

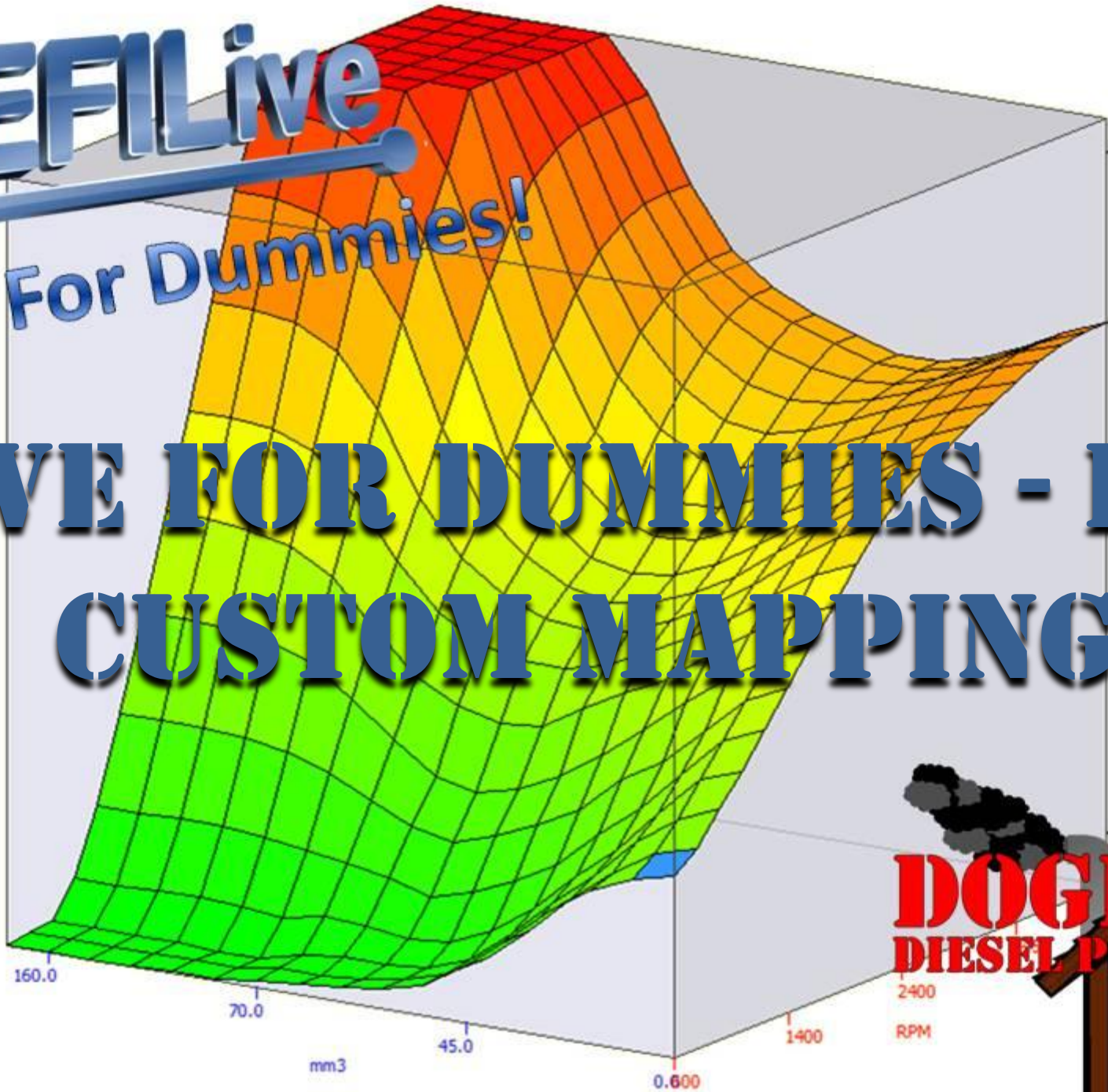


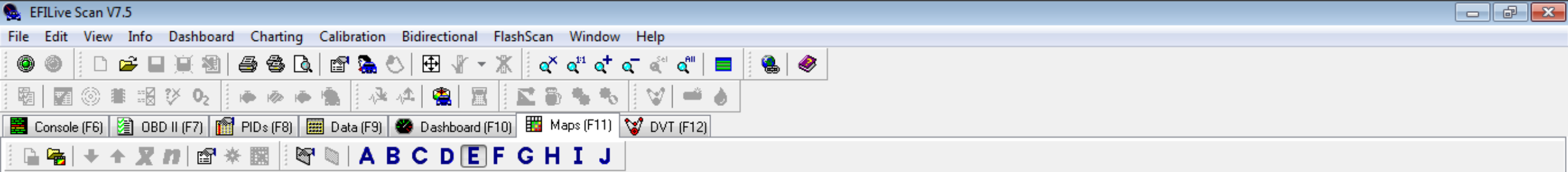
**EFILive**

**For Dummies!**

# **EFILIVE FOR DUMMIES - PART 3**

## **CUSTOM MAPPING**





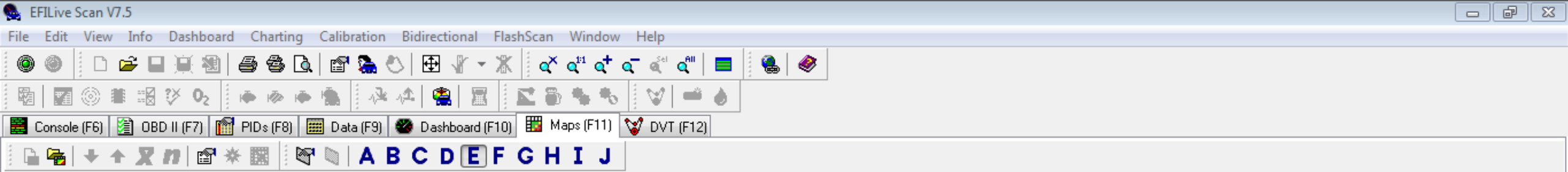
Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.  
Select "Map Properties" (Ctrl+Enter) to create a new map

Here we are going to create our custom maps.

The custom maps are one of the most powerful tools in EFILive software suite.

If you're not using them, you're not getting the most out of your tuning.





Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.

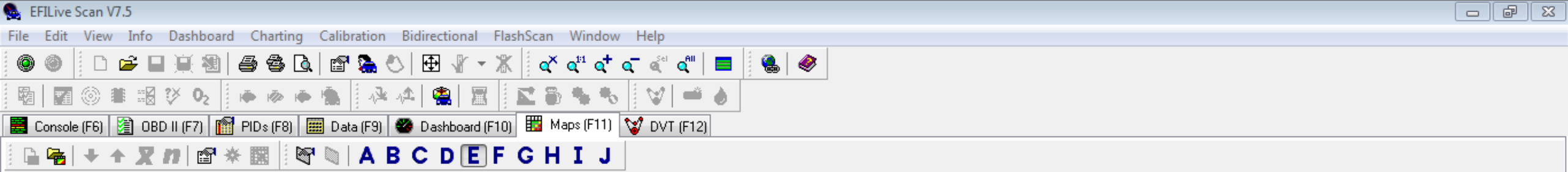
Select "Map Properties" (Ctrl+Enter) to create a new map

To get started, press CTRL+ENTER to create a new map. This is the box that will appear.

This is the Map Properties box and is where you'll enter the information for your custom maps.

?	?	?	?	?	?	?	?	?	?
?									
?		11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0
?		21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0
?		31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0
?		41.0	42.0	43.0	44.0	45.0	46.0	47.0	48.0
?		51.0	52.0	53.0	54.0	55.0	56.0	57.0	58.0
?		61.0	62.0	63.0	64.0	65.0	66.0	67.0	68.0
?		71.0	72.0	73.0	74.0	75.0	76.0	77.0	78.0





Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.

Select "Map Properties" (Ctrl+Enter) to create a new map

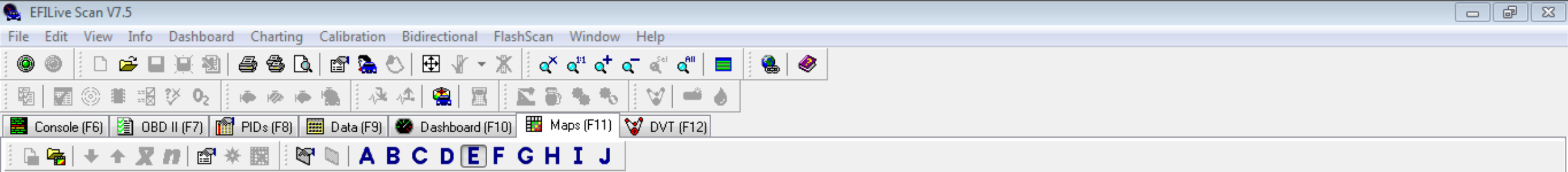
First, we need to select the data that we want to see in the main body of the map.

For this example, we'll use the Main Injection Duration in microseconds (uS) as our parameter.

?	?	11	12	13	14	15	16	17	18
?	?	21	22	23	24	25	26	27	28
?	?	31	32	33	34	35	36	37	38
?	?	41	42	43	44	45	46	47	48
?	?	51	52	53	54	55	56	57	58
?	?	61	62	63	64	65	66	67	68
?	?	71	72	73	74	75	76	77	78







Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.

Select "Map Properties" (Ctrl+Enter) to create a new map

Then we need to select the parameter that we want for our columns.

In this case, we selected Fuel Rail Pressure.

Now, you can either enter the column headers manually, or.....

Map properties

Column: (0) Fuel Pressure Actual (PSI)

Title: (0) Fuel Control Actuator Current (mA)

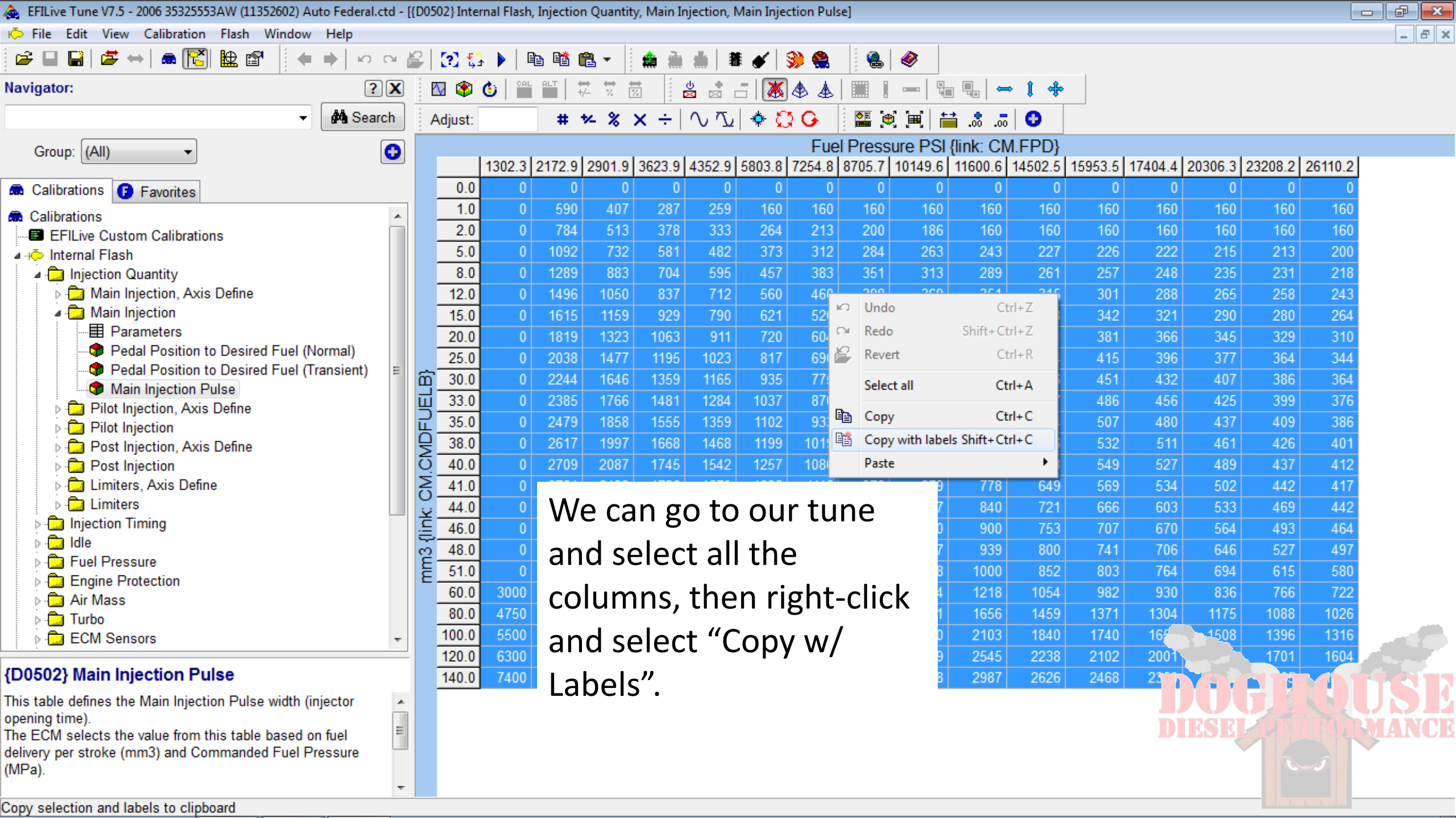
Columns: (0) Fuel Control Actuator Duty Cycle Actual (%), (0) Fuel Control Actuator Duty Cycle Commanded (%), (0) Fuel Pressure Actual (MPa)

Col labels: (0) Fuel Pressure Actual (PSI), (0) Fuel Pressure Control State (Counts), (0) Fuel Pressure Desired (MPa), (0) Fuel Pressure Desired (PSI), (0) Fuel Pressure High Total Error (MPa), (0) Fuel Pressure High Total Error (PSI), (0) Fuel Pressure Low Total Error (MPa), (0) Fuel Pressure Low Total Error (PSI), (0) Fuel Pressure Sensor State (Counts)

?	?								
?		11	12	13	14	15	16	17	18
?		21	22	23	24	25	26	27	28
?		31	32	33	34	35	36	37	38
?		41	42	43	44	45	46	47	48
?		51	52	53	54	55	56	57	58
?		61	62	63	64	65	66	67	68
?		71	72	73	74	75	76	77	78

Buttons: Save, Save as, Ok, Cancel





Navigator:

Search

Adjust:

Fuel Pressure PSI {link: CM.FPD}

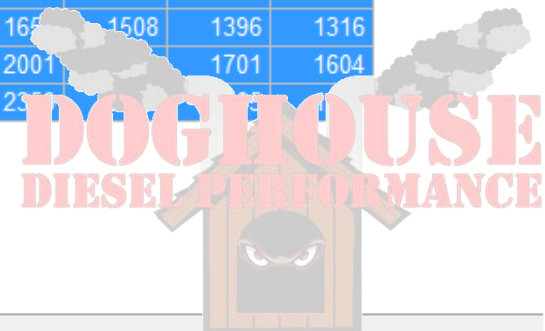
	1302.3	2172.9	2901.9	3623.9	4352.9	5803.8	7254.8	8705.7	10149.6	11600.6	14502.5	15953.5	17404.4	20306.3	23208.2	26110.2
0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.0	0	590	407	287	259	160	160	160	160	160	160	160	160	160	160	160
2.0	0	784	513	378	333	264	213	200	186	160	160	160	160	160	160	160
5.0	0	1092	732	581	482	373	312	284	263	243	227	226	222	215	213	200
8.0	0	1289	883	704	595	457	383	351	313	289	261	257	248	235	231	218
12.0	0	1496	1050	837	712	560	460	399	360	324	285	301	288	265	258	243
15.0	0	1615	1159	929	790	621	521	450	400	364	325	342	321	290	280	264
20.0	0	1819	1323	1063	911	720	600	510	450	414	375	381	366	345	329	310
25.0	0	2038	1477	1195	1023	817	690	590	530	494	455	415	396	377	364	344
30.0	0	2244	1646	1359	1165	935	770	670	610	574	535	451	432	407	386	364
33.0	0	2385	1766	1481	1284	1037	870	770	710	674	635	486	456	425	399	376
35.0	0	2479	1858	1555	1359	1102	930	830	770	734	695	507	480	437	409	386
38.0	0	2617	1997	1668	1468	1199	1010	910	850	814	775	532	511	461	426	401
40.0	0	2709	2087	1745	1542	1257	1080	980	920	884	845	549	527	489	437	412
41.0	0									778	649	569	534	502	442	417
44.0	0									840	721	666	603	533	469	442
46.0	0									900	753	707	670	564	493	464
48.0	0									939	800	741	706	646	527	497
51.0	0									1000	852	803	764	694	615	580
60.0	3000									1218	1054	982	930	836	766	722
80.0	4750									1656	1459	1371	1304	1175	1088	1026
100.0	5500									2103	1840	1740	1650	1508	1396	1316
120.0	6300									2545	2238	2102	2001	1800	1701	1604
140.0	7400									2987	2626	2468	2350			

We can go to our tune and select all the columns, then right-click and select "Copy w/ Labels".

### {D0502} Main Injection Pulse

This table defines the Main Injection Pulse width (injector opening time). The ECM selects the value from this table based on fuel delivery per stroke (mm3) and Commanded Fuel Pressure (MPa).

Copy selection and labels to clipboard



Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.  
 Select "Map Properties" (Ctrl+Enter) to create a new map

Once you've copied the labels, you come back to your Map Properties box and click on the "Paste labels" button and it will populate the column headers for you.

Much easier, much faster.

**Map properties**

Data Column Row Cells Color Empty

Column: (0) Fuel Pressure Actual (PSI)

Names  Selected

Title: Rail Pressure    Show units

Columns: 16

Col labels: ,1302.3,2172.9,2901.9,3623.9,4352.9,5803.8,7254.8,8705.7,10149.6,11600.6,14502.5,15953.5,17404.4,20306.3,23208.2,26110.2

**Main Injection Duration (uS) - Custom**

**Rail Pressure**

	1302.3	2172.9	2901.9	3623.9	4352.9	5803.8	7254.8	8705.7	10149.6	11600.6	14502.5	15953.5	17404.4	20306.3	23208.2	26110.2
?																
?		11	11	12	13	13	14	14	15	16	16	17	18	18	19	
?		21	21	22	23	23	24	24	25	26	26	27	28	28	29	
?		31	31	32	33	33	34	34	35	36	36	37	38	38	39	
?		41	41	42	43	43	44	44	45	46	46	47	48	48	49	
?		51	51	52	53	53	54	54	55	56	56	57	58	58	59	
?		61	61	62	63	63	64	64	65	66	66	67	68	68	69	
?		71	71	72	73	73	74	74	75	76	76	77	78	78	79	
?		81	81	82	83	83	84	84	85	86	86	87	88	88	89	
?																

Paste column labels copied from the EFILive Tuning Tool, using "Copy with labels"



Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.  
 Select "Map Properties" (Ctrl+Enter) to create a new map

Then we do the exact same thing for our rows....

**Map properties**

Data Column Row Cells Color Empty

Row: [Dropdown]

Title: (0) Commanded Fuel Uncompensated (mm3)

Rows: (0) Commanded Fuel with Balance Rates (mm3)

Row labels: (0) Cruise Control Speed (KMH)

(0) Cruise Control Speed (MPH)

(0) Cruise Control Switch State (Counts)

(0) Current Gear (SED)

(0) Engine Coolant Temperature (°C)

(0) Engine Coolant Temperature (°F)

(0) Engine Coolant Temperature A/D Value (Counts)

(0) Engine Load (%)

(0) Engine RPM (RPM)

(0) Engine Status (Counts)

(0) Fuel Control Actuator Current (mA)

	1302.3	2172.9												
?														
?		11	11	12	13	13	14	14	15	16	16	17	18	19
?		21	21	22	23	23	24	24	25	26	26	27	28	29
?		31	31	32	33	33	34	34	35	36	36	37	38	39
?		41	41	42	43	43	44	44	45	46	46	47	48	49
?		51	51	52	53	53	54	54	55	56	56	57	58	59
?		61	61	62	63	63	64	64	65	66	66	67	68	69
?		71	71	72	73	73	74	74	75	76	76	77	78	79
?		81	81	82	83	83	84	84	85	86	86	87	88	89
?														

Save Save as [Text] Ok Cancel







Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.

Select "Map Properties" (Ctrl+Enter) to create a new map

**Map properties**

Data Column Row Cells Color Empty

Row:

Names  Selected

Title:   Show units

Rows:

Row labels:

Create labels Paste labels

Paste row labels copied from the EFILive Tuning Tool, using "Copy with labels"

### Main Injection Duration (uS) - Custom

#### Rail Pressure

	1302.3	2172.9	2901.9	3623.9	4352.9	5803.8	7254.8	8705.7	10149.6	11600.6	14502.5	15953.5	17404.4	20306.3	23208.2	26110.2
0.0																
1.0		4	5	5	5	5	6	6	6	7	7	7	7	8	8	
2.0		9	9	9	9	10	10	10	10	11	11	11	11	12	12	
5.0		13	13	13	14	14	14	14	15	15	15	15	16	16	16	
8.0		17	17	17	18	18	18	18	19	19	19	20	20	20	20	
12.0		21	21	22	22	22	22	23	23	23	23	24	24	24	24	
15.0		25	26	26	26	26	27	27	27	27	28	28	28	28	29	
20.0		29	30	30	30	30	31	31	31	32	32	32	32	33	33	
25.0		34	34	34	34	35	35	35	35	36	36	36	36	37	37	
30.0		38	38	38	39	39	39	39	40	40	40	40	41	41	41	
33.0		42	42	42	43	43	43	43	44	44	44	45	45	45	45	

Save Save as  Ok Cancel



Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.  
 Select "Map Properties" (Ctrl+Enter) to create a new map

The Cells tab allows you to specify the size you want you the cells to remain.

I suggest leaving the "Constrain cell size" box unchecked so your table adjusts to the space you have available.

**Map properties**

Data Column Row Cells **Color** Empty

Cell size:  
 Constrain cell size.

Width Height  
 Minimum: 32 18  
 Maximum: 64 18

**Main Injection Duration (uS) - Custom**

	1302.3	2172.9	2901.9	3623.9	4352.9	5803.8	7254.8	8705.7	10149.6	11600.6	14502.5	15953.5	17404.4	20306.3	23208.2	26110.2
0.0																
1.0		4	5	5	5	5	6	6	6	7	7	7	7	8	8	
2.0		9	9	9	9	10	10	10	10	11	11	11	11	12	12	
5.0		13	13	13	14	14	14	14	15	15	15	15	16	16	16	
8.0		17	17	17	18	18	18	18	19	19	19	20	20	20	20	
12.0		21	21	22	22	22	22	23	23	23	23	24	24	24	24	
15.0		25	26	26	26	26	27	27	27	27	28	28	28	28	29	
20.0		29	30	30	30	30	31	31	31	32	32	32	32	33	33	
25.0		34	34	34	34	35	35	35	35	36	36	36	36	37	37	
30.0		38	38	38	39	39	39	39	40	40	40	40	41	41	41	
33.0		42	42	42	43	43	43	43	44	44	44	45	45	45	45	

Save Save as Ok Cancel



Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.  
 Select "Map Properties" (Ctrl+Enter) to create a new map

The colors tab is where you choose to either leave it black and white or make it stand out.

If you do nothing more than check the "Colored" box, it will default to the standard EFILive color scheme.

**Map properties**

Data Column Row Cells Color Empty

Background  
 Min color  
 Mid color  
 Max color  
 Null cell color  
 Table font color  
 Selected cell color  
 Selected font color

Colored  
 Show color shading based on min/max values  
 To use the Windows system colors for selected cells, set both the cell and font colors to Black.

Custom...

**Main Injection Duration (uS) - Custom**

**Rail Pressure**

	1302.3	2172.9	2901.9	3623.9	4352.9	5803.8	7254.8	8705.7	10149.6	11600.6	14502.5	15953.5	17404.4	20306.3	23208.2	26110.2
0.0																
1.0		4	5	5	5	5	6	6	6	7	7	7	7	8	8	
2.0		9	9	9	9	10	10	10	10	11	11	11	11	12	12	
5.0		13	13	13	14	14	14	14	15	15	15	15	16	16	16	
8.0		17	17	17	18	18	18	18	19	19	19	20	20	20	20	
12.0		21	21	22	22	22	22	23	23	23	23	24	24	24	24	
15.0		25	26	26	26	26	27	27	27	27	28	28	28	28	29	
20.0		29	30	30	30	30	31	31	31	32	32	32	32	33	33	
25.0		34	34	34	34	35	35	35	35	36	36	36	36	37	37	
30.0		38	38	38	39	39	39	39	40	40	40	40	41	41	41	
33.0		42	42	42	43	43	43	43	44	44	44	45	45	45	45	

Save Save as Ok Cancel



Select "Open Map" (Shift+Ctrl+M) to load a preconfigured map.  
 Select "Map Properties" (Ctrl+Enter) to create a new map

The Empty tab is where you tell the map what you want done with cells that do not contain active data.

It's a good idea to leave check the "Hide empty cells" box, so you see only the parts of your tune that actually get used.

**Map properties**

Data Column Row Cells Color Empty

Hide empty cells

Hide cells which are considered "empty" less than:

Smoothing weight when filling blank cells during copy operations:

**Main Injection Duration (uS) - Custom**

	1302.3	2172.9	2901.9	3623.9	4352.9	5803.8	7254.8	8705.7	10149.6	11600.6	14502.5	15953.5	17404.4	20306.3	23208.2	26110.2
0.0																
1.0		4	5	5	5	5	6	6	6	7	7	7	7	8	8	
2.0		9	9	9	9	10	10	10	10	11	11	11	11	12	12	
5.0		13	13	13	14	14	14	14	15	15	15	15	16	16	16	
8.0		17	17	17	18	18	18	18	19	19	19	20	20	20	20	
12.0		21	21	22	22	22	22	23	23	23	23	24	24	24	24	
15.0		25	26	26	26	26	27	27	27	27	28	28	28	28	29	
20.0		29	30	30	30	30	31	31	31	32	32	32	32	33	33	
25.0		34	34	34	34	35	35	35	35	36	36	36	36	37	37	
30.0		38	38	38	39	39	39	39	40	40	40	40	41	41	41	
33.0		42	42	42	43	43	43	43	44	44	44	45	45	45	45	

Save Save as Ok Cancel



Save map...

Organize New folder

File name: V7 MAP DEMO

Save as type: EFILive map files (\*.map)

Save Cancel

Name	Date modified	Type
{B5913_5914} High_Low Timing - Spark R...	2/9/2007 10:33 AM	MAP File
{B5913_5914} High_Low Timing - Spark R...	1/12/2007 6:55 PM	MAP File
{B5932_5933} Base Spark Timing - Spark ...	2/9/2007 10:36 AM	MAP File
{B5932_5933} Base Spark Timing - Spark ...	2/9/2007 10:37 AM	MAP File
CM.MAININJD us.map	1/1/2012 4:11 PM	MAP File
CUMMINS FUEL CMD.map	1/1/2012 4:00 PM	MAP File
CUMMINS INJECTION TIMING.map	1/1/2012 6:24 PM	MAP File
CUMMINS MAIN DURATION.map	1/1/2012 8:48 PM	MAP File
CUMMINS RAIL PRESSURE.map	1/1/2012 8:43 PM	MAP File
E38.VE_PLOT.map	7/9/2007 8:07 PM	MAP File

Now you just need to go back through your setup, make sure its how you want it and save your map.

It's that easy.

Duration (uS) - Custom

Pressure

	8705.7	10149.6	11600.6	14502.5	15953.5	17404.4	20306.3	23
6	6	7	7	7	7	8	8	
10	10	11	11	11	11	12	12	
14	15	15	15	15	16	16	16	
18	19	19	19	20	20	20	20	
22	23	23	23	24	24	24	24	
26	29	30	30	30	31	31	31	
30	34	34	34	35	35	36	36	
34	38	38	38	39	39	40	40	
38	42	42	42	43	43	44	44	

Save Save as Ok Cancel





EFILive Scan V7.5

File Edit View Info Dashboard Charting Calibration Bidirectional FlashScan Window Help

Console (F6) OBD II (F7) PIDs (F8) Data (F9) Dashboard (F10) Maps (F11) DVT (F12)

A B C D E F G H I J

Main Injection Duration (uS) - Custom

Rail Pressure

	1302.3	2172.9	2901.9	3623.9	4352.9	5803.8	7254.8	8705.7	10149.6	11600.6	14502.5	15953.5	17404.4	20306.3	23208.2	26110.2
0.0																
1.0																
2.0																
5.0																
8.0																
12.0																
15.0																
20.0																
25.0																
30.0																
33.0																
35.0																
38.0																
40.0																
41.0																
44.0																
46.0																
48.0																
51.0																
60.0																
80.0																
100.0																
120.0																
140.0																

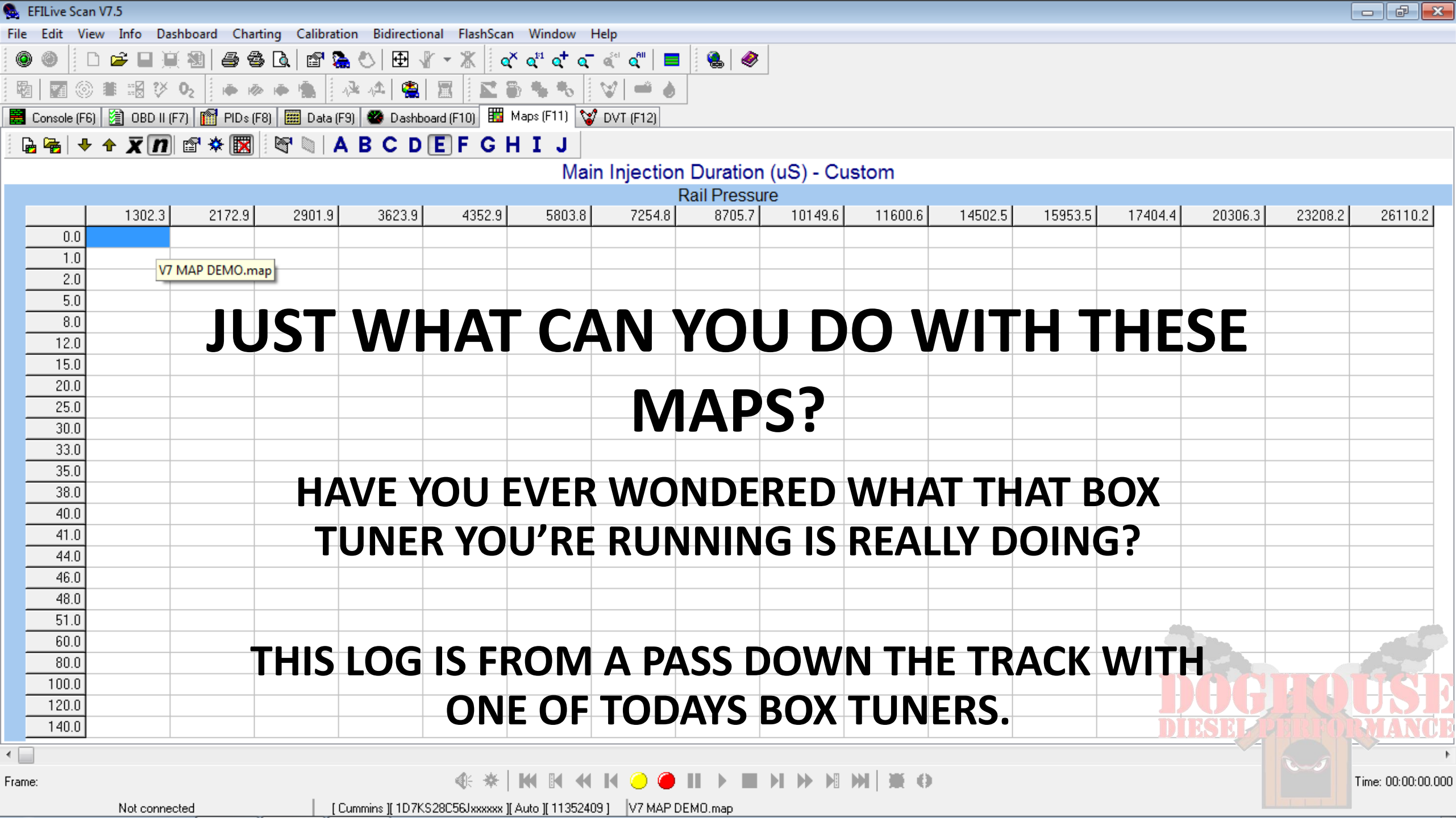
V7 MAP DEMO.map

When you're done, here's what your finished map will look like.

Once you begin logging data or open up a previously saved data log, the cells that are used will populate.

**Let's open up a data log!**



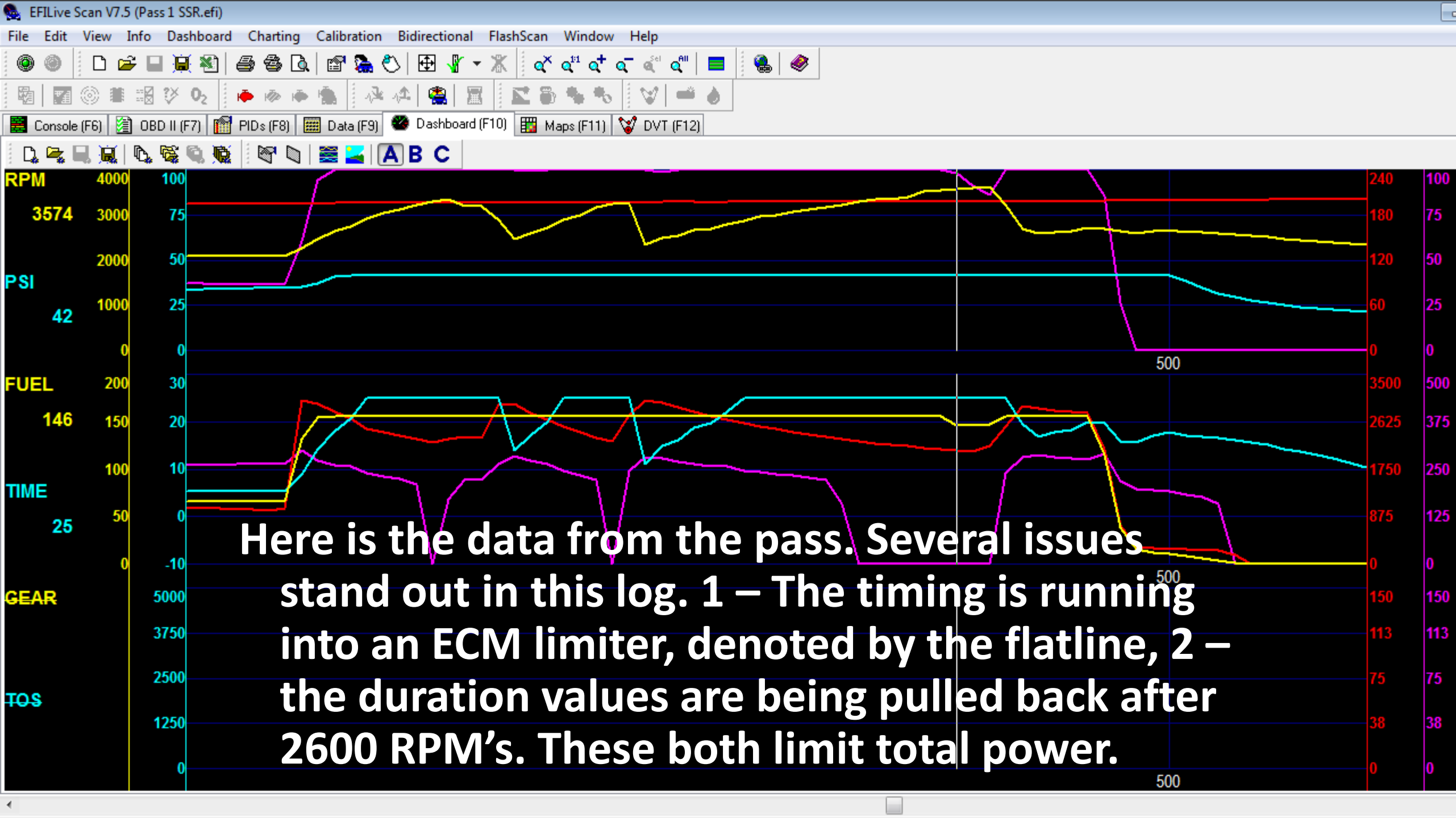


# JUST WHAT CAN YOU DO WITH THESE MAPS?

HAVE YOU EVER WONDERED WHAT THAT BOX TUNER YOU'RE RUNNING IS REALLY DOING?

THIS LOG IS FROM A PASS DOWN THE TRACK WITH ONE OF TODAY'S BOX TUNERS.





Here is the data from the pass. Several issues stand out in this log. 1 – The timing is running into an ECM limiter, denoted by the flatline, 2 – the duration values are being pulled back after 2600 RPM's. These both limit total power.

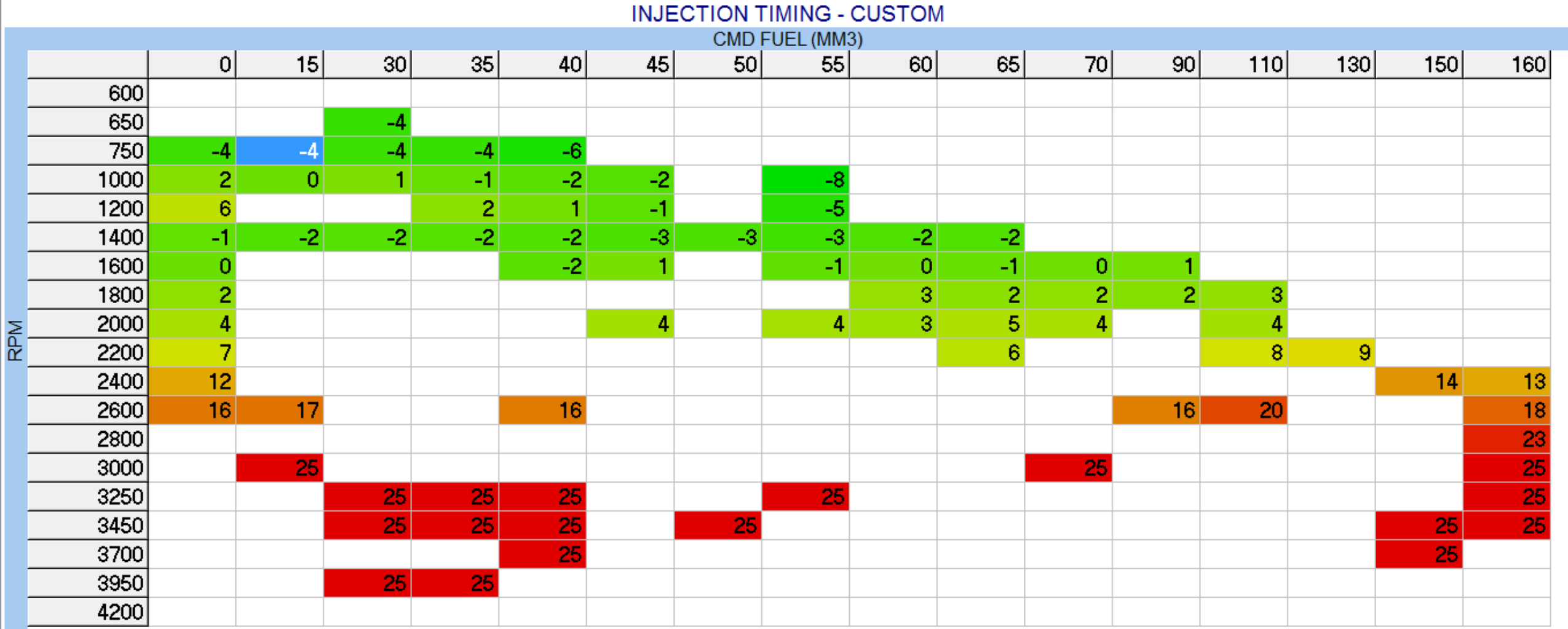
EFILive Scan V7.5 (Pass 1 SSR.efi)

File Edit View Info Dashboard Charting Calibration Bidirectional FlashScan Window Help

Console (F6) OBD II (F7) PIDs (F8) Data (F9) Dashboard (F10) Maps (F11) DVT (F12)

A B C D E F G H I J

On the map, you can plainly see the tune running into the ECM's hard limiter of 25\*'s



Frame: 780

Not connected | [ Cummins ] [ 1D7KS28C56Jxxxxx ] [ Auto ] [ 11352602 ] | CUMMINS INJECTION TIMING.map

Time: 22:51:38.382

EFILive Scan V7.5 (Pass 1 SSR.efi)

File Edit View Info Dashboard Charting Calibration Bidirectional FlashScan Window Help

Console (F6) OBD II (F7) PIDs (F8) Data (F9) Dashboard (F10) Maps (F11) DVT (F12)

A B C D E F G H I J

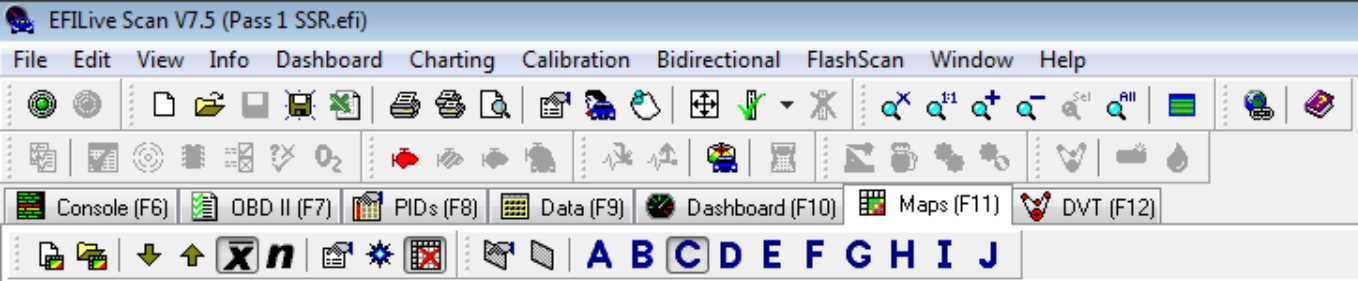
Here we see the total duration values that were cut back to approx half of what was commanded.

**MAIN INJECTION D**

**RAIL PRESSURE**

	0.0	2172.9	4352.9	5803.8	6525.8	7254.8	7976.7	8705.7	9427.7	10149.6	13051.5	14502.5	16682.5	18855.4	21028.3	24001.0
0.0					55	98	92	66	29	0	0	11	67			
10.0					354	430							258	290		
15.0					500	491				427			324	323		
20.0					622	625	571			416	418			371		
25.0					624	638	619	605	559		443					
30.0					768	653	639	588	564		421	473				467
35.0						832		687	620		508	472	476			686
40.0										689			508	511	787	
42.0							813				684		518	453		
44.0									988	755		594	608	493	512	
46.0													578	518		
48.0													555			
50.0													681		1208	
52.0													680	690		
54.0										959		688		670	1224	
56.0											886	905	699	708		
58.0													764	773		
60.0													918	825		
65.0													1160	1006		
70.0												1424	1422	1294		
80.0												1677	1485		1448	
100.0												1991	2073	1959	2528	
130.0														3016	2375	
160.0														2854	2849	2381





Here we see the tune running into the ECM's rail pressure limiter, even though it's commanding much higher.

		RAIL PRESSURE															
		0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0	110.0	120.0	130.0	145.0	165.5
RPM	650						7010	9421									
	800				6490	7530	8278	9675	10985								
	1030					7623	8631	9996	11463	13004	15189						
	1260					7955	8344	10695	12131	12514	14667	16182	17058	18636			
	1490						8863	10089	11562	12864	14706	16203	17161	18579			
	1720							10169	11456		14882	15939	17123	19078	20434		
	1950									13009	14028	16527	17518	18945	20651		
	2280										14822	15444		18317	20771		
	2510											15966	17359	18824	20957		
	2740												17964	19287	21122	22638	
	2970													19209	20865	23219	
	3200														21002	23756	
	3430															20945	23865
	3660															21329	23536
	3890															20908	
4120																	
4200																	



**EFILive**

**For Dummies!**

# **EFILIVE FOR DUMMIES - PART 3**

## **CUSTOM MAPPING**

