Călin @ Cherry Tuning & Performance:

Hyundai i30N Performance ECU Calibration (Eastern Europe)

Optimized Power. Pure Driveability. Factory-Grade Reliability.

Our calibration solutions for the Hyundai i30N are not just “Stage” remapping solutions, they are OE-like ECU calibrations designed to deliver **measurable performance gains** while preserving the character, safety, and reliability of the original vehicle.

We believe in engineering that respects both the machine and its purpose — which is why every remap is tailored, tested, and validated using professional tools and methods.

Every solution made for this platform is custom, made for the type of fuel that you put in the car, in-line with official OEM-manufacturers standards, by our Engine Calibration and Software Engineers.

Performance Enhancement Without Compromise

- Noticeable gains in **acceleration and responsiveness**
- Smooth power delivery across the entire RPM range
- **Full load performance** enhanced while maintaining driveability in daily use
- **Improved fuel economy in normal conditions**

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Safety and Reliability First

- ECU is read/written via **safe bench mode** – no ECU opening – warranty is not voided
- Fully **reversible software process**
- **Licensed and original tools only**
- Catalyst and exhaust gas temperatures are protected
- Calibration stays within **OEM-defined emission thresholds (EUROPEAN regulations)**
- No stress added to the components of the vehicle

Included Add-On Features:

- **Custom Pops & Bangs** <<track use only>>
- **GPF / DECAT / VMAX OFF** solutions <<track use only>>
- **Stop & Start Disable**
- **Take-Off Assist / Idle-Up / Anti-Stall Features**
- **Exhaust flap control for loudness/ silence**
- **Improved launch control**
- **Fan mod (for track use cooling)**
- **Torque by gear for driveshaft protectionand/or better driveability**

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Tested with Care – Tuned for the Road

All calibrations are backed by **real-world testingand 100% custom** using high-accuracy RaceBox GPS and full OBD data logging. We ensure that the vehicle's **thermal performance, fueling, and emissions** remain within safe and legal limits — delivering confidence with every drive.

Remap Workflow

Precision, Care, and Custom Calibration

Each remap follows a structured and detailed process to ensure optimal performance, safety, and customer satisfaction. The complete process typically takes **2 days**, allowing us to properly assess, calibrate, and validate each vehicle.

Day 1 – Vehicle Assessment & Data Acquisition

1. **Full Vehicle Health Check**
    - Complete system scan via **OBD diagnostics**
    - Real-time parameter logging to assess the car's condition before tuning
    - Identify and resolve any existing faults or limitations
2. **Performance Baseline Runs**
    - **100–200 km/h** and **50–130 km/h** measurements
    - Used as reference points to validate performance gains post-remap
3. **On-Road Dyno Measurement**
    - Road-based dyno session
    - Accuracy comparable to traditional chassis dynos (within 1% error)

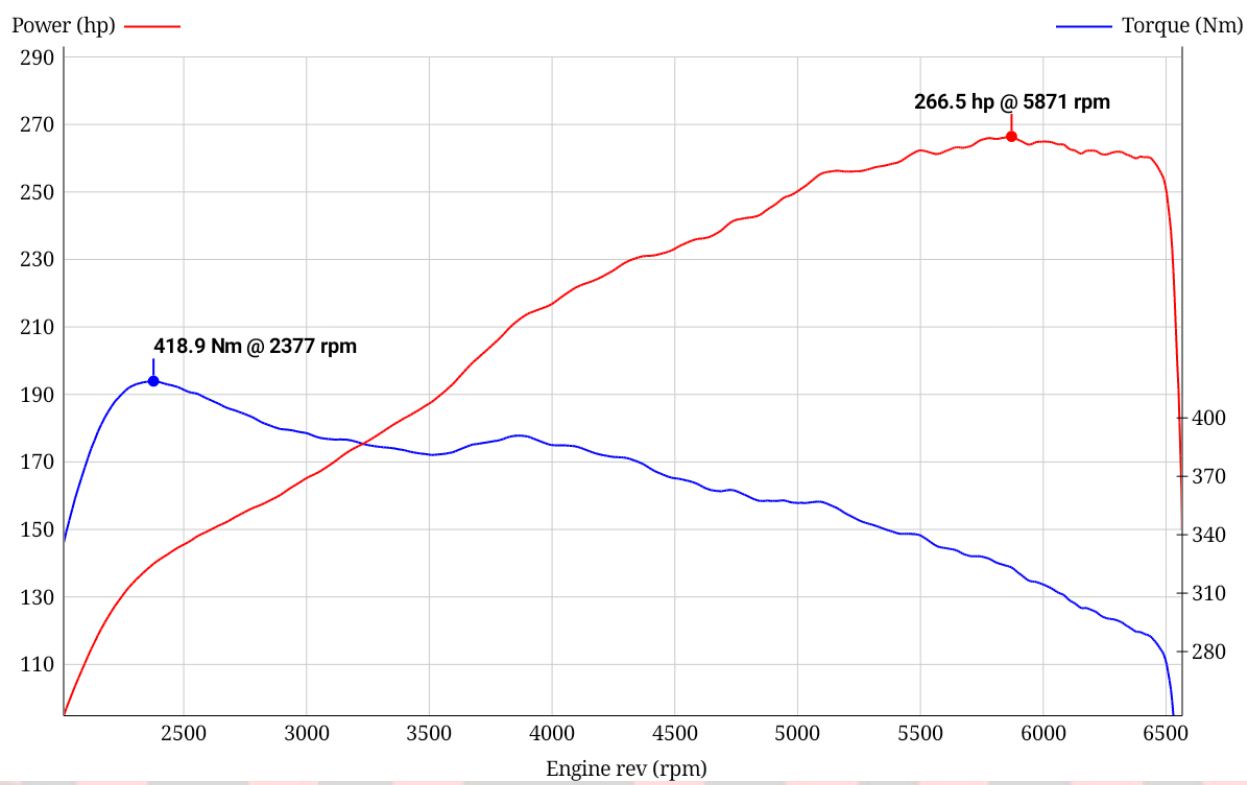
- Ensures real-world performance evaluation

4. **High Gear Pulls & Data Logging**
    - Performed in safe highway conditions
    - Captures key parameters: boost pressure, AFR, fuel trims, temperatures, ignition, timing, fuel pressure.
    - Data is reviewed by our calibration engineers to design the custom tune
5. **Custom ECU Calibration**
    - Tuning is performed off-site with attention to your car's exact setup
    - Software is developed specifically for each car

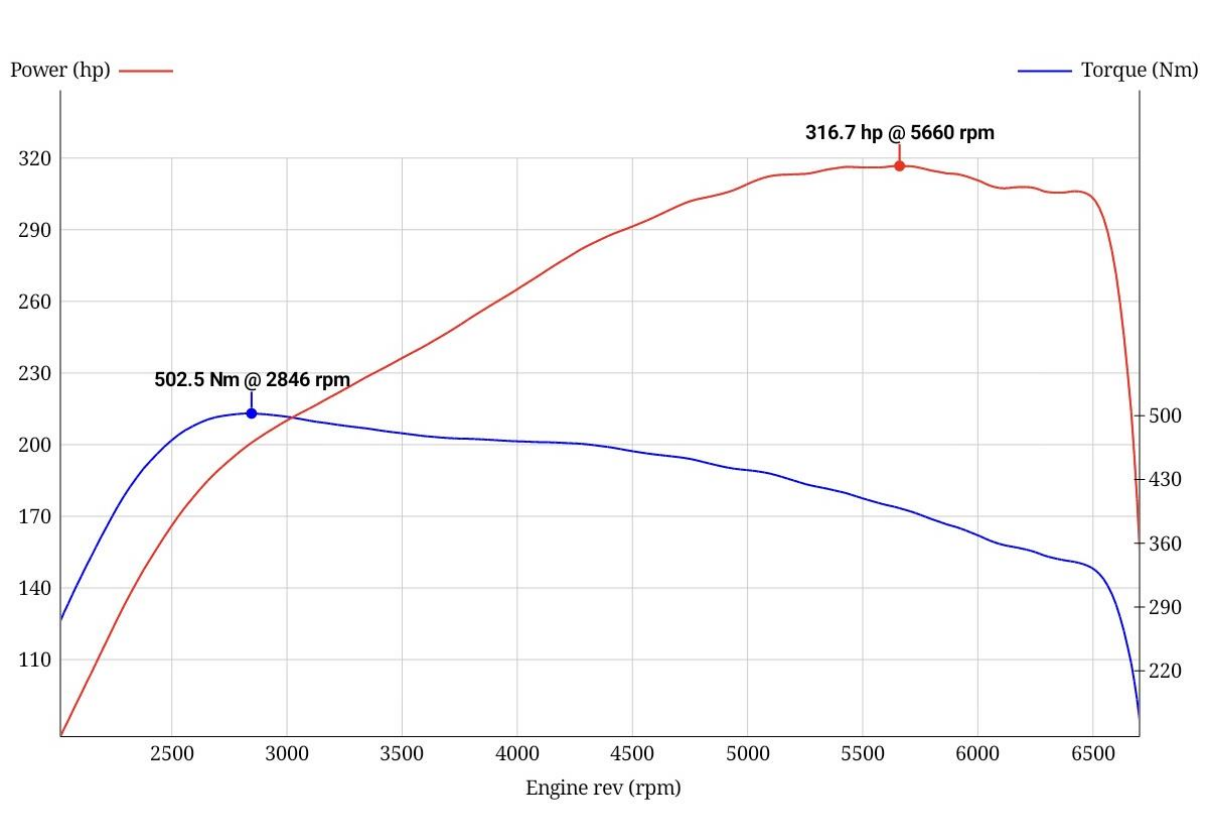
Day 2 – Flashing, Testing & Final Validation

1. **Flashing the Custom Tune**
    - ECU is programmed via safe **bench mode** using licensed tools
    - Post-flash log review ensures everything runs smoothly
2. **Performance Validation**
    - Repeat of dyno road testing and **RaceBox time runs**
    - Direct comparison with baseline values for measurable improvement
3. **Final Adjustments (if needed)**
    - Based on log data, **small refinements** may be required
    - If necessary, the ECU will be reflashed to achieve the perfect balance

- Every car is different — every calibration is developed around your car's condition and use case, with a focus on **reliability, safety, and real-world performance**.



Example: Stock vs Tuned (preFacelift model)



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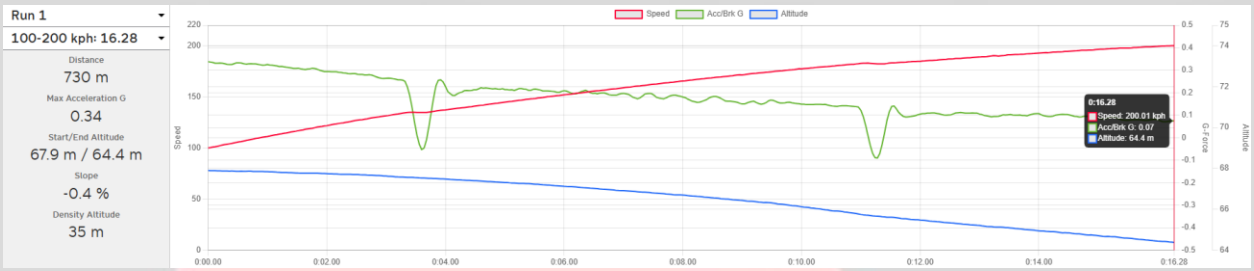
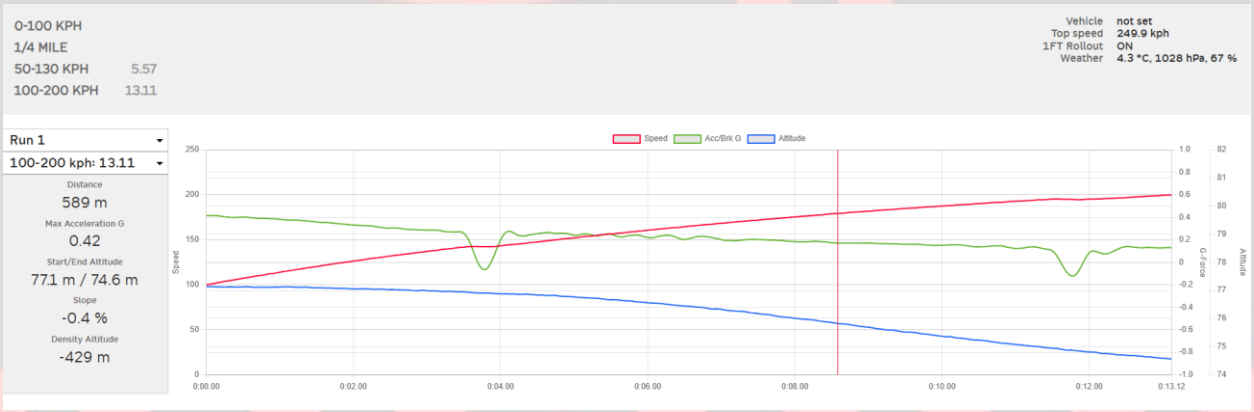
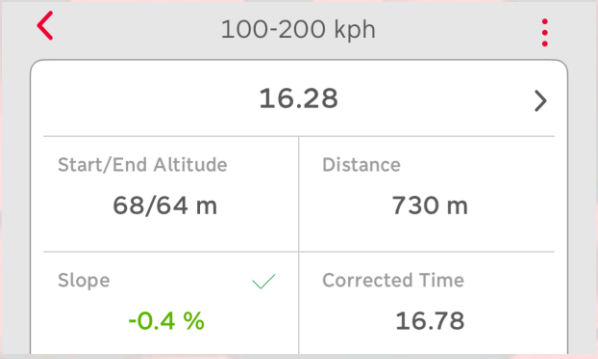


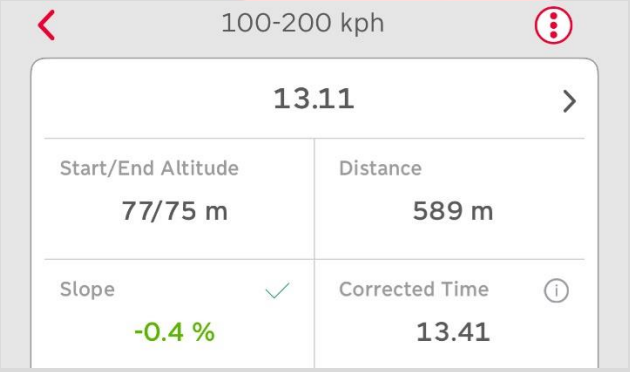
100-200 Stock vs Tuned (preFacelift model)



Stock: 16.28 sec best time (16.78 sec corrected)



Stage 1: 13.11 sec best time (13.41 sec corrected)



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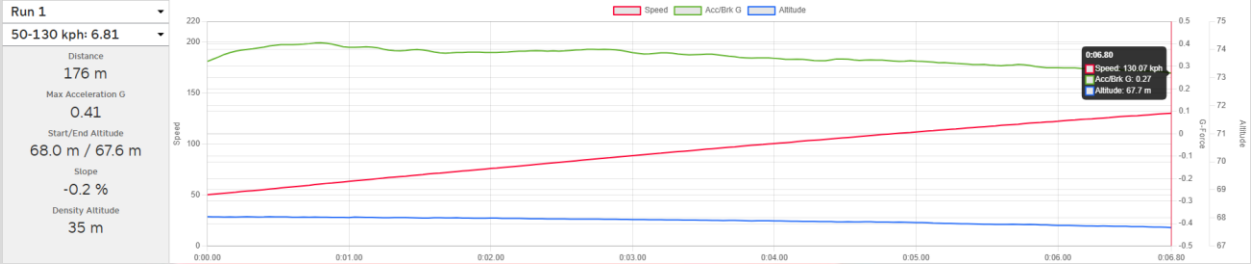
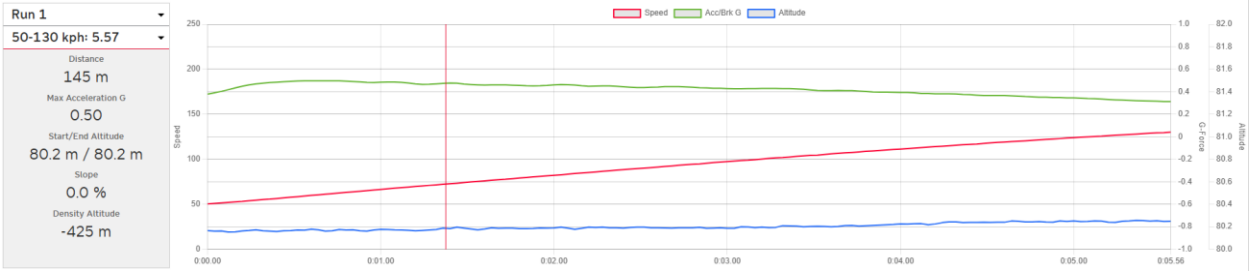
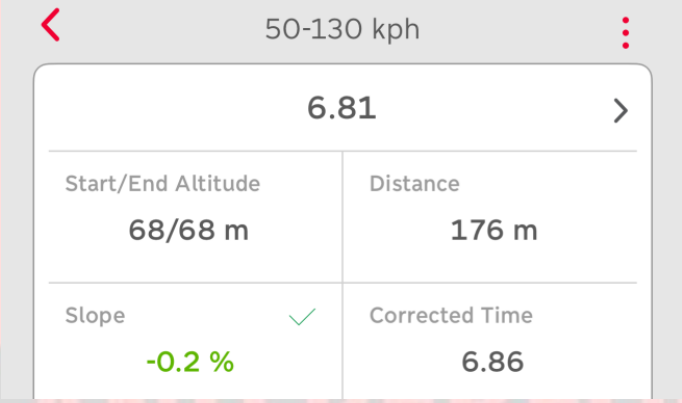


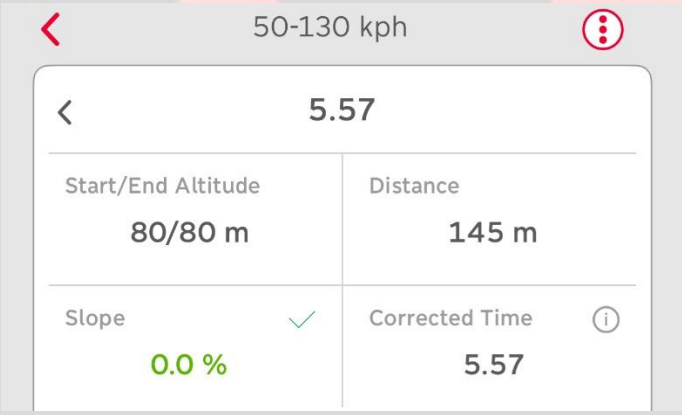
50-130 Stock vs Tuned (preFacelift model)



Stock: 6.81 sec best time (6.86 sec corrected)



Stage 1: 5.57 sec best time (5.57 sec corrected)



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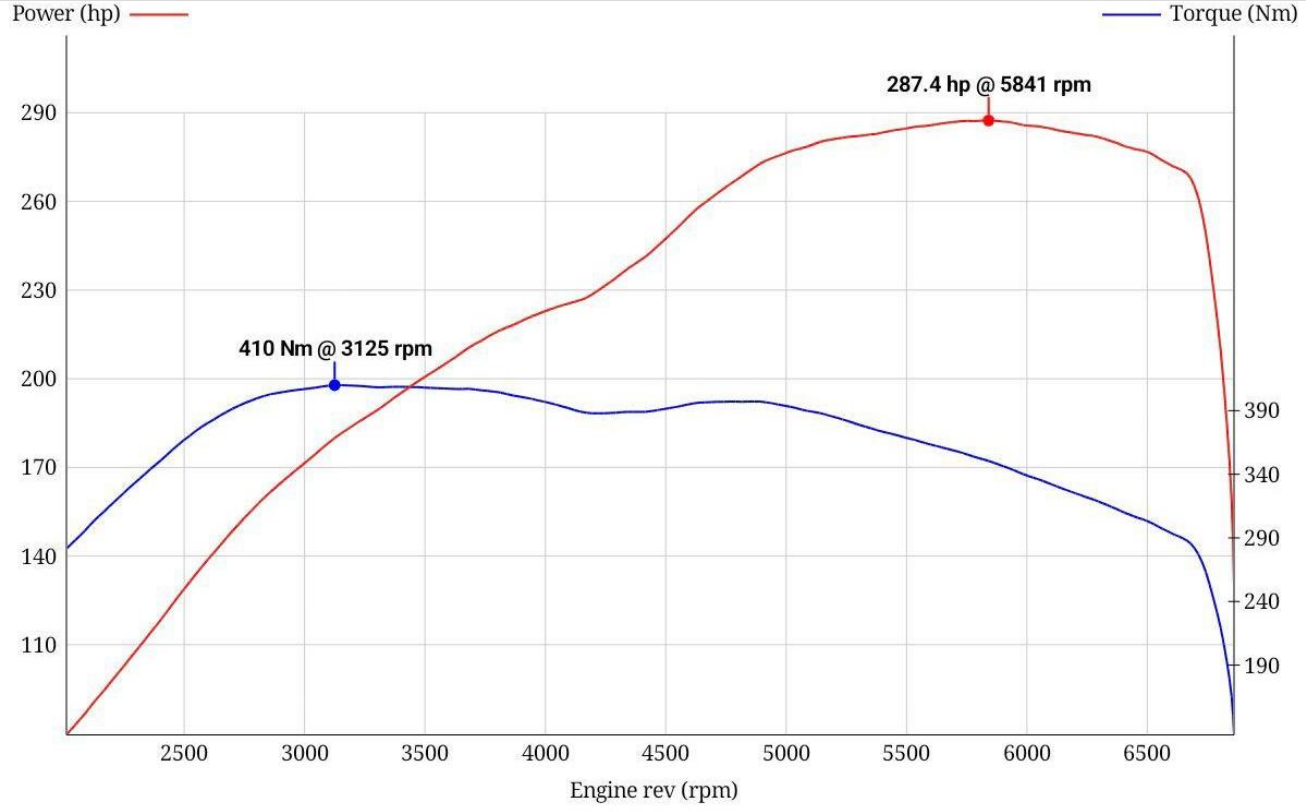
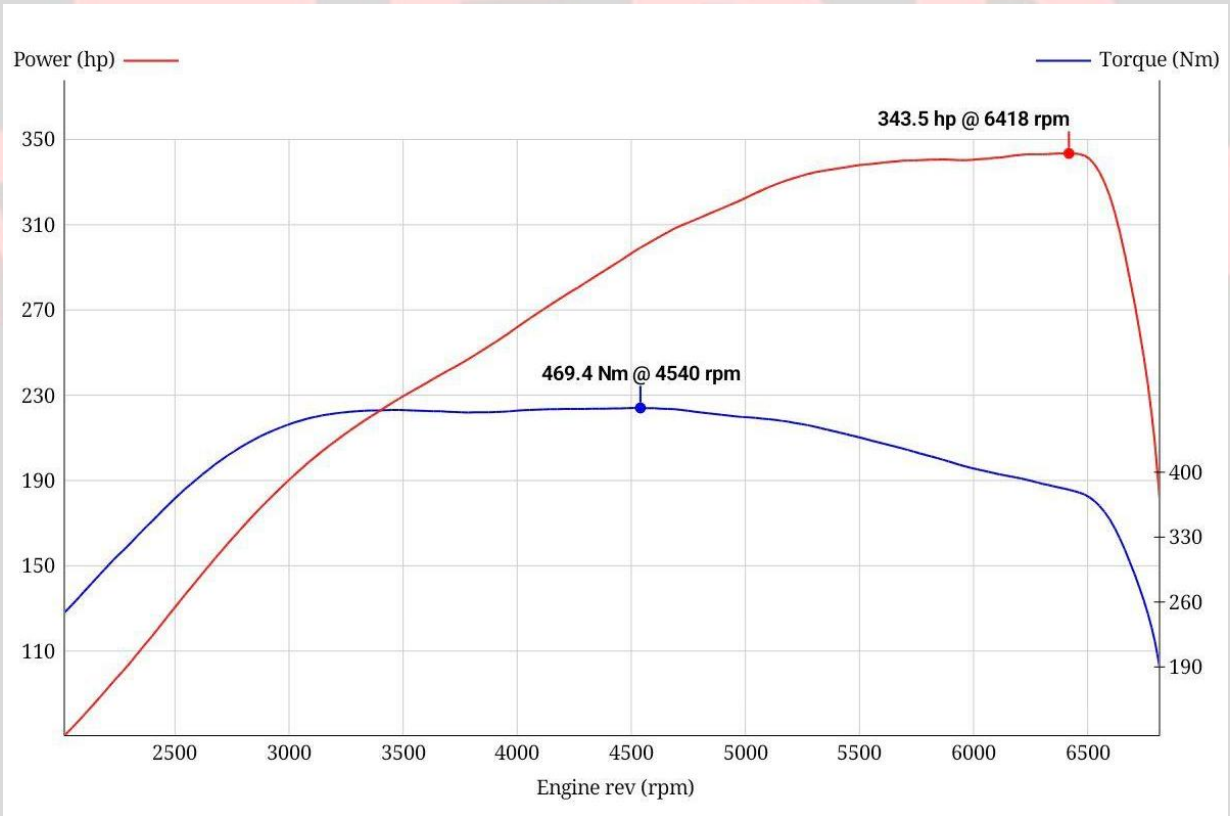


Facelift i30N with DCT- before and after Stage 1



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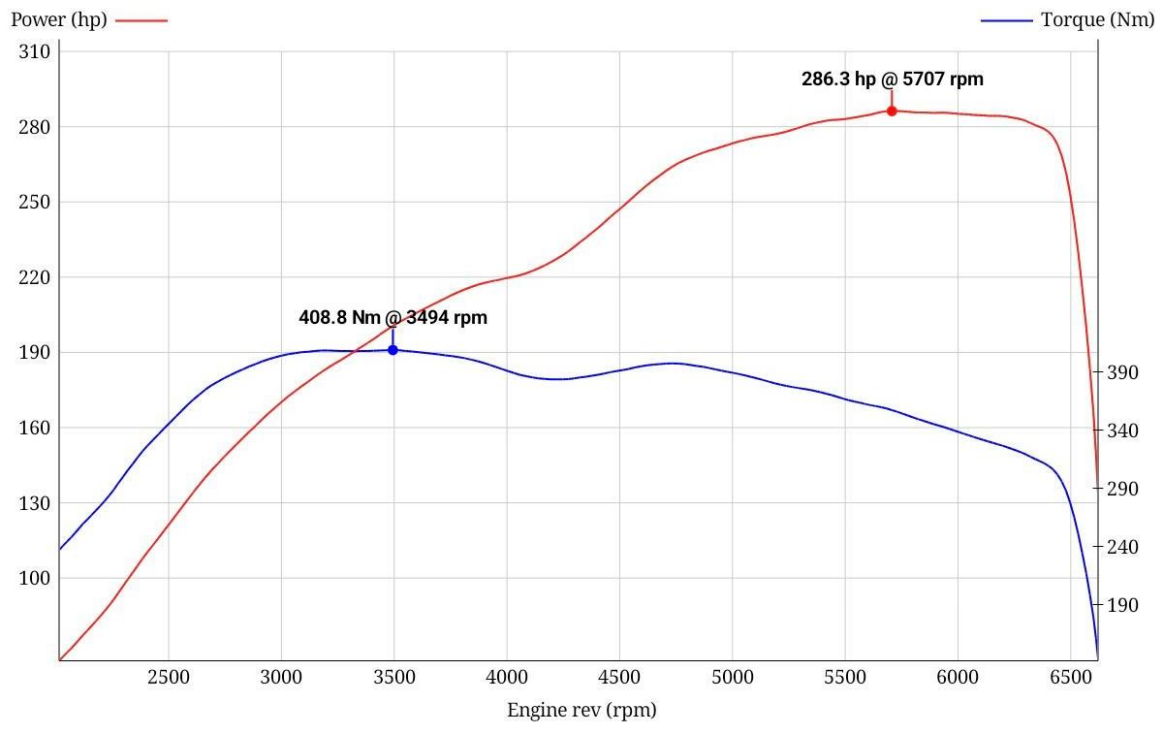
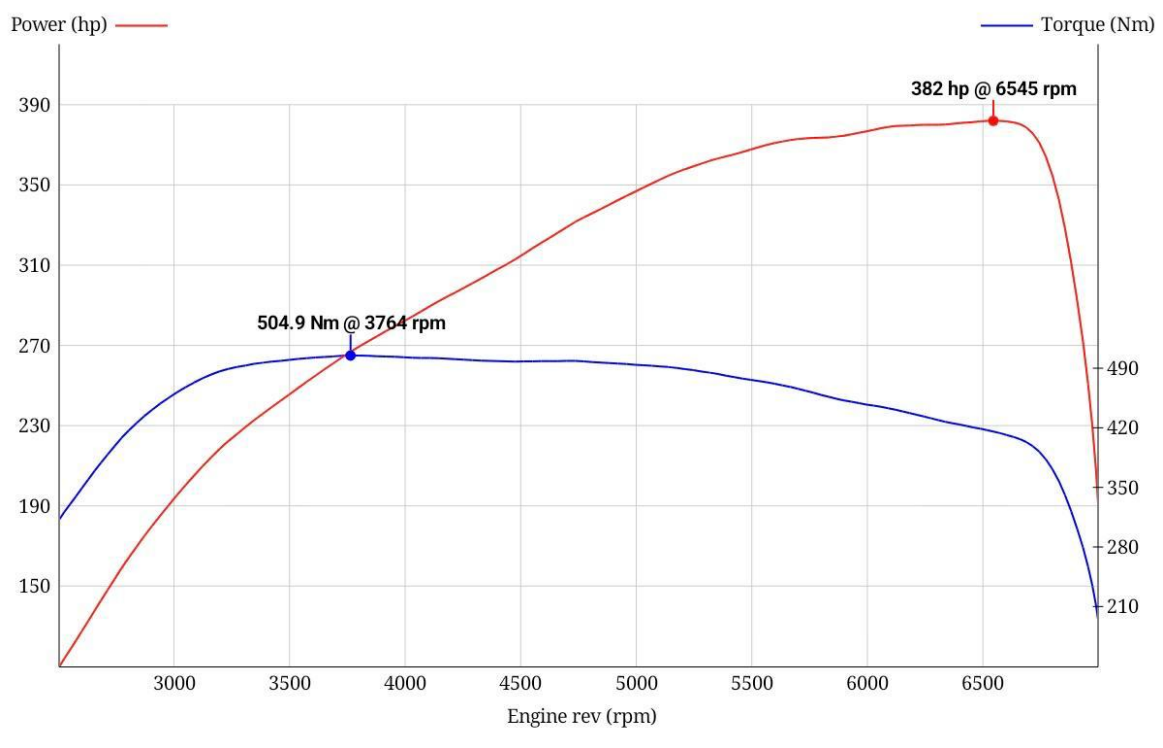


Facelift (Stage 3) example – before and after



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100-200 kph	12.98
50-130 kph	6.04
100-200 kph	12.92
50-130 kph	6.22
100-200 kph	12.98

Facelift – stage 3 100-200 comparison

100-200 kph	9.44
50-130 kph	4.67
100-200 kph	9.40
100-200 kph	9.72
100-200 kph	10.10
100-200 kph	10.27
50-130 kph	4.91

Best time with this car was an impressive 9.39s

100-200 kph	9.39 ›

RaceBox equimpent for Dyno road and 100-200 + 50-130 measuring:

25Hz GPS (0.04s sampling rate)

Accuracy as low as 10cm between samples.

Over 99.5% measurement accuracy to a hundredth of a second

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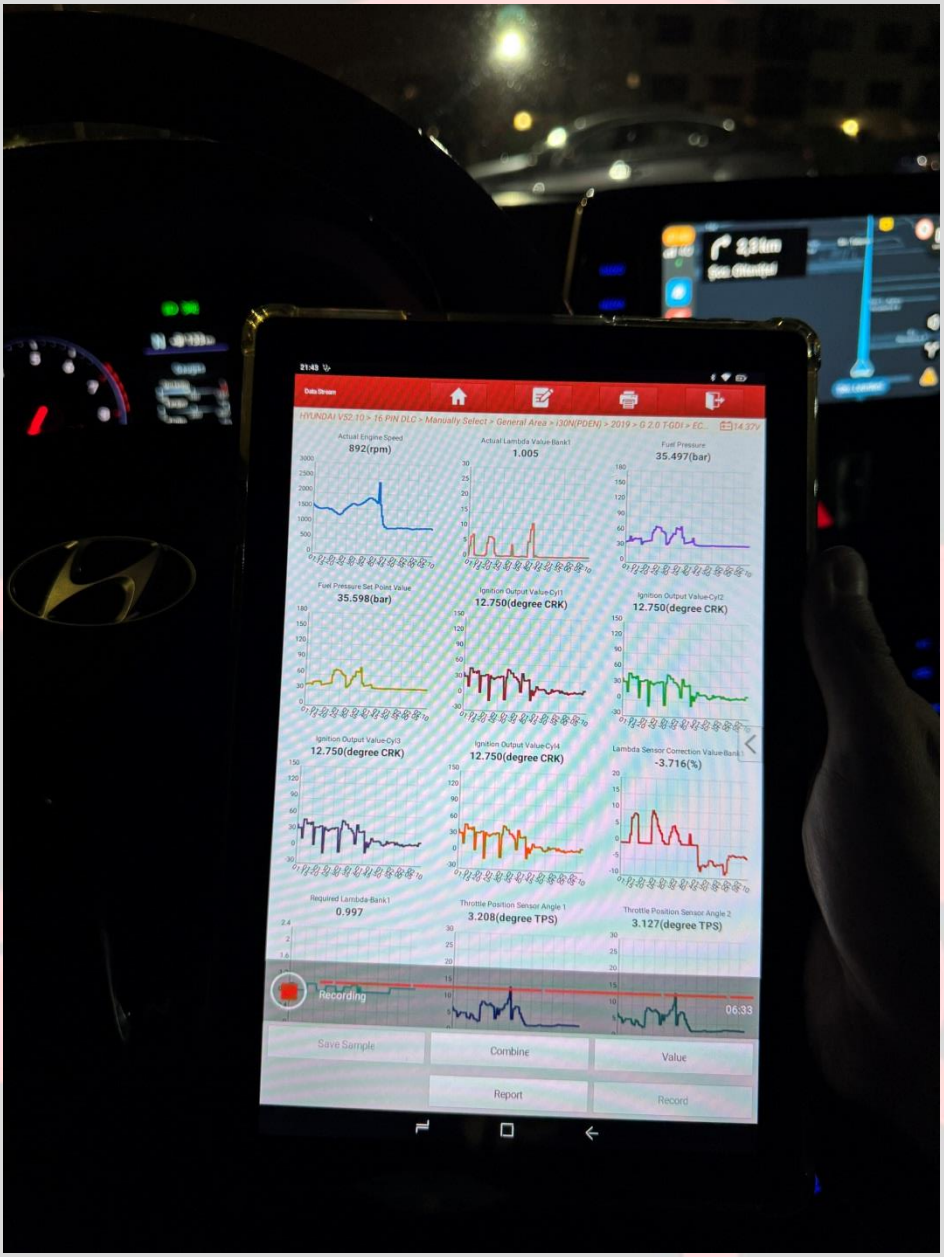
Data logging via OBD example:



Data logging is done using original and licensed tools.

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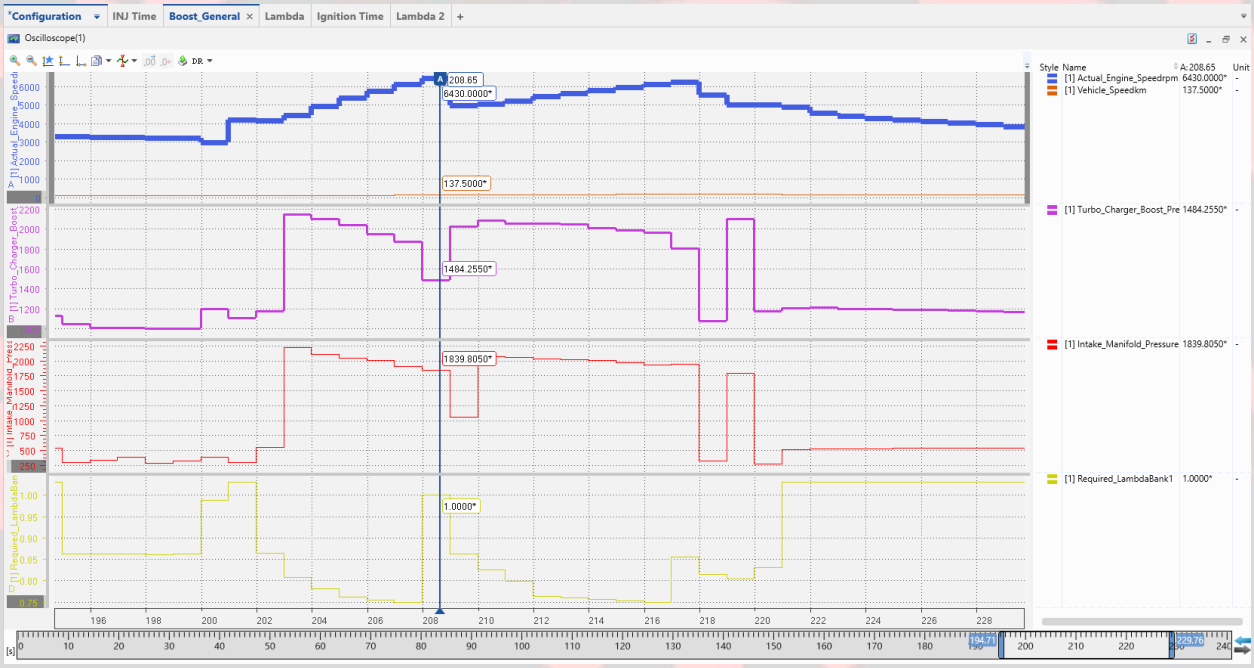
Data plotting for accurate reading of the data logging:



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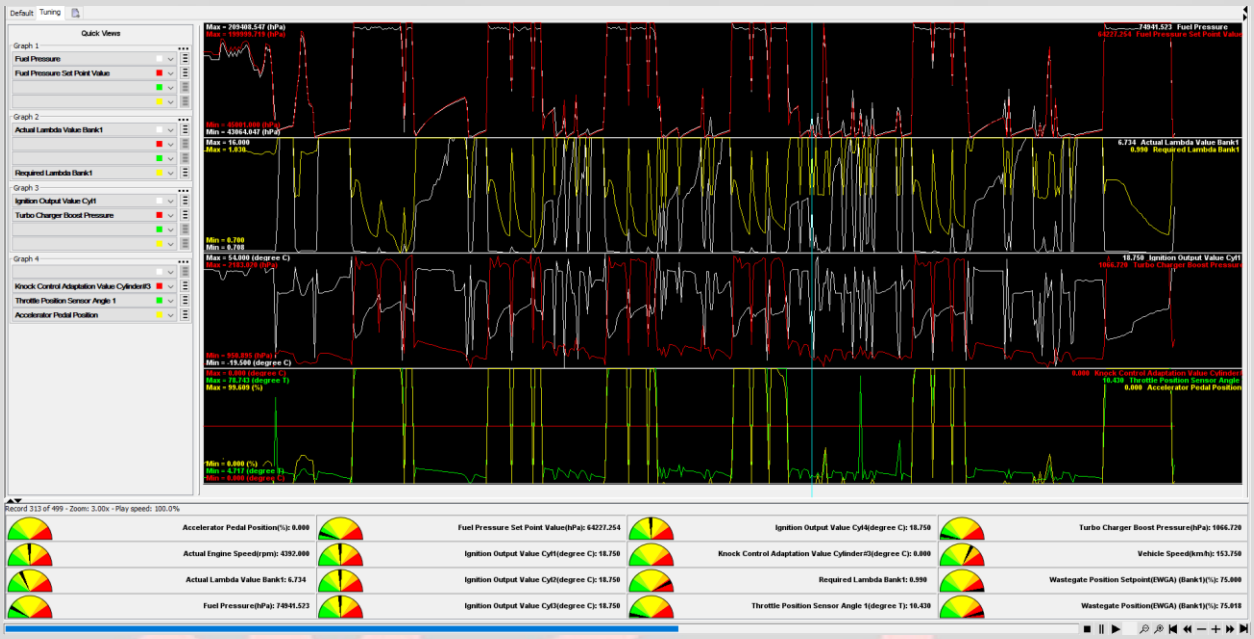

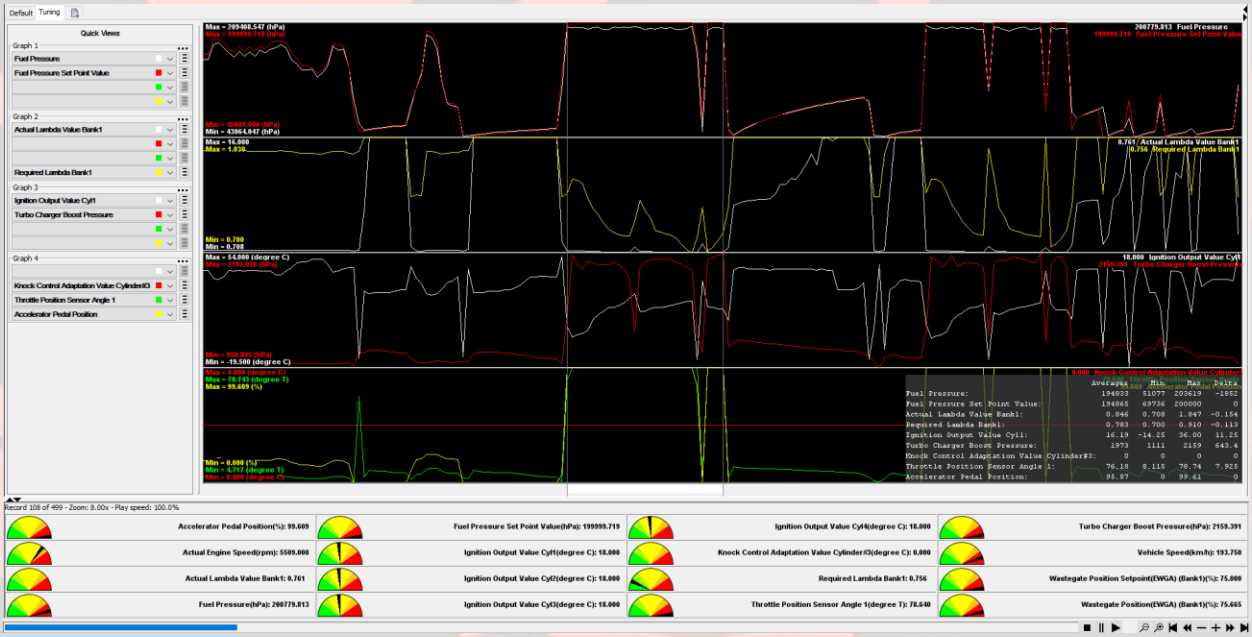

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In comparison, we have just below 0.2 bar increase in boost (for a Stage 1) combined with a correct lambda target value at full load.

Intake air temperatures remained the same: 30 degC (as in this test) after a couple of good 100-200 runs on the highway- very good result!

Fuel pressure targets remained the same: around 210 bar for both stock and stage 1 -> no additional stress on HPFP.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Accelerato	Actual Eng	Actual Lam	Fuel Pressu	Fuel Pressu	Ignition Ou	Ignition Ou	Ignition Ou	Ignition Ou	Knock Con	Required L	Throttle Po	Turbo Charger	Vehicle Sp	Wastegate	Wastegate Position(EWGA) (Bank1)[%]
178	99.609	2872	0.875	201496.2	205232.2	9	9	9	9	0	0.877	78.64	2027.979	123.75	6.5	5.334
179	99.609	2954	0.895	208389.7	209997.6	2.25	2.25	2.25	2.25	0	0.876	78.743	2334.663	128.75	11.487	14.044
180	99.609	3067	0.897	211642.7	209997.6	3.75	3.75	3.75	3.75	0	0.874	78.743	2264.77	132.5	12.897	13.544
181	99.609	3178	0.901	211043	209997.6	3.75	3.75	3.75	3.75	0	0.872	78.743	2291.052	137.5	16.663	15.802
182	99.609	3264	0.893	210719.3	209997.6	4.5	4.5	4.5	4.5	0	0.87	78.743	2269.247	141.25	15.747	15.198
183	99.609	3366	0.892	210586.6	209997.6	3.75	3.75	3.75	3.75	0	0.868	78.64	2275.714	146.25	14.606	15.155
184	99.609	3461	0.89	211350.8	209997.6	5.25	5.25	5.25	5.25	0	0.866	78.743	2284.917	148.75	15.472	15.161
185	99.609	3557	0.88	210767.1	209997.6	4.5	4.5	4.5	4.5	0	0.861	78.743	2305.23	153.75	15.674	15.106
186	99.609	3643	0.878	209583.7	209997.6	4.5	4.5	4.5	4.5	0	0.858	78.64	2330.02	157.5	15.045	15.143
187	99.609	3737	0.87	210278.8	209997.6	5.25	5.25	5.25	5.25	0	0.854	78.743	2348.177	161.25	14.716	15.363
188	99.609	3826	0.856	209445.7	209997.6	6	6	6	6	0	0.848	78.743	2341.295	165	14.673	15.07
189	99.609	3904	0.848	210008.2	209997.6	6.75	6.75	6.75	6.75	0	0.843	78.743	2344.529	168.75	15.369	15.43
190	99.609	3995	0.84	210676.8	209997.6	6.75	6.75	6.75	6.75	0	0.839	78.743	2355.39	172.5	15.881	15.71
191	99.609	4067	0.836	210544.2	209997.6	7.5	7.5	7.5	7.5	0	0.834	78.743	2348.177	175	13.855	15.436
192	99.609	4142	0.831	211106.7	209997.6	15	15	15	15	0	0.831	78.743	2346.685	177.5	16.077	15.894
193	99.609	4225	0.828	210485.8	209997.6	15	15	15	15	0	0.826	78.743	2349.255	181.25	16.174	16.132
194	99.609	4307	0.825	210305.4	209997.6	15.75	15.75	15.75	15.75	0	0.823	78.743	2347.514	185	15.955	16.296
195	99.609	4381	0.825	211833.7	209997.6	16.5	16.5	16.5	16.5	0	0.82	78.743	2351.991	187.5	16.29	16.119
196	99.609	4435	0.817	209212.2	209997.6	16.5	16.5	16.5	16.5	0	0.817	78.743	2333.916	191.25	14.758	16.431
197	99.609	4508	0.817	211467.5	209997.6	16.5	16.5	16.5	16.5	0	0.814	78.743	2332.175	193.75	15.002	16.162
198	99.609	4568	0.81	210411.5	209997.6	17.25	17.25	17.25	17.25	0	0.812	78.743	2343.12	196.25	16.345	15.851
199	99.609	4644	0.808	210735.2	209997.6	18	18	18	18	0	0.811	78.743	2351.493	198.75	16.241	15.851
200	99.609	4686	0.811	211350.8	209997.6	18	18	18	18	0	0.809	78.743	2350.25	202.5	16.034	15.985
201	99.609	4747	0.813	210066.6	209997.6	18.75	18.75	18.75	18.75	0	0.808	78.743	2345.607	203.75	15.79	15.948
202	99.609	4807	0.806	210708.7	209997.6	18.75	18.75	18.75	18.75	0	0.807	78.743	2340.052	206.25	15.527	16.016
203	99.609	4877	0.796	210066.6	209997.6	18.75	18.75	18.75	18.75	0	0.805	78.743	2343.12	208.75	15.704	15.71
204	99.609	4929	0.8	210411.5	209997.6	18.75	18.75	18.75	18.75	0	0.804	78.743	2354.81	211.25	15.839	15.851
205	99.609	4989	0.803	209981.7	209997.6	19.5	19.5	19.5	19.5	0	0.804	78.743	2343.617	212.5	16.107	15.582
206	99.609	5038	0.803	208437.4	209997.6	20.25	20.25	20.25	20.25	0	0.802	78.743	2346.685	216.25	15.485	15.442
207	99.609	5095	0.805	209918	209997.6	21	21	21	21	0	0.801	78.743	2340.549	217.5	15.723	15.192
208	99.609	5148	0.798	210066.6	209997.6	21	21	21	21	0	0.801	78.64	2336.984	220	15.369	14.838
209	99.609	5186	0.797	210199.2	209997.6	21.75	21.75	21.75	21.75	0	0.8	78.743	2341.544	222.5	14.819	14.508
210	99.609	5232	0.798	210655.6	209997.6	21.75	21.75	21.75	21.75	0	0.799	78.743	2346.187	223.75	14.972	13.959
211	99.609	5286	0.8	209849	209997.6	21.75	21.75	21.75	21.75	0	0.798	78.743	2354.81	226.25	15.173	14.618
212	99.609	5336	0.798	211053.6	209997.6	22.5	22.5	22.5	22.5	0	0.798	78.743	2357.877	227.5	14.996	14.233
213	99.609	5372	0.802	209275.9	209997.6	22.5	22.5	22.5	22.5	0	0.797	78.743	2346.685	228.75	14.832	14.471
214	99.609	5391	0.791	210841.4	209997.6	23.25	23.25	23.25	23.25	0	0.797	78.743	2342.042	231.25	14.185	14.227
215	99.609	5427	0.796	208861.9	209997.6	23.25	23.25	23.25	20.25	0	0.796	78.743	2338.559	232.5	14.624	14.447
216	97.656	5469	0.799	209058.3	209997.6	23.25	23.25	23.25	20.25	0	0.796	78.743	2339.471	233.75	14.252	13.965
217	99.609	5500	0.794	209275.9	209997.6	23.25	23.25	23.25	21	0	0.795	78.743	2349.752	235	14.545	14.081
218	99.609	5536	0.794	210316	209997.6	23.25	24	24	21.75	0	0.795	78.743	2330.268	236.25	12.885	13.953
219	94.141	5550	0.791	209546.5	209997.6	23.25	24	24	21.75	0	0.794	78.64	2339.969	237.5	14.197	13.647
220	88.281	5593	0.797	210570.7	209997.6	25.5	26.25	26.25	24.75	0	0.794	78.691	2136.674	238.75	13.147	16.834
221	88.672	5614	0.801	209275.9	209997.6	26.25	27	27	25.5	0	0.793	78.64	2217.76	240	17.102	15.448

HYUNDAI_98519336300_2025043020

<u>For stage 1 tunes, the torque model won't be modified and the car will run as it will be on the stock map but with torque and power request increased. Almost as if the Hyundai engineers knew that a lot of people will go for remapping and they left a lot of room for extra power.</u>

Reading and Writing the ECU:

Bench mode (most used method- non intrusive):

On-car example (the method we use for 99% of the cars).

Preparation time for reading or writing: 10 minutes.

Reading time : 3 min.

Writing time: 4 min.

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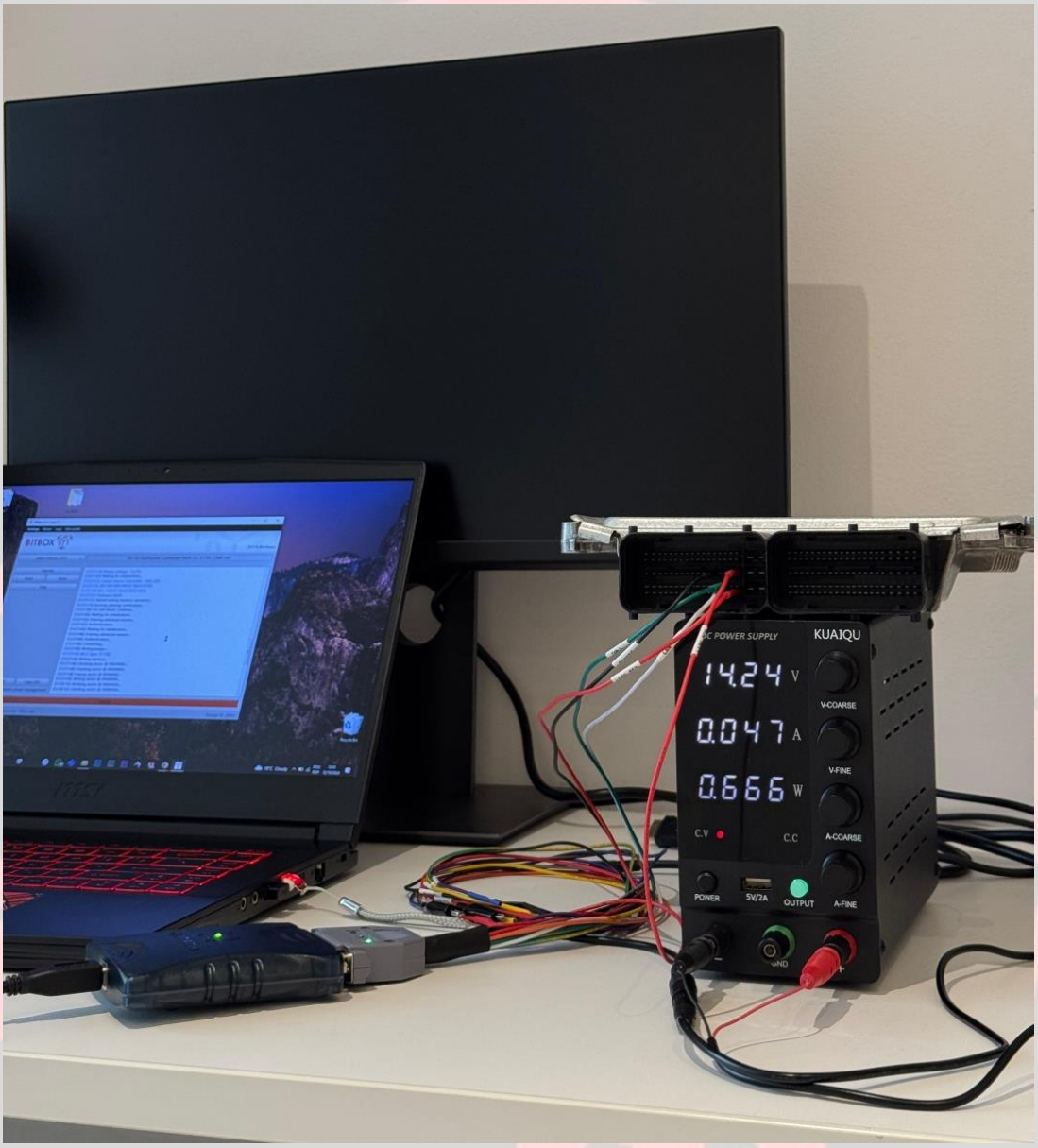
Same thing as working the ECU on the table:



Writing in bench mode using original licensed tools and external power supply.

THERE IS NO NEED TO OPEN THE ECU for reading and writing.

OBD work is also possible but not as stable as bench mode.

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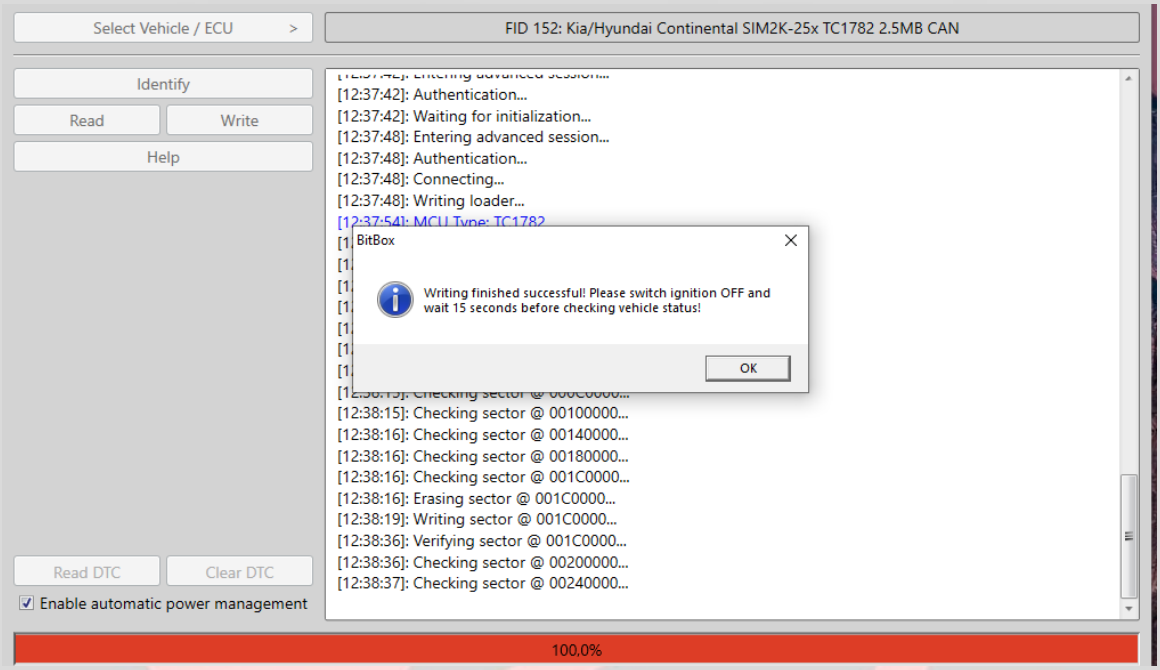

Recovery mode for unsupported software versions (cars newer than 2023) or in case of bricked ECU:

A spare ECU was used in this photo to test Recovery Mode.

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Fuel consumption and everyday driveability is not affected as this is a stage 1- only full load performance is enhanced.

Fuel consumption decrease in low load conditions- example after stage 1:

Route: Bucharest- Bacau *Route: Campulung- Bucharest*

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Pricing (JAN 2026):

Stage 1 or 2: 700 EUR

Stage 3 (modified turbo): 900 EUR

OEM+ setting (all the options except power increase): 250 EUR

GPF / DECAT / VMAX solutions available for <<*race cars*>>: FREE for all remap solutions

Idle up +50 rpm (for cars with lower torque mount bushing changed): FFEE for all remap solutions

Exhaust mod/ Hush mod: FREE

Take off assist/ anti stall optimized strategies : FREE for all remap solutions

Stop and Start disable: FREE for all remap solutions

Pops and Bangs custom: FREE for all remap solutions

Improved launch control: FREE for DCT cars

FAN mod: *FREE for stage 3 cars/ 50 EUR for stage 1/2 cars*

Torque by gear: *FREE for stage 3 cars/ 50 EUR for stage 1/2 cars*

Multimap/ DCT tune/ Rolling AntiLag: *still work in progress- for stage 3 cars only*

Mechanical work also available as well as tuning parts.

All remap solutions are fully reversible (lifetime- free of charge) if needed, and all reflashes of the ECU (without modifications) as well.

For upgrading pricing plans (stage 1 to stage 3 or similar) or any other questions, please contact us.

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Q&A - options (explained)

Our custom calibrations are named after the following criteria:

Conservative Tune (Stage 1) (Reliability > Power)

This is for the daily driver who wants a nice, enjoyable performance bump without pushing the hardware to its limits. We prioritise engine longevity and smooth driving with this one (0-2 revisions needed for testing).

Standard Tune (Stage 1+ or Stage2) (Reliability = Power)

It delivers most of the available performance from your mods while keeping a healthy safety margin (we have a lot on these engines as they are really made for tuning). Perfect for spirited street driving and a fast track day (this usually involves 1-4 revisions).

Aggressive Tune ("Stage 3") (Power > Reliability)

For those who want to chase maximum performance from their current setup. This requires good quality fuel and a well-maintained car. You should be comfortable with the fact that chasing maximum power puts more stress on engine components (this usually involves 3-5 revisions over a timespan of a couple of weeks, so consider leaving the car with me).

Advanced or Complex Tune (Pushing past the limit)

This is a full-on custom service for heavily modified cars with things like upgraded turbos, water/meth injection (WMI), port injection, E85 fuel, or Nitrous (NOS). The tuning process is much more involved, takes longer, and requires extensive data analysis (this usually involves more than 5 revisions over a timespan of a couple of weeks, so consider leaving the car with me).

Options include:

Start stop disabling

GPF/ CAT/ Max speed disabling

Pops and Bangs (Optional Extra)

These aren't included by default. How we create them is important: we never add extra fuel to make pops. Instead, we manipulate the existing factory fuel-cut systems.

These cars have a factory "impulse combustion" structure. We work within this system, allowing us to safely change the length, intensity, frequency, and RPM points of the pops.

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Idle Speed Increase

We can give you a small increase, a larger increase, or a static idle speed of around 950 RPM, regardless of the driving mode. This makes the car feel a lot smoother at idle, especially if you have upgraded engine mounts, but it might use a tiny bit more fuel in traffic.

Improved Launch Control

We tweak the factory launch control to be more aggressive, adding more torque, boost, and RPM to allow for harder and more consistent launches. Our focus is on functional, fast launches rather than just making noise for a 2-step effect.

Take-Off Mod / Clutch Mod (manual cars only)

This makes taking off from a stop much easier by adjusting the "anti-stall" function. You can often get the car moving in traffic without even touching the accelerator.

Fan Mod

We can change the fan settings to keep the engine running a bit cooler, usually targeting around 90°C instead of the factory's 100°C, which is great for hard driving.

Exhaust Valve Mod

We can set the exhaust valve to be always open in N-Mode for maximum noise.

Hush Mod

The opposite of the above! We can set the valve to be closed in Normal/Eco at low RPM and idle, which is great for keeping the peace with your neighbours.

Torque-by-Gear

We can limit the torque in the lower gears (1st, 2nd) to help reduce wheel spin and improve traction when you're launching the car hard or just don’t want the wheelspin.

Recommendations:

Even though we do the calibration custom for each car, always use premium fuel (RON 98 and above). We recommend MOL100/ OMV100.

Don't overlaunch the car from a standstill and/or in the wet. This applies for the stock cars too. We recommend using polyurethane bushing for the engine mounts.

Change your oil every 5k km with good quality C2/C3 oils such as Shell or Amsoil/ Redline. C3 is strongly recommended.

Don't brake hard with the brakes cold as this can induce disc warping, especially if you're tuned and you carry more speed than you're used to.

Get the GPF out if you want the engine to breathe naturally (race cars only 😉). This way, you'll gain at least 30Nm extra after tuning and your car will be happy too.

Never shut the engine after a hard ride. Let it idle for a few minutes to fully cool down. I know we have an electronically controlled water pump and a fan, but it's better this way.

Never lean on the gas pedal until fully warm (your oil should reach at least 70 deg).

Thanks!

Călin.