

How To Use Pectel DESCProW to Flash and Verify Pectel ECU's

User guide

Version 2+

September 2015

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How To Use Pectel DESCProW to Flash and Verify Pectel ECU's

Pectel DESCProW is used as the calibration editor for all Pectel ECU's.

The intent of this document is to explain how to set up a computer to use the DESCProW application to flash (load) an ECU with an appropriate map and verify that the map on an ECU matches what has been previously flashed.

The intent of this document is **NOT** to repeat what is contained in the DESCProW manual. That being said, there will be some overlap because the DESCProW manual does go through how to load the DESCProW software. This document gets a little more specific.

It is not necessary to set the environment up the same as this document recommends. However, if a different setup is desired, a modification of what's written here will be necessary to successfully implement the program and use it.

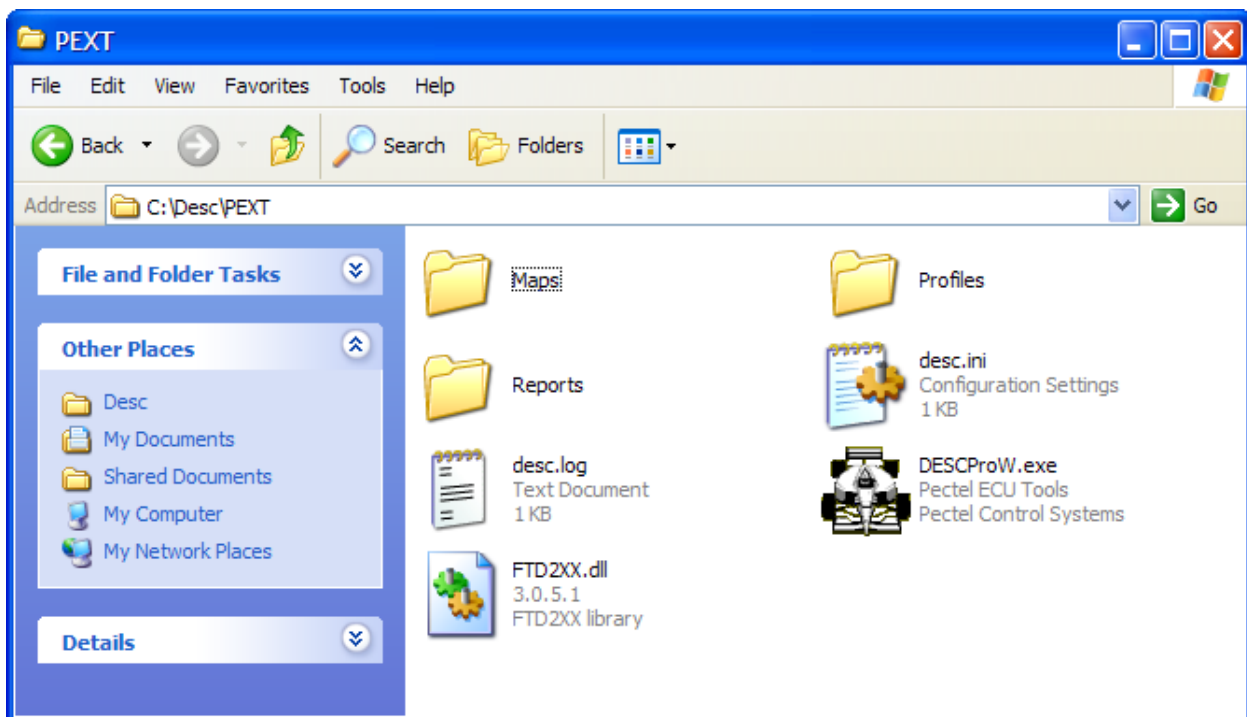
Setting Up the Computer

The DESCProW manual should probably be read regarding the requirements necessary to run the software on a specific computer. It can be successfully installed Windows XP, Vista, and Windows 7.

There really is no magic to the install the application. Simply load the CD or download/unpack the ZIP file and run the DESCProW.exe setup program. Use all the defaults and the program will be installed on the C: drive in the Desc\PEXT (C:\Desc\PEXT) directory.

Warning: On Win 7 computers, do not install in the C:\Program Files directory or it will not write any reports. Store at the root level on the C: drive.

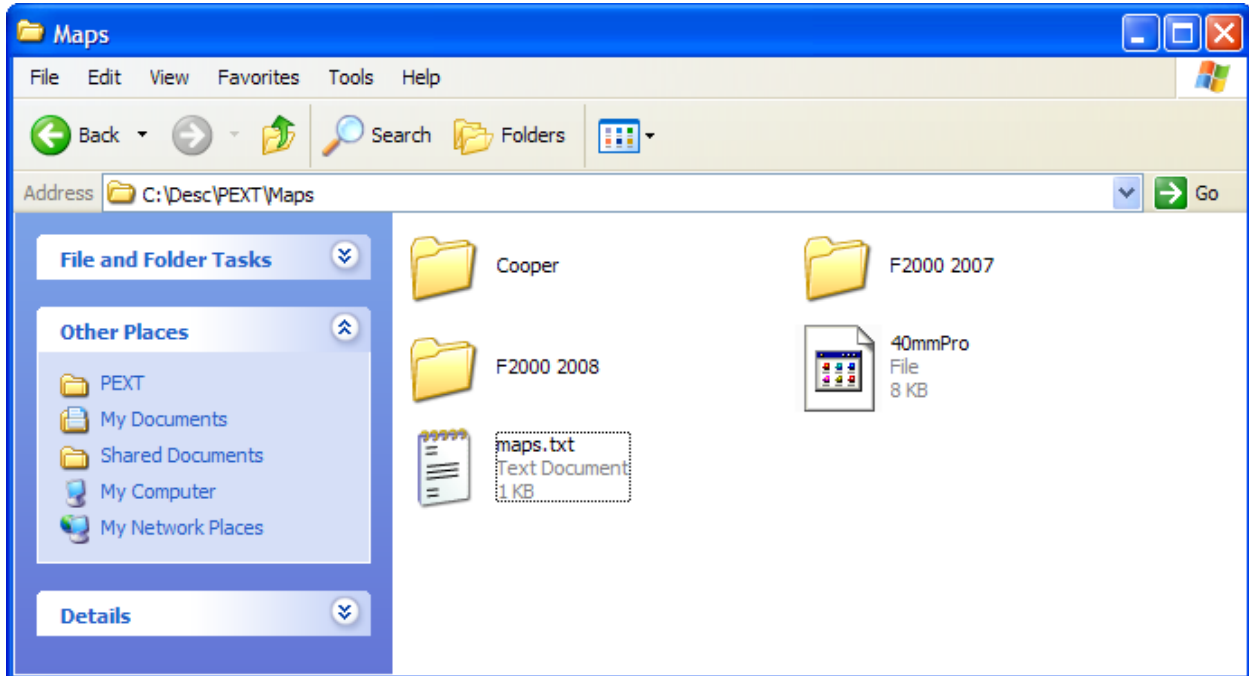
After successful installation the hard drive should now look something like this:



Notice the three folders: Maps, Reports, and Profiles. The contents are described below.

Maps

This is the directory where maps are placed that will be used when flashing and verifying ECU's. Sub folders can be used to store groups maps routinely used, which will look like:

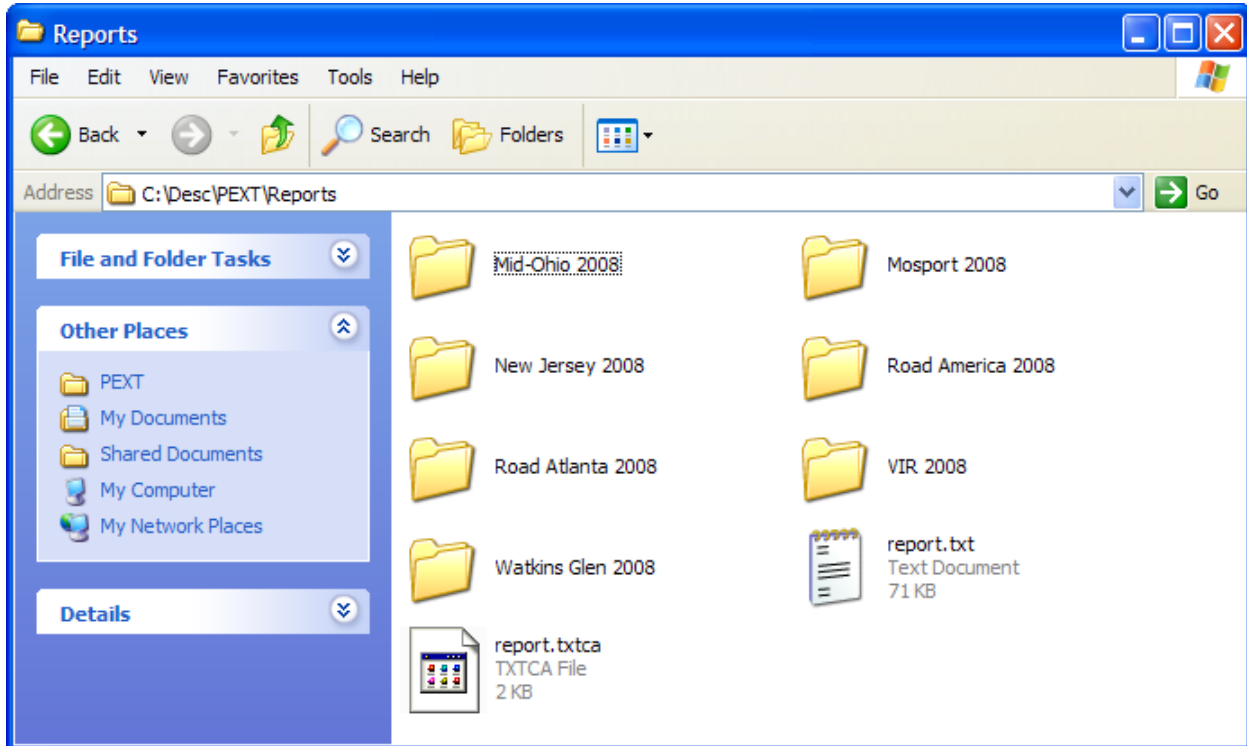


Within each directory are the actual map files. For example, in the F2000 2008 directory there are files for the PI2, PI3, and Stack systems. There is also a special map for doing timing tests on the motor.

These file are in a proprietary format and normally end with the *.DAT extension, although newer versions of DESCProW don't care about this extension.

Reports

This is the directory where any reports are placed. Sub folders for different venues can be used. This set up looks like:



When DESCProW is used to create a report, it writes a basic text file. It will be necessary to enter a file name when the report is saved. A naming convention that identifies the car number and run session is helpful. These file names look like: car08q1.txt where “q” implies qualifying and “r” would imply race. The digit at the end is the session number. So in this example it would mean the report is for car 08's first qualifying session.

Profiles

It is not real clear what the function of this part of the application performs. If the two files: ADABAPAC.AAB and ADABAPAF.AAE in this folder, then everything works.

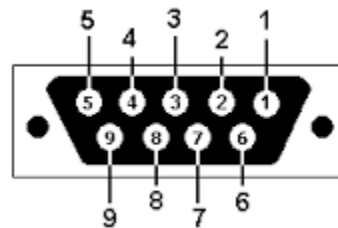
Cabling

Cabling. What a pain in the ass this can be.

The DESCProW application requires a serial connection to read/write data to the Pectel ECU. Depending on the age of the computer, that may be easy or more challenging. If the computer in use has no serial connector on it, a USB-to-Serial connector will be needed to use this software. When the cable is plugged in for the first time, the operating system asks for the device driver, which will need to be installed. It was easy in the Windows XP environment and a little more complicated in Vista. With a serial port on the laptop there are no particular issues.

The main cable is the COM port cable. The COM port from the ECU uses a standard stereo jack that supplies three feeds. Custom built cables will need to match the 9 pin serial plug with the stereo plug. The pin configuration is:

pin 2 - Tip
pin 3 - Ring
pin 5 - Ground



Here is a picture of the com port cable:



Here is a Serial-to-USB cable for computers without a serial port:



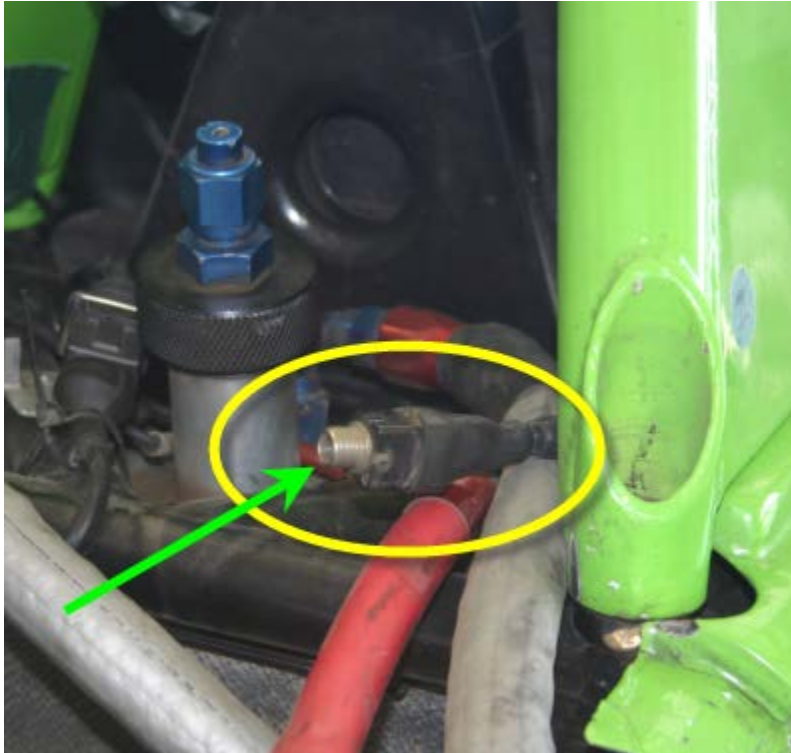
Connecting the Computer to the Car

This is fairly easy. One end of the cable is plugged into the computer and the other end into the ECU's com port connector.

Now for the rest of the story...

The computer connection is either the serial connector, or the USB connector. The ECU com port connector can present another challenge. The actual connection is simple, finding the connector on the car can be difficult. The car's driver or mechanic should (will) know exactly where the connector is. That makes life easy. If it is necessary to dig for it, it's usually under the engine's top cover on the driver's right side of the car and behind the firewall. It has also been found on either the left or right side of the driver's seat. Some cars have the connector on the outside of the car near the roll bar.

Below are some examples of F2000 Championship Series:



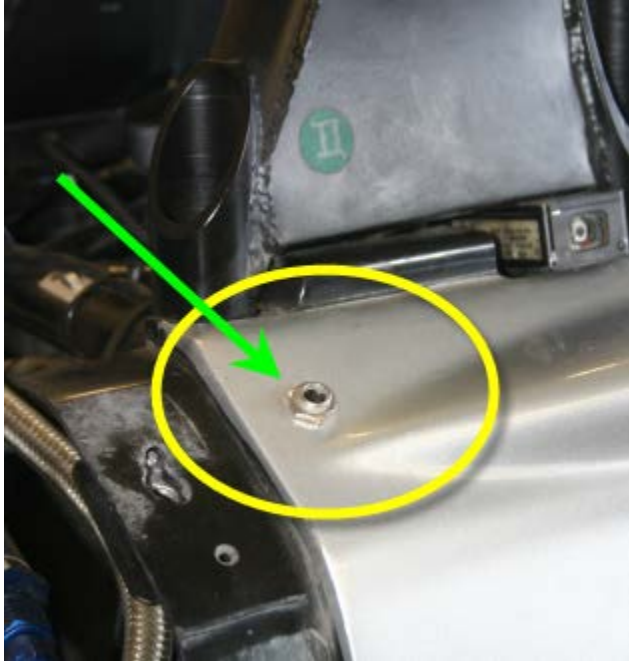
Under engine cover - loose wire



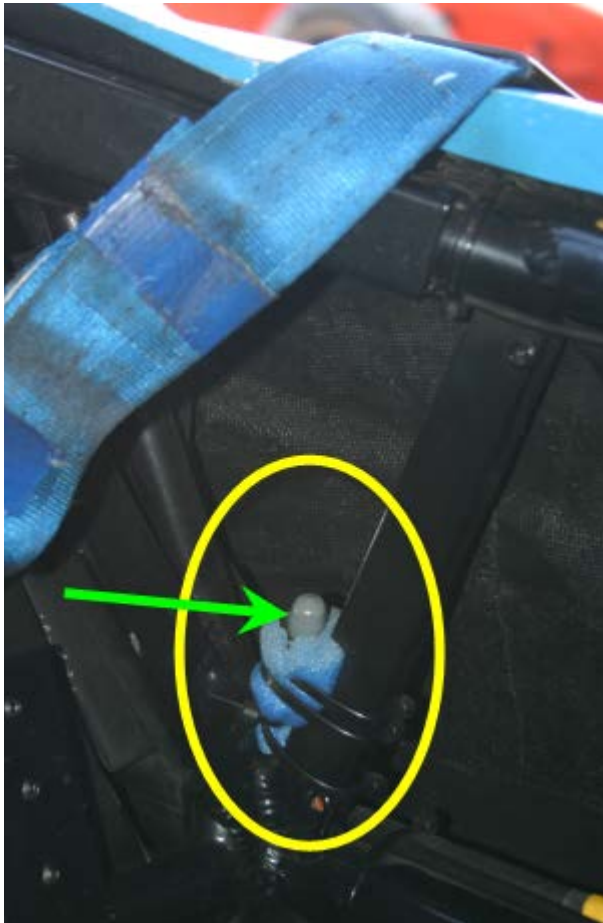
Driver's right - this one has a cover on it to keep the crud out



Under engine cover - fixed position



Outside the car on driver's right



Drivers left - this one is covered as well

Knowing where the connectors are, connect the computer to the car:



At this point the program is ready to start.

Starting DESCProW

The car must have power. The ignition doesn't have to be on, but the kill switch does.

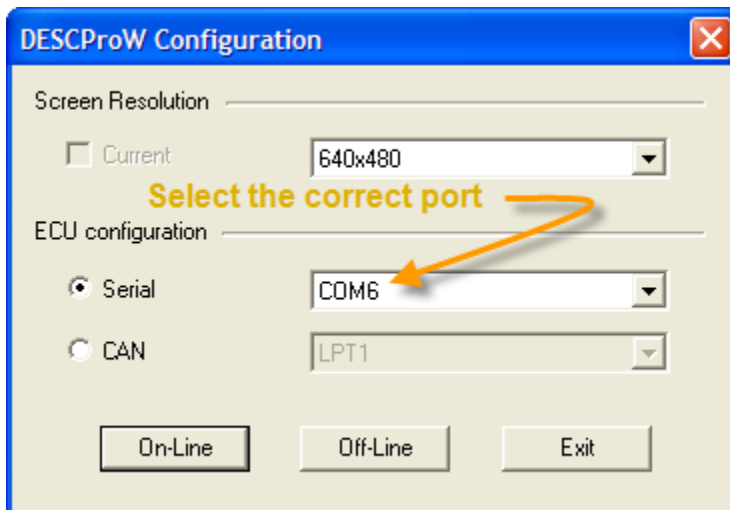


If the kill switch is off, the software can not find the ECU. Unfortunately remembering that the power is not on seems the last thing checked. Get in the habit of verifying the power is on before actually starting DESCProW.

Now start the program. The shortcut can be on the desktop so it's easy to find. It looks like this:



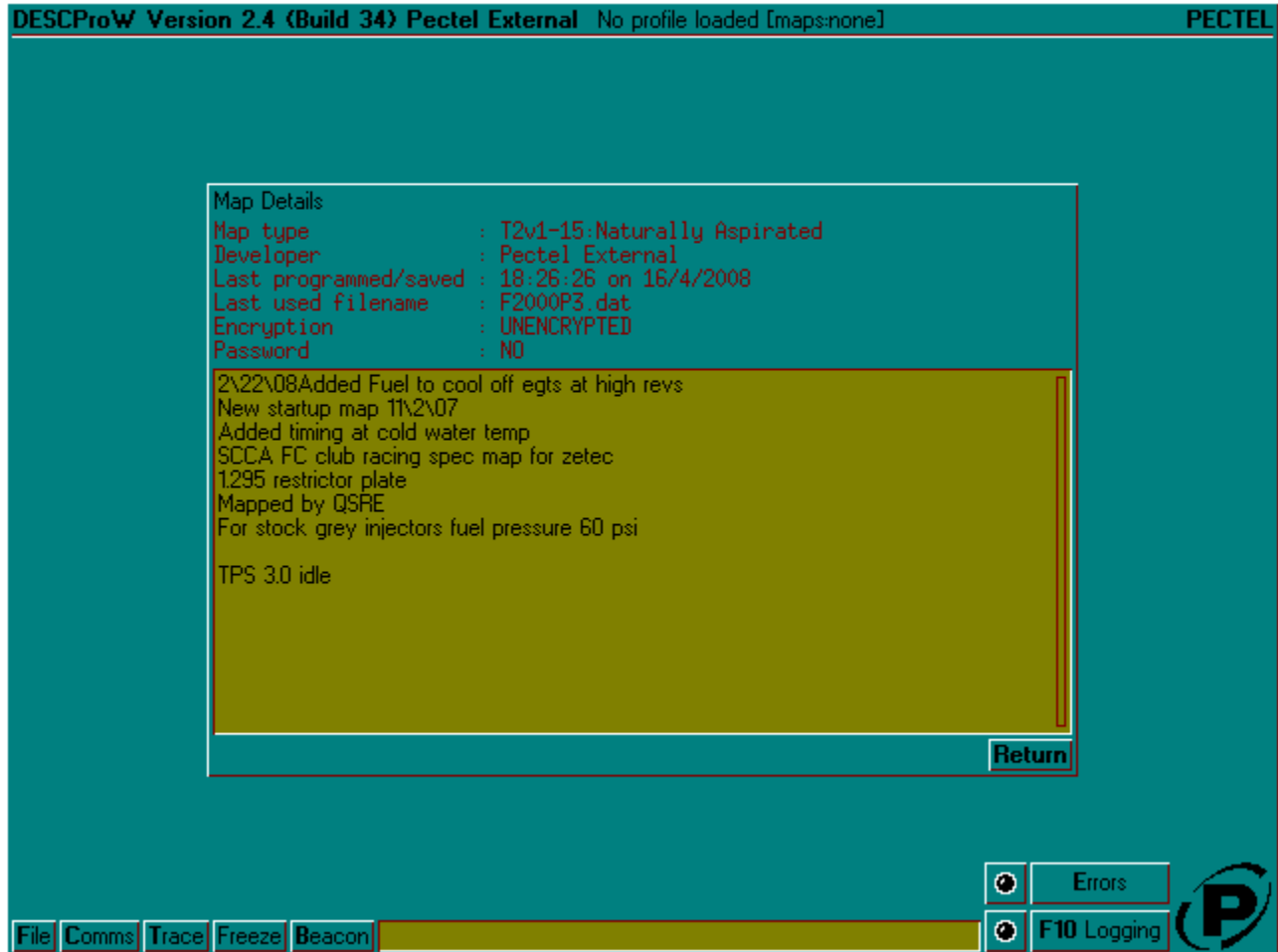
Double-click it to start.



Set screen resolution to the maximum possible for the computer. Finding the correct COM port is a trial and error process. If the port isn't correct the program will send a message that it couldn't find a Pectel device. Once the correct port is selected, it will connect successfully.

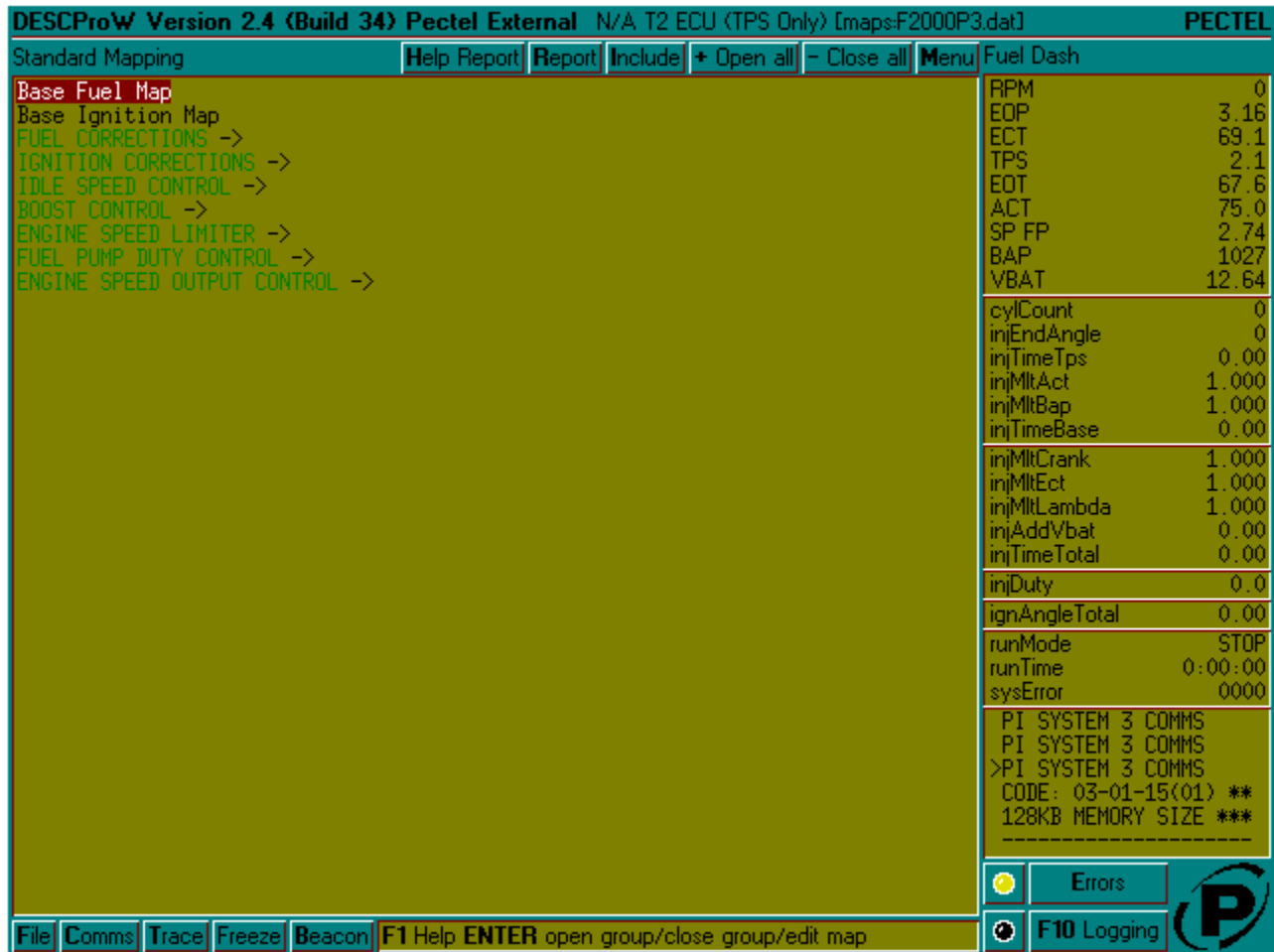
The application will default to the resolution and port selected the next time it is run. Just remember where the cable was plugged in (if using a USB port) and use it the next time to run the application.

Once connected the next screen should display after the program reads the ECU's data:



There's some summary information here regarding the last map that was loaded. Click the Return button to keep going.

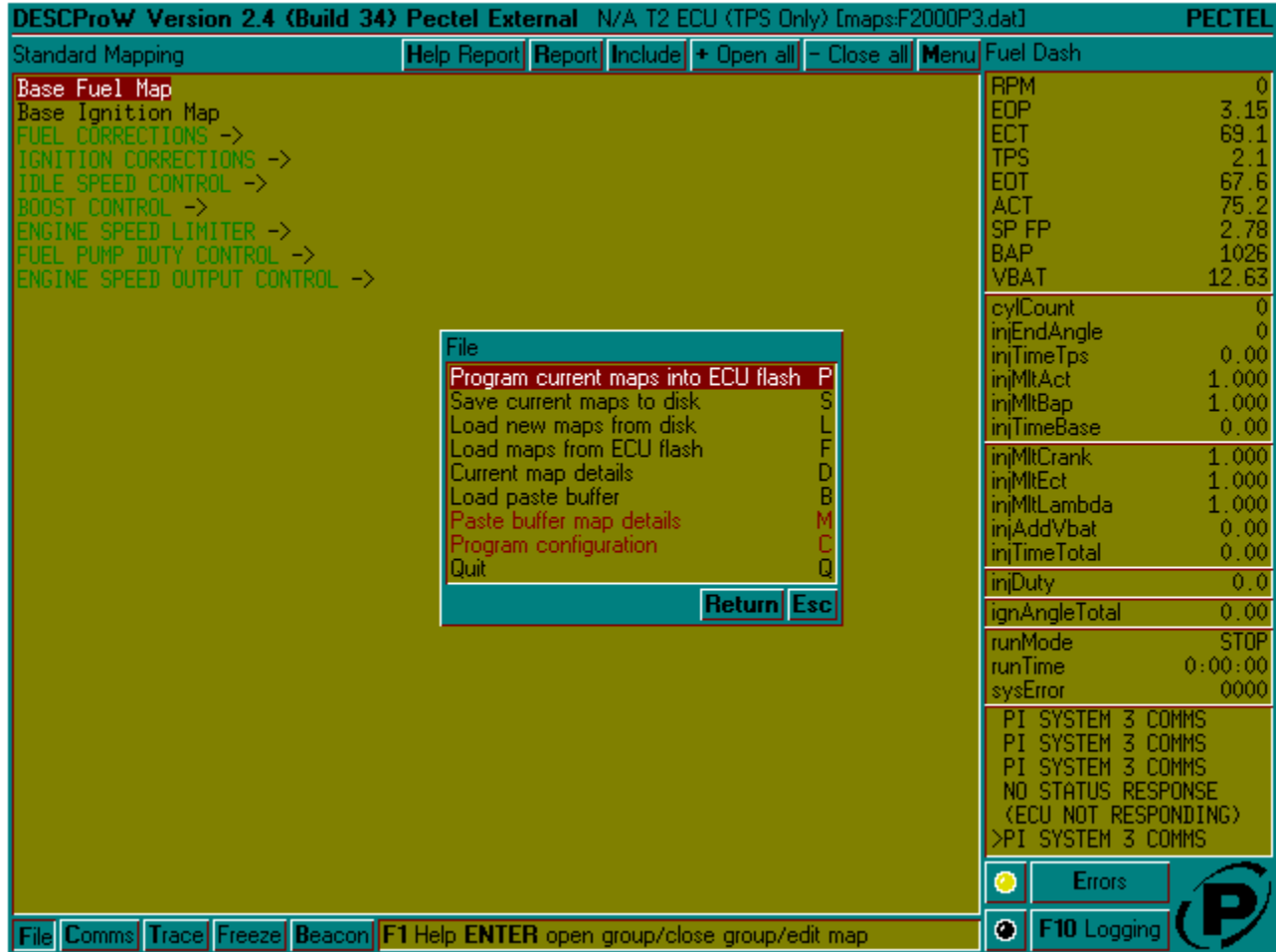
The next screen will display the map contents:



This is the point where the DESCProW program can be used. See the user's manual which should be installed with the program for more information. What is covered in the following sections is how to flash an ECU and how to can generate a report to verify that the map on the ECU either matches, or is different than what is expected.

Flashing the ECU

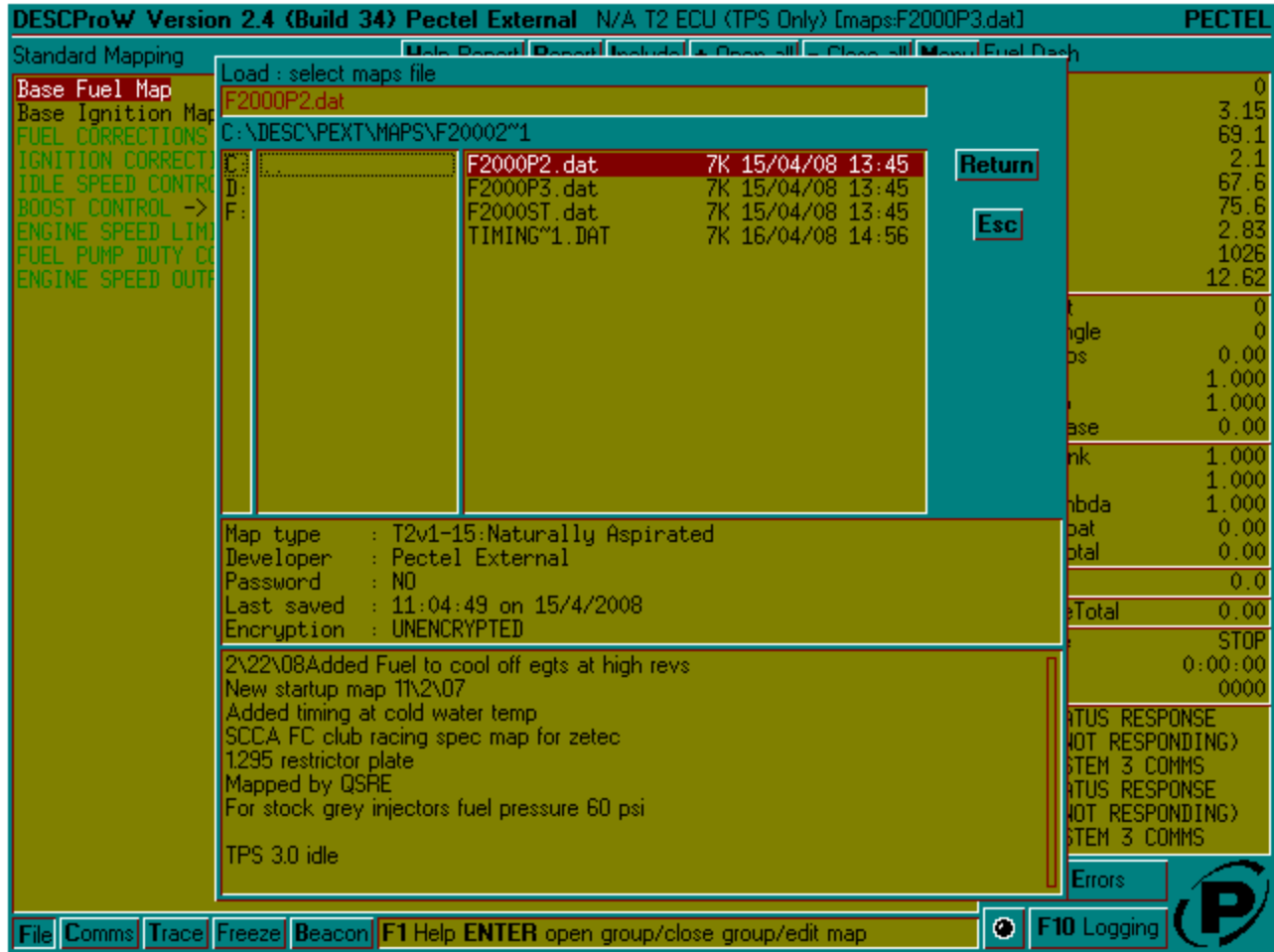
After starting DESCProW as described above, press the F (File) key which will bring up the File Menu.



Notice at the bottom right of the screen that the ECU is using the PI System 3 COMMS. Remember this when a new map is loaded so the correct file can be selected.

Warning: Check the VBAT reading. In the screen above it is 12.63. This is more than enough voltage to flash the ECU. Readings below 12.00 aren't high enough to successfully flash the ECU and a battery charger or external battery hooked to the car will be necessary to get the voltage up high enough. There has been limited success using just a second starter battery.

To Flash the ECU, click on Load new maps from disk and click on Return (or press the L key)



Select the correct file to load. In this case the F2000P3.dat was chosen (not the one that is highlighted). Then click on or press Return.

The screenshot shows the DESCProW software interface. At the top, the title bar reads "DESCProW Version 2.4 (Build 34) Pectel External N/A T2 ECU (TPS Only) [maps:F2000P3.dat] PECTEL". Below the title bar is a menu bar with "Standard Mapping" selected, and buttons for "Help", "Report", "Include", "+ Open all", "- Close all", and "Menu".

The main window is divided into two panes. The left pane, titled "Base Fuel Map", contains a list of menu items: "Base Fuel Map", "Base Ignition Map", "FUEL CORRECTIONS ->", "IGNITION CORRECTIONS ->", "IDLE SPEED CONTROL ->", "BOOST CONTROL ->", "ENGINE SPEED LIMITER ->", "FUEL PUMP DUTY CONTROL ->", and "ENGINE SPEED OUTPUT CONTROL ->".

The right pane, titled "Fuel Dash", displays various engine parameters and their values:

RPM	0
EOP	3.15
ECT	69.3
TPS	2.2
EOT	67.6
ACT	76.1
SP FP	2.86
BAP	1027
VBAT	12.62
<hr/>	
cylCount	0
injEndAngle	0
injTimeTps	0.00
injMltAct	1.000
injMltBap	1.000
injTimeBase	0.00
injMltCrank	1.000
injMltEct	1.000
injMltLambda	1.000
injAddVbat	0.00
injTimeTotal	0.00
injDuty	0.0
ignAngleTotal	0.00
runMode	STOP
runTime	0:00:00
sysError	0000
<hr/>	
>WARN:HIGH LOADING ***	
(ECU NOT RESPONDING)	
PI SYSTEM 3 COMMS	
NO STATUS RESPONSE	
(ECU NOT RESPONDING)	
PI SYSTEM 3 COMMS	

A confirmation dialog box is centered on the screen, asking: "Do you want to program the flash with these maps (you do not have to)?". It has three buttons: "Yes", "No", and "Esc".

At the bottom of the interface, there is a status bar with buttons for "File", "Comms", "Trace", "Freeze", "Beacon", and "F1 Help ENTER open group/close group/edit map". On the right side of the status bar, there are "Errors" and "F10 Logging" buttons, and a large "P" logo.

A confirmation box will appear. Click Yes if the ECU should be flashed.

The screenshot shows the DESCProW software interface. At the top, the title bar reads "DESCProW Version 2.4 (Build 34) Pectel External N/A T2 ECU (TPS Only) [maps:F2000P3.dat] PECTEL". Below the title bar is a menu bar with "Standard Mapping", "Help Report", "Report", "Include", "+ Open all", "- Close all", and "Menu".

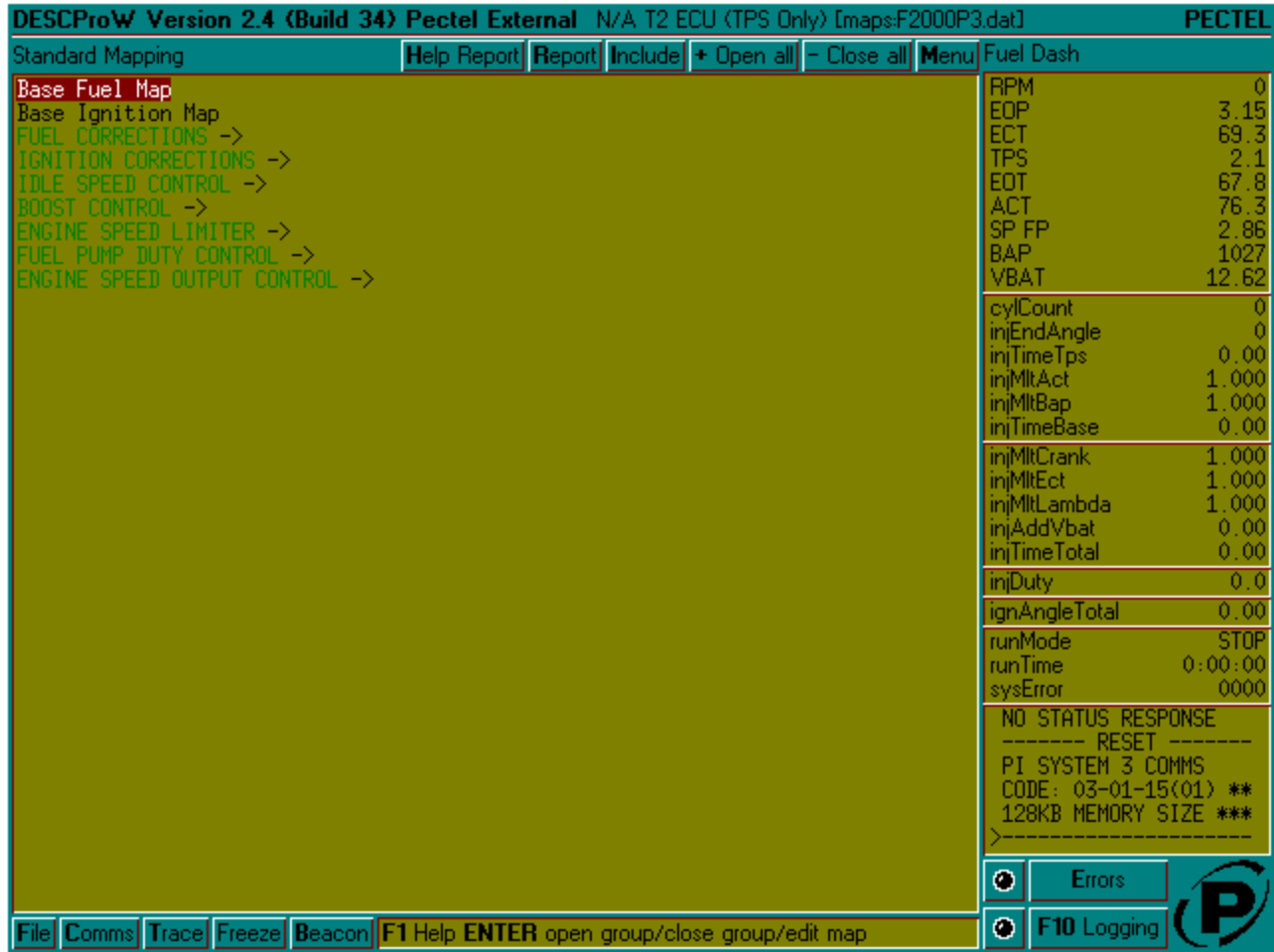
The main window is divided into several sections:

- Left Panel:** A tree view showing "Base Fuel Map" selected, with sub-items: "Base Ignition Map", "FUEL CORRECTIONS ->", "IGNITION CORRECTIONS ->", "IDLE SPEED CONTROL ->", "BOOST CONTROL ->", "ENGINE SPEED LIMITER ->", "FUEL PUMP DUTY CONTROL ->", and "ENGINE SPEED OUTPUT CONTROL ->".
- Center:** A dialog box with the text "Go ahead and program the ECU's flash?" and three buttons: "Yes", "No", and "Esc".
- Right Panel:** A "Fuel Dash" table with various engine parameters and their values.
- Bottom Panel:** A status bar with buttons for "File", "Comms", "Trace", "Freeze", "Beacon", and "F1 Help ENTER open group/close group/edit map". On the right, there are "Errors" and "F10 Logging" buttons, and a large "P" logo.

Parameter	Value
RPM	0
EOP	3.18
ECT	69.3
TPS	2.1
EOT	67.8
ACT	76.3
SP FP	2.86
BAP	1027
VBAT	12.62
cylCount	0
injEndAngle	0
injTimeTps	0.00
injMltAct	1.000
injMltBap	1.000
injTimeBase	0.00
injMltCrank	1.000
injMltEct	1.000
injMltLambda	1.000
injAddVbat	0.00
injTimeTotal	0.00
injDuty	0.0
ignAngleTotal	0.00
runMode	STOP
runTime	0:00:00
sysError	0000

WARN:HIGH LOADING ***
NO STATUS RESPONSE
<ECU NOT RESPONDING>
>PI SYSTEM 3 COMMS
<ECU NOT RESPONDING>
PI SYSTEM 3 COMMS

It *really really* wants to know if the ECU should be flashed. Click Yes again.



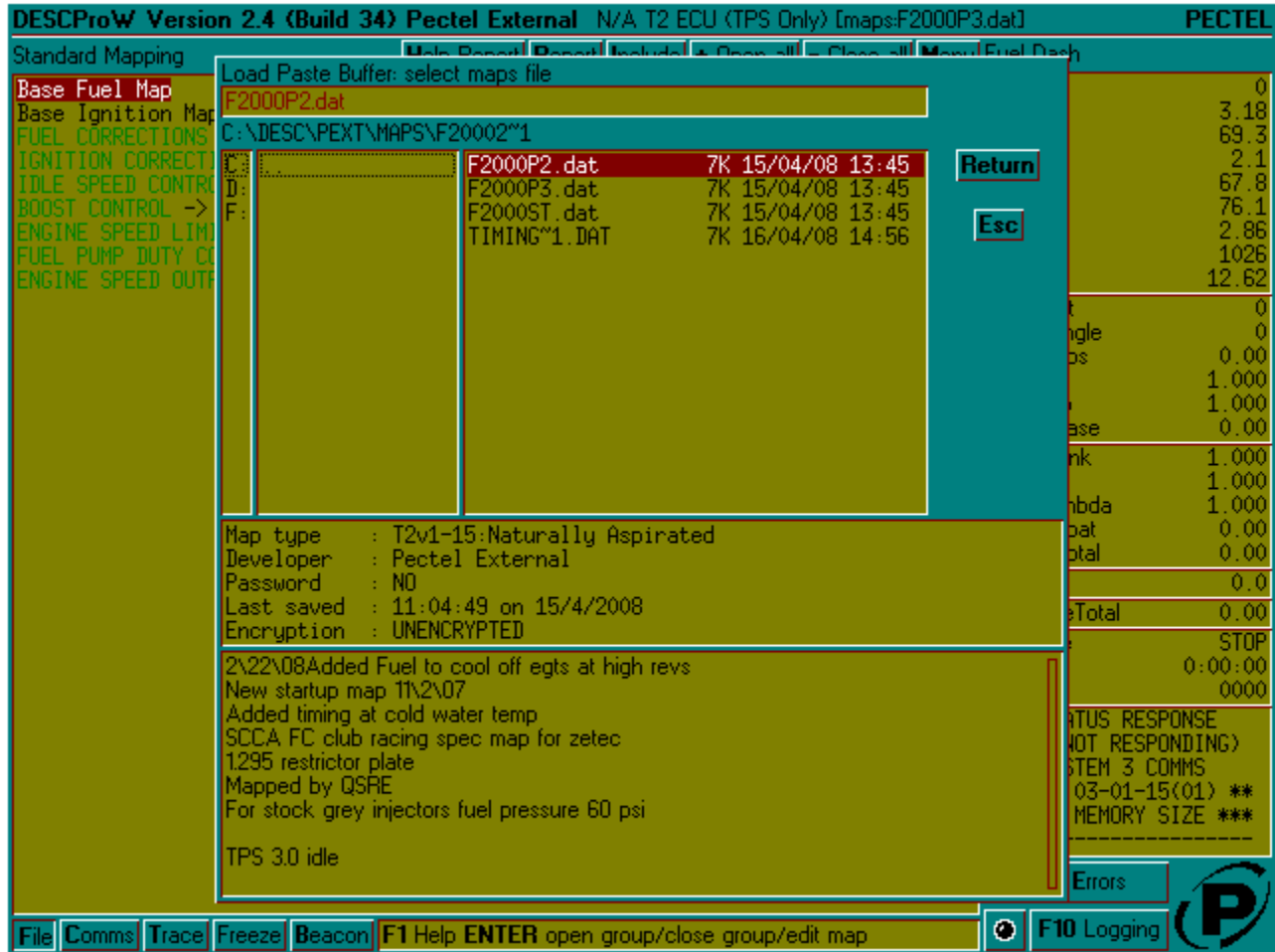
At this point the ECU has been loaded with the new map. Notice the file name at the top right of the screen.

Enter F (File) and Q (Quit) to close the program

Verifying a Flashed ECU

Connect the computer to the car and start the program. Read the map stored on the ECU.

After the map has been read from the car, press the F (File) and then B (Load Paste Buffer) key to load the map desired to test the ECU program against.



Select the file (F2000P3.dat was selected, not the highlighted file) and click on Return. This will return to the previous screen. Next, click the R (Report) key.

DESCProW Version 2.4 (Build 34) Pectel External N/A T2 ECU (TPS Only) [maps:F2000P3.dat] [past '3.PECTEL

Standard Mapping Help Report Report Include + Open all - Close all Menu Fuel Dash

Base Fuel Map
 Base Ignition Map
 FUEL CORRECTIONS ->
 IGNITION CORRECTIONS ->
 IDLE SPEED CONTROL ->
 BOOST CONTROL ->
 ENGINE SPEED LIMITER ->
 FUEL PUMP DUTY CONTROL ->
 ENGINE SPEED OUTPUT CONTROL ->

Select report type
 Standard report (included maps only)
 Standard report (all maps) A
 Difference report (included maps only)
 Difference report (all maps) D

Return Esc

RPM	0
EOP	3.18
ECT	69.4
TPS	2.1
EOT	67.8
ACT	76.3
SP FP	2.86
BAP	1027
VBAT	12.62
cylCount	0
injEndAngle	0
injTimeTps	0.00
injMltAct	1.000
injMltBap	1.000
injTimeBase	0.00
injMltCrank	1.000
injMltEct	1.000
injMltLambda	1.000
injAddVbat	0.00
injTimeTotal	0.00
injDuty	0.0
ignAngleTotal	0.00
runMode	STOP
runTime	0:00:00
sysError	0000

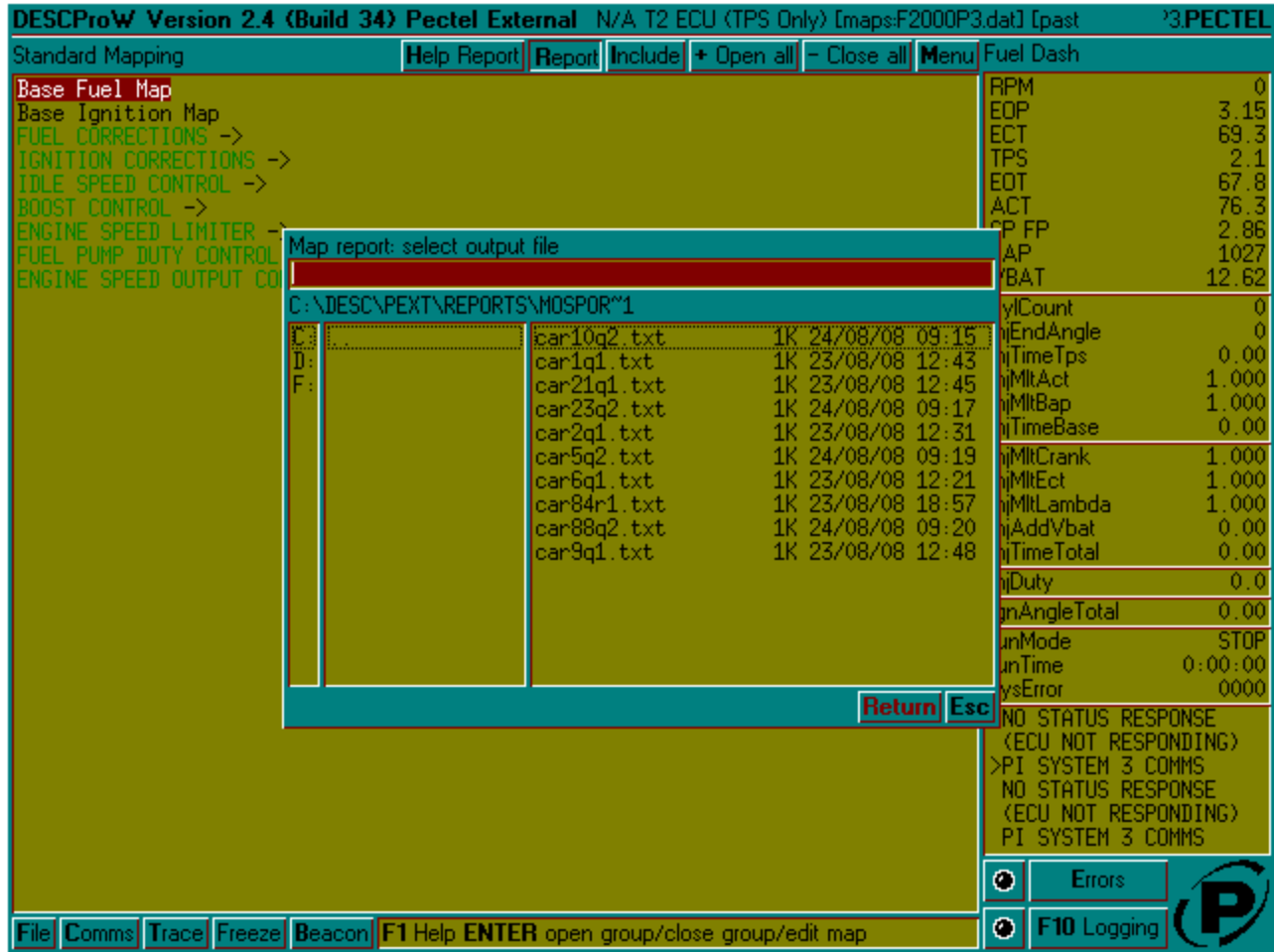
NO STATUS RESPONSE
 <ECU NOT RESPONDING>
 PI SYSTEM 3 COMMS
 NO STATUS RESPONSE
 <ECU NOT RESPONDING>
 >PI SYSTEM 3 COMMS

Errors

F10 Logging

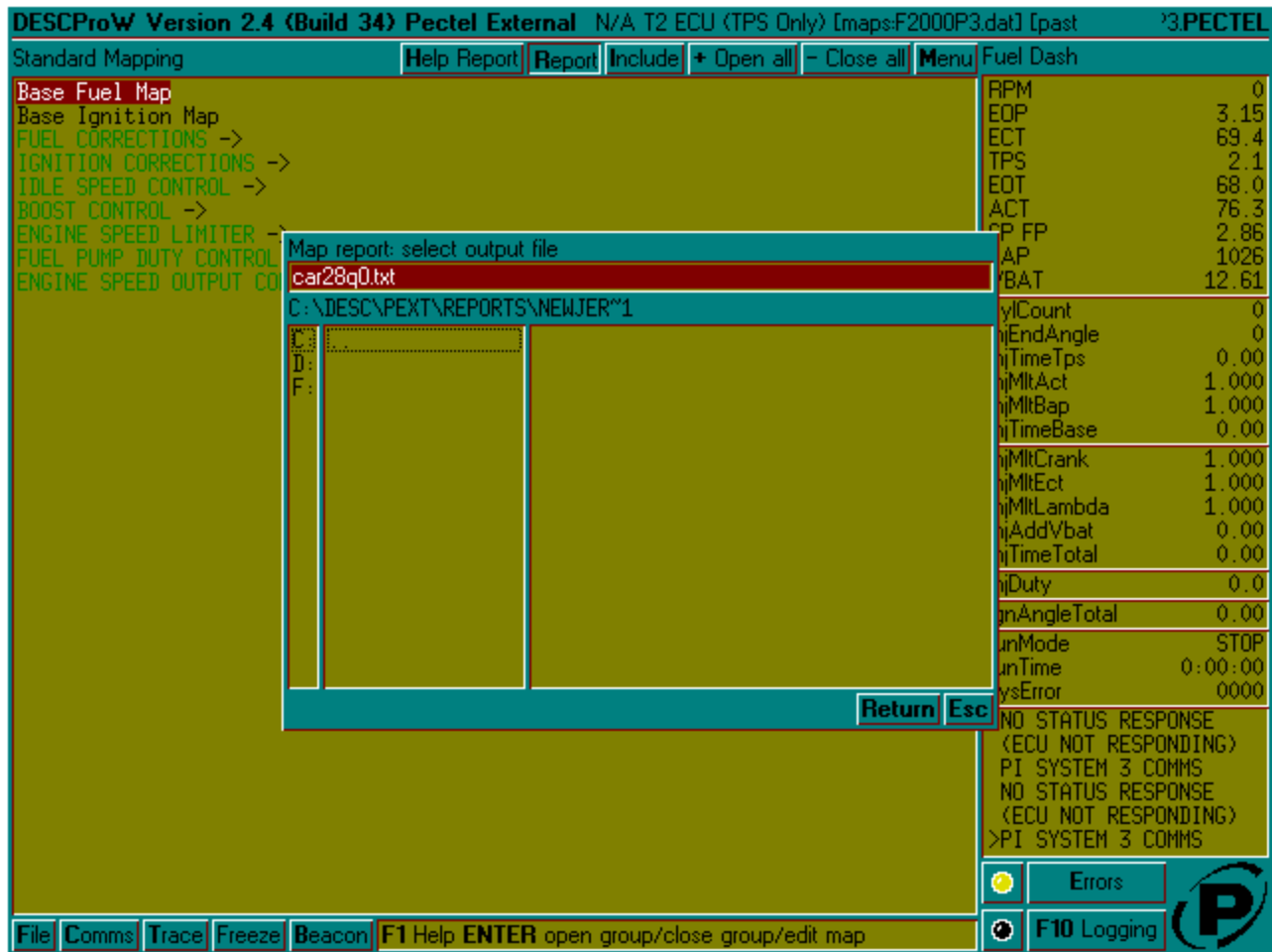
File Comms Trace Freeze Beacon F1 Help ENTER open group/close group/edit map

Click the D (Difference report) to generate a Difference report.



The location and name of the report need to be entered, or selected from previous files. In the above example, the directory was changed and the name of the file was car28q0.txt.

Warning: The file that is generated is a standard text file. The DESCProW program does not append the *.TXT suffix to the file name and it must be done in the file name entered. It's not critical, as it can always be changed later, but it's easier to do it when created.



After the location and file name (with extension) have been entered click Return.

The report will be placed in the location specified.

Enter F (File) and Q (Quit) to close the program

Open the Difference Report just saved. An example is shown on the next page.

DESCProW Version 2.4 (Build 34) : Pectel External
Copyright (c) Pectel Control Systems 1997

Full Difference Report
Generated from F2000P3.dat and F2000P3.dat
On Fri Sep 19 12:15:05 2008 **Date report was run**

-----F2000P3.dat-----

Map type : T2v1-15:Naturally Aspirated **Data from ECU**
Developer : Pectel External
Last saved : 12:09:51 on 19/9/2008 **Date file was flashed on the ECU**

2\22\08Added Fuel to cool off egts at high revs
New startup map 11\2\07
Added timing at cold water temp
SCCA FC club racing spec map for zetec
1.295 restrictor plate
Mapped by QSRE
For stock grey injectors fuel pressure 60 psi

TPS 3.0 idle

-----F2000P3.dat-----

Map type : T2v1-15:Naturally Aspirated **Data from File**
Developer : Pectel External
Last saved : 11:06:42 on 15/4/2008 **Date file was last saved**

2\22\08Added Fuel to cool off egts at high revs
New startup map 11\2\07
Added timing at cold water temp
SCCA FC club racing spec map for zetec
1.295 restrictor plate
Mapped by QSRE
For stock grey injectors fuel pressure 60 psi

TPS 3.0 idle

**Differences will be shown below the
----- line.**

**If nothing is shown, the ECU and map
are the same.**

There is nothing below the ----- line in this report so no modifications to the data on the ECU have been made.

The next page has an example of a report that has differences.

DESCProW Version 2.4 (Build 34) : Pectel External
Copyright (c) Pectel Control Systems 1997

Full Difference Report
Generated from F2000 and SCCAFCS
On Fri Jun 13 14:54:46 2008

-----F2000-----
Map type : T2v1-15:Naturally Aspirated
Developer : Pectel External
Last saved : 12:06:43 on 12/6/2008

2\22\08Added Fuel to cool off egts at high revs
New startup map 11\2\07
Added timing at cold water temp
SCCA FC club racing spec map for zetec
1.295 restrictor plate
Mapped by QSRE
For stock grey injectors fuel pressure 60 psi

TPS 3.0 idle

-----SCCAFCS-----
Map type : T2v1-15:Naturally Aspirated
Developer : Pectel External
Last saved : 10:42:21 on 13/4/2007

Stack Dash
SCCA FC club racing spec map for zetec
1.295 restrictor plate
Mapped by QSRE
For stock grey injectors fuel pressure 60 psi

TPS 3.0 idle

Menu : Standard Mapping
Map : Base Fuel Map (msecs)
Columns: Engine Speed (rpm)
Rows : Throttle Position (ø)

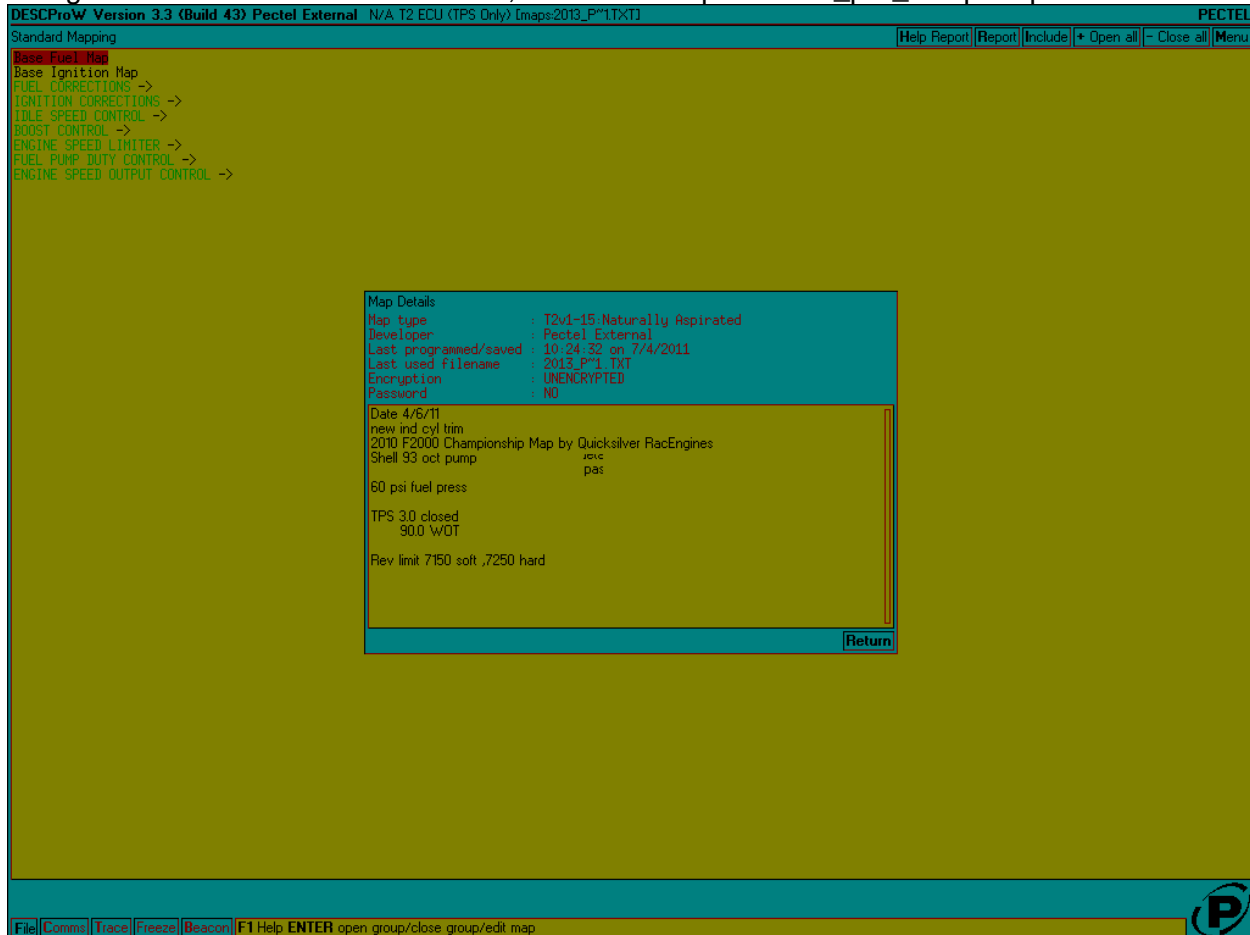
	600	800	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
90.0	0.00	0.00	-1.10	-1.10	-1.10	+0.17	+0.21	+0.22	+0.33	-1.27	-0.98	-0.57	+0.64	+2.64	+2.64	+1.97
80.0	0.00	0.00	-1.10	-1.10	-1.10	+0.17	+0.21	+0.23	+0.33	-0.85	-0.27	-0.58	+0.63	+2.14	+1.94	+1.97
70.0	0.00	0.00	-1.10	-1.10	-1.10	+0.18	+0.23	+0.26	+0.33	+0.34	-0.16	-0.28	+0.13	+1.56	+1.17	+1.79
60.0	0.00	0.00	-1.10	-1.10	-1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.0	0.00	0.00	-1.10	-1.10	-1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.0	0.00	0.00	-1.10	-1.10	-1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32.0	0.00	0.00	-1.10	-1.10	-1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26.0	0.00	0.00	-1.10	-1.10	-1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22.0	0.00	0.00	-1.10	-1.10	-1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.0	0.00	0.00	-1.10	-1.10	-1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14.0	0.00	0.00	0.00	-0.30	+0.20	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30
10.0	0.00	0.00	0.00	0.00	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30
7.5	0.00	0.00	0.00	0.00	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30
5.0	0.00	0.00	0.00	0.00	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30
3.0	0.00	0.00	0.00	0.00	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30
0.0	0.00	0.00	0.00	0.00	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30	+1.30

Obviously, this would indicate that something is amiss.

SCCA Map File

The SCCA requires a 2013 version of a pro map. The following screens and listings provide an overview of what is in this file.

Using the latest version of DESCProW, a screen dump for 2013_pro_zmap map file is:



DESCProW Version 3.3 (Build 43) : Pectel External
Copyright (c) Pectel Control Systems 1997

Full Map Report

Generated from 2013_P~1.TXT

On Sun Sep 20 12:42:15 2015

-----REPORT COMMENT-----
Report for 2013_pro_zmap.txt from SCCA web site
-----2013_P~1.TXT-----

Map type : T2v1-15:Naturally Aspirated
Developer : Pectel External
Last saved : 10:24:32 on 7/4/2011

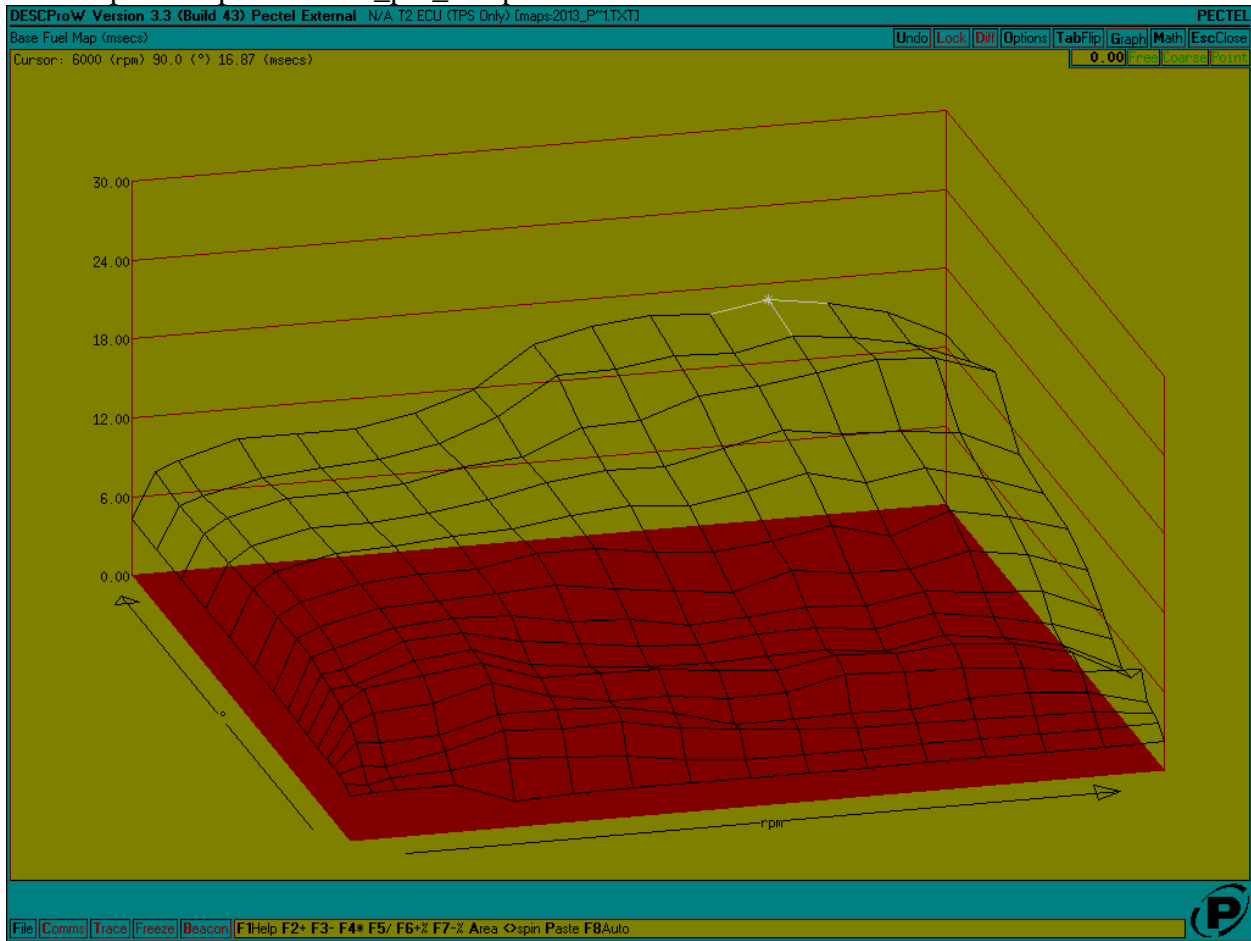
Date 4/6/11
new ind cyl trim
2010 F2000 Championship Map by Quicksilver RacEngines
Shell 93 oct pump

60 psi fuel press

TPS 3.0 closed
90.0 WOT

Rev limit 7150 soft ,7250 hard

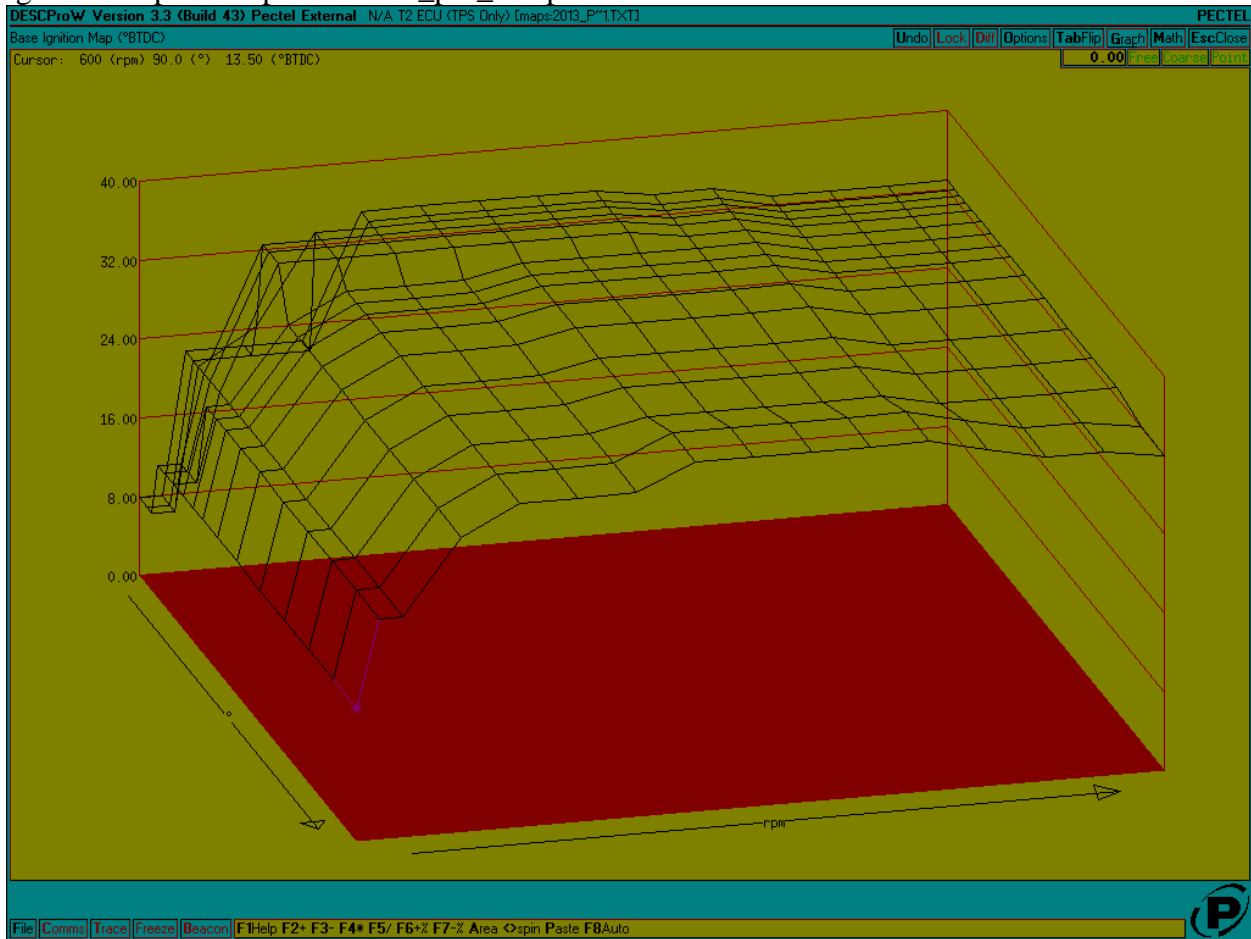
Fuel map for map file: 2013_pro_zmap



Map : Base Fuel Map (msecs)
 Columns: Engine Speed (rpm)
 Rows : Throttle Position (°)

	600	800	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
90.0	4.29	7.81	8.52	9.81	9.78	9.83	10.54	11.88	14.96	15.98	16.42	16.12	16.87	16.16	15.15	12.90
80.0	4.31	7.54	8.12	9.14	9.47	9.83	10.54	12.18	14.96	15.06	15.71	15.42	16.38	15.87	15.05	13.19
70.0	4.31	7.67	8.66	9.81	9.88	10.11	10.96	11.36	13.25	13.42	14.87	15.12	15.83	16.49	16.18	14.66
60.0	4.31	7.67	8.79	9.81	9.83	10.19	10.72	11.63	12.21	12.09	13.16	14.06	13.42	13.25	12.72	10.64
50.0	4.31	7.94	9.06	10.08	10.26	10.62	10.72	11.39	11.70	11.36	12.13	13.05	11.87	12.64	11.55	9.84
40.0	4.31	8.07	9.06	10.08	10.40	10.39	11.20	11.19	10.49	10.18	10.62	11.37	10.19	11.74	10.92	9.49
32.0	4.31	8.20	8.92	9.94	10.14	10.33	10.54	9.88	9.35	8.85	10.16	9.54	9.45	10.43	9.79	8.15
26.0	4.31	8.20	8.66	9.90	10.24	10.04	9.10	8.93	8.10	8.37	8.75	8.37	9.14	8.64	8.41	6.47
22.0	4.11	7.70	7.88	9.68	9.99	8.97	8.28	7.72	7.51	7.96	8.00	7.45	8.30	7.64	6.71	5.15
18.0	4.12	7.58	7.64	9.15	9.58	8.15	7.51	7.14	6.98	7.22	7.24	6.70	7.52	6.97	6.03	3.82
14.0	4.05	7.17	8.28	8.99	9.54	7.98	7.96	7.82	7.36	7.02	7.84	7.46	7.86	7.46	6.48	4.00
10.0	4.01	6.66	7.32	7.64	8.86	7.44	6.62	6.62	6.12	6.16	7.23	6.92	6.81	6.48	5.82	5.48
7.5	4.07	5.82	5.59	5.82	7.01	6.99	6.73	5.92	4.64	4.66	4.80	4.56	5.09	5.16	4.76	3.59
5.0	3.99	4.57	4.30	5.12	6.36	6.06	6.16	5.36	4.83	4.45	4.20	4.12	4.02	3.92	3.86	3.31
3.0	3.73	3.60	3.93	4.14	4.64	4.36	4.00	3.40	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
0.0	3.50	3.70	3.70	3.70	2.05	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30

Ignition map for map file: 2013_pro_zmap



Map : Base Ignition Map (øBTDC)
 Columns: Engine Speed (rpm)
 Rows : Throttle Position (ø)

	600	800	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
90.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	35.50	35.50	35.50	35.50	35.50	34.25	33.00	33.00	32.00
80.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	35.50	35.50	35.50	35.50	35.50	34.25	33.00	33.00	32.00
70.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	34.25	34.25	34.25	34.25	34.25	33.00	33.00	33.00	33.00
60.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	34.25	34.25	34.25	34.25	34.25	33.00	33.00	33.00	33.00
50.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	34.25	34.25	34.25	34.25	34.25	33.00	33.00	33.00	33.00
40.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	34.25	34.25	34.25	34.25	34.25	33.00	33.00	33.00	33.00
32.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	34.25	34.25	34.25	34.25	34.25	33.00	33.00	33.00	33.00
26.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	34.25	34.25	34.25	34.25	34.25	33.00	33.00	33.00	33.00
22.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	34.25	34.25	34.25	34.25	34.25	33.00	33.00	33.00	33.00
18.0	13.50	22.50	22.50	30.00	33.00	33.00	33.00	34.25	34.25	34.25	34.25	34.25	33.00	33.00	33.00	33.00
14.0	13.50	13.50	22.50	35.00	35.00	35.00	35.00	35.00	35.00	35.00	34.25	34.25	33.00	33.00	33.00	33.00
10.0	13.50	13.50	22.50	35.00	35.00	35.00	35.00	35.00	35.00	35.00	34.25	34.25	33.00	33.00	33.00	33.00
7.5	13.50	13.50	22.50	35.00	35.00	35.00	35.00	35.00	35.00	35.00	34.25	34.25	33.00	33.00	33.00	33.00
5.0	8.00	8.00	22.50	26.00	35.00	35.00	35.00	35.00	35.00	35.00	34.25	34.25	33.00	33.00	33.00	33.00
3.0	8.00	8.00	22.50	22.50	22.50	35.00	35.00	35.00	35.00	35.00	34.25	34.25	33.00	33.00	33.00	33.00
0.0	8.00	8.00	22.50	22.50	22.50	35.00	35.00	35.00	35.00	35.00	34.25	34.25	33.00	33.00	33.00	33.00

There is a substantial amount of information exported in the map file report, and the fuel (injector) and ignition maps are the most significant.