

## Ferrari 575M "Bespoke Series ECU Software" : Product Documentation



# 00: BACKGROUND

Welcome, I hope you find this guide a valuable source of inspiration on your quest to make your Ferrari 575M the car it always deserved to be!

The novel technical solutions presented here encompass thousands of man hours worth of work in both tireless research and development spanning multiple years of ecu calibration and tweaking.

All dyno and road tested (and sometimes even race tested) by professional drivers and customers alike across multiple countries and climates. Work passionately carried out in the pursuit of absolute driving perfection. With calibration's tirelessly refined by world respected engine expert Kent Goldy, Director of Cosworth Engineering.

They combine to make the experience of driving your car absolutely transformed, completely re-imaged. The focus has therefore been very much on playful character and perfect balance, banishing all numbness and delay, optimizing feel and response, giving you absolute control. You'll instantly notice within seconds of getting behind the wheel how much it has been transformed.

You literally won't find anything else out there that comes even close to what these upgrades can offer. As such I am very proud, delighted and excited to share with you what it possible and how much of a difference it will make to the pleasure and enjoyment of your car.

360trev

1000  
MIGLIA

*"Race proven calibration's as raced in the 1000 Miglia in Italy by Sam Fane (AKA YouTuber Seen Through Glass) in his Ferrari 360 Modena"*



Non-Endorsement: This product is not endorsed in any way by Ferrari SpA or Ferrari North America.

# 01: FIORANO HANDLING GTC SPEC

The HGTC Fiorano base upgrade is a fantastic way to improve any 575M !

It is an excellent starting point for **any 575M** and a great base for further upgrades.

This upgrade rolls up all of the engine management software improvements (not just the calibration maps) to an improved later software release which;

Fixes Bugs on earlier firmware releases (especially important on earlier model year cars).

We also improve on the factory code to Introduce differences in control strategy with different calibrations for Sport and Race. **A world 1<sup>st</sup> for the 575M!**

Gains Torque and Horsepower across entire rev range (even on a stock 575M)

Improves Drivability

Improves Throttle responses

Fixes broken fault code system and detonation sensing on some vehicles.

Fixes for “phantom” cold start misfires!

This upgrade works on **BOTH** F1-Paddleshift and 6-Speed gated shift cars

It has taken many man hours of work to perfect

This isn't just stock firmware re-flashed, its not possible without considerable R&D efforts

It takes into consideration all of the vast array of differences (wiring, sensors, actuators, etc.) across all the different model years, model geographies and vehicle configurations.



*“Even the HGTC software itself can be significantly improved upon”*

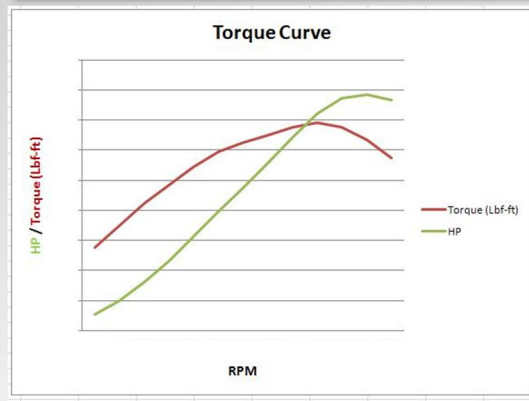
## 02: INSTANT TORQUE

$$\text{HP} = \frac{\text{RPM} \times \text{T}}{5252}$$

revolutions per minute      torque  
horsepower

$$\text{Power (Kw)} = \frac{2\pi \times \text{Speed} \times \text{Torque(nm)}}{60}$$

$$\text{Torque (Nm)} = \frac{60 \times \text{Power (kW)}}{2\pi \times \text{Speed (Rpm)}}$$



Instant Torque *is something we strongly recommend.*

This upgrade dramatically improves the way you interact with the engine and how the car feels to drive. Driver engagement is greatly improved.

The interface between the throttle and engine power is sped up so that unnecessary delays between your right foot and torque application to wheels are completely eliminated.

You feel more in control as it allows you to steer the vehicle on throttle

The only thing you may experience is that traction may prove more challenging in some circumstances so more caution may be needed on poor traction surfaces.

## 03: SLOW DOWN

This removes the entire troublesome hardware associated with factory catalyst temperature monitoring.

Cat Temperature thermistors probes are deleted.

Cat ECU control stations are deleted.

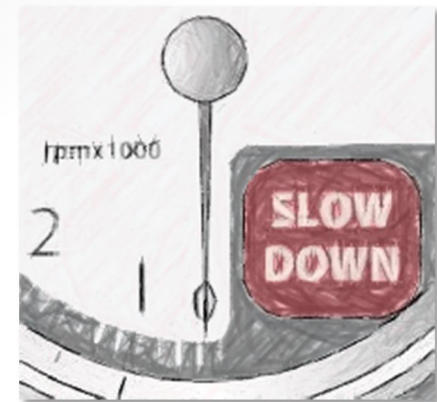
You can leave everything plugged in or remove them (entirely up to you).

The associated SLOW DOWN light monitoring CEL's are deleted.

Monitoring now uses 'Cat Temperature' Estimation modelling exactly like later models (which also don't need cat ecu's or thermistors).

This improves reliability of your 575M!

Note: If you remove thermistors you *\*must\** fit bungs to block the holes left.



*"Cat Ecu's are prone to failures  
and can be software emulated"*

## 04: SPORTS CATS



*"CEL's can be triggered by Sports Cats even when they are operating perfectly"*

This removes the CEL's which trigger when high-flow sports cats are fitted or for track days installation of 'test pipes'.

For many years removal of the troublesome catalytic converters in the manifolds/headers of some cars and fitment of sports cats has caused many enthusiasts countless headaches with CEL's.

This fix eliminates the control strategy entirely so the Cat Efficiency CEL's will never trigger (even under cold start worst case scenario's) that will always eventually impact any other solution such as 'cat extenders'.

This also removes the need to fit or have fitted operational Secondary O2 Sensors. They are normally only used to calculate catalytic efficiency.

This improves reliability (less to go wrong..)

In some regions this may only be used "Off Road Use Only".

**Note:** If you remove secondary O2 sensors you must fit bungs to block the holes left.

**Note:** Cat protection is still active and fueling is still restricted under some circumstances to protect cats from damage.

# 05: RACE CAR CONVERSION



Cat protection elimination can be useful if you do full catalytic deletion by fitment of 'test pipes' when preparing a car for track only use preparation.

This is exclusively for customers who intend to use their 575M for track days only – or for converted race cars that don't require to pass any emissions regulations.

In some regions this is permissible. For instance some models destined for UAE did not come equipped with any catalyzers at all (they borrowed hollow cats from the race cars).

It removes the ecu cat protection calibrations so requested fueling is never restricted.

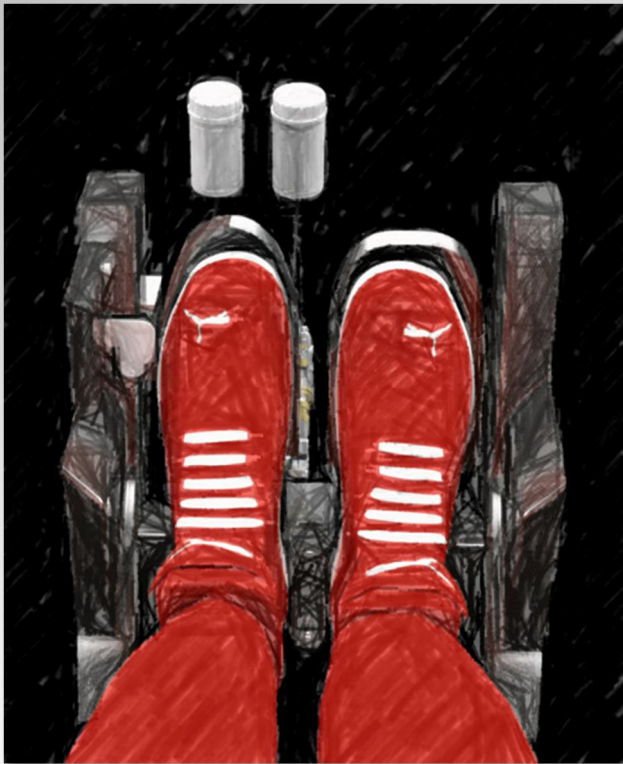
This lifts performance further (as used in Challenge race cars) as normally fueling is restricted in some circumstances to protect catalyzers from being damaged by too much fuel.

This full catalyzer delete is intended for '**Off Road Use Only**'.

It cannot be used on the public roads in countries or regions which have emissions regulations.

Note: This option can also be used 'in reverse' so that a race car can be used effectively with "Sports Cats" without ruining them with overfueling.

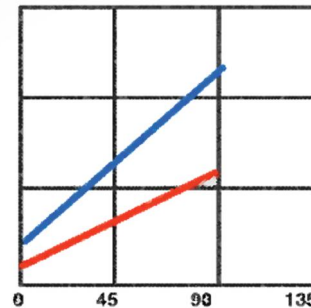
# 06: SWITCHABLE E-THROTTLE MAPS



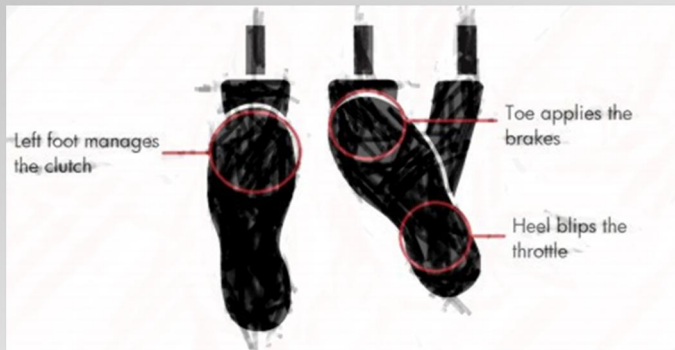
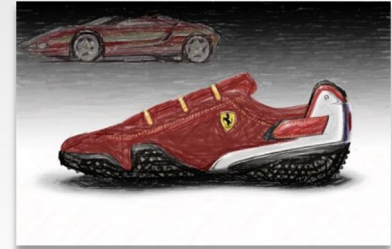
Improvements to the calibration associated with electronic throttle including the sensitivity.

The sensitivity is re-calibrated for improved torque feeling, particularly at the lower to mid-range level where you need it most

This gives a more satisfying take off the line and is useful for F1 to reduce clutch slip and improve clutch life for F1-AMT equipped vehicles



# 07: HEEL & TOE ENHANCEMENT



An upgrade to permit 'Heel & Toe' yields instant 'fun'....

This allows you to override the standard 'Bosch' pre-programmed algorithm so that you can heel and toe!

Eliminates fuel cut algorithm as engine management normally turns off fueling during clutch de-activations to save fuel.

This allows you to blip on downshifts on manual gated cars!

More satisfaction from doing it yourself



## 09: IMMOBILIZER RE-ARM FIX

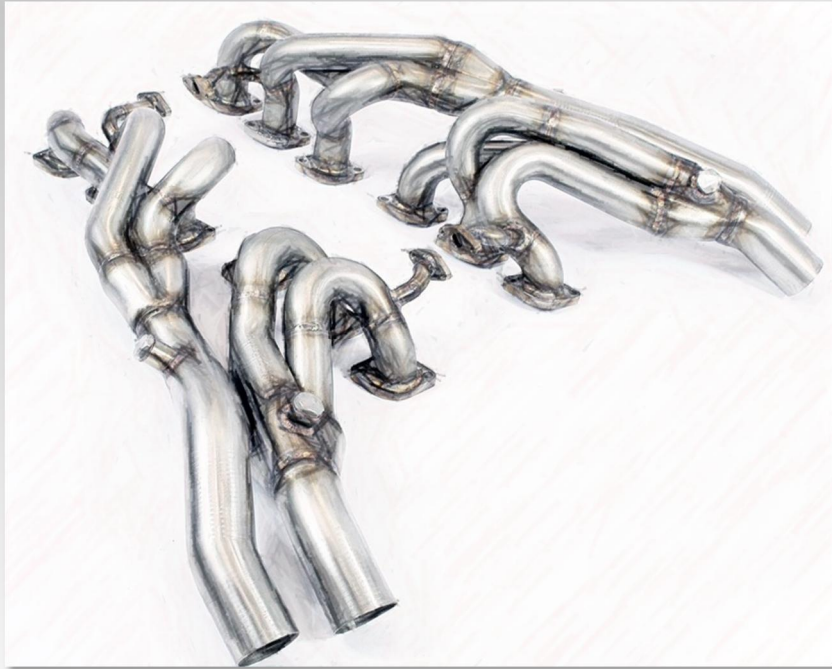
Annoyingly the factory default timeout after de-activating the immobilizer is woefully too short.

This increases the time limit so you have enough time to start up from **25 seconds to 1 minute** to allow more time to start the vehicle after unlocking the car with the fobs before it kicks back in.

Useful to eliminate frustration of having to lock/unlock every time you try to start your own vehicle!



# 11: CUSTOM EXHAUST VALVE MAPS



No longer do you need to choose between having exhaust valves or not. This is the best of both world.

Fully selectable exhaust valve maps with custom calibration maps

The exhaust valves can be reconfigured to open earlier and under less throttle application in both sport and race modes.

More details can be provided and recommended maps shown.

## 12: FUEL CAP LOOSE CEL

If you get annoyed that not tightening the fuel cap can cause an engine CEL you can deactivate it.

This feature is quite simple, it simply removes it.

The loose cap CEL is only to inform you that you have forgotten to completely tighten the refueling cap.

It should also be used if you intend to do an EVAP delete

If you intend to remove the entire fuel vapor system with and fit a simple vent to air solution (to save weight).

See EVAP deletion for more information.



## 13: F1/GATED SWAPS



This features allow you to convert between F1 and Gated transmission setup's by re-configuring the engine management firmware accordingly.

To reduce complexity and weight, the F1 system can be removed.

Full options include swapping from F1 to 6-Speed gated.

Or from 6-Speed gated to F1 shift paddles.

This configures all of the correct software calibrations so that shifting is smooth and exactly like the factory does it.

We can also help you to configure you dashboard panel too.

# 14: COLD START 'MISFIRE' CEL FIX

After years of blighting the Ferrari's of this era (All Model years) finally we have a calibration solution.

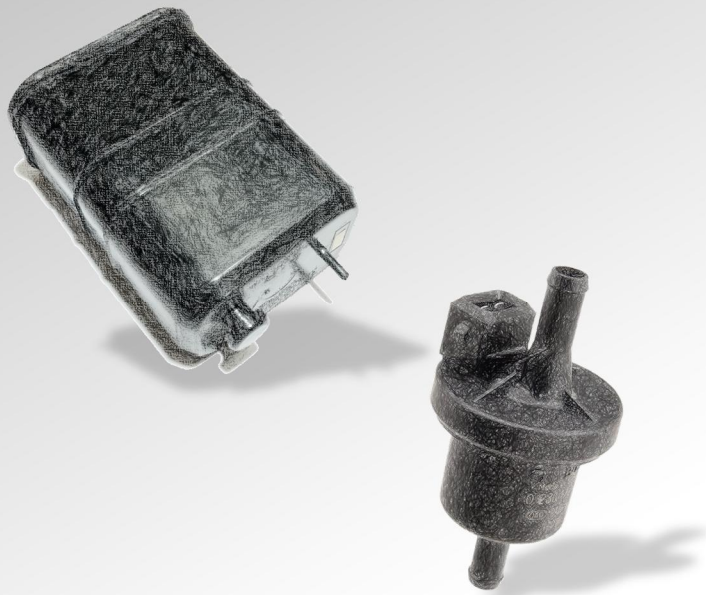
No more "Phantom" cold-start random multiple misfires!

If you genuinely have a real misfire this will not stop the misfire CEL's, it will just prevent cold start triggering phantom CEL's.

This configures calibrations so that you never get a phantom cold start CEL again.



## 15: FUEL EVAP SYSTEM



Fuel evaporation system removal is typically part of conversion of a road car to racing or track only duties.

To reduce complexity and weight, the charcoal canister, vapour separator, solenoid actuation valves and associated pipework can be completely deleted.

Installing a mini charcoal canister with vent to atmosphere valve is recommended.

This feature deletes the CELs and ecu control solenoid control valves.

Typically recommended for “off-road use only” for track vehicles.

Not road legal in many countries.

Please check applicable laws in your region if you intend to use on public roads.

## 16: SECONDARY AIR SYSTEM

Secondary Air System – this is an emissions control system used to get catalysts up to speed quickly.

To reduce complexity and weight, the air injection system can be completely deactivated.

It deletes very rich startup condition maps as normally extra air and fuel pumped in.

This deletes the monitoring, CEL's and control of the air-pump.

Typically recommended for "off-road use only" for track vehicles.

Not road legal in many countries.

Please check applicable laws in your region if you intend to use on public roads.

## 17: OVERSIZED AFM UPGRADE



These Larger spec Air flow Meters improve performance at higher rpm's.

They replace the 575M AFM's and are fully recalibrated correctly.

Performance at peak power is improved.

Note: These larger AFM's require new air boxes (different fitment method too) or aftermarket airbox covers.

For more information please enquire.

# 18: STEP #1+ PERFORMANCE



Step #1 Performance upgrade takes factory calibration further.

We improve performance with tweak to various engine management calibrations to tailor the car to “Fast Road” use.

This map is for fast road enjoyment, not to make outright peak power at the expense of enjoyment.

We setup the Air to Fuel ratio's for “**Optimal Torque**” in all conditions vs “Optimal Fuel Efficiency” of the stock maps.

These maps will still pass emissions testing as we leave the areas of the map which are tuned for emissions alone so your yearly/bi-yearly test will still be fine.

We remove dead and ‘flat spots’ in the rev range by tuning the performance specifically for a free flowing sports exhaust.

The recommended system is the factory Challenge Style optional exhaust, or any other system which still uses valves and does a bypass of the back box (highest flow) on valve opening.

Performance is specifically tuned for low back pressure systems.

This map is recommended for use with “180/200 Cell Sports Cats” and a “Free flowing Sports Exhaust”.

# 19: STEP #2+ PERFORMANCE



## Step #2+ Performance upgrades for "Track Performance".

We improve performance with tweak to various engine management calibrations to tailor the car to "Track Usage".

This map is intended for Track usage.

We setup the Air to Fuel ratio's for "**Optimal Torque**" in all conditions vs "Optimal Fuel Efficiency" of the stock maps.

Stage 2 also calibrates the Ignition curves to be optimized for higher octane fuel so at this point its recommended to use 98+ RON octane rated petroleum.

We remove dead and 'flat spots' in the rev range by tuning the performance specifically for a free flowing sports exhaust and "test pipes".

The recommended system is the Supersprint or Fabio exhaust spec'd with valves, or any other system which still uses valves and does a bypass of the back box (highest flow) on valve opening.

This calibration is recommended for use with "Test Pipes" or free flowing "200 cell Sports cats" and a free flowing "Race Exhaust".

Performance is specifically tuned for low back pressure systems however we can also accommodate "low dB" back boxes and other dB reducing equipment (please enquire).

# 20: STEP #3/4/5 PERFORMANCE



## Step #3/4/5 Fully Personal Calibration & Data Logging.

We work directly with you to improve performance.

These calibrations are fully tailored to your needs

A full data logging suite is installed and we can monitor telemetry in real-time.

Examples include;

- Fully Built Blue-printed engines

- Polished High Flow Performance Heads

- Cubic Capacity increases

- Larger Fuel Injectors

- Larger Throttle Bodies

- Re-profiled Cam shafts

- Recommended settings for Exhaust cam timing

Please enquire for more details, this stage needs further discussion on a one to one basis.