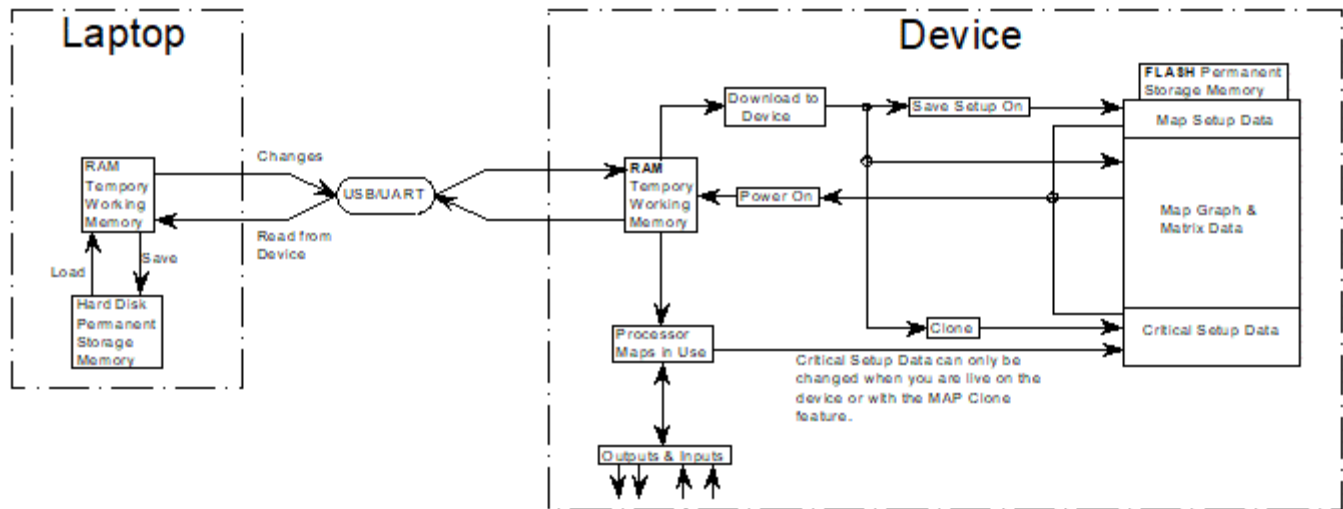


# ECU Memory Handling in Ver 3.6

## Memory

The Memory handling in Ver 3.6 Firmware is changed to provide more GP outputs from the unused Coil and Injector drivers. The danger before was that when different Map files is downloaded into the Device, it may override critical setup values which could damage the device or components on the engine. Now the critical values cannot be changed by loading a map. It is saved in a separate space in the flash memory. These values can only be changed by adjusting them on a connected device or by Cloning a Map or Tune file into the device.

Below is a block diagram of the map memory and how map data is handled.



The memory is divided into 3 categories. Map setup data, Map Graph and Matrix data and Critical setup data. Below is a description of the different memory spaces:

### Map Setup Data

In this block all the normal engine and tuning settings are saved. If you load a map file, this setup data can be overwritten or it can be retained by selecting or de-selecting the Save Setup Data. In most cases this check box is left on.

☒ Save Setup Data

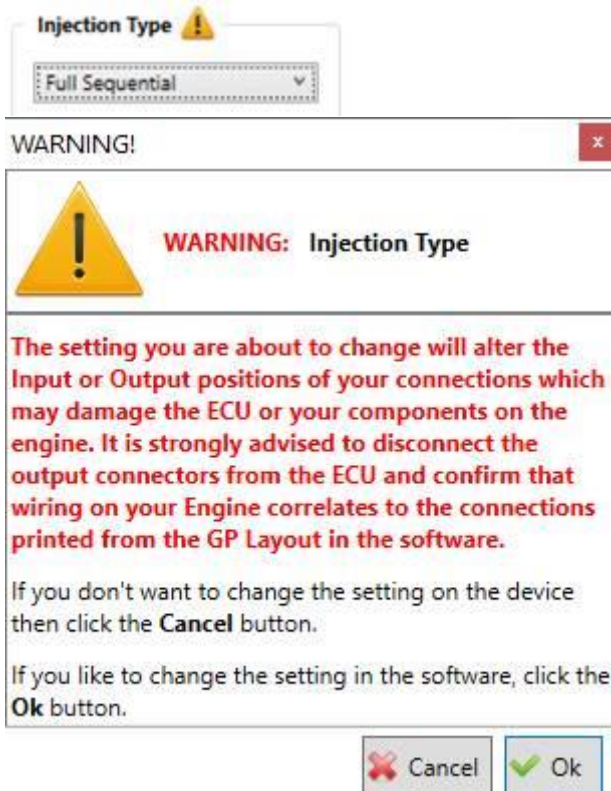
**Note.** This setting must be selected before opening the map. Once you open a map file then this setting is ignored as it is now part of the setup. There are values like sensor calibration that must be recalibrated if you load a new map.

### Map Graph and matrix data

This memory house all the graphs and matrix data. This influences the actual tuning of individual engines. Graphs and matrixes may also be exported and imported individually so that you can add a previous tuned feature from one map to another. This is handy if you want to try a different algorithm for example between Graph and matrix.

### Critical I/O setup data

The memory holds settings that will alter the inputs and outputs connections of the device. They are part of the normal setup data but are critical not to change during a map load function. This memory can never be overwritten by loading a map. One way to change these settings is online with the device connected, and then save it to the device. The other is by the Cloning function. So be careful if you load a map on a working engine not to use the clone functions. All these settings are protected by an indicator and warning message.



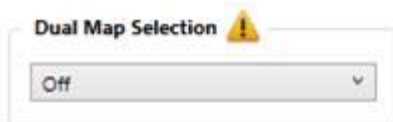
## The ECU Critical settings

### Save Setup Data

☒ Save Setup Data

This setting determines if the setup block will be overwritten or not. Checked on means it will be overwritten. It does not have a warning because it is not dangerous if it is selected on a live engine.

### Dual Map Selection



This setting will effect which map data is loaded at startup. It may also be used as a Flat-Shift input or Coil 5 Driver Output. Setting it on dual will influence the wiring connections.

### RPM Output pulses



This setting is used by other devices like a tachometer or TCU input for RPM and should not change by loading a new map.

### Coil Combination



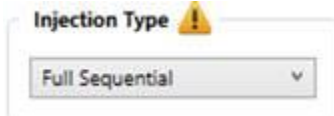
This setting is critical because it could free up drivers that may be used for GP outputs. It will effect wiring connections. Having this wrong could damage Drivers or coils on the engine.

## Coil Driver Trigger Combination



This setting will move coil outputs between HV Negative Drivers for Basic Coils or Positive Drivers for Smart Coils. The drivers have 2 or 3 functions and care must be taken to set it up before you connect the ECU to the engine.

## Injection Type



This setting is critical because it could free up drivers that may be used for GP outputs. It will effect wiring connections. Having this wrong could fill a cylinder with fuel resulting in a bent con-rod.

## Idle Control



This setting effects wiring connections and is combined with GP outputs. Some idle valves require 2 outputs from the ECU.

## Tuning Pot



This feature controls the way the engine handles the Turbo or tuning of Fuel or Timing. It does not affect wiring but can be dangerous if it controls fuel or ignition timing.

## Cam Control



This setting effect wiring connections and is combined with GP outputs.

## Anti-Lag Control



This setting use a driver to activate a bypass valve. It is shared with other outputs and inputs.

## Flat Shift Control



This feature shares the Dual Map selection and Coil Driver 5 output. It will effect wiring connections.

## Duel Injector Control



This setting effect wiring connections and is combined with GP outputs,

## Map Lock Password

This is also saved in this block. If you want to clear a password, you need to load a map and Clone it into the device. See the Clone function next. Note that all your critical values will be changes so you need to set the device up from the start. Disconnect all the output connectors as you may damage drivers or components on the engine. See locking a device below.

## TPS Calibration

This calibration is also saved in the critical memory.

## Cloning



Cloning means copying a device map exactly onto another device. This process will save all the settings including the critical setup data exactly as the device map that was saved. This is handy for builders that use the same engines and drivetrains in different builds. It is also handy to load a startup map of a similar engine in the device to assist new customers. It will also load the map in all the relevant maps for systems with Dual or quad maps.