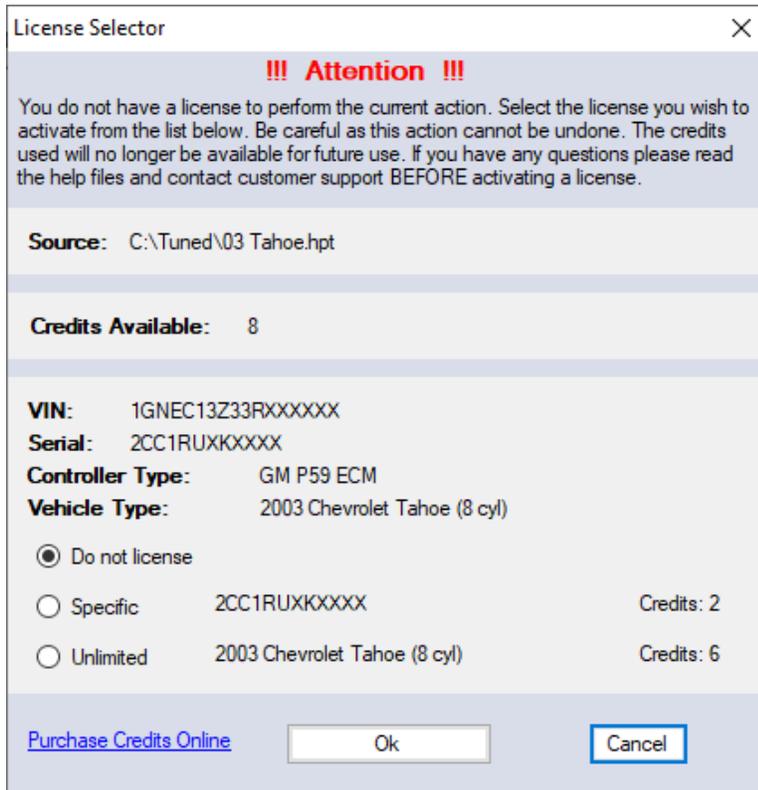
- For some vehicle models, a **Year/Model** license can be purchased. These licenses allow you to tune an unlimited number of vehicles with the same model, year, and engine. This is likely a good option for tuner shops that handle a significant number of vehicles of the same model and vintage.

Licenses for additional vehicles can be purchased at any time. Moreover, if a Year/Model license is available for the vehicle you are licensing, the purchase of the Single Vehicle License will earn **upgrade credits**, which can be applied to the purchase of the Year/Model license.

PURCHASING A LICENSE

If you do not yet have a license that covers the vehicle you are working on, the software will prompt you to purchase a license when you attempt to flash those changes to the vehicle. See *License Activation Rules* (Page 17) for more detail on licensing requirements.

The prompt the software displays looks like this:



 **NOTE:** Prices for licenses are listed in credits. Credits are the currency HP Tuners uses for license transactions. See *Credits (Page 20)* for more information.

Choose the desired option and click the **Ok** button. The appropriate amount of credits will be deducted from the credits on your MPVI2/2+.

HOW MANY CREDITS DO I NEED?

The number of credits required to license a particular vehicle depends on the vehicle. Some vehicles require more credits than others. Most single vehicle licenses require between 2 and 6 credits.

Additionally, purchasing a license for all vehicles of the same model and year requires more credits than a single vehicle license. But, its price can be reduced by earning **upgrade credits**.

For a list of specific credit requirements by make and model, see the **Supported Vehicles** page.

CAN I DELETE LICENSES OR SWAP THEM FOR ANOTHER VEHICLE?

No. Once licenses are chosen and committed, they are permanently stored and cannot be erased or swapped.

LICENSE ACTIVATION RULES

You can open, view, and modify any file supported by HP Tuners, whether you have a license for the vehicle or not.

If you do not already have a license that covers the vehicle you are working on, you will be prompted to purchase a license the first time you attempt to write a tune to that vehicle.



NOTE: Older (pre-MPVI2) devices also required the vehicle to be licensed prior to saving a modified file on your PC. This is not required with MPVI2/2+/3. devices.

The rules are as follows:

- Every **HP Tuners interface device** must have its own license for each vehicle you flash with that device.
- The vehicle used for the original read your tune is based on must be licensed. This license is tied not only the vehicle's VIN, but also to the serial number and operating system version of its VCM.

- If you are writing to a different vehicle, you will need a license that covers that vehicle, even if the vehicle is otherwise identical to the vehicle used for the original read. (The new vehicle will still have a different VIN and its VCM will have a different serial number.)
- If you change the VCM installed in the vehicle to be flashed, you will need a license that covers the new VCM. (The new VCM will have a different serial number than the original.)
- If you load a different operating system version on the VCM, you will sometimes be prompted to license the new operating system. However, if you apply a custom operating system from HP Tuners, you will typically not be required to license the custom OS as long as you license the base vehicle BEFORE you attempt to apply the custom OS.
- It's possible to change the VIN for certain vehicles. If you do this, you may be required to license the additional VIN.

TYPICAL VEHICLE LICENSING

In practice, licensing prompts appear very infrequently. For example:

- When working with your own vehicle, you will almost always read the vehicle first. The read and any modifications you make to the read file do not require a license.
- The first time you write a tune to a particular vehicle, you will be required to purchase the required license(s).
- Once purchased, you have all the licenses needed for your vehicle. This allows you to flash the same vehicle an unlimited number of times without seeing another prompt.
- If you later apply changes to the vehicle that would change the VIN, the PCM or the version of the PCM operating system, you may receive additional licensing prompts.

TAKE CAUTION WHEN

The following cases are extreme tests of our licensing rules. To avoid having to purchase multiple licenses for the same vehicle, think carefully before you proceed.

DOWNLOADED TUNE FILES

Although viewing tune files downloaded from the Internet can sometimes be very helpful when you're learning to tune, flashing these files to a vehicle is NOT recommended.

If you try to write such a file to your vehicle, you will be prompted to purchase a license for the vehicle that file was read from when you attempt to write the file to your vehicle.

If you have not yet licensed your own vehicle, you will be prompted to license your vehicle as well.

Additionally, you may be prompted to license the new VIN/OS combination.

ADDITIONAL / REPLACEMENT VCMS

Single vehicle licenses are tied to both VIN and VCM. If you purchase a spare VCM for your vehicle, you will need an additional license for the spare VCM when you try to write to it.

However, if the spare VCM is same year and model as a year/model license which you already have, you will not be prompted to license the spare. You will already have a license that supports that VCM.

CREDITS

Credits are the currency HP Tuners uses to sell **licenses** for tuning specific vehicles.

When purchased, credits are loaded onto the **HP Tuners interface device** you use to read and flash vehicles. Newer devices, such as the MPVI2, 2+, and 3 employ universal credits, which can be used for any vehicle we support.

Older MPVI units used a different type of credit for each vehicle manufacturer. Those credits are still valid and will be accepted if they have not yet been used.

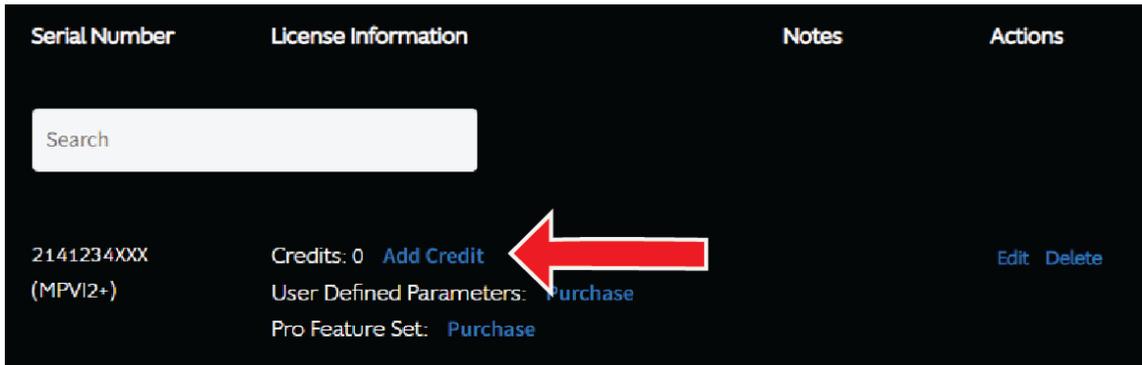
ADDING CREDITS

To purchase new credits and add them to your device:

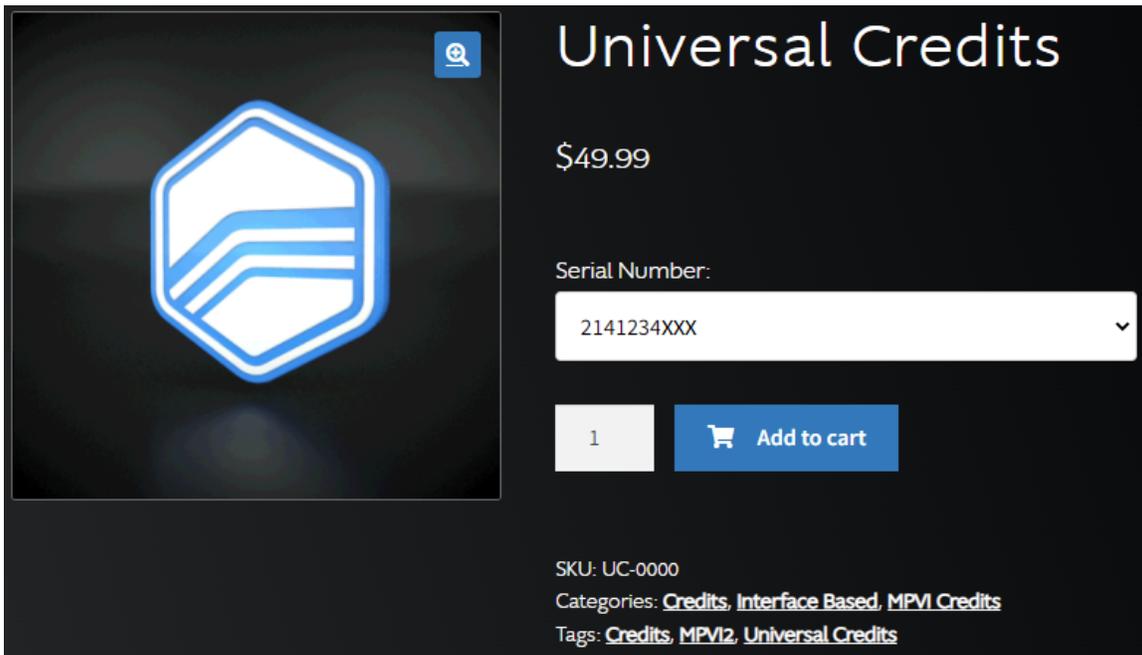
1. If you have not already done so, create an account on www.hptuners.com and **register your interface device**.
2. Once registered, the module will appear in your My Devices list. Select **My Devices** on the My Account page.



- The My Devices page lists all of your registered devices. Select the **Add Credit** link for the desired device.

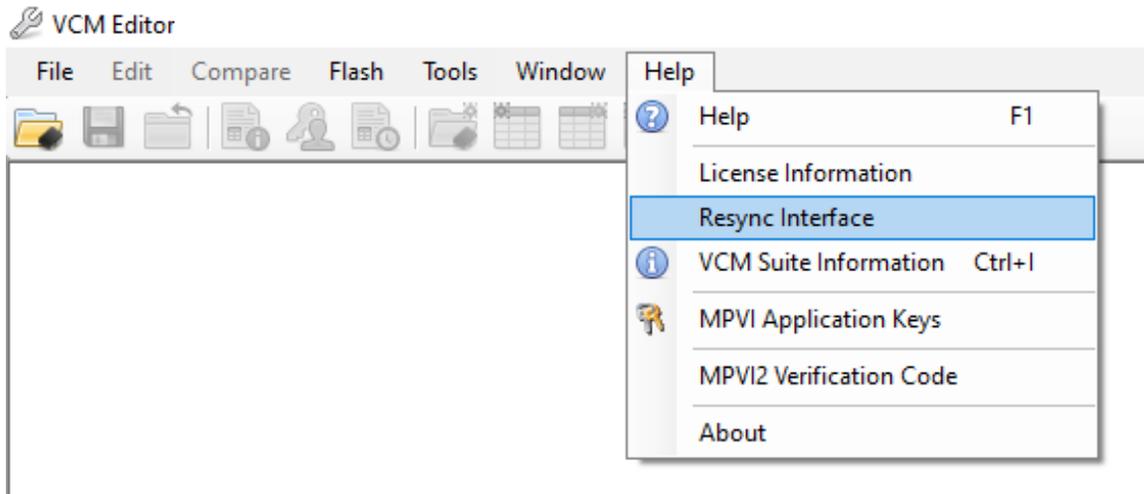


- In the box to the left of the Add to cart button, enter the number of credits you wish to purchase.



- Click **Add to cart** and proceed to checkout.
- Once checkout is completed, connect the device to a USB port on your computer.

7. Open VCM Scanner or VCM Editor.
8. In the menu bar, select **Help > Resync Interface**. This ensures that information about your interface, its credits and its licenses are available to both the VCM Suite and the device itself.



9. When the resync is completed, click **Close**.

HOW MANY CREDITS DO I HAVE NOW?

There are two places to see available credits:

- VCM Suite Info (the Infolog)
- The My Account page on the HP Tuners website.

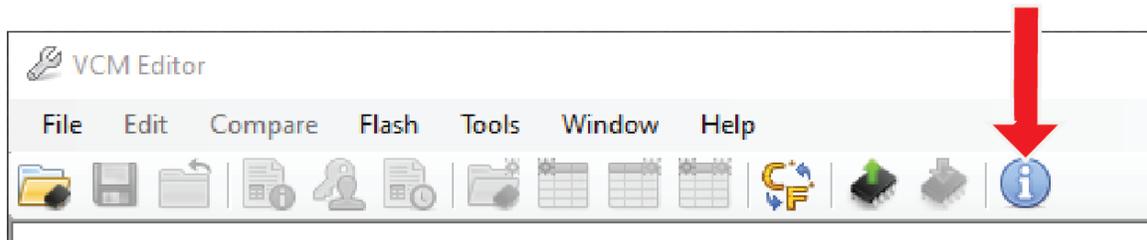


NOTE: You can view the number of credits spent on licenses and the number of upgrade credits available in the VCM Editor's License Information window.

VIEWING CREDITS IN THE INFOLOG

The number of available credits can be seen in the VCM Suite Info window:

1. Click the VCM Suite Info button in either VCM Editor or VCM Scanner.



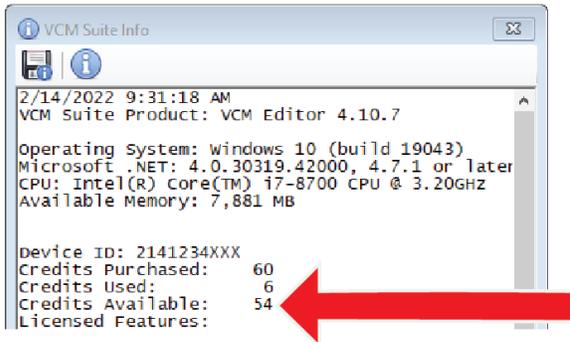
NOTE: make sure your interface is plugged into your PC before proceeding.

2. Click the blue circle "i" icon to poll the software and the vehicle.



 **NOTE:** This step may take five to twenty seconds to complete.

- 3. When Infolog generation is complete, the number of credits on the attached interface can be seen near the top of the file.



VIEWING CREDITS ON THE MY ACCOUNT PAGE

1. Navigate to the My Account page at <https://www.hptuners.com/my-account/>.
2. Select the **My Devices** tab.



3. The interface devices you have registered are listed on this page by serial number. The number of credits that have been loaded onto each device is displayed directly to the right of the device's serial number.

Serial Number	License Information	Notes	Actions
<input type="text" value="Search"/>			
2141234XXX (MPVI2+)	Credits: 0 Add Credit User Defined Parameters: Purchase Pro Feature Set: Purchase		Edit Delete

UPGRADE CREDITS

For vehicle models that have a Year/Model license available, each purchase of a Single Vehicle license will earn "upgrade credits" that count towards the purchase of the Year/Model license:

For these models, 75% of the credits used to purchase a Single Vehicle License will count towards an upgrade to a Year/Model license for the same vehicle. For example, 75% of the credits spent on a 2001 Camaro Single Vehicle license count towards an upgrade to a 2001 Camaro Year/Model license.

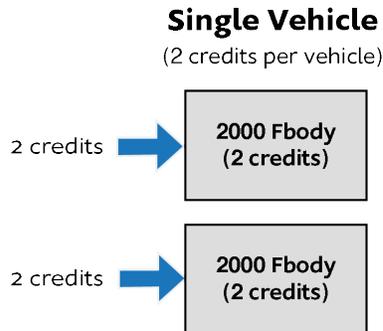
This combination of lower tier license availability and discounted upgrades provides customers a relatively low cost entry point while protecting that investment for future growth.

Upgrade credits are applied automatically. When you are prompted to license a new vehicle, the reduced number of credits will be displayed for the higher tier license. It is possible to reduce the number of credits required to purchase the Year/Model license to zero.

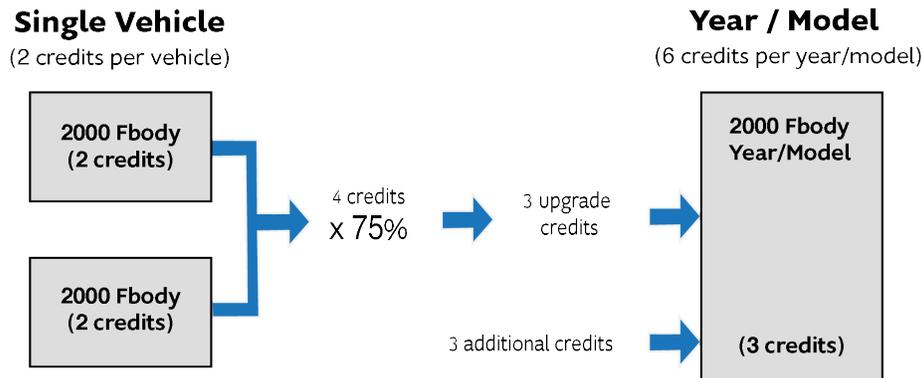
EXAMPLE 1

In this example, a customer does the following things:

1. Uses 4 credits to license two Fbody single vehicles that are model year 2000.

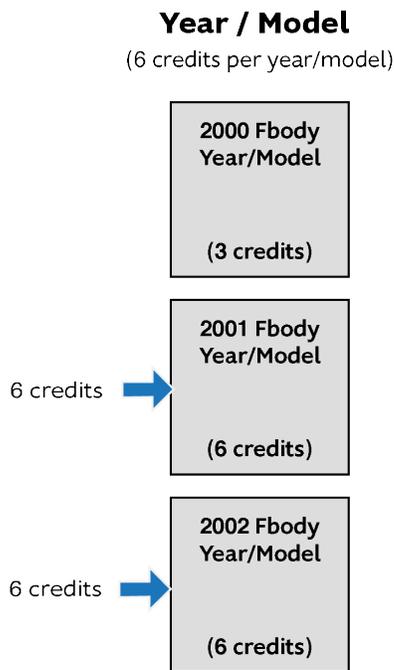


75% of these 4 credits count towards an upgrade to license for all model year 2000 Fbody vehicles. So, they are added together, then multiplied by 75%, which yields 3 Upgrade Credits.



Since the 2000 Fbody Year/Model license normally costs 6 credits, it is now reduced to 3 because of the customer's 3 upgrade credits. The calculation of this is completely automatic. All the customer will notice is the reduced number of credits on the licensing form.

- 2. The customer then decides to purchase the 2000 Fbody Year/Model license at the reduced 3 credit price.
- 3. The customer then purchases the 2001 and 2002 Fbody Year/Model licenses for 6 credits each.

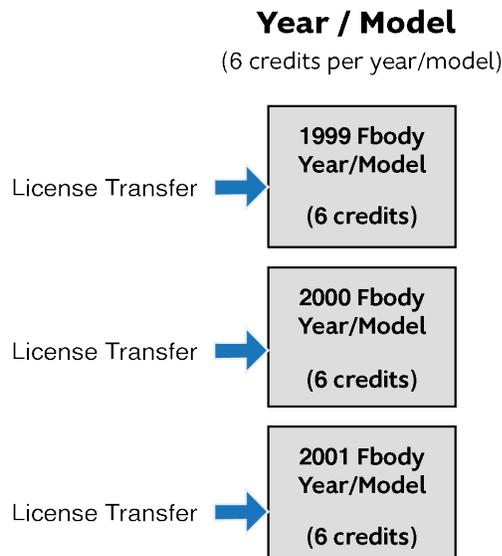


 **NOTE:** Since all available upgrade credits had already been used by the previous purchase, these new purchases are recorded at the full price of 6 credits each.

EXAMPLE 2

This example shows a small tuner shop or weekend tuner using upgrade credits to take advantage of the lower entry point while protecting their investment. In this example, the customer was an existing HPT customer with Year/Model licenses for 1999, 2000, and 2001 Fbody vehicles.

1. The customer upgrades from Serial to MPVI Pro. Existing licenses are transferred at 6 credits each.



2. Then, the tuner is faced with a decision. He has a customer who wants a 2004 GTO tune, but he's not sure how many more 2004 Ghats he's going to get. So, he decides to take the Single Vehicle option for 2 credits on this one and "see how it goes".

Single Vehicle

(2 credits per vehicle)

Year / Model

(6 credits per year/model)

1999 Fbody
Year/Model
(6 credits)

2000 Fbody
Year/Model
(6 credits)

2001 Fbody
Year/Model
(6 credits)



3. Six months pass and the tuner receives another 2004 GTO request. The tuner thinks it's been 6 months since the last one, so he will just do the same thing.

NOTE: At this point, the software would have prompted him with a cost of 5 credits to upgrade to the 2004 GTO Year/Model (since $2 \times 75\% = 1$ upgrade credit).

4. Another few months pass and the tuner receives a third 2004 GTO request. The tuner thinks he has only done two of these and it's cost him \$199 for the two single vehicles, he is still \$100 ahead over the last nine months compared to the 2004 GTO Year/Model at \$299. At this point, the software would be prompting him to purchase 3 credits to upgrade to the 2004 GTO Year/Model (since $4 \times 75\% = 3$ upgrade credits). The tuner decides to go the Single Vehicle route again happy that he is doing the right thing.
5. After another few months, the tuner receives a fourth 2004 GTO request. This time, the tuner sees the software is prompting him to purchase 2 credits to upgrade to the 2004 GTO Year/Model (since $6 \times 75\% = 4$ upgrade credits). The

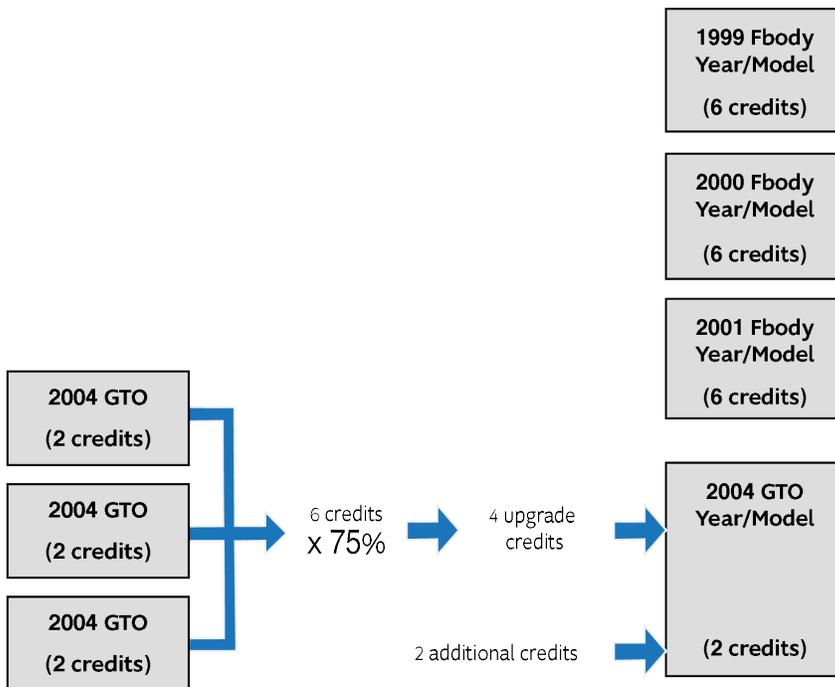
tuner then decides he would be crazy not to take the 2004 GTO Year/Model option for 2 credits. He thinks back over the last year and realizes sure he has paid \$99 more than if he had taken the risk initially on the 2004 GTO Year/Model license. But, given the length of time that has passed, it is of no concern. He would have been much worse off had he purchased the Year/Model up front and never tuned another 2004 GTO!

Single Vehicle

(2 credits per vehicle)

Year / Model

(6 credits per year/model)



6. The Year/Model upgrade purchase is recorded at the reduced price of 2 credits, which is now the tuner's actual purchase price to license the 2004 GTO Year/Model.

REVIEWING AVAILABLE UPGRADE CREDITS

To review your available Upgrade Credits:

1. Open VCM Editor.
2. In the Help menu, select **License Information**. The License Information window appears.
3. Select the **License Upgrade Paths** tab. You will see the upgrade credits you have and how many additional credits are required for the license.

Paid Licenses		Free Licenses		License Upgrade Paths
License Type	Type	Upgrade Credits	Credits Required	Description
Vehicle Type	GM	3	9	2006 GMC Envoy (8 cyl)
Vehicle Type	GM	1	5	2000 GMC Yukon (8 cyl) 4.8 5.3 6.0
Vehicle Type	GM	1	5	2002 GMC Yukon (8 cyl)
Vehicle Type	GM	1	5	2003 GMC Yukon (8 cyl)
Vehicle Type	GM	1	5	2005 GMC Yukon (8 cyl)
Vehicle Type	GM	1	5	2002 Holden Commodore (8 cyl) 5.7
Vehicle Type	GM	1	11	2006 Holden Commodore (8 cyl) 6.0
Vehicle Type	Ford	1	11	2012 Ford Mustang (6 cyl)
Vehicle Type	Ford	3	9	2006 Ford Mustang (8 cyl)
Vehicle Type	Ford	1	11	2008 Ford Mustang (8 cyl)
Vehicle Type	Ford	1	11	2010 Ford Mustang (8 cyl)
Vehicle Type	Ford	1	11	2014 Ford Mustang (8 cyl)
Vehicle Type	Ford	4	8	2004 Ford F-Series (8 cyl) 4.6 5.4
Vehicle Type	Ford	1	1	2003 Ford Australia Generic (V8)
Vehicle Type	D...	1	11	2006 Dodge Charger (8 cyl)
Vehicle Type	D...	15	0	2008 Dodge Viper (10 cyl)
Vehicle Type	D...	15	0	2014 Dodge Viper (10 cyl)

INTERFACE DEVICES

When using the VCM Suite to read information from a vehicle or write tunes to a vehicle, you will need to connect your computer to the vehicle. This requires an "interface device" that translates the many languages (protocols) used by vehicle on-board computing systems into the single language (protocol) used by HP Tuners software.

There are two current interface devices:

- MPVI3
- RTD Gen 3

Additionally, a number of **older interface devices**, such as the MPVI, MPVI2, and MPVI2+ are still supported by VCM Suite. However, these devices do not support the full range of features of the MPVI3.

MPVI3



This is our most recent interface device designed specifically for tuners. It supports the full range of features of the VCM Suite and the full range of features of the TDN app for mobile devices. Plus, it includes twice the storage of the MPVI2+ and a faster processor. Moreover, this device now includes a built in high-resolution accelerometer.

Pro Feature Set is now standard with this interface, but if you want to attach external inputs, you will need to purchase a Pro Link+ cable separately. External sensor inputs can often provide valuable insight into what's going on under the hood.

RTD GEN 3



Tuners sometimes provide this device to their customers so that the customer can read tuning files from their own vehicle. This allows the customer to exchange these files with their preferred tuner, who is then able to adjust the vehicle's tune and monitor its performance remotely.

These devices fully support the TDN app, which is the recommended software for users of these devices. Users who are interested in the powerful data logging features of VCM Scanner will find that application to be fully functional with RTD Gen 3 as well.

However, use of VCM Editor is NOT supported by this device. This helps prevent the tuner's customers from altering the tuner's enhancements.

When used with the **Pro Feature Set** (including the Pro Link+), the RTD Gen 3 allows users to attach additional sensor inputs, which may provide valuable insight into what's going on under the hood.

In North America, This device is only available via direct sale to select, high volume tuning customers. Devices sold this way typically carry the tuner's company brand. They are not sold under the HP Tuners brand.

OLDER INTERFACE DEVICES

The **interface devices** used by HP Tuners applications have evolved over time. Although we always recommend using the latest generation of interface device (currently the MPVI3), several older generations still exist in the field. Depending on their age, these devices may remain fully functional with newer releases of the VCM Suite:

- MPVI2+ (4th generation tuner interface)
- RTD+ (2nd generation end user interface)
- MPVI2 (3rd generation tuner interface)
- RTD (1st generation end user interface)
- MPVI (2nd generation tuner interface)
- Serial Interface (our 1st generation tuner interface)

MPVI2+



This interface is nearly identical to the current generation of devices. It featured faster Bluetooth® and USB connections than any of our previous interface devices and included a more robust screw on connector for additional inputs.

However, it did not have as much storage as newer devices and it lacked the high-resolution accelerometer.

When used with the optional **Pro Feature Set** (including the Pro Link+), the MPVI2+ allows tuners to attach additional sensor inputs, which may provide valuable insight into what's going on under the hood.

RTD+

This is the second generation of our RTD series. These devices are for vehicle owners and vehicle technicians who are using a third party to tune vehicles rather than tuning vehicles themselves.



NOTE: These devices are the same generation as the MPVI2+. They're just intended for a different group of users.

These devices fully support the TDN app, which is the recommended software for users of these devices. Users who are interested in the powerful data logging features of VCM Scanner will find that application to be fully functional with RTD+ as well.

However, use of VCM Editor is NOT supported by this device. This helps prevent the tuner's customers from altering the tuner's enhancements.

When used with the optional **Pro Feature Set** (including the Pro Link+), the RTD+ allows users to attach additional sensor inputs, which may provide valuable insight into what's going on under the hood.

In North America, The RTD+ is only available via direct sale to select, high volume tuning customers. Devices sold this way typically carry the tuner's company brand. They are not sold under the HP Tuners brand.

MPVI2



This interface supports most of the features that the current generation of devices support.

However, the iOS version of the TDN app is NOT supported by this device. It also has less storage than the MPVI3 and lacks a high-resolution accelerometer.

When used with the optional **Pro Feature Set**, the MPVI2 also allows tuners to attach additional sensor inputs, which may provide valuable insight into what's going on under the hood. However, this device uses a Pro Link for this function rather than the Pro Link+ used by newer devices.

RTD



This is the first generation of our RTD series. These devices are for vehicle owners and vehicle technicians who are using a third party to tune vehicles rather than tuning vehicles themselves.

 **NOTE:** These devices are the same generation as the MPVI2. They're just intended for a different group of users.

First generation RTDs fully support the Android version of the TDN app, which is the recommended software for users of these devices. Users who are interested in the powerful data logging features of VCM Scanner will find that application to be fully functional with RTD as well. However, use of VCM Editor or the iOS version of the TDN app is NOT supported by this device.

MPVI



The MPVI was the first HP Tuners interface device to connect to computers using a USB interface.

An enhanced version of this device, called the MPVI Pro, also supported attaching additional sensor inputs, which could provide valuable insight into what was going on under the hood. This function used an Enhanced Input/Output Connector (EIO Plug), which was only supported by the MPVI Pro. The EIO Plug could not be used with the standard MPVI interface.



NOTE: Use of this device with PCs running Windows 11 (or newer) is not supported.

SERIAL INTERFACE



The original interface device provided by HP Tuners connected to the 9-pin RS-232 serial port that was usually present on laptops made at the time.



NOTE: Use of this device is no longer supported.

OBTAINING A NEW INTERFACE DEVICE

You can purchase the latest HP Tuners interface device from our website. Upgrades to the current interface from older interface devices may also be available.



NOTE: At the time of this writing, MPVI2+ is the current device. But, MPVI3 is coming soon!

PURCHASING AN INTERFACE DEVICE

1. Navigate to the current device's page on the HP Tuners website:
 - **MPVI2+:** <https://www.hptuners.com/mpvi2plus/>
 - **MPVI3:** <https://www.hptuners.com/mpvi3/>
2. The **Pro Feature Set** is included with MPVI3. If you wish to purchase a license for this feature with an MPVI2+, scroll down to the bottom of the page and check the **PRO FEATURE SET LICENSE** box.



NOTE: Although Pro Feature Set is included with MPVI3, the device does not come with a Pro Link+ cable. This must be purchased separately.

3. If you wish to load your device with **credits** immediately, select the number of credits to add.



NOTE: If you won't be flashing tunes to vehicles immediately, this can wait. Credits can be purchased at any time. See [Adding Credits \(Page 20\)](#).

4. Click **Add To Cart** and proceed to checkout.

UPGRADING FROM OLDER INTERFACES



NOTE: Due to initial demand, upgrades to MPVI3 will not be available immediately. However, we expect them to become available shortly.

Upgrades to the current interface from older HP Tuners devices are usually available. Follow these steps to upgrade your older device to the current interface:

1. Backup the licenses and credits on your existing interface:
 - a. Connect the interface to a computer that has the VCM Suite installed.
 - b. Start VCM Editor and select **Help > Resync Interface** from menu bar.
2. Navigate to the customer account page at <https://www.hptuners.com/my-account/>.
3. Select the **My Devices** tab. You will find this tab located in the sidebar on the left side of the screen.



4. Scroll down to the list of registered devices and select **Upgrade** next to the device you wish to upgrade.
5. Complete your order.



NOTE: If you are upgrading from MPVI2 Pro to MPVI2+, you will receive the Pro Feature Set free of charge. There is no need to purchase it again for the new interface.

6. Ship your old interface to the address below and include your order number on the outside of the box.



NOTE: This is an exchange. You will NOT receive your old device back.

SHIPPING ADDRESS

HP Tuners LLC
RE: Interface Upgrade
700 Eastwood Ln
Buffalo Grove, IL 60089

WHAT IS PRO FEATURE SET?

The Pro Feature Set is an enhancement to MPVI2 and MPVI2+ that takes the capabilities of these interfaces to the next level. Pro Feature Set is standard on MPVI3.

At present, purchasing the Pro Feature Set adds the following features:

- Support for Pro Link and Pro Link+
- Standalone Data Logging

Additional features are planned.

PRO LINK AND PRO LINK+

The Pro Link and Pro Link+ are cables that allow additional inputs to be connected to the MPVI2, 2+ and 3 for enhanced data logging. This allows you to see these additional signals in VCM Scanner, potentially providing critical insights into how your tune is performing.

- Pro Link allows you to connect up to two analog signals (such as a wideband sensor or a map sensor) and one CAN bus signal to an MPVI2.
- Pro Link+ allows you to connect the same inputs to an MPVI2+ or MPVI3.

When you purchase the Pro Feature Set for your MPVI2/2+, we will send you the version of the Pro Link cable that supports your interface.

Although Pro Feature Set comes standard on the MPVI3. The Pro Link+ cable must be purchased separately for this interface. To order, go to <https://www.hptuners.com/product/pro-link-plus/>.

STANDALONE DATA LOGGING

Standalone Data Logging lets you log directly to the internal storage on your MPVI2+ without being tethered to a laptop. It is now easier than ever to collect data while driving. Easily record your vehicle's data on the go with a press of a button or pre-set start/stop triggers. Then, at your convenience, evaluate and customize start/stop conditions right on your PC or laptop.

PREPARING A NEW INTERFACE DEVICE FOR USE

After unboxing a brand new HP Tuners interface device, you will want to make sure it is up to date with all of the latest files and firmware. The following steps will help you get started with your device and will also allow you to resync to get the newest updates.

BEFORE YOU BEGIN

Ensure that:

- Your computer is connected to the Internet.
- The current version of the VCM Suite is installed.

UPDATING DEVICE DRIVERS

MPVI2+ / MPVI3

When used with a computer running Windows 10 (or later), the MPVI2+ and MPVI3 are completely "Plug and Play" devices. You do not need to manually update their drivers.

If you are preparing an MPVI2+ or MPVI3 for use with a Windows 7 or 8 computer, contact **Customer Support** for setup instructions.

MPVI2

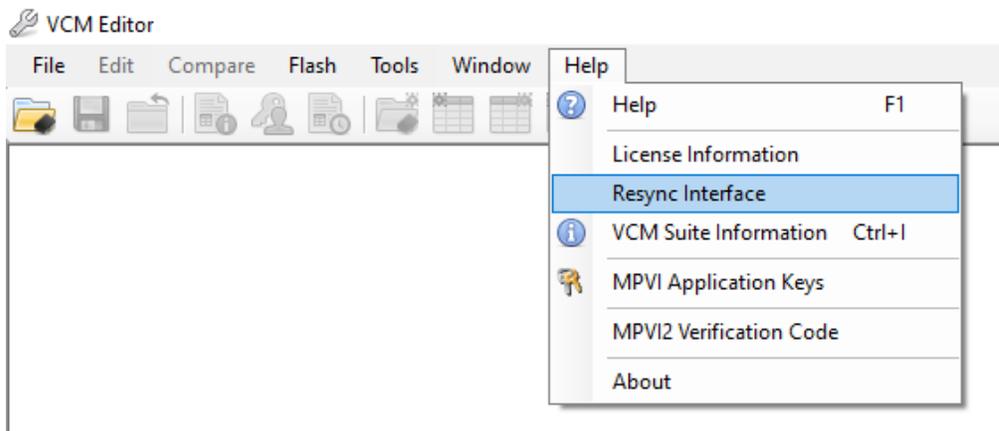
1. Navigate to <https://www.hptuners.com/downloads/>.
2. Download the MPVI2 drivers.



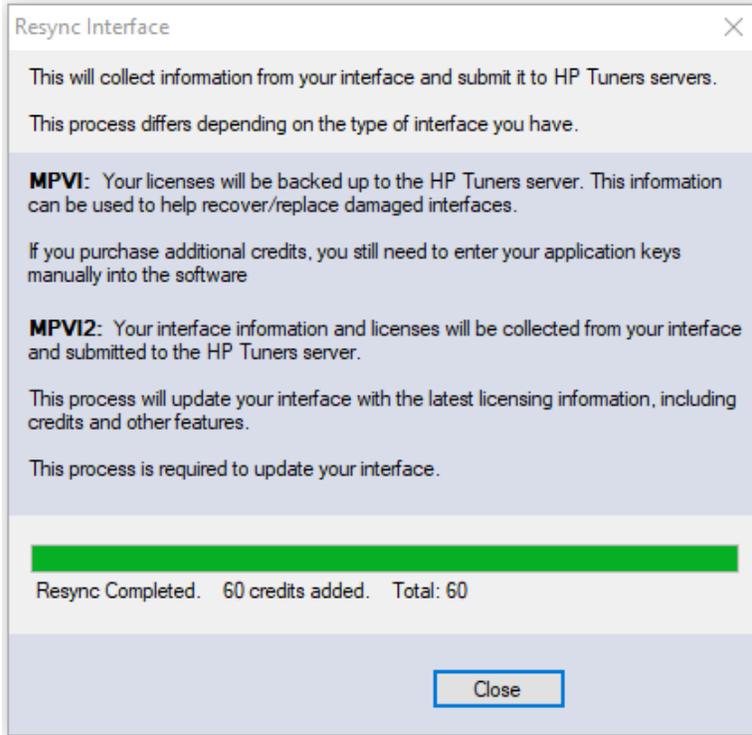
3. Unzip and install the drivers on your computer.

SYNCING THE INTERFACE

1. Connect your MPVI2/2+ to your computer via the USB cable.
2. Open VCM Editor.
3. From the Help menu, select **Resync Interface**.



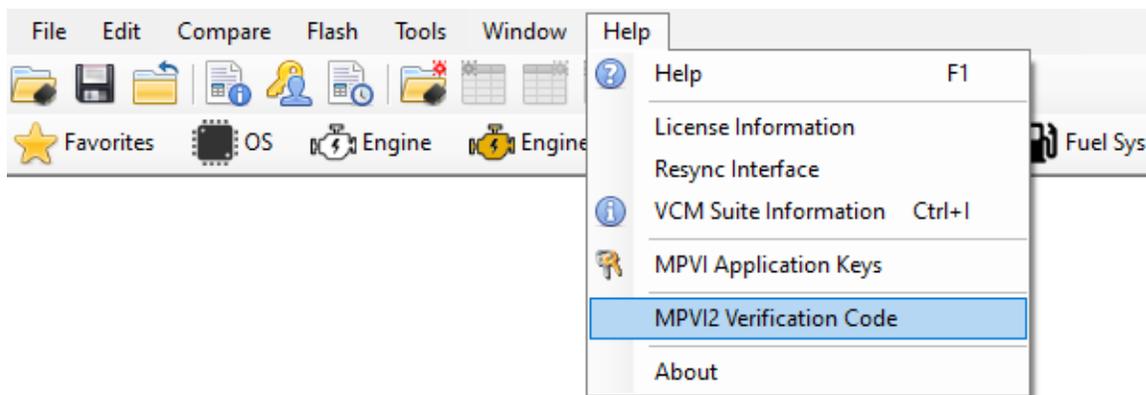
4. If the Sync was successful, the progress bar will indicate that the operation is complete.



REGISTERING YOUR INTERFACE DEVICE

Before you can use a new MPVI2, 2+, or 3, you will need to register the device with HP Tuners. The following instructions will walk you through the registration process:

1. Make sure your computer is connected to the Internet.
2. Connect your MPVI2/2+/3 to your PC using the USB cable.
3. Open either VCM Scanner or VCM Editor.
4. In the menu bar, select **Help > MPVI2 Verification Code**.



5. Write down the serial number and verification ID that the VCM software gives you (or keep the window open for cutting and pasting).
6. If you do not already have an account with hptuners.com, create one now. See *Creating An Account* (Page 11).
7. Navigate to the customer account page at <https://www.hptuners.com/my-account/>.

8. Select the **My Devices** tab on your account page. You will find this tab located in the sidebar on the left side of the screen.



9. In the fields under the **MPV12/MPV12+** heading, enter the serial number and the verification ID you received in Step 4.

A form titled 'MPV12/MPV12+' with a blue header. Below the header are three input fields: 'Serial Number' with a placeholder 'Serial Number', 'Verification ID' with a placeholder 'Verification ID' and a link 'Where do I find my verification id?', and 'Notes (optional)' with a placeholder 'Notes'. At the bottom is a blue 'Import' button.

10. Click **Import**. A summary of the new device will appear below the fields you just filled out.

Serial Number	License Information	Notes	Actions
<input type="text" value="Search"/>			
2141234XXX (MPVI2+)	Credits: 0 Add Credit User Defined Parameters: Purchase Pro Feature Set: Purchase		Edit Delete

 **NOTE:** If you have registered multiple devices, look for the new device's serial number in the column on the left.

This summary includes information about how many **credits** are already on the device (if any). It also indicates whether you have licensed the **Pro Feature Set** or the User Defined Parameters feature for this device. You can use the links here to purchase any of the options listed.

CONNECTING TO A VEHICLE

The procedure for connecting to a vehicle varies by the type of interface device you are using.

MPVI2/2+/3 AND ALL RTD INTERFACES

When used with the VCM Suite, a USB connection to your PC is recommended:

1. Connect the larger end of the included USB cable to an available USB port on a laptop with VCM Suite Installed.
2. Connect the other end of the USB cable to the USB type C port on the front of the interface device.



3. When you are ready to scan or reprogram the vehicle, plug the large, molded OBD-II connector on the other side of the interface device into the vehicle's diagnostic port.

When used with the TDN app for mobile devices, these devices connect to your mobile via Bluetooth®. The app provides on-screen instructions for establishing the connection and attaching the device to your vehicle. For more information, consult the documentation for the TDN app.

MPVI

1. Connect the larger end of the included USB cable to an available USB port on a laptop with VCM Suite Installed.
2. Connect the other end of the USB cable to the USB type B port on the interface device.



3. Connect the 15-pin side of the OBD-II interface cable to the matching connector on the interface device.
4. When you are ready to scan or reprogram the vehicle, connect the 16-pin side of the OBD-II interface cable to the vehicle's diagnostic port.

MANUFACTURER LOCKED CONTROL MODULES

Some vehicle manufacturers now put locking devices in their VCMs to prevent third parties from tuning the vehicle. Although most of these vehicles can be read by the VCM Suite without any problem, writing an updated tune to these vehicles may require special hardware.

For many of these vehicles, HP Tuners can upgrade the existing VCM to allow it to be tuned by our software or exchange it for a controller that has already been upgraded. For other vehicles, a special cable may be required.

GM

Controller	Vehicles	HP Tuners Solutions
E41 ECM	2017+ Chevrolet Silverado and GMC Sierra 2500/3500 trucks with 6.6L Duramax diesel engines	L5P purchase, exchange, or upgrade
E99 ECM	2019+ Corvette ZR1	ZR1 modified purchase or exchange
E90 ECM	2019 - 2021 Chevrolet Silverado and GCM Sierra trucks with 5.3L L84 engines and 6.2L L87 engines	L84 & L87 - E90 modified ECM exchange
T87A TCM	2017+ GM vehicles equipped with 8-speed and 10-speed transmissions	T87A unlock service Unlocked T87A purchase

DODGE / CHRYSLER / RAM / JEEP

Controller	Vehicles	HP Tuners Solutions
2015+ PCMs	All 2015+ Dodge, Chrysler, RAM, and Jeep vehicles (except Dodge Viper)	Dodge PCM upgrade service Dodge upgraded PCM purchase

Controller	Vehicles	HP Tuners Solutions
2018+ PCMs	All 2018+ Dodge, Chrysler, RAM, and Jeep vehicles.	<p>Dodge 2018+ smart access cable</p> <p>(These vehicles also require the upgraded PCM above)</p>

POLARIS

Controller	Vehicles	HP Tuners Solutions
MG1CA007 ECM	RZR-Pro R	MG1CA007 ECM upgrade service
All supported ECMS	Supported Ranger, Ace, Sportsman, RZR, and Scrambler models	OBD-II adapter cable for Polaris vehicles

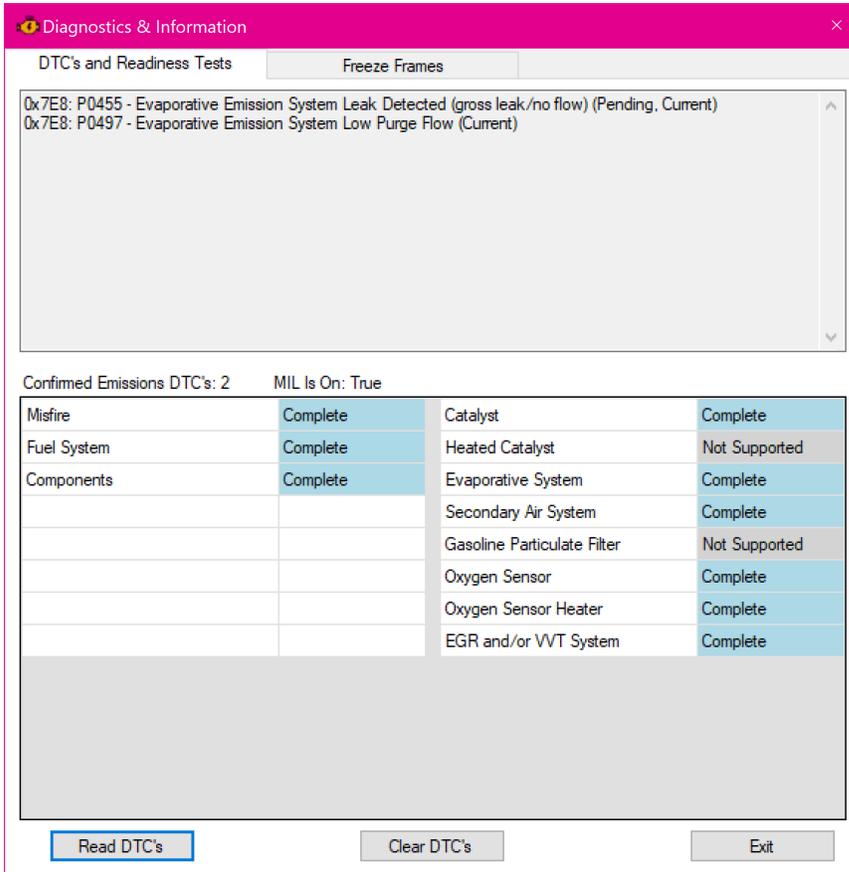
READING AND CLEARING DTCS

When you begin tuning a new vehicle, ALWAYS check the vehicle for diagnostic trouble codes (DTCs) and resolve as many as you can before you do anything else. If there is a mechanical issue with the vehicle, it may affect performance and any performance data you want to monitor could be impacted. This makes it very difficult to tune the vehicle effectively.

! **IMPORTANT:** Reading a vehicle's current tune will clear all DTCs, resulting in the loss of the troubleshooting information they contain. DO NOT read the tune until you have checked for DTCs here and resolved or made note of any issues reported.

Follow these steps:

1. Physically connect your laptop to the vehicle. See *Connecting to a Vehicle* (Page 49).
2. If VCM Editor is open, close it now.
3. Open VCM Scanner.
4. Turn the vehicle ignition to a position other than OFF. (The engine can be running or stopped. But, the vehicle must supply power to the OBD-II port.)
5. Click the  icon in the toolbar to open a data connection to the vehicle.
6. Click . The Diagnostics & Information window appears.



7. Click **Read DTCs**. VCM Scanner will query the vehicle for diagnostic information. When finished, any DTCs detected will appear in the top half of the window.
8. Some vehicles report additional "freeze frame" data for individual DTCs. If this data is available for your vehicle, it can be viewed on the Freeze Frame tab.
9. Use the provided information to resolve as many issues as possible before tuning the vehicle.

10. If desired, you can click **Clear DTCS** to tell the vehicle that the issue has been repaired.



NOTE: Clearing DTCS resets the emissions monitors. This will cause the vehicle to fail emissions testing until it completes the tests performed by the emissions monitors. These tests typically take several drive cycles to complete.



NOTE: If an issue has not been successfully repaired, a cleared DTC will be reported again.

READING A VEHICLE

When you read a vehicle, you are transferring calibration information from the control module(s) in your vehicle to VCM Editor. The read process will automatically detect the presence of relevant VCMs in the vehicle and read them all in sequence. The various status messages and the progress bar give information about the current state of the read.



CAUTION: Ensure that the vehicle battery is charged before proceeding (keeping the battery attached to a charger during the procedure is recommended). Although it should not be possible to harm any of the vehicle's control modules during the read process, vehicle controllers can be left in an odd state if a power loss occurs.

If communication is lost, the program will automatically reset the module. It will then prompt you to correct the problem and/or try again.

READ PROCEDURE

To read the VCM, follow these steps:

1. Connect your HP Tuners interface device to a laptop with VCM Suite installed. Then, connect the device to the vehicle's OBD-II diagnostic port. See *Connecting to a Vehicle* (Page 49) for more information.
2. If VCM Scanner is open, close it before proceeding.
3. Open VCM Editor.
4. If a tune file is open, close it by selecting **File > Close** in the menu bar.
5. Turn the vehicle ignition to the ON (or RUN) position, but do not start the engine.



NOTE: Some vehicles require special procedures to be put in the correct state. See *Putting a Vehicle in the "ON" State* (Page 58) for more information.

6. Make sure the doors are closed and all accessories are turned off.

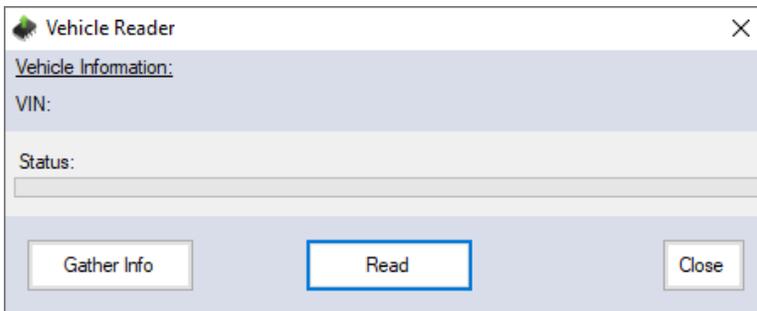
 **CAUTION:** Do not use any vehicle accessories, including the door locking mechanism, while the vehicle is being read.

7. In VCM Editor, select **Flash > Read Vehicle**.



8. The Vehicle Reader window appears. Wait 10 to 15 seconds.

9. Click the **Read** button.



10. Allow VCM Editor to read the vehicle controllers until the status bar indicates the read is complete.

 **NOTE:** During the read, the instrument panel may briefly display all sorts of indicators and error messages and some accessories may appear to turn on and off randomly. This is normal.



NOTE: For vehicles with multiple VCMs (for example: LS2 A4 vehicles), there is a 15-second pause between reading each module.

11. Turn off the ignition and unplug the interface cable.
12. The file will automatically open in VCM Editor.
13. If this is the initial read of the stock controller, we strongly recommend that you save (and backup) the file before any modifications are made. You may wish to restore your vehicle to the stock tune at a later date.

PUTTING A VEHICLE IN THE "ON" STATE

When connecting to a vehicle for read and write operations, HP Tuners software typically requires that the vehicle be put in an ON state without starting the vehicle's engine. The correct procedure varies from model to model. Here are some examples:

CONVENTIONAL KEY START IGNITIONS

1. Insert the key in the ignition.
2. Rotate the key to the ON (or RUN) position, but do not continue to the START position.

DODGE / CHRYSLER / RAM / JEEP WITH RED PUSHBUTTON IGNITION

Keep your foot off the brake and follow these steps.

1. Press the red START button once. The indicator around the button will change from OFF to ACC.
2. Wait 2 seconds.
3. Press the red START button again. The indicator should change to RUN.

GM VEHICLES WITH PUSHBUTTON IGNITION

Without putting your foot on the brake pedal, push and hold the ENGINE START button for eight to ten seconds.

CONTACTING CUSTOMER SUPPORT

OVERVIEW

HP Tuners does not currently offer incoming phone support. The best way to reach our Support Department is to **create a ticket**. If you prefer to speak with someone on the phone, just let us know in the ticket and we'll call you back as soon as possible.

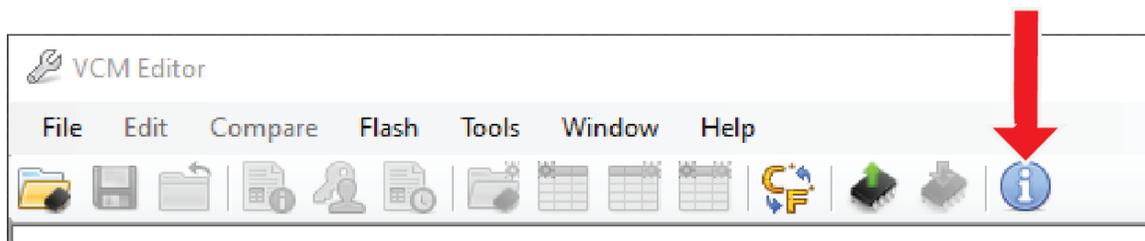
When you contact us, we may ask for an infolog, a debug.dat file, or a license file. Having these files ready may speed up the support process.

HOW TO GENERATE A VCM SUITE INFOLOG

When contacting customer support, it's often helpful for us to have a copy of a VCM Suite Infolog. The Infolog must be generated while connected to your vehicle.

GENERATING AN INFOLOG

1. Click the VCM Suite Info button in either VCM Editor or VCM Scanner.



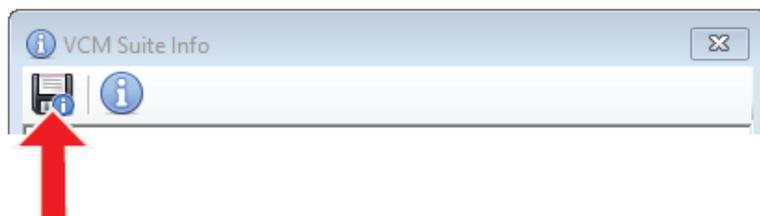
NOTE: make sure your cable is connected to the vehicle and the vehicle's key is in the ON position before proceeding.

2. Click the blue circle "i" icon to poll the software and the vehicle.



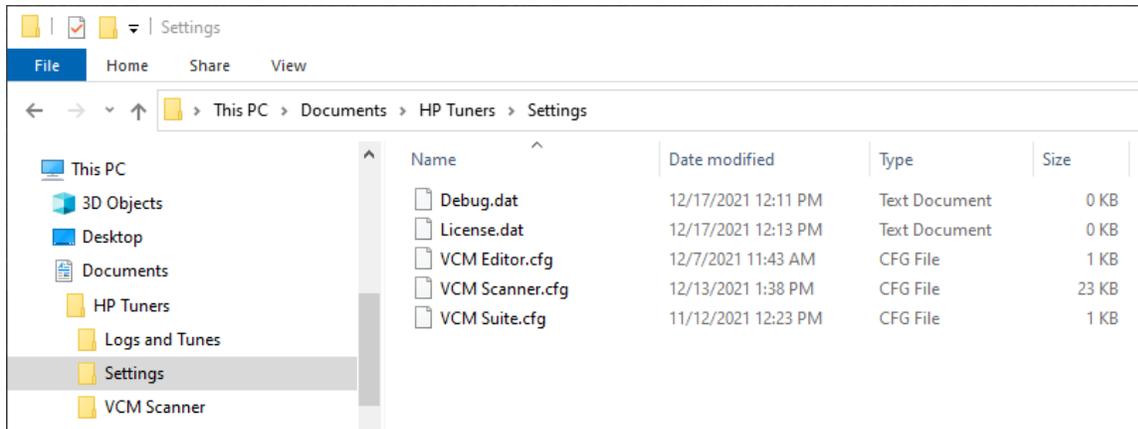
 **NOTE:** This step may take five to twenty seconds to complete.

3. When Infolog generation is finished, click on the Save icon. Once the file is saved, it is ready to email to our Support team.



LOCATING THE DEBUG.DAT AND LICENSE.DAT FILES

For many support issues, we ask that you provide us with a debug.dat file. This file can be found in **This PC > Documents > HP Tuners > Settings**:



We may also ask for a license.dat file. This can found in the same file path.