



**SPITRONICS™**  
**ENGINE MANAGEMENT SYSTEMS**

## Getting Started with Spitronics Hyperspace Devices

### **About the product.**

Spitronics products are developed for the DIY market and are mostly sold through dealers and to handy customers outside the RSA boundaries. This makes it a more cost effective product as the company overheads are held to a minimum. Spitronics rather makes use of the extensive infrastructure of dealers that specialize in this type of business. The Spitronics devices are not plug & play devices but must be customized by the dealer for specific applications. These products are very versatile and can be adapted to most engines and transmissions. The dealer is responsible for after sale service which is a third party company that Spitronics don't have control over. So make sure about the dealer service and capabilities before you buy from him. Spitronics is not responsible for poor service from him. Please read our terms and conditions found on our website. All the information, software and manuals are freeware on our website [www.spitronics.com](http://www.spitronics.com)

### **How does Spitronics Products Work**

Each Spitronics product is Micro based which requires specific firmware programs to initialize the hardware for each type of engine or transmission. It then has tuning Maps that adjust parameters and graphs for that engine or transmission. To alter the Maps, require tuning software, so that the tuner can adjust fuel and timing etc. for that application. The product needs to be activated before it will operate.

1. The **firmware** will initialize the hardware to work on a specific engine or transmission. This firmware is fixed code and is pre-loaded into the product with the USB Debug Adapter or Firmware Programmer. The programmer is optional for an end user because he will use it only once. The dealer has the option to customize standard hardware for all different applications with this programmer. The firmware files is freeware on our website and has the extension of **.HEX**. This process is illustrated in step 1 of Fig 1. Orion does not need a firmware programmer as it has a BootLoader. This means firmware is loaded with the USB/UART tuning cable. The firmware files have a **.FIRM** extension.
2. Spitronics developed an internet **activation** system to allow dealers abroad to carry stock at a reduced price. Then when the dealer sells to a customer, he will activate the unit in a specific hardware class according to the required firmware for that application. He will then do a payment for the rest of the amount. He will load the correct firmware and startup Map for the customer and guide him to the correct drawings and settings. He will test the unit on a simulator and verify that everything is in order as to assist the customer. This feature makes the product counter ready without the delay of ordering the product on demand. This procedure is illustrated in the steps of Fig 1. Note that Orion does not use Step 1 because it has a BootLoader.
3. The **tuning** software will allow the tuner to adjust his engine or transmission to his requirement. This could be performance, economy, automatic or tiptronic etc. This tuning data

is saved in the product and also in a file called a data Map with the extension **.SPIECU** or **.SPITCU** etc.

## Block Diagram of Product interfacing

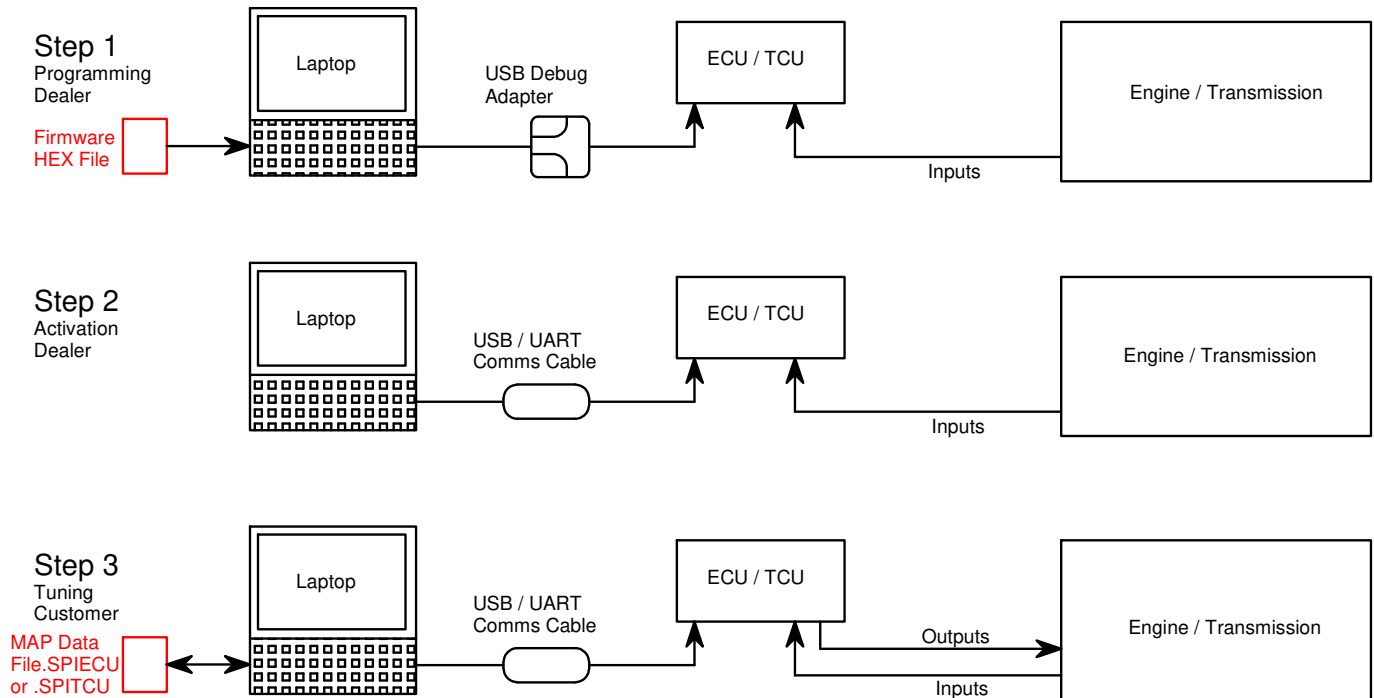


Fig 1

## What you need to get started.

1. The **product hardware** and **accessories** for the specific application. This will be the ECU / TCU, control modules such as idle control and Coil Igniters, harnesses, MAP sensors etc. for that specific application. The product is sold in different classes and priced according to the features and outputs used. There is a chart in the manuals indicating the different classes. Below this section is a link on where to find it in the manual. If you click on that program number, it will open the comparison chart for you. Or you may ask a dealer in your area of send a mail to [info@spitronics.com](mailto:info@spitronics.com)
2. The **USB / UART communication cable** to connect the device on to a laptop for tuning purposes. This cable is sold separate as you only need one for tuning all our products. The communication electronics is put in the cable which means the product becomes cheaper as each device does not require those components. This USB Cable has Windows drivers that needs to be installed before it will operate. See further in the manual for instructions. Note that Orion use this cable to load new firmware into the device.
3. The **tuning software** to interface with the products. You need a Laptop or Tablet for this. The software is only Windows based and works on versions from Windows 7 and Up. You need 4 Gig ram or more.
4. A **Startup map** which helps with the setup of the specific engine. Each engine differs in minor changes so these MAP's or Tunes requires some refining. A MAP is a data file that is saved on the hard disk and differs for each type of engine. If you don't get a specific map for your engine, you may adapt any map to suit your engine.

- The **manuals** for explaining wiring and tuning. These manuals became bulky with all the information but once you browse through them you will get to your info quickly. They are available on the web and is updated from time to time.

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### ECU Program Numbers

Last Update 16\_03\_2019

| No              | Ver  | Orion | Description                | Mercury2   | Orion        |
|-----------------|------|-------|----------------------------|--|--------------|
|                 |      |       | No Firmware for this Model |  |              |
|                 |      | X     | Firmware Exist             |  |              |
|                 |      |       | Planned Development        |  |              |
|                 |      |       |                            | For GP Layout click on the hardware class of the program |              |
| <b>Mercury2</b> |      |       |                            | <b>Hardware Class Required</b>                           |              |
|                 |      |       |                            | <b>Mercury2</b>  | <b>Orion</b> |
|                 | 3.5E | 3.5B  |                            | Adv / Int / Std  | Int / Std    |
| 1               |      | X     | Standard Pulses            |  |              |
| 2               |      |       | Fuel Only                  |  |              |
| 3               |      |       | 4/6 Combo                  |  |              |
| 4               |      |       | Crank Signal Converter     |  |              |
| 5               |      |       | Cam Controler              |  |              |
| 6               |      |       | Trotle by Wire             |  |              |
| 7               |      | X     | 12-1 4Cyl                  |  | Adv / Int    |
| 8               | X    | X     | 12-1 6Cyl                  | Ult / Adv / Int  | Adv / Int    |
| 9               |      | X     | 18-1 4Cyl                  |  | Adv / Int    |
| 10              |      |       | 18-1 6Cyl                  |  |              |
| 11              |      |       | 36-1 1Cyl                  |  |              |
| 12              |      |       | 36-1 2Cyl                  |  |              |
| 13              |      | X     | 36-1 3Cyl                  |  |              |
| 14              | X    | X     | 36-1 4Cyl                  | Ult / Adv / Int  | Adv / Int    |
| 15              | X    | X     | 36-1 6Cyl                  | Ult / Adv / Int  | Adv / Int    |
| 16              | X    | X     | 36-1 8Cyl                  | Ult / Adv / Int  | Ultimate     |
| 17              | X    |       | 60-2 10Cyl                 | Ultimate   |              |

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| Mercury2 Program No            | Commercial | Ultimate | Advance | Intermediate | Standard | Notes |
|--------------------------------|------------|----------|---------|--------------|----------|-------|
| 14                             |            |          |         |              |          |       |
| 36-1 4Cylinder Ver 3.5E        |            |          |         |              |          |       |
| Full Sequential Spark          |            | X        |         |              |          |       |
| Wasted Spark                   |            | X        | X       |              |          |       |
| Distributor                    |            | X        | X       | X            |          |       |
| Full Sequential Injection      |            | X        | X       |              |          |       |
| Split Sequential Injection     |            | X        | X       | X            |          |       |
| Injector Trimming              |            | 8        |         |              |          |       |
| Fuel Pressure Control          |            | X        | X       |              |          |       |
| Dual Injectors                 |            | X        | X       |              |          |       |
| Adjust. Injection Angle Res. ° |            | 10       | 10      |              |          |       |
| Launch Retard to -30°          |            | X        |         |              |          |       |
| Launch Retard to 0°            |            | X        | X       | X            |          |       |
| Launch Recover Delay           |            | X        |         |              |          |       |
| Anti-Lag control               |            | X        | X       |              |          |       |
| Flat-Shift control             |            | X        | X       |              |          |       |
| RapidFire                      |            | X        | X       | X            |          |       |
| Open Loop Cam Control          |            | 2        | 2       | 2            |          |       |
| Intake Flap Control            |            |          |         |              |          |       |
| GP Outputs                     |            | 10       | 10      | 2            |          |       |
| Dual Maps                      |            | X        | X       | X            |          |       |
| Lambda Control                 |            | X        | X       | X            |          | #     |
| Idle Control                   |            | X        | X       | X            |          | \$    |
| Altitude Compensation          |            | X        | X       | X            |          | *     |
| V-Tech / Intake Flap           |            | X        | X       | X            |          | %     |

# Wide Band Requires External Electronic Converter  
\$ Stepper Motors Requires External Electronic Converter

| Mercury2 Program No            | Commercial | Ultimate | Advance | Intermediate | Standard | Notes |
|--------------------------------|------------|----------|---------|--------------|----------|-------|
| No                             |            |          |         |              |          |       |
| 36-1 4Cylinder Ver 3.5B        |            |          |         |              |          |       |
| Full Sequential Spark          |            |          |         |              |          |       |
| Wasted Spark                   |            |          | X       |              |          |       |
| Distributor                    |            |          | X       | X            |          |       |
| Coil Drivers                   |            |          | 4       | 1            |          |       |
| Full Sequential Injection      |            |          |         |              |          |       |
| Split Sequential Injection     |            |          | X       | X            |          |       |
| Injector Trimming              |            |          |         |              |          |       |
| Fuel Pressure Control          |            |          |         |              |          |       |
| Dual Injectors                 |            |          |         |              |          |       |
| Adjust. Injection Angle Res. ° |            |          | 10      | 10           |          |       |
| Launch Retard to -30°          |            |          |         |              |          |       |
| Launch Retard to 0°            |            |          | X       | X            |          | %     |
| Launch Recover Delay           |            |          |         |              |          |       |
| Anti-Lag control               |            |          |         |              |          |       |
| Flat-Shift control             |            |          | X       |              |          | %     |
| RapidFire                      |            |          | X       |              |          | %     |
| Open Loop Cam Control          |            |          |         |              |          |       |
| Intake Flap Control            |            |          |         |              |          |       |
| GP Outputs                     |            |          | 4       | 2            |          | %     |
| Dual Maps                      |            |          | X       | X            |          | %     |
| Lambda Control                 |            |          | X       | X            |          | #     |
| Idle Control                   |            |          | X       | X            |          | \$    |
| Altitude Compensation          |            |          | X       | X            |          | *     |
| V-Tech / Intake Flap           |            |          | X       | X            |          | %     |

# Wide Band Requires External Electronic Converter  
\$ Stepper Motors Requires External Electronic Converter  
\* Optional Sensor must be installed if MAP sensor is in use.  
% Dependant on selections of each other as it is shared I/O

## Optional requirements.










1. The **firmware programmer**. This USB Debug Adapter lets you customize the product yourself for any engine or transmission, or custom task that firmware was developed for. Firmware is free and are placed on the website. You can browse there to see if you application is covered. The programmer is also used to download the latest updates for your application. Then new features may be added for your convenience. We always recommend buying one programmer to distant customers. There is test firmware for each product which helps in fault finding. Note that Orion does not require this programmer as it has a BootLoader. This means firmware is loaded with the tune cable.
2. The **simulator** helps dealers to setup and test customer's devices. It is recommended for the dealer that likes to carry stock and help customers over the counter. The latest Simulator3 works on all our products with the exception of different connecting harnesses.

## Useful links and direction of info on the website.






### The USB / UART communication cable.

- [Downloads](#)
- [USB Drivers](#) 2015-06-23 13:49:49
- [Spitronics USB Drivers.rar](#)
- <http://www.spitronics.co.za/downloads/USB%20Drivers/Spitronics USB Drivers.rar>


## The Ver 3 Hyperspace Tuning software.



- **Downloads**
  -  [Tuning Software](#) 2015-12-17 16:35:40
  -  [Hyperspace Software](#) 2019-05-24 08:32:32
- ### 7 Files
- | Name  | Date Changed               | Size            |
|---|----------------------------|-----------------|
|  <a href="#">Bootloader 1.0.2.zip</a>                | <u>2018-11-24 12:05:05</u> | <u>14.04MB</u>  |
|  <a href="#">Hyperspace Device Manager 3.5.3.zip</a> | <u>2019-05-24 08:33:24</u> | <u>16.77MB</u>  |
|  <a href="#">Hyperspace Device Manager 4.0.5.zip</a> | <u>2019-05-24 08:29:10</u> | <u>22.57MB</u>  |
|  <a href="#">Hyperspace ECU 3.5.7.zip</a>            | <u>2019-05-24 08:32:59</u> | <u>62.09MB</u>  |
|  <a href="#">Hyperspace TCU 3.3.6.zip</a>            | <u>2019-05-24 08:32:29</u> | <u>59.89MB</u>  |
|  <a href="#">Read Me.pdf</a>                         | <u>2018-07-18 09:59:28</u> | <u>407.17KB</u> |
|  <a href="#">dotNetFx40 Full x86 x64.exe</a>         | <u>2019-03-16 23:43:06</u> | <u>48.11MB</u>  |
- Due to regular updating of software we will not include a link here. Select the software you require. ECU, TCU, TxW etc. The **Read Me** file has more information regarding the software.

## The Hyperspace Manual

- **Downloads**
  -  [Manuals](#) 2016-03-10 08:15:22
- ### 1 Folders
- | Name  | Date Changed               |
|---|----------------------------|
|  <a href="#">Old Manuals</a> | <u>2019-05-27 10:26:08</u> |
- ### 3 Files
- | Name   | Date Changed               | Size            |
|--|----------------------------|-----------------|
|  <a href="#">Mercury2 Manual 10 05 2019.chm</a> | <u>2019-05-10 17:16:36</u> | <u>17.68MB</u>  |
|  <a href="#">Orion Manual 10 05 2019.chm</a>    | <u>2019-05-10 17:16:45</u> | <u>26.91MB</u>  |
|  <a href="#">Read Me.pdf</a>                    | <u>2018-07-17 12:26:09</u> | <u>407.17KB</u> |
- Due to regular updating of manuals we will not include a link here. Select the manual you require. Orion or Mercury2. Older manuals for older products are in the Old Manuals folder. The **Read Me** file has more information regarding the manuals.

## ***The Firmware Programmer (USB Debug Adapter)***

- **Downloads**
-  [Firmware Programmer](#)
- **2 Folders**

| <b>Name</b>   | <b>Date Changed</b>                 |
|---|-------------------------------------|
|  <a href="#">BootLoader</a>    | <a href="#">2019-03-15 11:53:10</a> |
|  <a href="#">Debug Adapter</a> | <a href="#">2019-01-31 11:54:37</a> |
- [http://www.spitronics.com/downloads/Firmware Programmer/Debug Adapter/mcu\\_ide.exe](http://www.spitronics.com/downloads/Firmware Programmer/Debug Adapter/mcu_ide.exe)
- The Debug adapter is the Mercury2 firmware programmer files. The BootLoader holds a few recover files for Orion to reinstall the Bootloader mostly use by the manufacturers.

## **Installation of Software, Drivers and Manual**

### **Manuals**

#### ***Hyperspace Manual***

Select the manual you require. There are a Mercury2 and Orion manual. It contains all the information around that product. The browser should download the Manual in the downloads folder on your PC. Sometimes the antivirus programs will block the content of HTML files or ask you if you want to keep the content. Say yes to keep content. The file is compressed with WinRAR which is freeware software. Un-compress the file. If you open the file and the data is not complete, close it and right click on the manual icon, and give it permissions to unlock the data. Again this is a windows virus protection feature. Then open the file and it should look like this:

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# SPITRONICS®

## ENGINE MANAGEMENT SYSTEMS

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### Introduction



The Mercury2 Manual is a complete document which have all the information regarding the product, accessories, installation drawings, instructions and software. It will teach you the do's and don'ts, installation


## USB Drivers

Click with the mouse on the blue [The USB / UART communication cable](#) link under the Useful Links topic. The browser should download the drivers in the downloads folder. The drivers file is compressed with WinRAR which is freeware software. Un-compress the file. After uncompressing there should be a folder created as below.

 CP210x\_VCP\_Windows

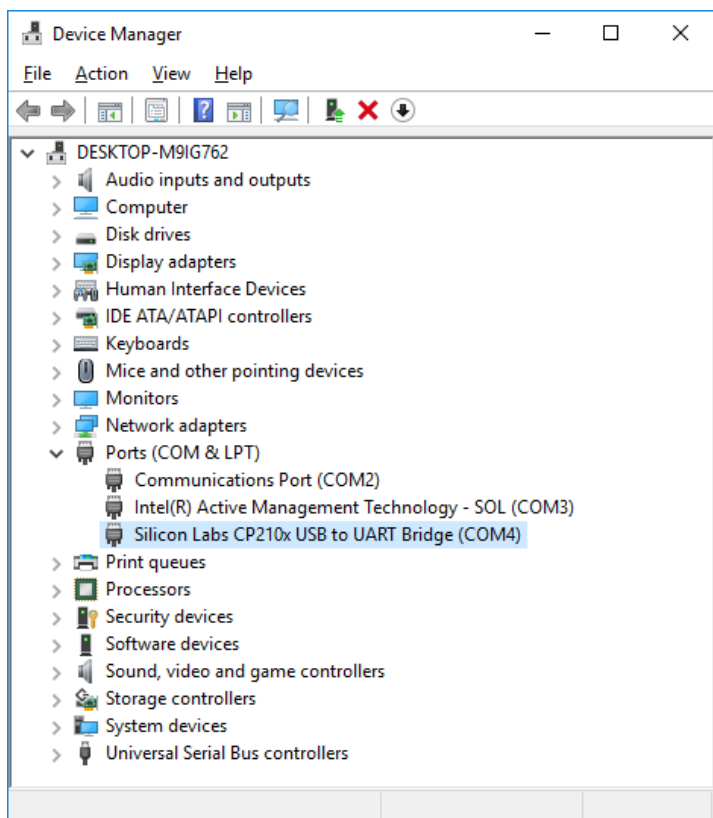
Go into the folder and you should see the following.

| Name                                  | Date modified      | Type              | Size     |
|---------------------------------------|--------------------|-------------------|----------|
| x64                                   | 11-Apr-14 11:56 PM | File folder       |          |
| x86                                   | 11-Apr-14 11:56 PM | File folder       |          |
| CP210xVCPInstaller_x64.exe            | 11-Apr-14 11:56 PM | Application       | 1,026 KB |
| CP210xVCPInstaller_x86.exe            | 11-Apr-14 11:56 PM | Application       | 901 KB   |
| dpinst.xml                            | 11-Apr-14 11:56 PM | XML Document      | 12 KB    |
| ReleaseNotes.txt                      | 11-Apr-14 11:56 PM | Text Document     | 11 KB    |
| SLAB_License_Agreement_VCP_Windows... | 11-Apr-14 11:56 PM | Text Document     | 9 KB     |
| slabvcp.cat                           | 11-Apr-14 11:56 PM | Security Catalog  | 12 KB    |
| slabvcp.inf                           | 11-Apr-14 11:56 PM | Setup Information | 5 KB     |

If you have a 64bit computer then run the file called  CP210xVCPInstaller\_x64.exe

For 32bit computer run the file called  CP210xVCPInstaller\_x86.exe

After you installed the driver plug the USB /UART cable into the computer and the cable will be activated. In the device manager you should see the block below in com ports. This means the drivers are installed correctly.





## Tuning Software

Select the manual you require. The browser should download the file in the downloads folder on your PC. The file is compressed with WinRAR which is freeware software. Un-compress the file. After uncompressing there should be a file created as the example below.

🔗 [Hyperspace ECU V3.5.7.exe](#)

Run the file and Hyperspace will be opened.



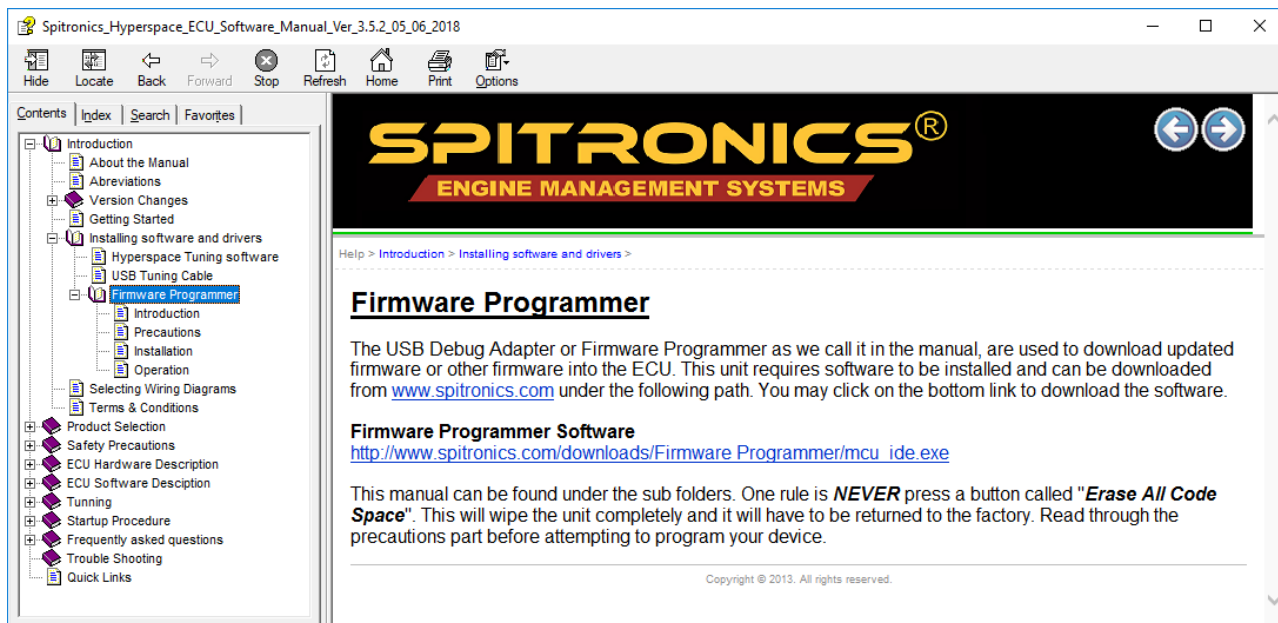
After it is opened and indemnity was done as well as manuals opened in the software you should end up with a file set like below:

- 📁 DeviceSaves
- 📁 AutoSaves
- 🔗 [Hyperspace ECU V3.5.7.exe](#)
- 📄 [Hyperspace ECU V3.5.7.exe.config](#)
- 📖 [Mercury2\\_Manual\\_28\\_02\\_2019.chm](#)
- 📖 [Orion\\_Manual\\_28\\_02\\_2019.chm](#)

That is why it is a good idea to make sub folders Like ECU, TCU etc. to keep files together.

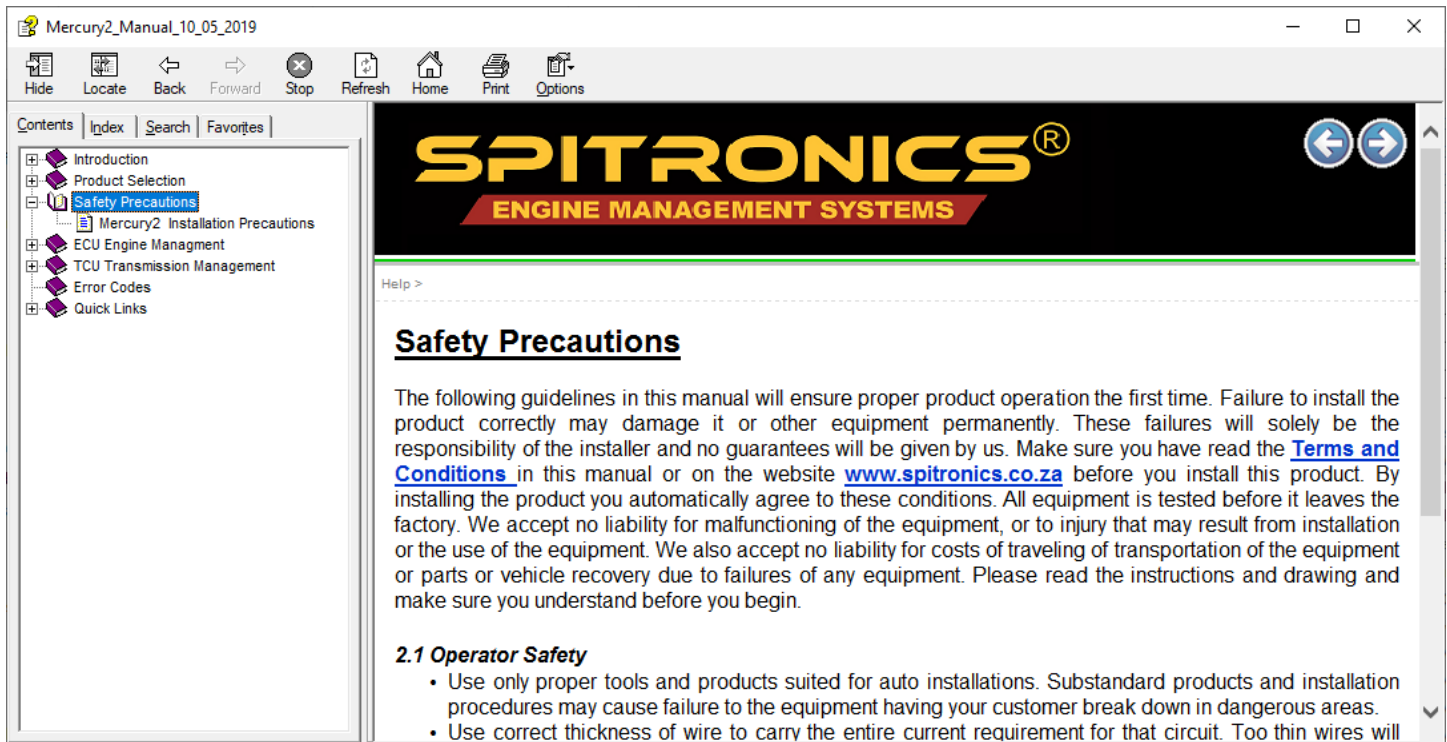
## Firmware Programmer

In the manual is a complete description of how to install and operate the Firmware Programmer. Again very important is the **Precautions**. Read them carefully. Never press the **Erase All Code Space button**. It will render the product useless and it will have to be returned to the factory. Below is a screen shot of where you can find it in the Hyperspace ECU Manual.



## Connecting a Product to Hyperspace for the first time.

By now you should be familiar with the product and information around it. The chapters you should read before attempting to install is the **Safety Precautions**. This will help to prevented making the obvious faults that could damage the unit or components of the engine. Below is a screenshot where you can find it in the Hyperspace manual.



Always follow the **Startup Procedure** step by step as it is explained in the manual. Do not attempt to take shortcuts and try to start. If you missed some points in the setup, the ECU or engine components could be damaged. Each Product differs and has its own unique way in the Startup Procedure. Each point is numbered and you can reference this number to the dealer to ask him for advice. If the number does not function correctly do not go further till it is solved. Failing to do so may damage the unit and inflict repair costs for your account. Below is a screenshot where you can find it in the Hyperspace manual.