EDC-16

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Thanks to: A lot of helpful forum members!
For more info: **www.ecuconnections.com**
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Introduction:

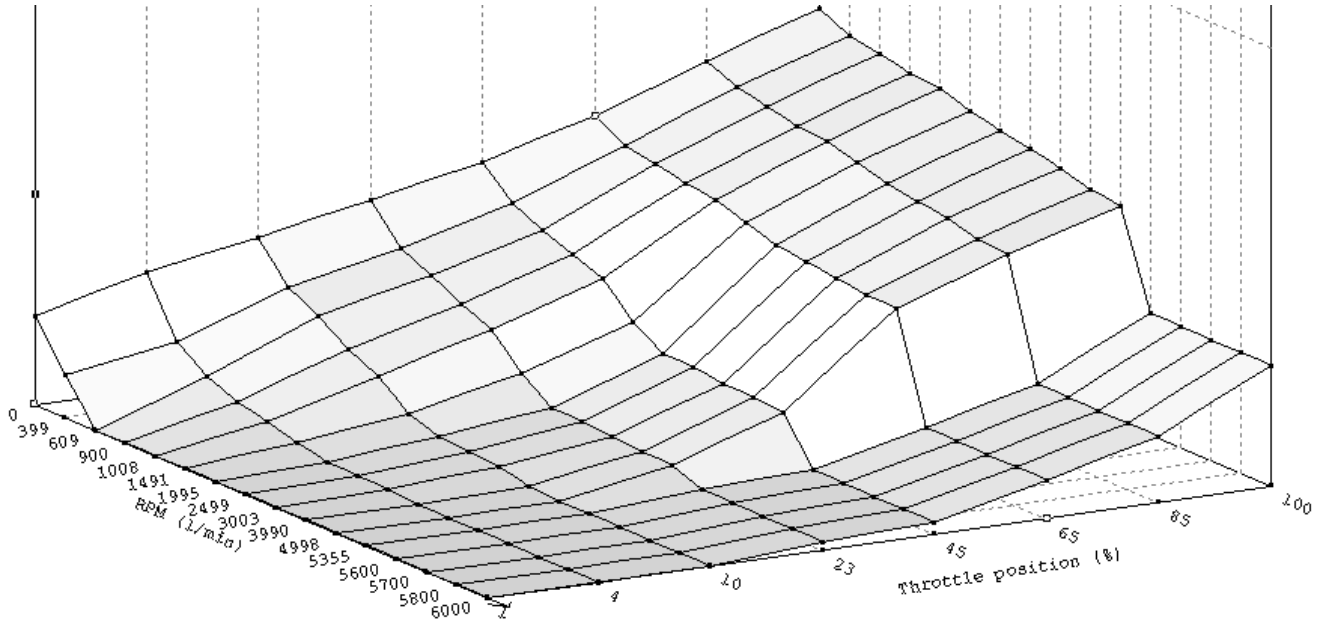
The EDC16 system is used in cars like the Seat Leon, golf 5 and other cars that are produced in the same period. The system looks a lot like the EDC15 system, but the EDC16 system is based on Torque (Nm) instead of Injected Quantity. There are a few more differences that are explained in this document. For all examples in this document I used the Seat Leon 105hp file

Fuel related maps

1. Drivers wish Maps:

General:

This map shows the required torque based on the RPM and the Throttle position. The output of this map is Torque in Nm. There may be more drivers wish maps, in the file I used for this guide there were 8 drivers wish maps.



Picture 1.1: 3D view of the drivers wish map.

Factors & offsets:

Map properties

Description:	Torque
Unit:	Nm
Name:	Drivers wish
Start address:	1C2F96
Column x rows:	8x16
Values:	16Bit(HiLo)
Factor:	0.1
Offset:	0

X-Axis

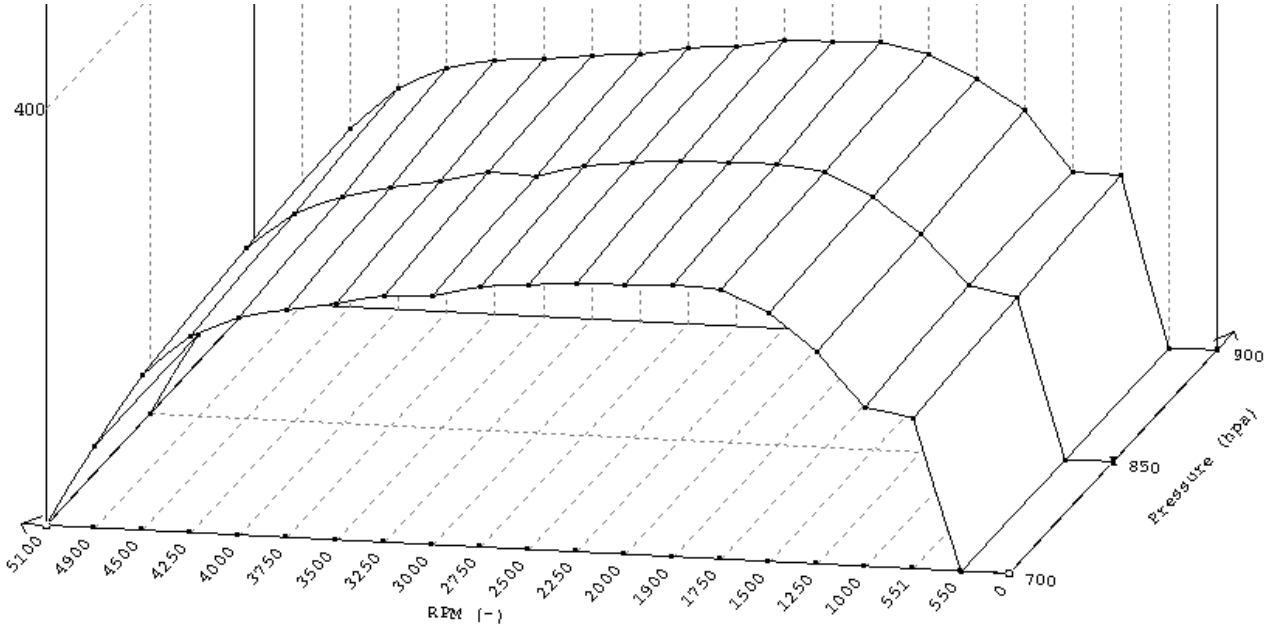
Description:	Throttle position
Unit:	%
Start address:	1C2F86
Values:	16Bit(HiLo)
Factor:	0.01
Offset:	0

Y-Axis

Description:	Rpm
Unit:	1/min
Start address:	1C2F66
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

2. Torque limiter:

General:
This map limits the torque of the engine based on RPM and atmospheric pressure. The output of this map is also Torque in Nm.



Picture 2.1: 3D view of the Torque limiter

Factors & offsets:

Map properties	
Description:	Torque
Unit:	Nm
Name:	Torque limiter
Start address:	1D43C2
Column x rows:	21x3
Values:	16Bit(HiLo)
Factor:	0.1
Offset:	0

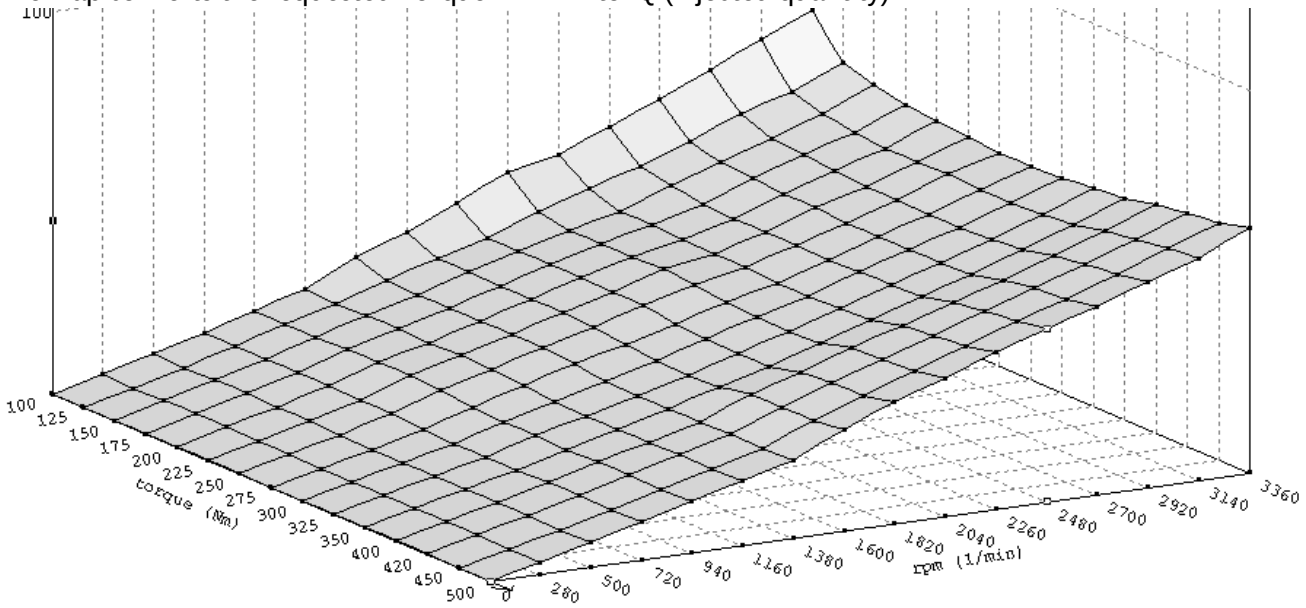
X-Axis	
Description:	Rpm
Unit:	1/min
Start address:	1D4398
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

Y-Axis	
Description:	Atmospheric pressure
Unit:	Hpa
Start address:	1D4392
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

3. Nm to IQ conversion map:

General:

This map converts the requested Torque in Nm into IQ (injected quantity).



Picture 3.1: 3D view of the NM to IQ conversion map.

Factors & offsets:

Map properties

Description:	IQ
Unit:	mg/stroke
Name:	Nm to IQ converion map
Start address:	1D6F9A
Column x rows:	16x15
Values:	16Bit(HiLo)
Factor:	0.1
Offset:	0

X-Axis

Description:	Rpm
Unit:	1/min
Start address:	1D6F7A
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

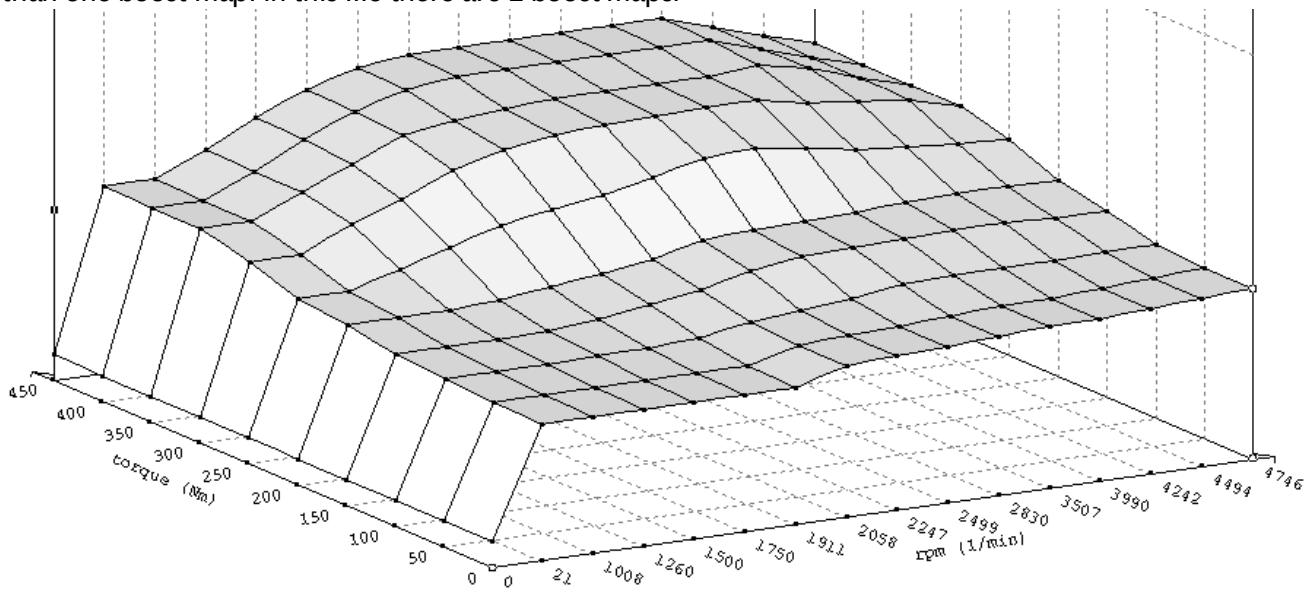
Y-Axis

Description:	Torque
Unit:	Nm
Start address:	1D6F5C
Values:	16Bit(HiLo)
Factor:	0.1
Offset:	0

4. Turbo map:

General:

This map set the required boost depending on the requested torque and current rpm. There might be more than one boost map. In this file there are 2 boost maps.



Picture 4.1: 3D view of the Boost map.

Factors & offsets:

Map properties

Description:	Boost
Unit:	mBar
Name:	Boost map
Start address:	1EAD92
Column x rows:	10x16(the other map in this file is 10x15)
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

X-Axis

Description:	Torque
Unit:	Nm
Start address:	1EAD7E
Values:	16Bit(HiLo)
Factor:	0.1
Offset:	0

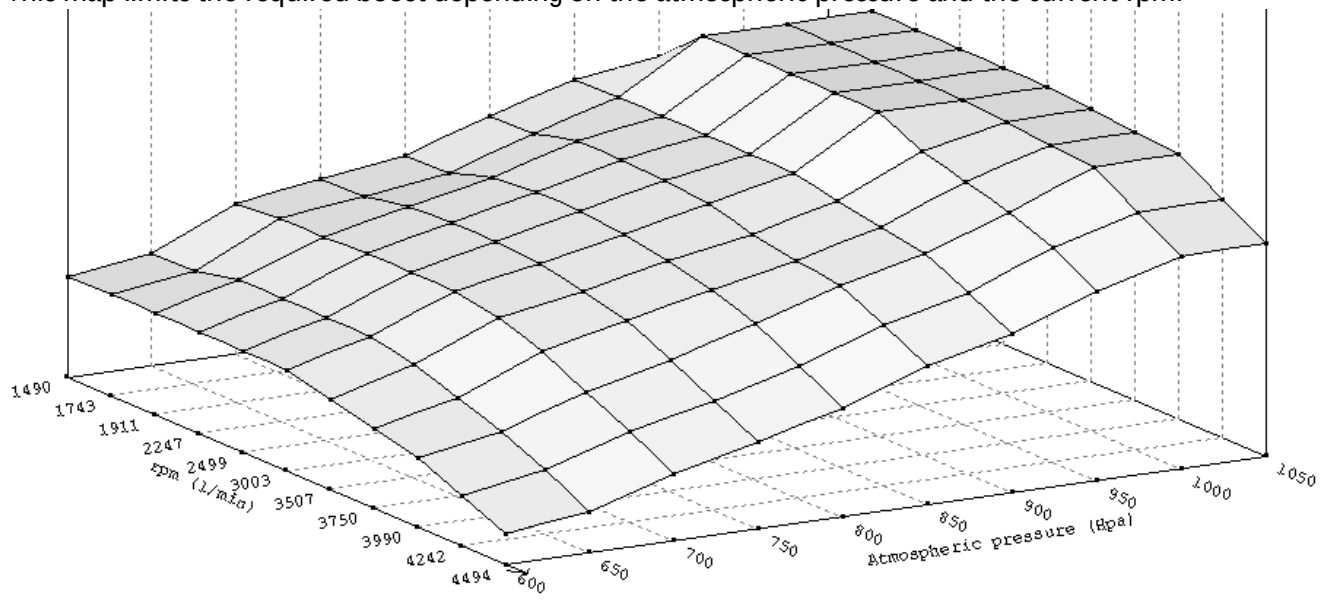
Y-Axis

Description:	Rpm
Unit:	1/min
Start address:	1EAD5E
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

5. Turbo limiter map:

General:

This map limits the required boost depending on the atmospheric pressure and the current rpm.



Picture 5.1: 3D view of the Boost limiter map.

Factors & offsets:

Map properties

Description:	Boost
Unit:	mBar
Name:	Boost limiter map
Start address:	1EAF00
Column x rows:	10x11
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

X-Axis

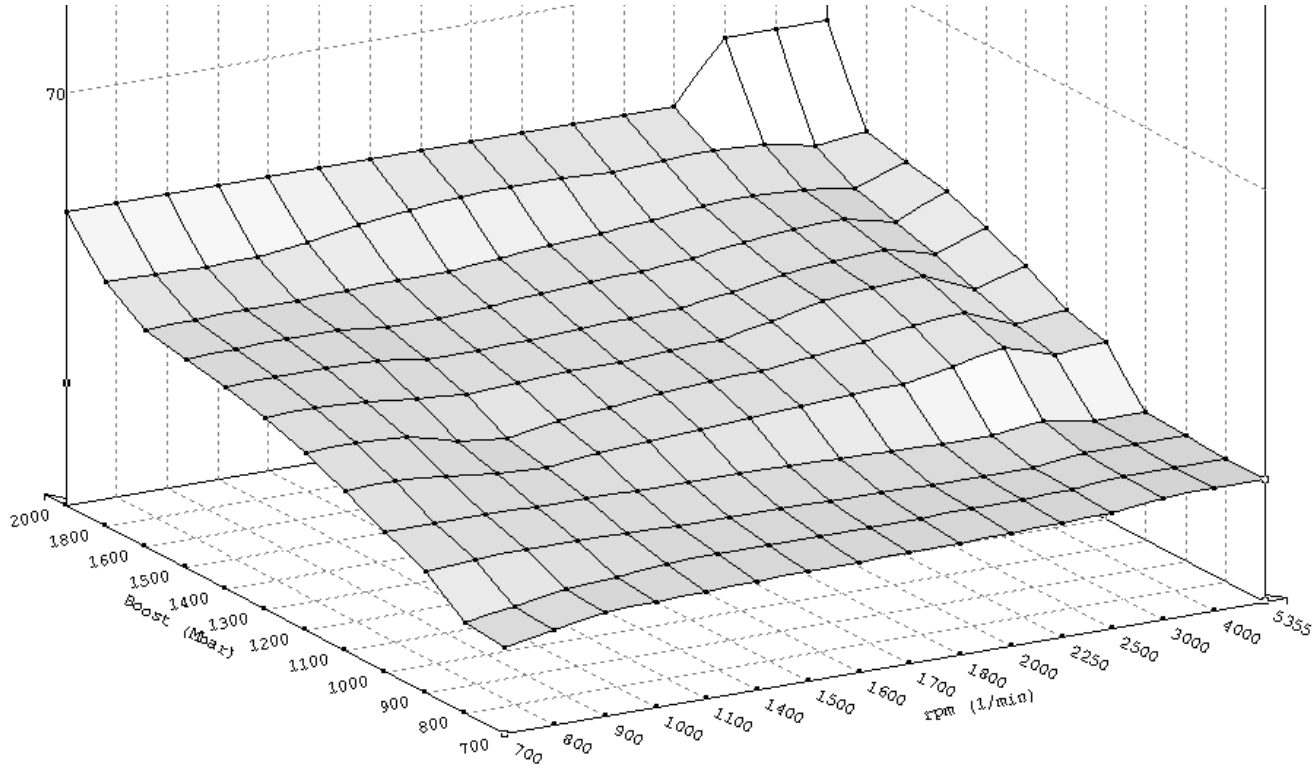
Description:	Atmospheric pressure
Unit:	Hpa
Start address:	1EAEEC
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

Y-Axis

Description:	Rpm
Unit:	1/min
Start address:	1EAED6
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

6. Smoke limiter map:

General:
This map limits the IQ depending on airmass and the current rpm.



Picture 6.1: 3D view of the smoke limiter map.

Factors & offsets:

Map properties	
Description:	IQ
Unit:	mg/stroke
Name:	Smoke limiter map
Start address:	1D6188
Column x rows:	12x16
Values:	16Bit(HiLo)
Factor:	0.01
Offset:	0

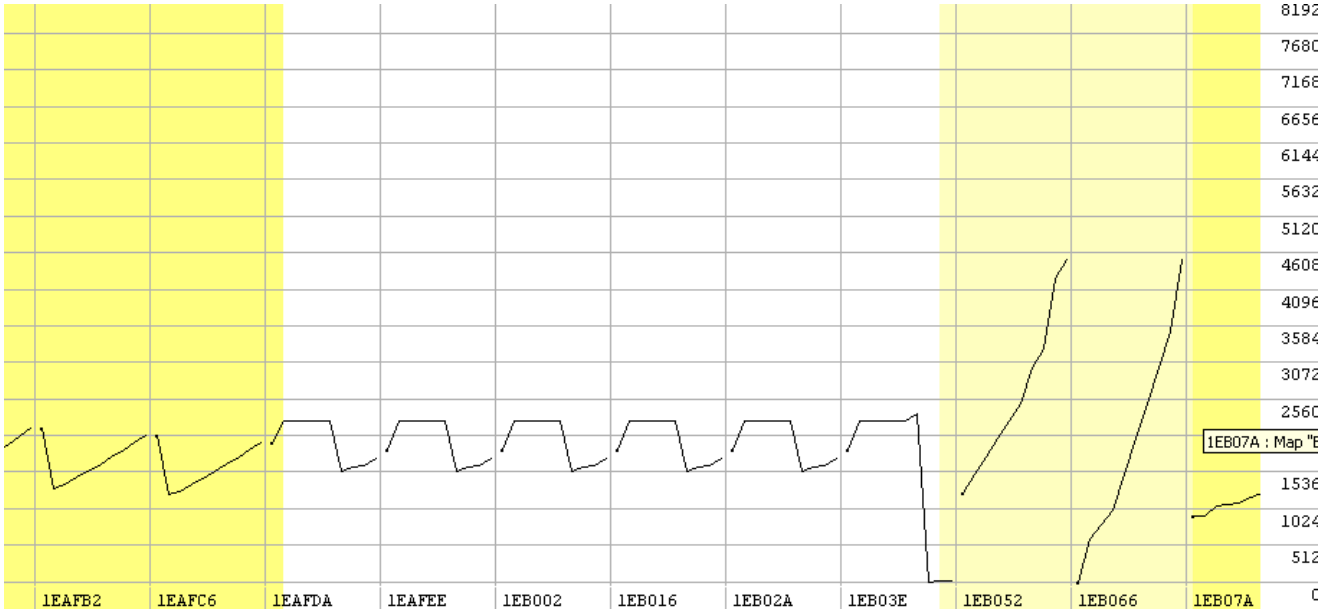
X-Axis	
Description:	Boost
Unit:	Mbar
Start address:	1D6170
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

Y-Axis	
Description:	Rpm
Unit:	1/min
Start address:	1D6150
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

7. Single value boost limiter:

General:

This value limits the absolute pressure of the turbo. This value can be found by looking directly behind the turbo limiter map. If you look in 2D you see a series of bumps like this:



Picture 7.1: 2D view of the svbl.

The Svbl is located at the end of the series of bumps, just before the line "falls" back to "0". In this case it is the highest value between the turbo limitation map and the next map. The value of the Svbl in this file is 2350mBar.

Factors & offsets:

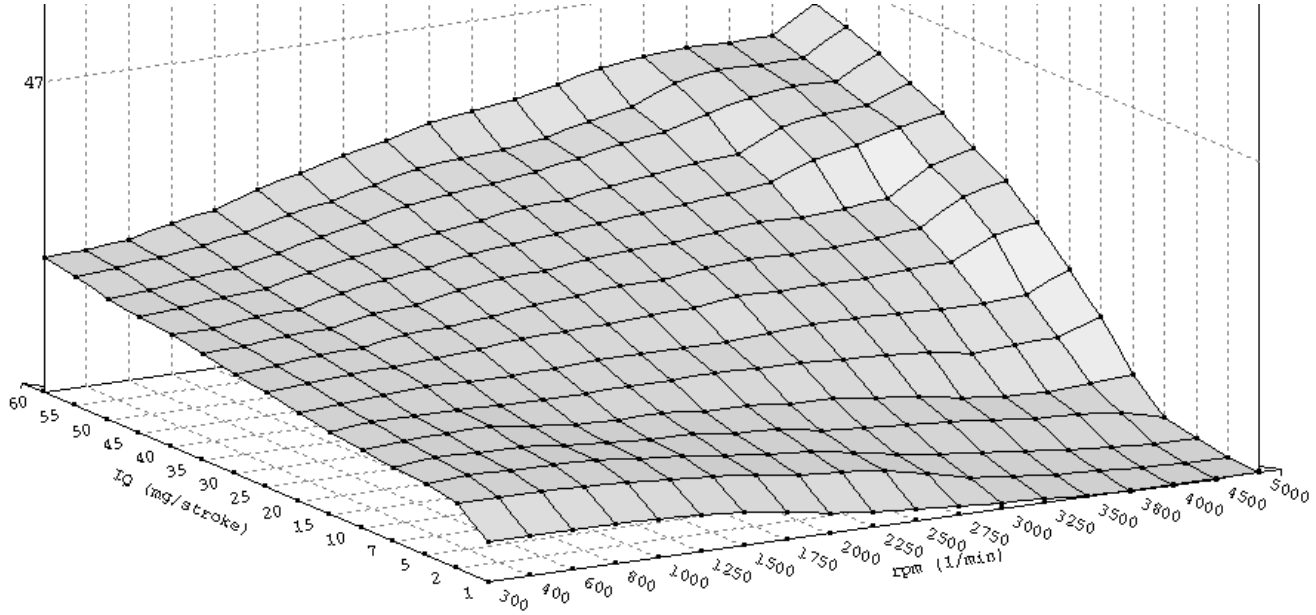
Map properties

Description:	Single value boost limiter
Unit:	mBar
Name:	Svbl
Start address:	1EB04A
Column x rows:	1x1
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

8. Smoke limiter map:

General:

This map is a calibration map. This map shows how much rotation it takes to achieve the requered amount of fuel injected. the output of this map is in engine degrees.



Picture 8.1: 3D view of the Duration map.

Factors & offsets:

Map properties

Description:	Engine rotation
Unit:	degrees
Name:	Duration map
Start address:	1E4F90
Column x rows:	15x19
Values:	16Bit(HiLo)
Factor:	0.023437
Offset:	0

X-Axis

Description:	IQ
Unit:	mg/stroke
Start address:	1E4F72
Values:	16Bit(HiLo)
Factor:	0.01
Offset:	0

Y-Axis

Description:	Rpm
Unit:	1/min
Start address:	1E4F4C
Values:	16Bit(HiLo)
Factor:	1
Offset:	0

1EAD44 - 2050mBar need mod??????

Conclusion:

Thanks to!
-Nuno
-Matt
-Dieseljohnny
-Rookie
-Gunnar-TDI
-to be continued!