



# User Manual

[www.fc-datalogit.co.nz](http://www.fc-datalogit.co.nz)

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# Contents

- [I](#)- Introduction.
- [FC](#)- FC-Edit Opening page screen capture.  
(Read this first)
- [\\*\\*\\*](#) Important! (Read this second)
- FC-Datalogit [CD](#)
- [How to install FC-Edit from the FC-Datalogit CD](#)
- [How to install an updated version of FC-Edit](#)
- FC-Datalogit-FD3S [E-group](#)

## [1](#)- FC-Edit Main

- o [1-1](#) File
  - o [1-1-1](#) Default
  - o [1-1-2](#) Open
  - o [1-1-3](#) SaveAs
  - o [1-1-4](#) Compare
  - o [1-1-5](#) Exit
- o [1-2](#) Window
  - o [1-2-1](#) Monitor (FC-Datalogit)
    - o [1-2-1-1](#) Basic Zone
    - o [1-2-1-2](#) Sensors Zone
    - o [1-2-1-3](#) Auxiliary AD Zone
    - o [1-2-1-4](#) Map Reference Zone
    - o [1-2-1-5](#) Advanced Zone
    - o [1-2-1-6](#) Datalogit Zone
    - o [1-2-1-7](#) Lines (Logged)
    - o [1-2-1-8](#) Reset
    - o [1-2-1-9](#) Start
    - o [1-2-1-10](#) End
    - o [1-2-1-11](#) Save
  - o [1-2-2](#) Graph
    - o [1-2-2-1](#) INJ
    - o [1-2-2-2](#) IGN
    - o [1-2-2-3](#) IGT
    - o [1-2-2-4](#) VVT
    - o [1-2-2-5](#) Base
  - o [1-2-3](#) Chart
    - o [1-2-3-1](#) File
      - o [1-2-3-1-1](#) Open
      - o [1-2-3-1-2](#) Save as
      - o [1-2-3-1-3](#) Exit
    - o [1-2-3-2](#) Log

- o [1-2-3-2-1](#) Start F1
- o [1-2-3-2-2](#) End F2
- o [1-2-3-3](#) Window
  - o [1-2-3-3-1](#) Map Watch
  - o [1-2-3-3-2](#) Add Watch
- o [1-2-3-4](#) Setup
  - o [1-2-3-4-1](#) Chart (setup)
  - o [1-2-3-4-2](#) Monitor
- o [1-2-4](#) Map Watcher
  - o [1-2-4-1](#) File
    - o [1-2-4-1-1](#) Open
    - o [1-2-4-1-2](#) Save As
    - o [1-2-4-1-3](#) Exit
  - o [1-2-4-2](#) Log
    - o [1-2-4-2-1](#) Start
    - o [1-2-4-2-2](#) End
  - o [1-2-4-3](#) View
    - o [1-2-4-3-1](#) Map Trace
    - o [1-2-4-3-2](#) Ghost
    - o [1-2-4-3-3](#) Col Width
    - o [1-2-4-3-4](#) Dec. Places
  - o [1-2-4-4](#) Window
    - o [1-2-4-4-1](#) Monitor
    - o [1-2-4-4-2](#) Chart
  - o [1-2-4-5](#) Options
    - o [1-2-4-5-1](#) MapRef
  - o [1-2-4-6](#) Drop Down Channel Selector
  - o [1-2-4-7](#) Drop Down Filter
  - o [1-2-4-8](#) Hold Off (m Sec)
- o [1-2-5](#) Add Watch
- o [1-2-6](#) Hide Watch
- o [1-3](#) Setup
  - o [1-3-1](#) Port Com1 ~8
  - o [1-3-2](#) Auxiliary (Setup)
    - o [1-3-2-1](#) Polynomial (Setup)
    - o [1-3-2-2](#) Delta AN1- AN2
    - o [1-3-2-3](#) Delta AN3 – AN4
    - o [1-3-2-4](#) ReCalculate Log
- o [1-4](#) Tools
  - o [1-4-1](#) ReCalc Base
- o [1-5](#) Read All
- o [1-6](#) Write All
- o [1-7](#) Update
- o [1-8](#) Map Tracer

## **2-** Fuel Correction Map (Injector Map)

- o [2-1](#) Read Injection Map
- o [2-2](#) Write Injection Map

## **3-** Ignition Map

- o [3-1](#) Read IGN Map
- o [3-2](#) Write IGN Map

## **4**- VVT Map

- o [4-1](#) Read VVT Map
- o [4-2](#) Write VVT Map

## **5**- Base Fuel Map

- o [5-1](#) Read Base Map
- o [5-2](#) Write Base Map

## **A**- Settings One

- o [A-1](#) Boost Control
- o [A-2](#) Rev / Idle
  - o [A-2-1](#) Rev Limit
  - o [A-2-2](#) F/C A.E
  - o [A-2-3](#) F/C E/L
  - o [A-2-4](#) F/C A/C
  - o [A-2-5](#) Idle A.E
  - o [A-2-6](#) Idle E/L
  - o [A-2-7](#) Idle A/C
- o [A-3](#) Function Select
  - o [A-3-1](#) Boost Control Kit
  - o [A-3-2](#) Injector / Air Flow Warn
  - o [A-3-3](#) Knock Warn
  - o [A-3-4](#) O2 F/B Control
  - o [A-3-5](#) Idle-IG Control
- o [A-4](#) Version
- o [A-5](#) Knock Warning
- o [A-6](#) O2 Feedback
- o [A-7](#) Protect

## **B**- Settings Two

- o [B-1](#) Water Temp Correction
- o [B-2](#) Accelerate Injector Time
- o [B-3](#) Cranking Time
- o [B-4](#) Injection vs. Acceleration TPS1
- o [B-5](#) Injection vs. TPS
- o [B-6](#) Injection vs. Air Temp
- o [B-7](#) Injection vs. Air Temp & Load
- o [B-8](#) Injection vs. Water Temp & load

## **C**- Settings Three

- o [C-1](#) Map Reference
- o [C-2](#) Air Flow

## **D**- Settings Four

- o [D-1](#) Ignition vs. Water Temp (cool)
- o [D-2](#) Ignition vs. Water Temp
- o [D-3](#) Boost vs. IGN S.F.
- o [D-4](#) Ignition vs. Air Temp
- o [D-5](#) Ignition vs. TPS
- o [D-6](#) Ignition vs. Battery Voltage
- o [D-7](#) Ignition vs. RPM

## **E**- Settings Five

- o [E-1](#) Injectors
- o [E-2](#) Primary Injector lag (uS) vs. BatV
- o [E-3](#) FC-Box Custom Features
  - o [E-3-1](#) Anti lag (Stutter box) ☺
  - o [E-3-2](#) Remote boost switch
  - o [E-3-3](#) Tuner String
- o [E-4](#) Notes

## **FC**- FC-Box

- o [FC1](#) FC-Box 4 Additional inputs
- o [FC2](#) FC-Box 4 Switches
- o [FC3](#) Mini din cable
- o [FC4](#) Mini din Socket
- o [FC5](#) Serial Socket
- o [Connection](#)

## **N**- Notes

- o [N-1](#) Knock Value
- o [N-2](#) Boost Control Kit for single turbo
- o [N-3](#) Mac Laptop & FC-Datalogit

## **T**- Tips

- o [T-1](#) To view the settings in two files simultaneously
- o [T-2](#) How the sample chart was created, Chart tutorial

## **W**- WARNING

- o [W-1](#) "Read all" the settings and maps and save the file!
- o [W-2](#) BOOST CUT
- o [W-3](#) Exhaust Temp Light flashing!
- o [W-4](#) Check Engine Light Flashing Slowly! Injector Duty / Map Warning
- o [W-5](#) Check Engine Light Flashing Quickly! Knock Warning

## **Z**-Screen Captures

# FC-Datalogit

## ➤ Introduction [^](#) Back to Contents

- o FC-Datalogit is a package comprised of:
  - FC-Edit Software
  - FC-Box Hardware
  - FC-Datalogit User Group
- o Key for this Manual

## Title

- o Description (Shot cut key) [short key (then >) short key]
  - What it does
    - o How to use it
      - Detail on how to use it
        - NOTE
        - o Note or Function list
        - ! Important Note
        - ⚠ DANGER!!

Questions? [Manual@fc-datalogit.co.nz](mailto:Manual@fc-datalogit.co.nz)

⚠ \*An important Notice before you plug in your FC-Box {[E-5-3 Tuner String](#)}

## ➤ FC-Datalogit CD [^](#)

- o The FC-Datalogit CD
  - You will receive the FC-Datalogit CD with you FC-Datalogit Package.
  - o The CD contains
    - A PDF copy of this manual. Updated user manuals are e-mailed the registered owners of FC-Datalogit
    - FC-Edit. Updated versions are e-mailed the registered owners of FC-Datalogit
      - ! You must install the FC-Datalogit CD version of FC-Edit before you can update it!
    - Log folder: with a sample log
    - Settings folder: with base default settings
    - "setup exe"
- To install the CD version of FC-Edit
  - Insert the CD into your CD ROM drive

- Open the CD
- Double click "setup exe", follow the set-up instructions

## ➤ To install an updated version of FC-Edit

! You must install the FC-Datalogit CD version of FC-Edit before you can update it!

- It will arrive as an attachment to an e-mail from FC-Datalogit.
- Right click on the attached file and choose 'copy'
- Open the 'FC-Edit' folder in the 'program files' folder on 'C' drive in your computer
- Right click anywhere in the 'FC-Edit' folder and choose 'paste'
- You will be told "this folder already contains a file named 'FC-Edit~.exe'" "Would you like to replace the existing file with this one"?
- Choose 'yes'

## ➤ FC-Datalogit user E-group

You must purchase FC-Datalogit before you can be invited to join the FC-Datalogit user e-group.

You must not redistribute anything from the e-group. We encourage members to share their knowledge and redistribution put this into jeopardy.

FC-Datalogit reserves the right to remove members from the e-group at their discretion.

To be invited e-mail the following information to;

[glen@fc-datalogit.co.nz](mailto:glen@fc-datalogit.co.nz)

FC-Box serial number.

FC-Edit version number.

Date and point of purchase.

The e-group is a user forum with a database and some other web tools.

The latest version of FC-Edit and this manual are kept on the e-group.

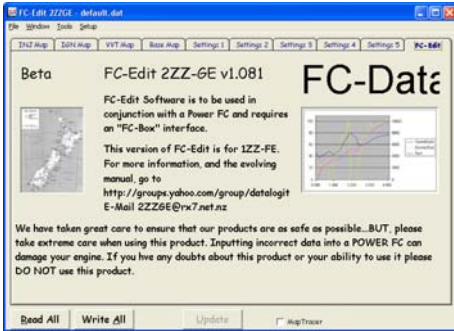
There is a section for users to post / share their setting data if they wish.

If you have any questions about FC-Datalogit or general tuning we encourage you to post them to the e-group.

All questions are posted to all e-group members.

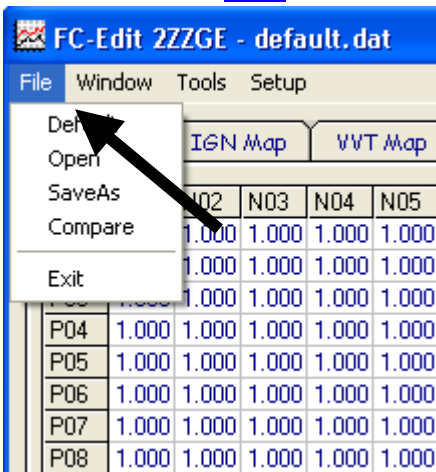
Likewise if you can answer a question feel free to answer. We value your input. We have also added a section where you can make suggestions. We will include anything reasonable and achievable.

# 1- FC-Edit Main



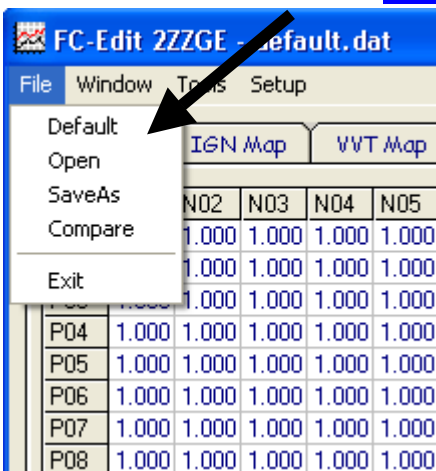
- o Refer to FC-Edit Cover page {[FC-Edit](#)}
  - Main refers to the drop down menus and items placed around the central tab area on the FC-Edit software

## 1-1 File



- o Drop down File menu (Alt f)
  - To access the following commands; Default, Open, SaveAs, Compare and Exit
    - o To open the drop down File menu, Left Click "File", once

### 1-1-1 Default



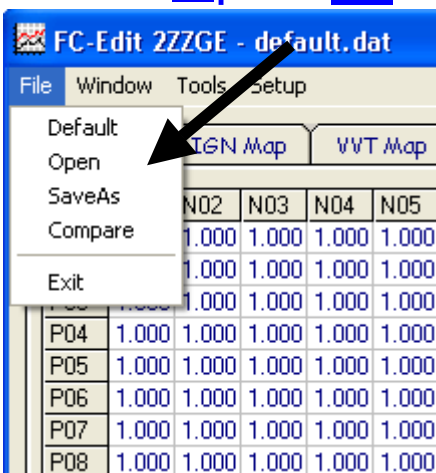
- o Restore maps and settings to "Default"
  - Loads the file "default.dat" from FC-Edit folder in program files
    - o To load the file "default.dat", Left Click "Default" in the drop down File menu, once

- The default file is NOT the same as resetting the Power FC to Apexi original settings with a commander.
- To make the default file the same as your Apexi Power FC original settings
  - Reset your Power FC with a commander
  - Save the settings with Datalogit "save as" function
  - Name the file "default.dat"
- To change the data in the default file by
  - Opening the default file, change the maps or settings and then save the file as default.dat
  - Or by re-naming any other settings file "default.dat"



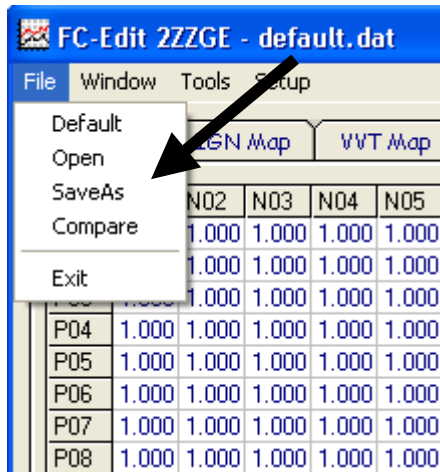
- If you get this message then you don't have a default.dat file in your FCEdit\_3SGTE folder in your program files.
- ✘ All unsaved data or unsaved changes made to the previous file will be written over with the maps and settings in your default file
- ✘ Save files or you will loose the data!

## 1-1-2 Open ^



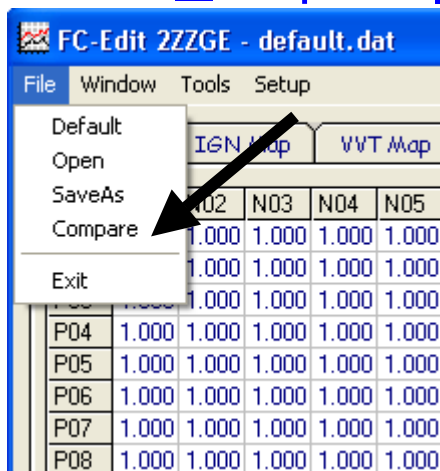
- Open an existing File (Alt o) [Alt f > Alt o > left click to choose file > Alt o]
  - To Open an existing file
    - To Open a existing file, Left Click "Open" in the drop down File menu, once
      - "Open" window will appear
      - Locate the file you wish to open
      - Double left click the file you wish to open
      - OR left click the file and left click the open button
    - ✘ All unsaved data or unsaved changes made to the previous file will be written over
    - ✘ Save files or you will loose the data!

## 1-1-3 SaveAs ^



- o Save a File (Alt a) [Alt f > Alt a > Alt n (name the file) > Alt s]
  - To Save a file
    - o To Save a file, Left Click "SaveAs" in the drop down File menu, once
      - "Save As" window will appear
      - Left click in the "File name" box and give the file a unique name
      - OR, left click on an existing file
      - Left click on the "Save" button
    - ✖ If you choose to save a file using an existing file name, the original file will be written over

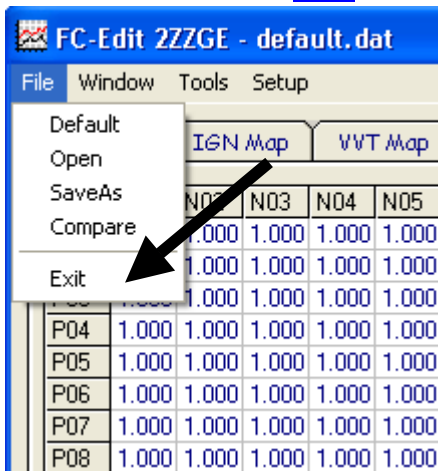
## 1-1-4 Compare



- o This unique tool is used to compare two files of settings to see if any values are different (Alt c) [Alt f > Alt c > left click to choose file > Alt o]
  - To Compare a file you are working on to another file
    - o Save the file you are working on.
    - o Click "Compare" in the drop down File menu, once
    - o "Open" window will appear
    - o Locate the file you wish to Compare with the file you already have open
    - o Double left click the file you wish to Compare
    - o OR left click the file and left click the open button
      - The difference between the two files will be displayed in all setting and map windows
      - Settings with a positive (+) difference to the file you chose to compare to will be **highlighted in red**
      - Settings with a negative (-) difference to the file you chose to compare to will be **highlighted in Yellow**

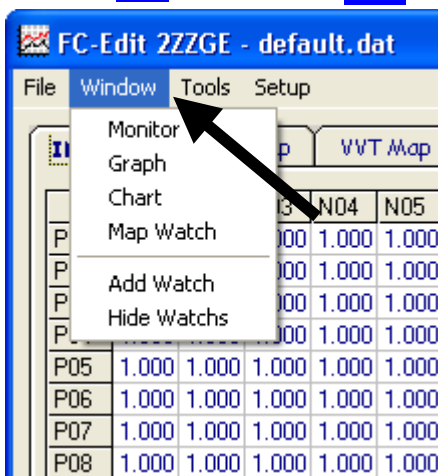
- {[T-1](#)} To view the settings in two files simultaneously

## 1-1-5 Exit [^](#)



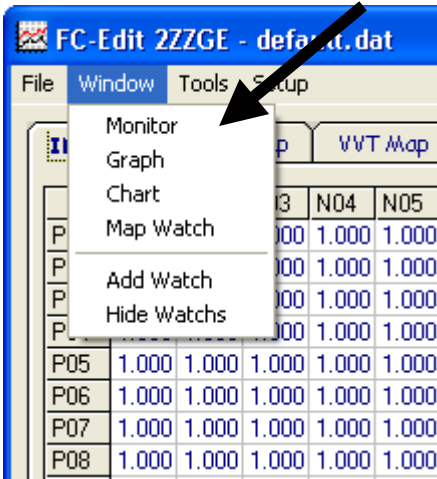
- o Shut down FC Edit program (Alt x)
  - To close FC Edit program
    - o To Close FC Edit, Left Click "Exit" in the drop down File menu, once
      - ⚠ All unsaved data or unsaved changes made to the previous file will be lost
      - ⚠ Save files or you will loose the data!

## 1-2 Window [^](#)

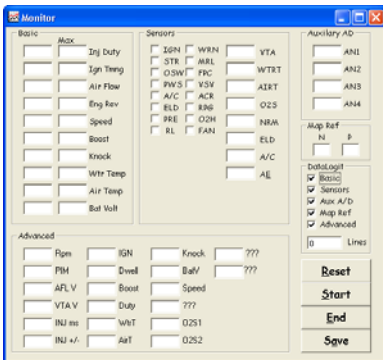


- o Drop down Window menu (Alt w)
  - To access the following windows; Monitor, Graph, Chart, Map Watch, Add Watch and Hide Watches
    - o To open the drop down Window menu, Left Click "Window", once

## 1-2-1 Monitor Window (FC-Datalogit) [^](#)



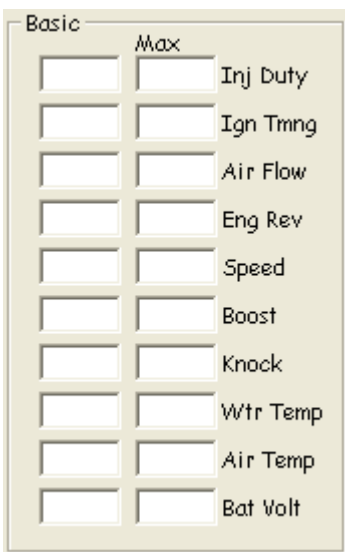
- o Monitor Window (Alt m) [Alt w > Alt m]
  - Monitor Window displays the various streams of data that can be logged
    - o To open the Monitor window Click "Monitor" in the drop down Window menu, once



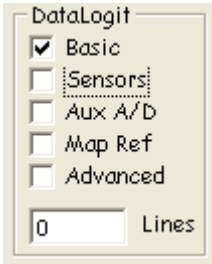
Click for Screen capture {[Monitor Window](#)}

- The streams of data are organized in separate Zones
- One or a combination of Zones can be logged

## 1-2-1-1 Basic Zone ^

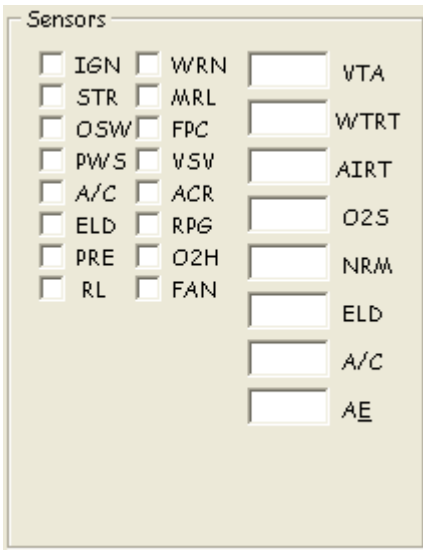


- o Basic general data Zone
  - A Zone on the Monitor Window that displays general data available for logging
    - o To select data streaming in the Basic Zone of the Monitor Window for logging Check the "Basic" check box in the Datalogit Zone on the Monitor Window

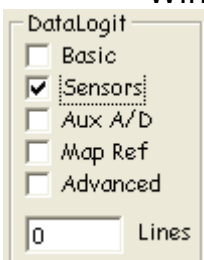


- There are two boxes for each Data value; Live on the left and Max on the right
- The following Data is displayed in the Basic Zone of the Monitor Window;
  - - o Inj Duty; Injector Duty time
    - o IGN Tmng; Ignition Timing
    - o Air Flow
    - o Eng Rev; Rpm
    - o Speed
    - o Boost
    - o Knock {[N-2](#) Knock Value}
    - o Wtr Temp; Water Temp
    - o Air Temp; Manifold inlet Air Temp
    - o Bat Volt

## 1-2-1-2 Sensors Zone ^



- o Sensors Zone
  - A Zone on the Monitor Window that displays the status or value of various sensors which are available for logging
    - o To select data streaming in the Sensor Zone of the Monitor Window for logging, check the "Sensor" check box in the Datalogit Zone on the Monitor Window

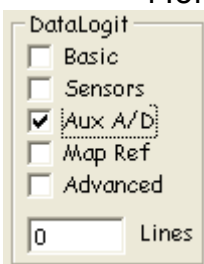


- The status of the following sensors is displayed in the Sensor Zone of the Monitor Window;
  - o IGN
  - o STR; Starter Switch
  - o OSW
  - o PWS; Power Steering Oil Pressure Switch
  - o A/C; Air Conditioner Switch
  - o ELD; Electric Load Switch
  - o PRE
  - o RL
  - o WRN
  - o MRL
  - o FPC
  - o VSV
  - o ACR
  - o RPG
  - o O2H
  - o FAN
- The value of the following sensors is displayed in the Sensor Zone of the Monitor Window;
  - o PIM; Pressure Sensor (Map sensor)
  - o VTA; Throttle Position Sensor
  - o WTRT; Water Temp Sensor
  - o AIRT; Intake Air Temp Sensor
  - o O2S; Stock O2 Sensor
  - o NRM
  - o ELD
  - o A/C
  - o AE

## 1-2-1-3 Auxiliary AD Zone



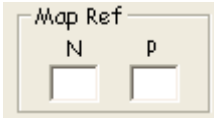
- o Additional input Zone
  - Provision has been made on the [{FC1 FC-Box 4 Additional inputs}](#) for up to four additional inputs. Their values are displayed in the Auxiliary AD Zone on the Monitor Window and can be logged
    - o To select data streaming in the Auxiliary AD Zone of the Monitor Window for logging, check the "Aux a/d" check box in the Datalogit Zone on the Monitor Window



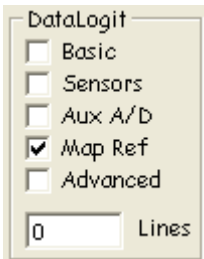
- There are 4 additional input posts on the FC-Box, they are marked
  - o AD0
  - o AD1

- o AD2
- o AD3
- ✘ **Voltage must be between 0~5 volts**
- Possible additional inputs;
  - o Wide band o2 sensor. UEGO
- See section {[E-3 FC-Box Custom Features](#)} for more information
- {[1-3-2 Auxiliary \(set up\)](#)} set up scale and values for A/d

## 1-2-1-4 Map Position Zone [^](#)

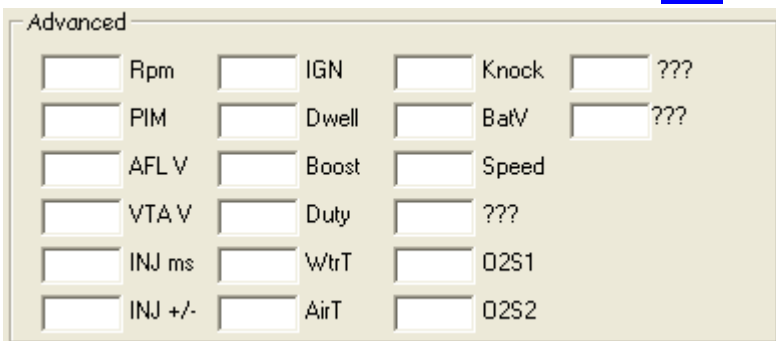


- o Map Position Zone
  - Shows the current map position by displaying the values of "P" (P01~P20) and "N" (N01~N20), which can be logged
    - o To select data streaming in the Map Position Zone of the Monitor Window for logging, check the "Map" check box in the Datalogit Zone on the Monitor Window

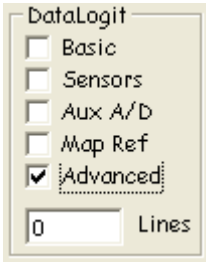


- The values for "P" and "N" can be rescaled, see section {[C-1 Map Reference](#)} for more information
- P01~P20 {[N-3 Pressure Value](#)} in the Fuel and Ign Maps
- N01~N20; RPM.

## 1-2-1-5 Advanced Zone [^](#)

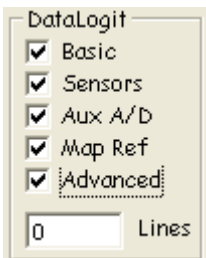


- o Advanced Zone
  - A Zone on the Monitor Window that displays data useful for tuning and available for logging
    - o To select data streaming in the Advanced Zone of the Monitor Window for logging Check the "Advanced" check box in the Datalogit Zone on the Monitor Window



- The following Data is displayed in the Advanced Zone of the Monitor Window;
  - o RPM
  - o PIM; Pressure Sensor (Map sensor) (0~24000 boost)
  - o AFL V
  - o VTA V
  - o INJ ms
  - o INJ +/-
  - o IGN
  - o Dwell
  - o Boost
  - o Duty; Wastgate solenoid duty cycle
  - o WtrT; Water Temp Sensor
  - o AirT; Intake Air Temp Sensor
  - o Knock; {[N-2](#) Knock Value}
  - o BatV
  - o Speed
  - o ???; Don't know what this one is ☺.
  - o O2S; Stock O2 Sensor 1
  - o O2S; Stock O2 Sensor 2
  - o ???; Don't know what this is either. Unused?
  - o ???; Don't know what this is either. Unused?

## 1-2-1-6 FC-Datalogit Zone [^](#)



- o Datalogging Zone
  - The area on the Monitor Window that displays which data zones have been chosen to be logged
    - o To select which Zone on the Monitor Window you want to log, check the appropriate check box on the Monitor Window. You can choose one, any or all Zones
      - The following Zones of Data on the Monitor Window are available for logging;
        - o Basic Zone
        - o Sensors Zone
        - o Aux A/D Zone
        - o Map Zone
        - o Advanced Zone (Shown checked in the image above)

## 1-2-1-7 Lines (Logged) [^](#)

Lines

- o "lines" in the Datalogit Zone
  - Shows the number of lines of data that were logged in the last logging session
    - The data, if viewed as a text file, is collected line by line
    - Each line has one value for each item logged, separated by a "Tab"
    - If you get 30 logs per second you will get 30 lines for each second logged
    - Different versions of Power FC will log at different rates.
    - More zones logged gives less lines per second due to the speed limit at which data can be extracted from the Power FC

## 1-2-1-8 Reset ^



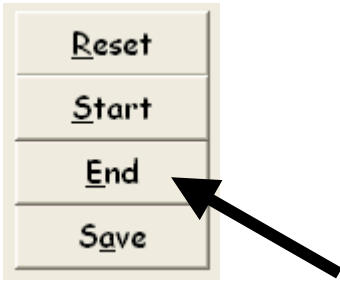
- o Reset values on Monitor Window (Alt r)
  - Used to reset the maximum values in the Monitor Zone. Resets all values on the Monitor Window and discards the current log file
    - o Left Click the "Reset" button on the Monitor Window, once
      - ✖ **There is no auto save so Resetting will delete the current log file**
      - ✖ **Save files or you will loose the data!**

## 1-2-1-9 Start ^



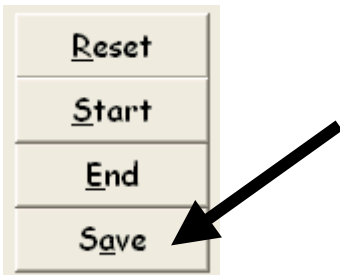
- o Start Logging (Alt s)
  - Starts logging the selected Zones
    - o Left Click the "Start" button on the Monitor Window, once
      - ✖ **There is no auto save so "Start" will delete the previous log file**
      - ✖ **Save files or you will loose the data!**

## 1-2-1-10 End ^



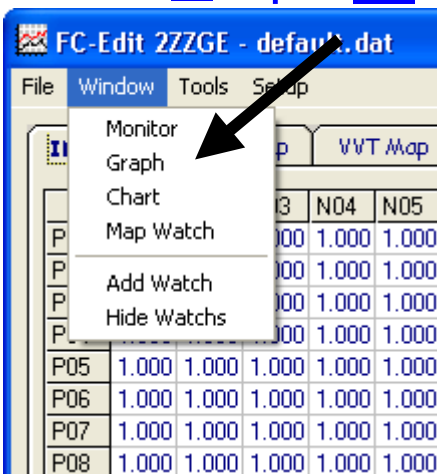
- o Stop Logging (Alt e)
  - Stops logging of the selected Zones
    - o Left Click the "End" button on the Monitor Window, once
      - ✘ There is no auto save. "End" will only stop the current logging. The file created will remain until you Reset or Start a new log
      - ✘ Save the file as soon as possible
      - ✘ Save files or you will loose the data!

## 1-2-1-11 Save (Alt a) ^



- o Save log file
  - Saves the log file you have just created
    - o Left Click the "Save" button on the Monitor Window, once
      - "Save As" window will appear
      - Left click in the "File name" box and give the file a unique name
      - OR, left click on an existing file
      - Left click on the "Save" button
        - ✘ If you choose to save a file using an existing file name, the original file will be written over

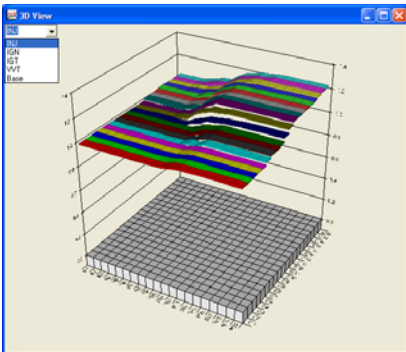
## 1-2-2 Graph ^



- o Graphical representation of Maps (Alt g) [Alt w > Alt g]
  - Shows graphs of the following maps; INJ, Ign, IGT, VVT, Base INJ

- To open the Graph Window Click "Graph" in the drop down Window menu, once
  - You can resize the Graphs by dragging the graph window

## 1-2-2-1 INJ

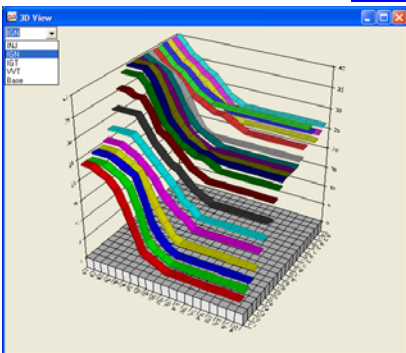


Click for Screen Capture [{INJ}](#)

- Graphical representation of the Injector correction map [Alt w > Alt g > choose "INJ" from the drop down list]
  - Shows a graph of the Injector correction map
    - To View the graph of the Injector correction map, choose "INJ" from the drop down list on the Graph Window



## 1-2-2-2 IGN

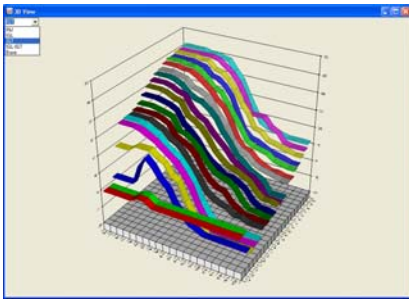


Click for Screen Capture [{IGN}](#)

- Graphical representation of the Leading Ignition map [Alt w > Alt g > choose "IGN" from the drop down list]
  - Shows a graph of the Leading Ignition map
    - To View the graph of the Injector correction map, choose "IGN" from the drop down list on the Graph Window



## 1-2-2-3 IGT ^

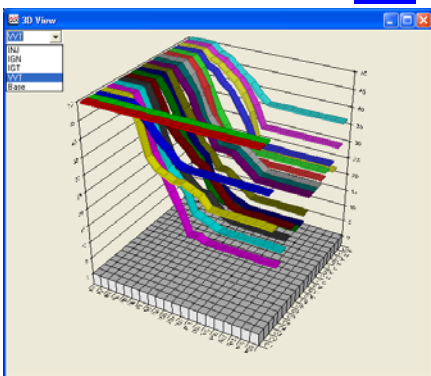


Click for Screen Capture {[IGT](#)}

- o
- o Graphical representation of the Trailing Ignition map [Alt w > Alt g > choose "IGT" from the drop down list]
  - Shows a graph of the Trailing Ignition map
    - o To View the graph of the Trailing Ignition map, choose "IGT" from the drop down list on the Graph Window



## 1-2-2-4 VVT ^

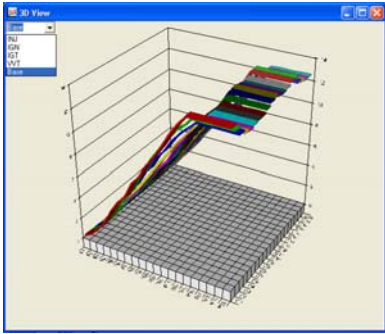


Click for Screen Capture {[VVT](#)}

- o
- o Graphical representation of the VVT map [Alt w > Alt g > choose "VVT" from the drop down list]
  - Shows a graph of the VVT map
    - o To View the graph of the VVT map, choose "VVT" from the drop down list on the Graph Window



## 1-2-2-5 Base ^

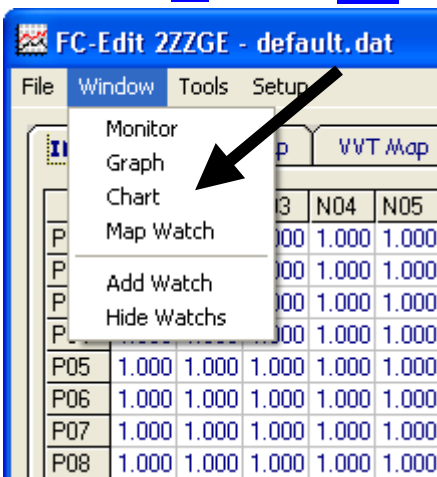


Click for Screen Capture {[Base](#)}

- o Graphical representation of the Base Injector map [Alt w > Alt g > choose "Base" from the drop down list]
  - Shows a graph of Base Injector map
    - o To View the graph of the Base Injector map, choose "Base" from the drop down list on the Graph Window



## 1-2-3 Chart ^



Click for Screen Capture {[FC-Datalogit Chart window](#)

Standard and a set-up chart with watches}

- o Live Chart plotter (Alt c) [Alt w > Alt c]
  - GMS Strip Chart by "Global Magic Software Inc." Used under license by FC-Datalogit

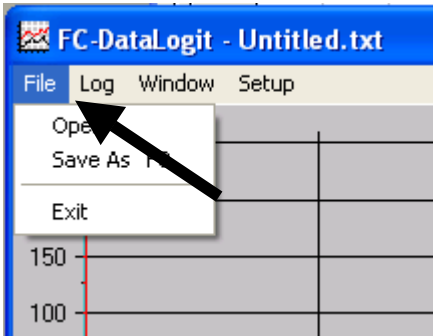


- Plots live charts of data logging or can be used to review saved logged data
  - o To open the Chart Window Click "Chart" in the drop down Window menu, once
    - Resize the chart as required
    - See {[1-2-3-4-1 Chart \(setup\)](#)} to setup the chart.
      - Once you have set up the chart you can use it to view live data or review logged data.
      - You can open a saved log in the chart.

- You can move the curser line along the chart with the arrow keys or scroll with a mouse
- Set up some watches and they will display the value of the watched data where the curser line meets the plotted data line (trace)
- You can stretch or compress time by sliding the arrows on the time line along the bottom of the chart
- You can alter the height of each chart by dragging the top or bottom of each chart

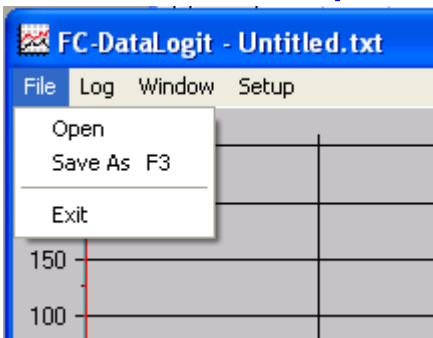
! T-2 How the sample chart was created, Chart tutorial

## 1-2-3-1 File ^



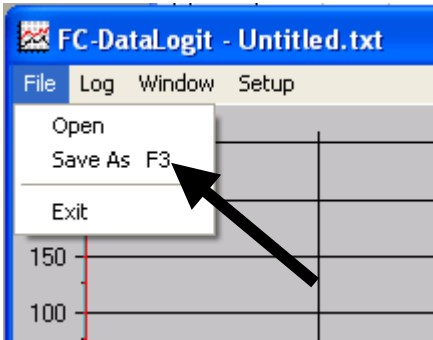
- o Drop down File menu for Charts
  - To access the following commands; Open, Save, SaveAs, and Exit
    - o To open the drop down File menu, Left Click "File", once

## 1-2-3-1-1 Open ^



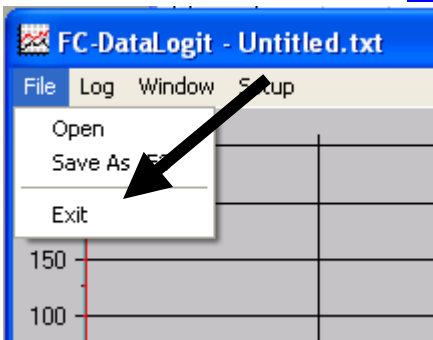
- o Open an existing Chart File
  - To Open an existing Chart file
    - o Left Click "Open" in the drop down File menu, once
      - "Open" window will appear
      - Locate the file you wish to open
      - Double left click the file you wish to open
      - OR left click the file and left click the open button

## 1-2-3-1-2 Save as ^



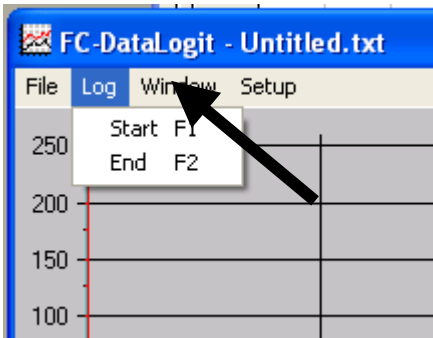
- o Save a Chart File under a different name
  - Save a file
    - o Left Click "SaveAs" in the drop down File menu, once
      - "Save As" window will appear
      - Left click in the "File name" box and give the file a unique name
      - OR, left click on an existing file
      - Left click on the "Save" button
        - ✖ If you choose to save a file using an existing file name, the original file will be written over

## 1-2-3-1-3 Exit ^



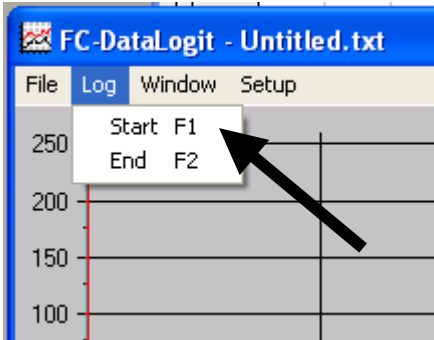
- o Shut down Chart window
  - To close Chart window
    - o Left Click "Exit" in the drop down File menu, once
      - Chart settings will remain and the chart will look the same when you reopen it

## 1-2-3-2 Log ^



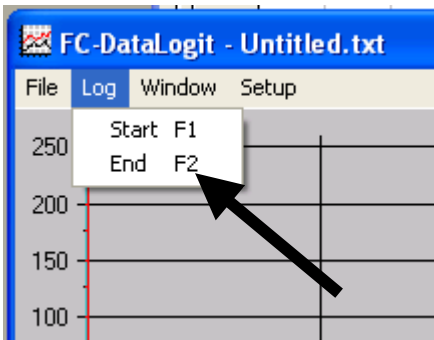
- o Drop down Log menu
  - To access the following windows; Start and End
    - o To open the drop down Log menu, Left Click "Log", once

## 1-2-3-2-1 Start F1 ^



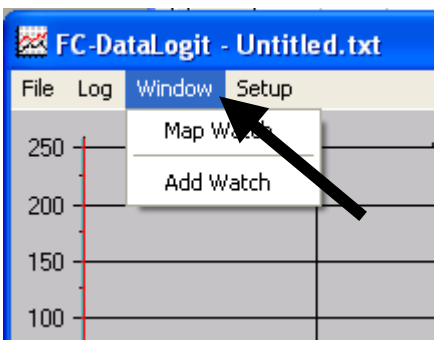
- o Start logging
  - Starts logging the items chosen in the monitor window {[1-2-1-6 Datalogit Zone](#)}

## 1-2-3-2-2 End F2 ^



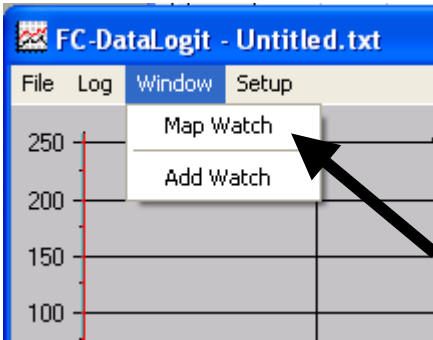
- o Stop logging
  - Stops logging the items chosen in the monitor window {[1-2-1-6 Datalogit Zone](#)}

## 1-2-3-3 Window ^



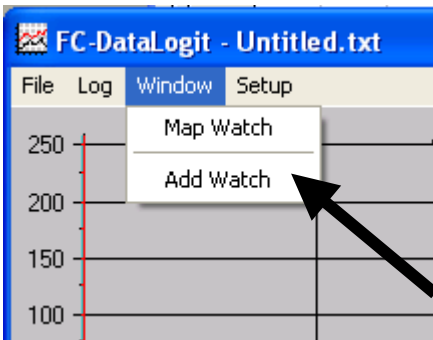
- o Drop down Window menu
  - To access the following windows; Map Watch, Add watch
    - o To open the drop down Window menu, Left Click "Window", once

## 1-2-3-3-1 Map Watch ^



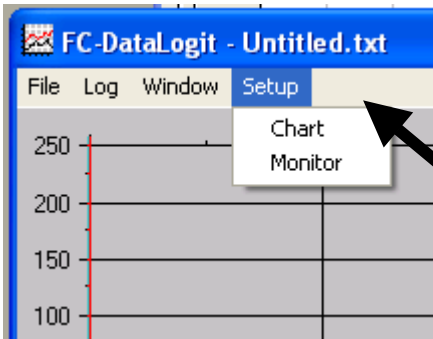
- o Opens the Map Watch window {[1-2-4](#) Map Watch}

## 1-2-3-3-2 Add Watch [^](#)



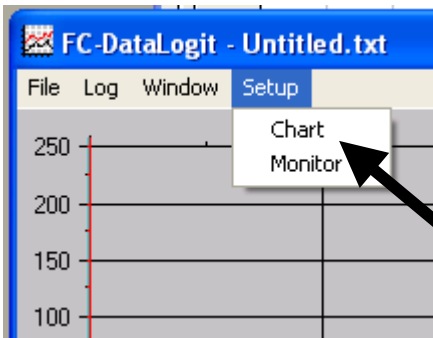
- o Opens the Add Watch window {[1-2-5](#) Add Watch}

## 1-2-3-4 Setup [^](#)



- o Drop down Setup menu
  - To access the following Chart Setup window
    - o To open the drop down Setup menu, Left Click "Setup", once

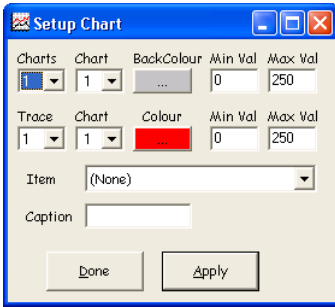
## 1-2-3-4-1 Chart (setup) [^](#)



- o Setup chart window

➤ To access the Chart Setup window

- Click "chart" in the drop down setup menu Setup chart window will appear



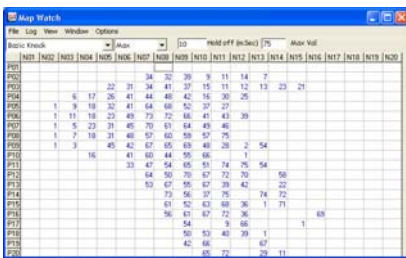
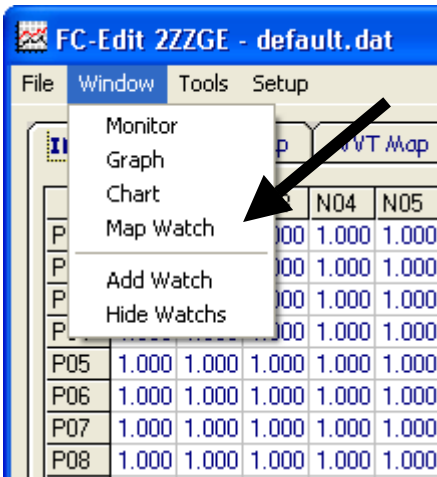
Click for Screen Capture {[Setup Chart](#)}

- You can have up to 4 charts
- Click "charts" drop down box and select the number of charts required
  - You can give each chart a different background colour if required. (Some trace colours are hard to see against certain background colours)
- Click "chart" drop down box and choose the chart number then choose desired background colour for that chart
  - You can have a different scale for each chart
- Click "chart" drop down box and choose the chart number then assign a max and min value for that chart
- Choose the number of traces you want to display and which chart you want each one on
  - Do this for as many traces you require
  - You can have a maximum of 20 traces
- Click "trace" drop down box and choose a trace number
- Click "trace chart" drop down box and select which chart you want this trace to be displayed on
- Choose a colour for the trace
- Choose a max and min value for the trace
- Click the "Item" drop down box and choose the channel you want for the trace
  - The caption will reflect which channel you have chosen but you can edit it if you wish
- Click apply to view changes to the chart
- Click Done when you are finished

## 1-2-3-4-2 Monitor [^](#)

- Opens the monitor window {[1-3-1 Monitor \(FC-Datalogit\)](#)}

## 1-2-4 Map Watch [^](#)

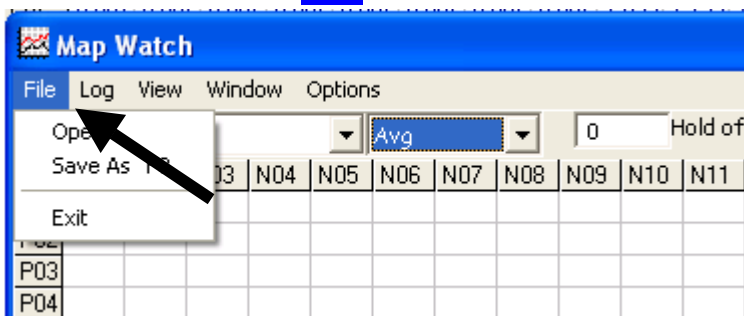


Click for Screen Capture {Map Watch}

o Map Watch

- 20 x 20 map that displays logger data in it's appropriate N & P position
  - These are the same positions as the data and settings in your fuel and ignition maps
  - Only works for settings that you chose to log {[1-2-1-6 Datalogit Zone](#)}
  - Will display live data while creating a log
- o Choose the log item you wish to analyse {[1-2-4-6 Drop Down Channel Selector](#)}
  - The most common items are wideband o2 and knock
- o Choose max, min or average {[1-2-4-7 Drop Down Filter](#)} and go for a drive...
- o As you go up and down revs and load, o2 (or what ever item you choose) will appear and fill up their relevant position in the map
- o Look over the map watch map and adjust the fuel map accordingly
- o Once you stop logging you can change the setting to a different item and the map watch will crunch the log and fill up the map with the logged data

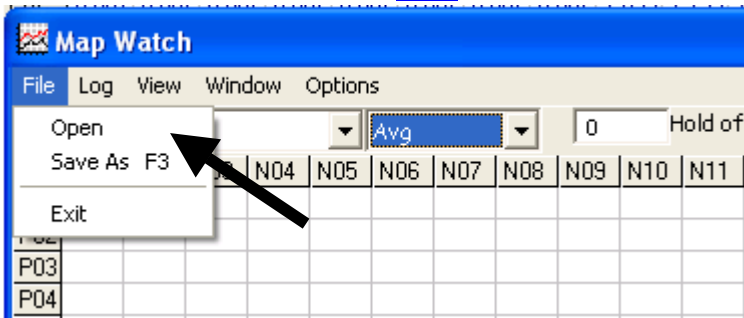
## 1-2-4-1 File



o Drop down File menu

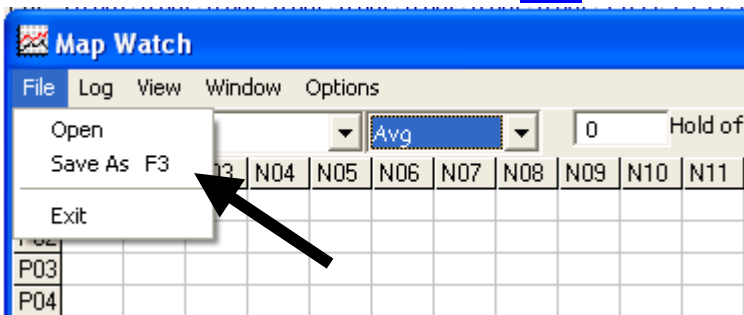
- To access the Open log window
  - o To open the drop down File menu, Left Click "File", once

## 1-2-4-1-1 Open ^



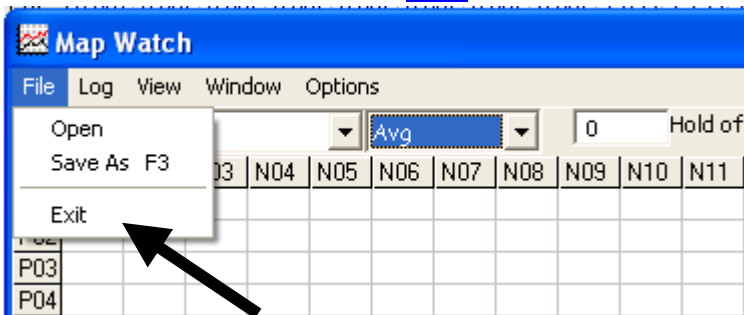
- o Open a saved log file for analysis
  - To Open a saved log file
    - o To Open a saved log file, Left Click "Open", once

## 1-2-4-1-2 Save As ^



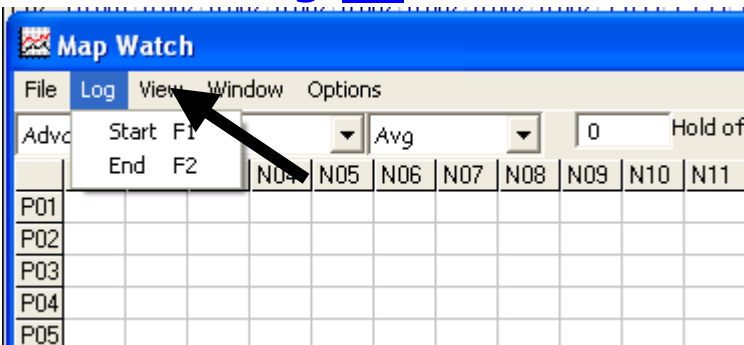
- o Save Map watch

## 1-2-4-1-3 Exit ^



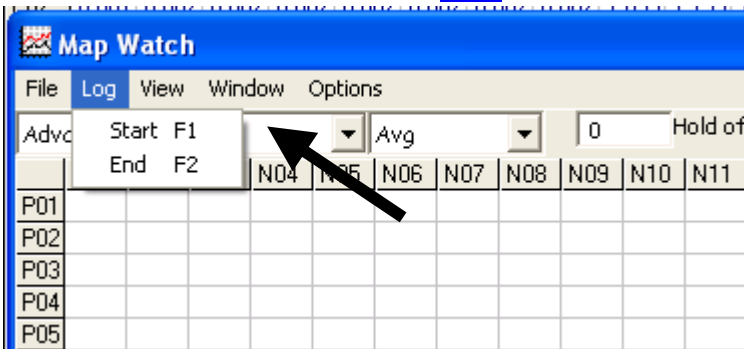
- o Close map watch

## 1-2-4-2 Log ^



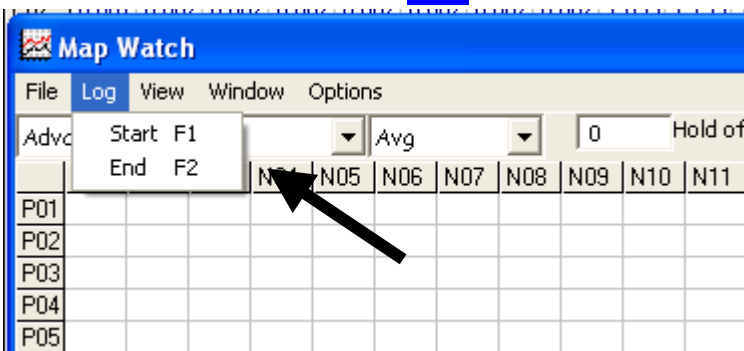
- o Drop down log menu

### 1-2-4-2-1 Start ^



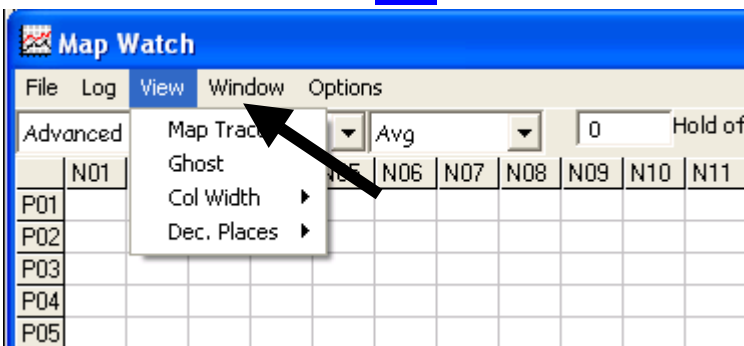
- o Remote Start logging
  - Logs as per settings on the monitor window {[1-2-1-6 Datalogit Zone](#)}

### 1-2-4-2-2 End ^



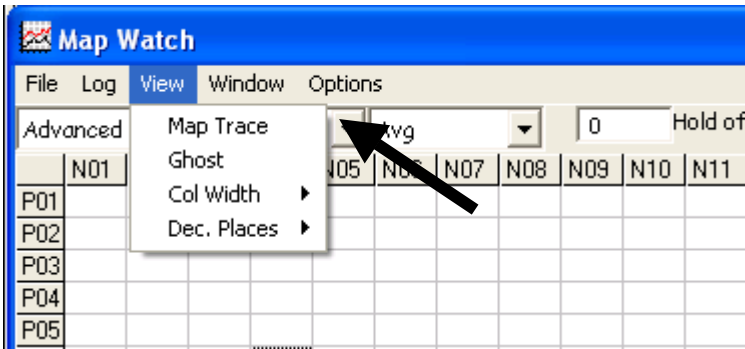
- o Remote End logging

### 1-2-4-3 View ^



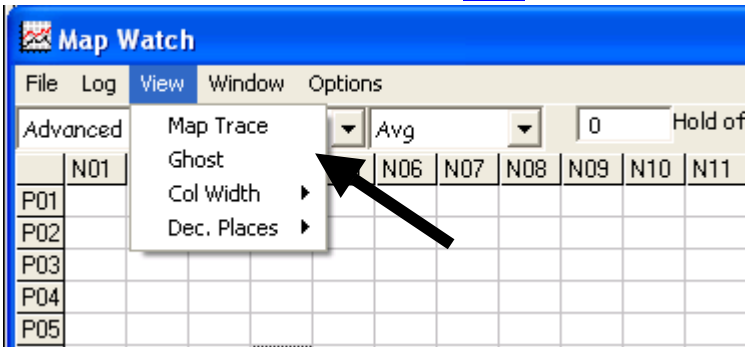
- o View drop down menu
  - To setup the presentation of data viewed in the Map Watch
    - o To access the view drop down menu, Left Click "View", once

### 1-2-4-3-1 Map Trace ^



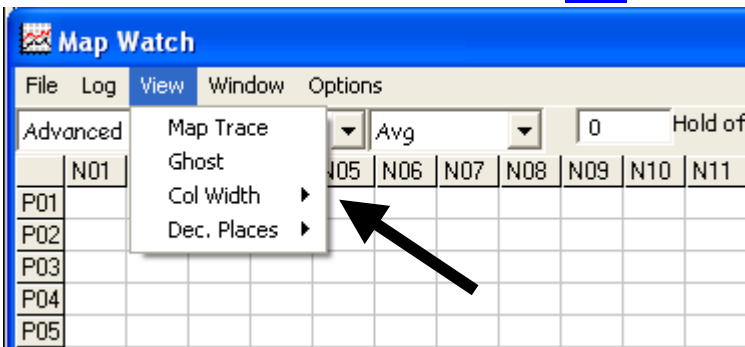
- o Map Trace for Map Watch
  - Highlights the current P and N cell in use in the map window
    - o Click 'Map Trace' in the View drop down menu
      - Shows you which cells are used for the current live engine condition so you know which ones to edit

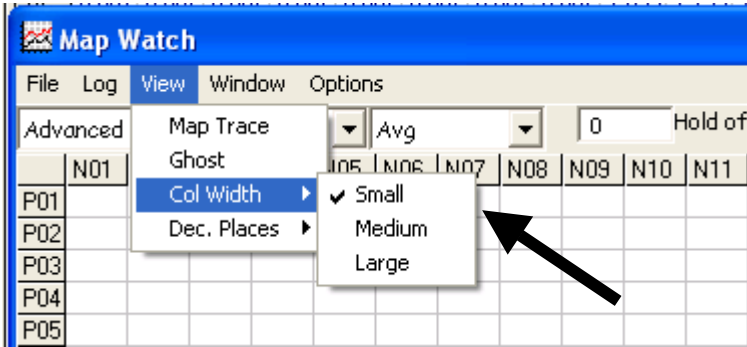
## 1-2-4-3-2 Ghost ^



- o Ghost Map Trace for Map Watch
  - Leaves a trail of the current P and N cell in use in the map window
    - o Click 'Ghost' in the View drop down menu
      - Shows you which cells are used for the current live engine condition so you know which ones to edit

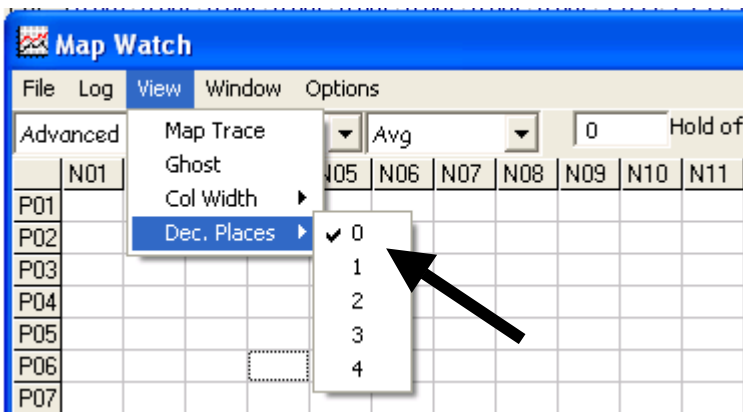
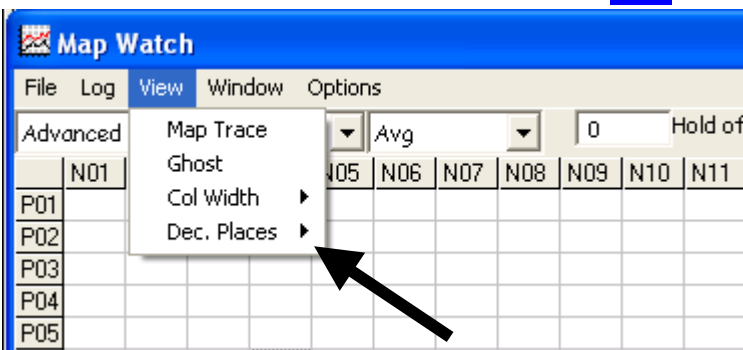
## 1-2-4-3-3 Col Width ^





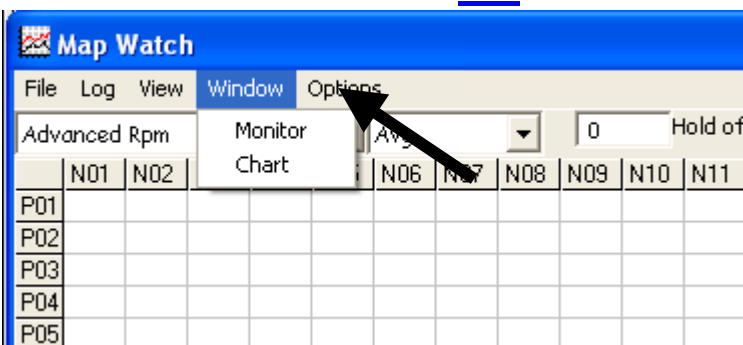
- o Column Width
  - Choose size of column width
    - o Click Col Width then choose Small, Medium or Large

## 1-2-4-3-4 Dec. Places ^



- o Decimal Points
  - Select Decimal points for data in map
    - o Click in text box and type in desired number of decimal points.

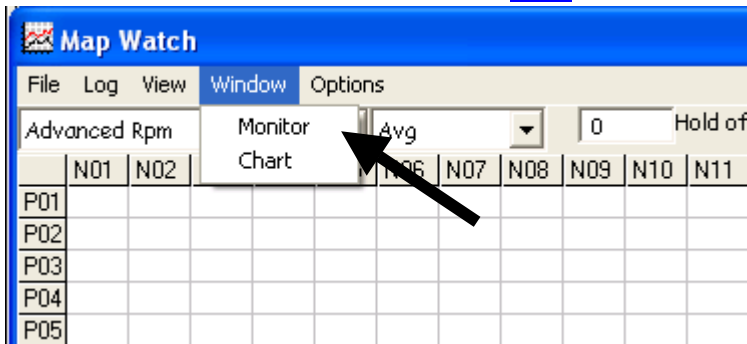
## 1-2-4-4 Window ^



- o Window drop down

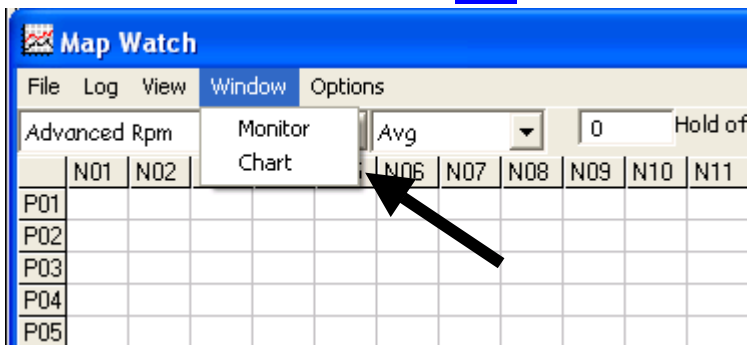
- Drop down Monitor and chart opener

### 1-2-4-4-1 Monitor [^](#)



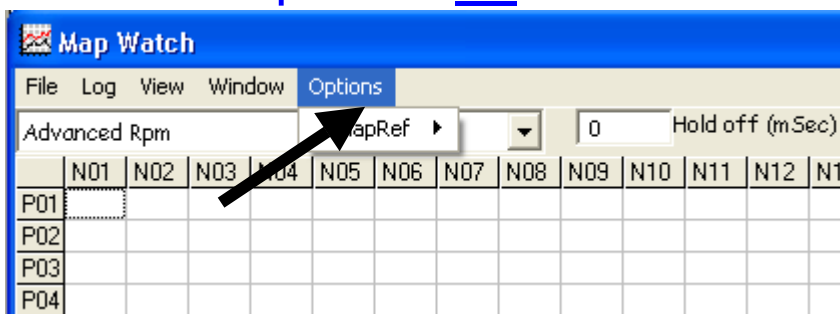
- o Open Monitor window
  - o Click Monitor in the Window drop down

### 1-2-4-4-2 Chart [^](#)



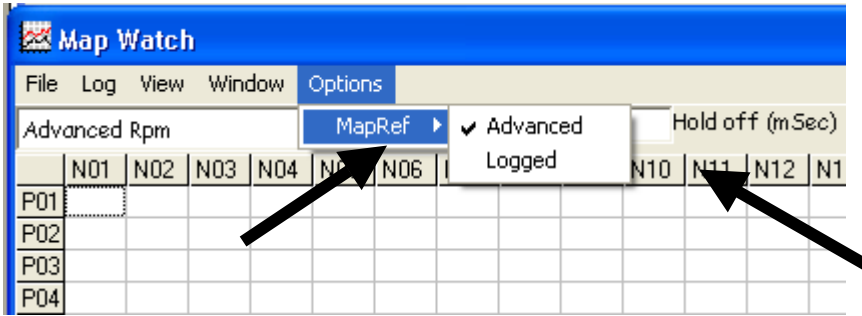
- o Open Chart window
  - o Click Chart in the Window drop down

### 1-2-4-5 Options [^](#)



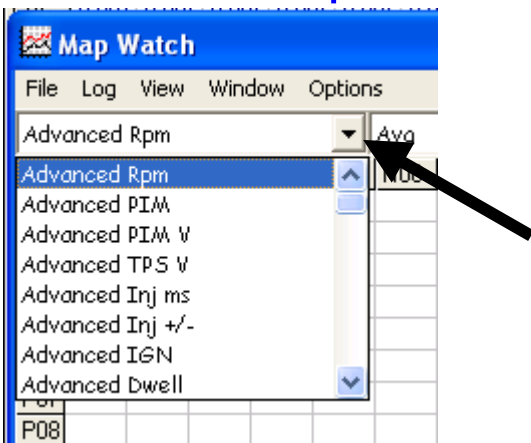
- o Drop down Map Reference selection window

### 1-2-4-5-1 MapRef [^](#)

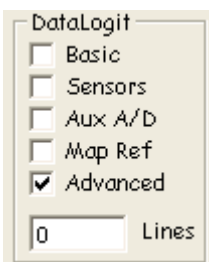


- o Map Reference selection window
  - Choose which set of map reference values you want to use
    - o Click Advanced or Logged

## 1-2-4-6 Drop down Channel selector ^

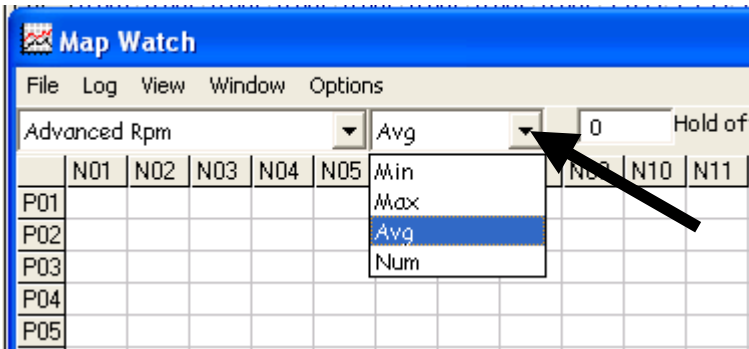


- o Drop down channel selector
  - Drop down selection to select the channel of log data to be analyzed
    - o Watching while logging. Left click on drop down box and choose the channel you wish to view
    - o Watching recorded logged data. Left click on drop down box and choose the channel you wish to view. Wait for your computer to calculate the values and populate the watch map
      - No data in the selected channel? The map watch will only display channels that are chosen to be logged in the monitor window



- E.g. If you didn't check "Basic" from {1-2-1-6 Datalogit Zone} on the monitor window when you created the log file then "Basic" channels weren't logged, so the "Basic" channels won't be able to be analysed with Map Watch

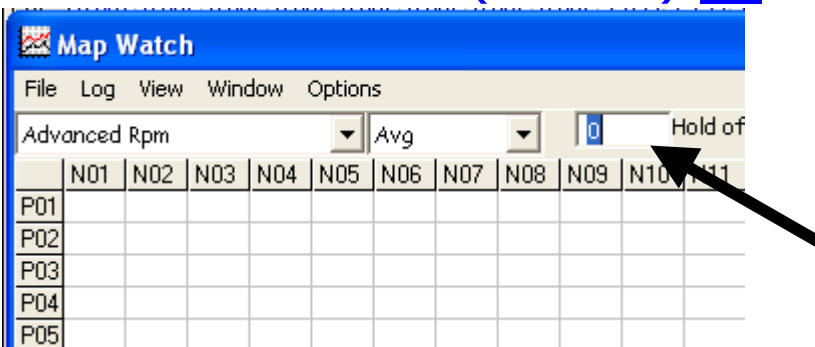
## 1-2-4-7 Drop down Filter ^



o Drop down filter selector

- Drop down selector to select the method of analyzing log data
  - o Choose max, min, average, number
    - The longer you drive, the bigger the log file therefore you get more samples of data for each position on the map.
    - Choose Max. Wait while your computer searches the log file to find the maximum value for each position in the map. The values displayed in the map are peak values for each N & P position.
    - Choose Min. Wait while your computer searches the log file to find the minimum value for each position in the map.
    - Choose Average. Wait while your computer searches the log file and calculates the average value for each position in the map.
    - Choose Number. Wait while your computer searches the log file and counts the number of samples for each position in the map. The values displayed in the map are total number of samples values for each N & P position.
    - Left click on arrow
    - Left click on the desired method. Wait for your computer to calculate the values in the map

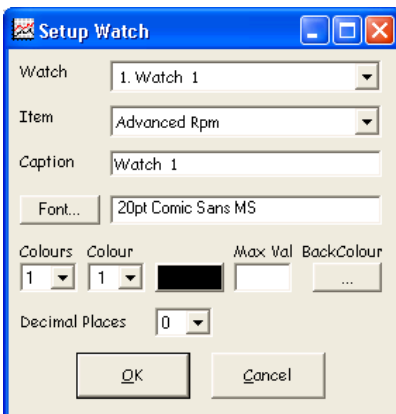
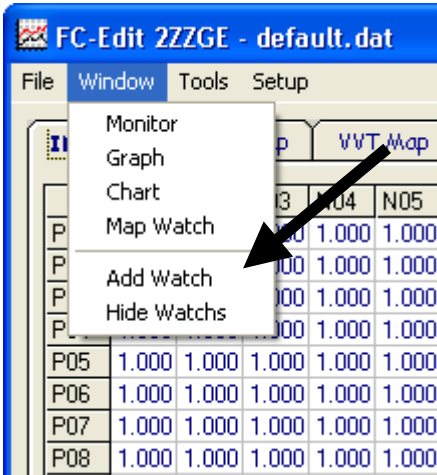
## 1-2-4-8 Hold Off (m Sec) ^



o Hold Off

- Sets the minimum time the active cell remains constant before the data is used in the map watch
  - o Click in the box then type in the desired hold off time in milliseconds

## 1-2-5 Add Watch ^



Click for Screen Capture {[Setup Watch](#)}

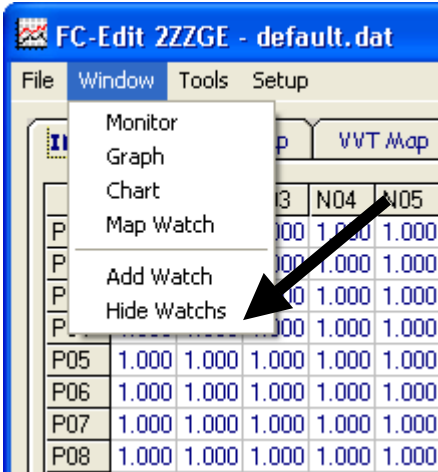
#### o Add Watch

- A pop up "Watch" which allows you to monitor a channel while you are logging
  - You can have up to 10 Watches
  - o Choose "Add Watch" in the Window menu
  - o A "Setup Watch" window will appear
  - o Choose the Item (Channel) from the drop down window.
    - You can choose any channel that can be logged in the Monitor window
    - The caption will display the channel you have chosen. You can edit the channel name if you desire
    - Choose a font and font size
    - You can create a "red line" by assigning different text colours to different values

#### o Coloured "red line"

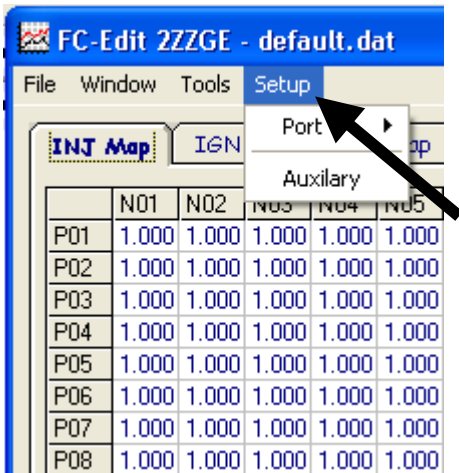
- o Example; RPM, text black until 6000rpm then red until 8000rpm then blue
- o Click "3" colours in the drop down "colours" box
- o Select colour 1 in the drop down colour box, click the coloured box and select black, type 6000 in the "Max Val" box
- o Select colour 2 in the drop down colour box, click the coloured box and select red, type 8000 in the "Max Val" box
- o Select colour 3 in the drop down colour box, click the coloured box and select blue
  - You can drag the box and position it on your screen or drag it bigger or smaller
  - Once you have made a Watch if you want to alter it you can by double left clicking it to go back to the "Setup Watch" window

## 1-2-6 Hide Watch ^



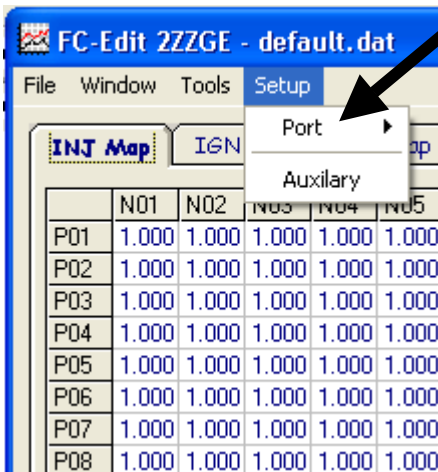
- o Hide watches
  - Hide watches from view

## 1-3 Setup ^



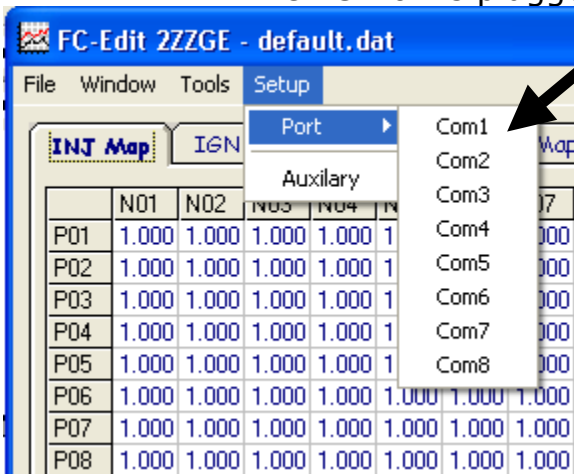
- o Drop down Setup menu (Alt w)
  - To access the following windows; Port and Auxiliary
    - o To open the drop down Setup menu, Left Click "Setup", once

## 1-3-1 Com selection ^



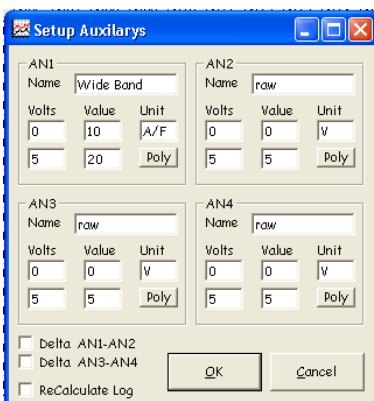
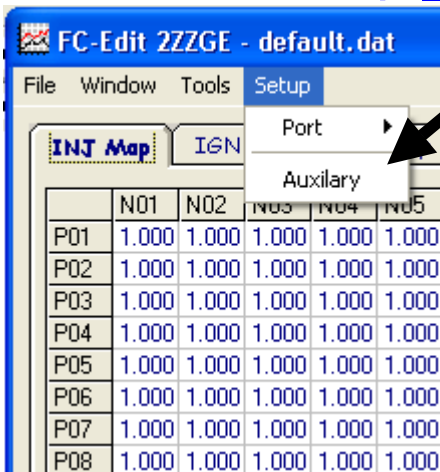
- o Com Port selection (Alt s)

- The FC-Box is plugged into your computer via a "Com port"



- Allows you to choose between Communication Ports 1, 2, 3, 4, 5, 6, 7 or 8 depending on which one you have plugged the FC-Box into
  - To open the drop down Setup menu, Left Click "Setup", once
  - Click "Port" choose Com1 or Com2 etc...

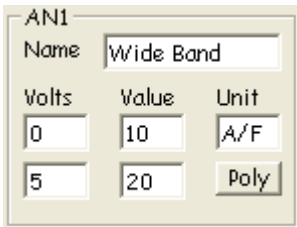
## 1-3-2 Auxiliary



Click for Screen Capture {[Setup Auxiliary](#)}

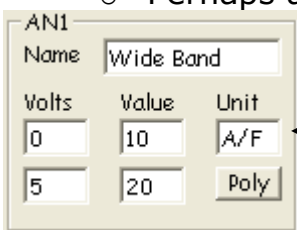
**⚠ AN inputs must be between 0~5 volts**

- Set up Auxiliaries
  - There are 4 Auxiliary channels and each has it's own calibration depending on what you connect to it.
    - AN1, AN2, AN3 and AN4



AN1

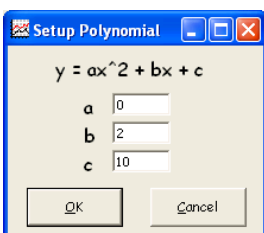
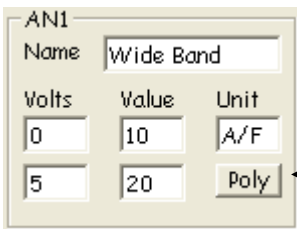
- If the output of the item you are logging is linear then you only need to enter values for two voltages to define the slope.
- More complex outputs, where the output can be defined with a curve, require a formula (a polynomial) Click the Poly button on the AN window and enter the values for a, b and c. {[1-3-2-1 Polynomial](#)}
  - There is a separate scale factor box for each AN channel
- For example, if you want to connect a particular Wideband o2 sensor controller which has a linear output. You need to define two voltages and their relative A/F values.
- Perhaps at 0 volts the A/F is 10 and at 5 volts the A/F is 20.



Name the output units, in this case A/F.

- Name the item so you can find it in your log
  - In this case a voltage of 2.5V will display an A/F value of 15 (:1).
    - You need to find the correct scale factor for the sensor you are using.

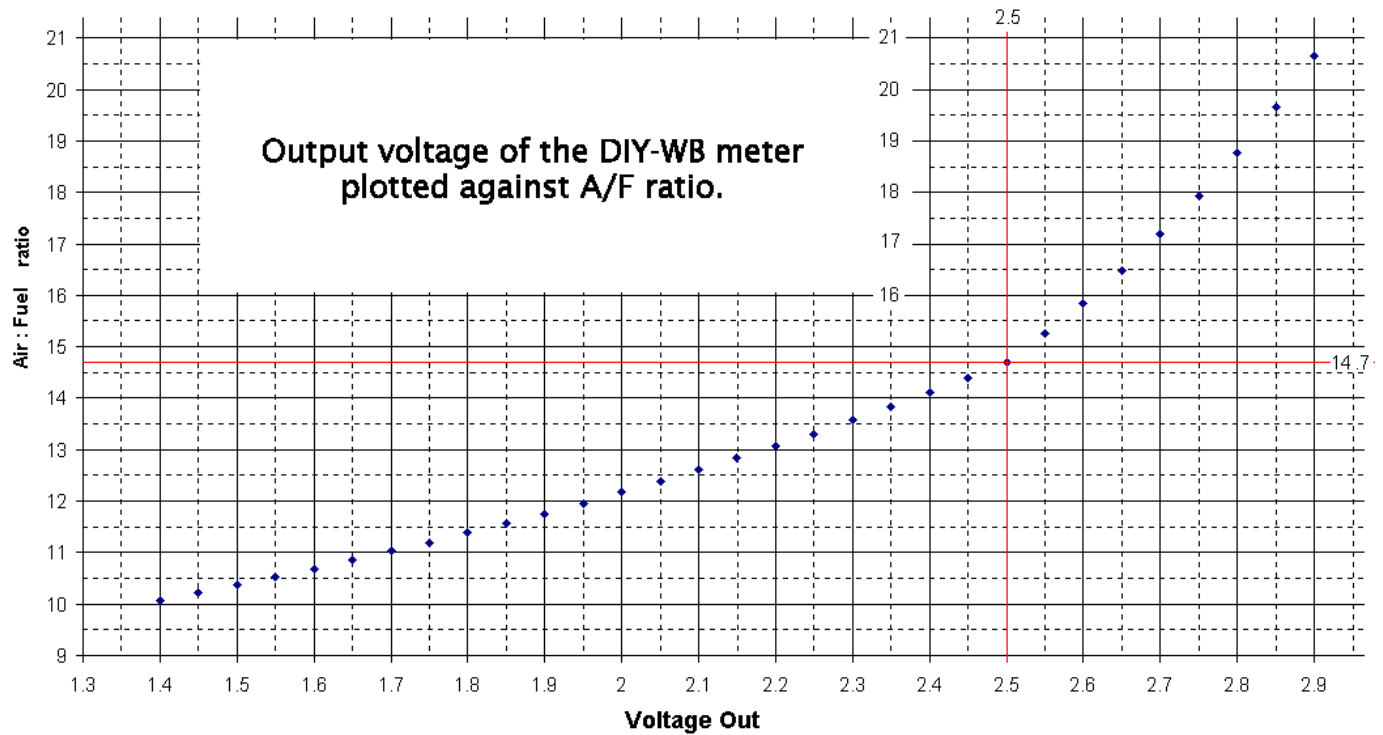
## 1-3-2-1 Polynomial (Setup) ^



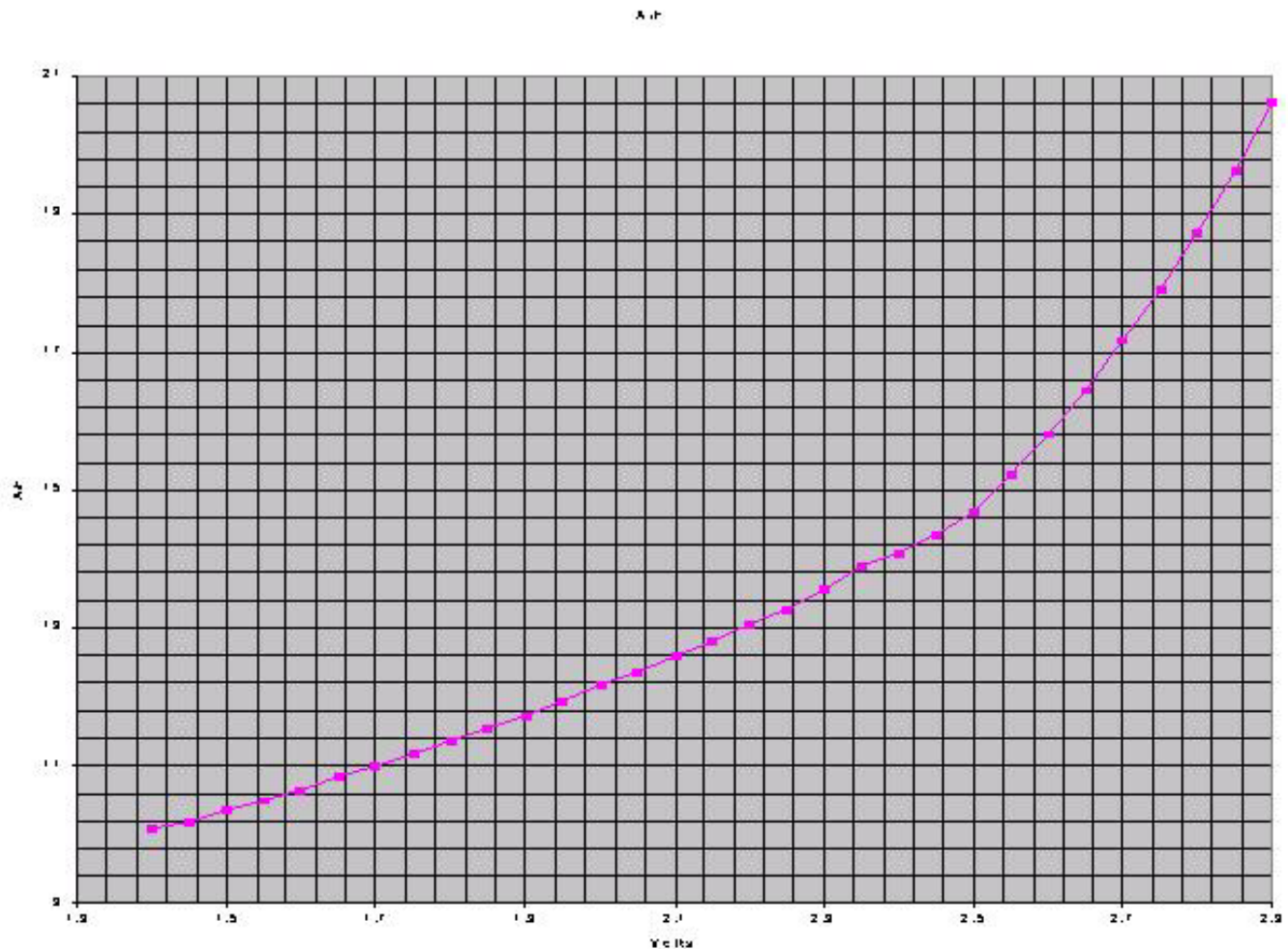
Click for Screen Capture {[Setup Polynomial](#)}

**⚠ AN inputs must be between 0~5 volts**

- Polynomial Window
  - Pop up window where you can input the values of a, b and c to define a curve to calibrate an AN input to be logged
    - More complex inputs, ones that can be defined by a curve, require a formula (a polynomial)
  - Click the Poly button on the AN window and enter the values for a, b and c.
    - For example. DIY Wideband set up. The graph of A/F vs. Output voltage is not a straight line.

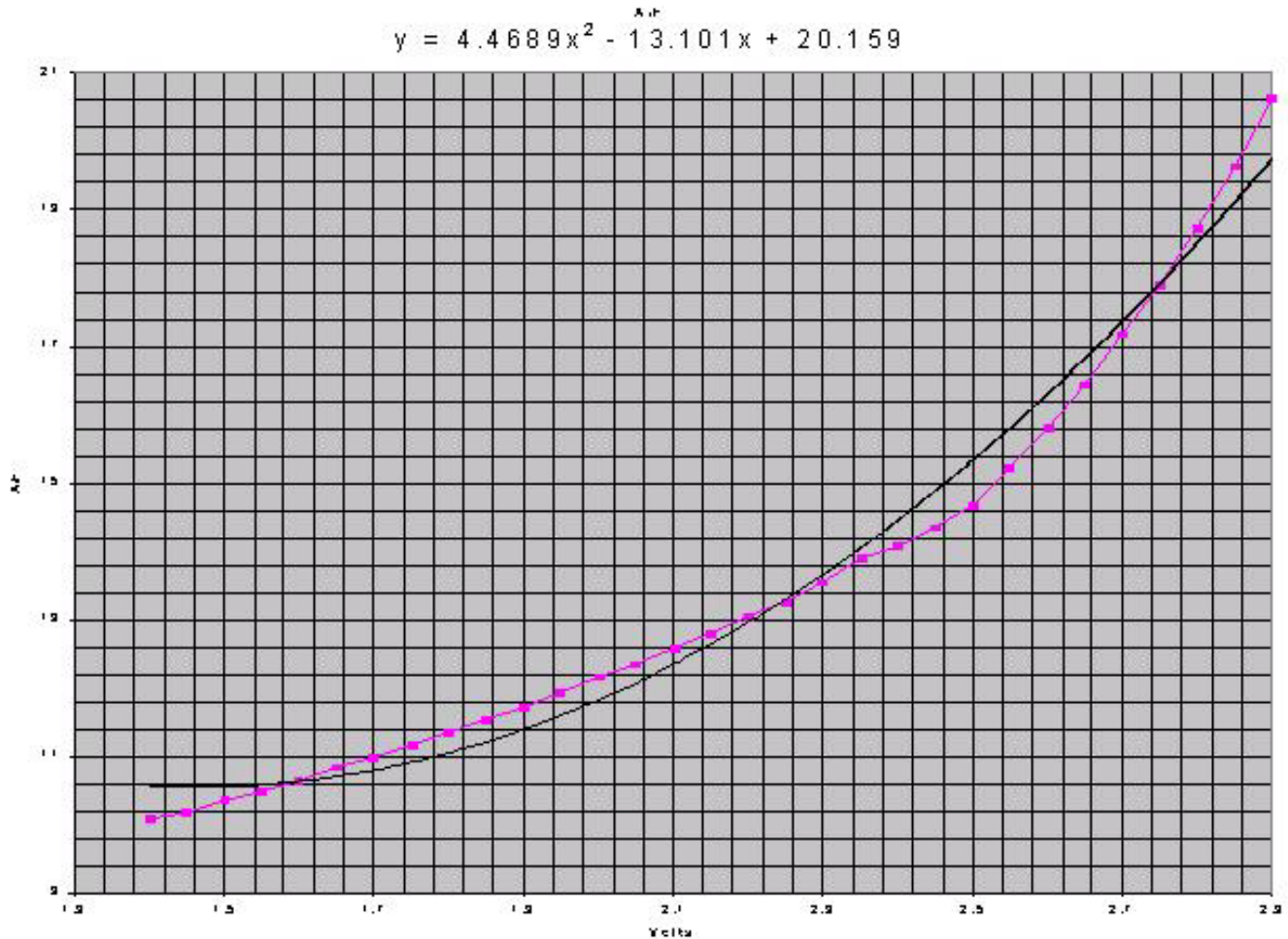


- The easiest way to create the polynomial is to plot the values from the graph in to excel then use the "trend line" function. The "trend line" function will create a "best fit" curve by using a polynomial formula.

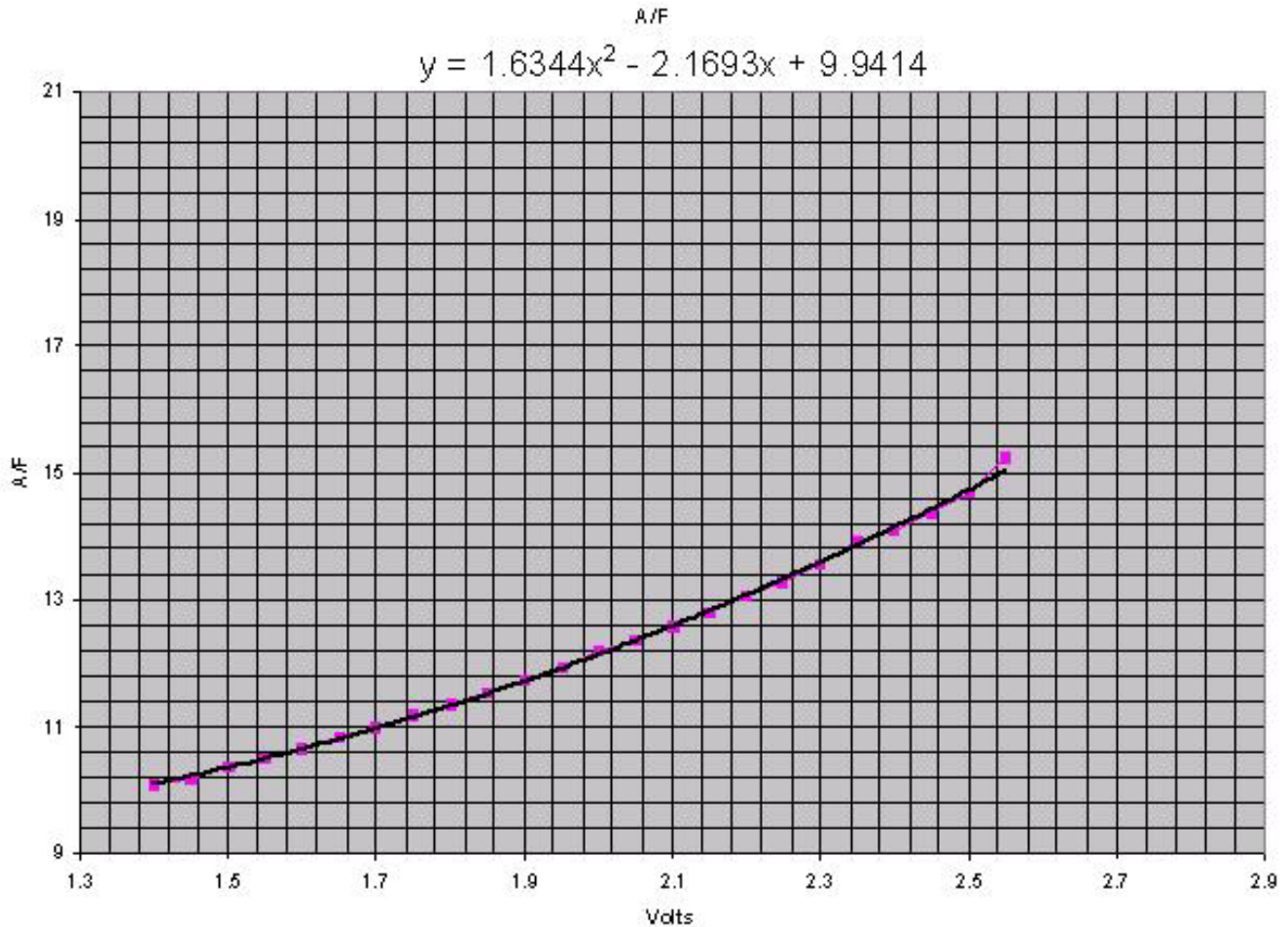


- Above is a picture of an xy graph on the values from the DIY A/F vs. Voltage graph.

- Unfortunately the curve of this graph doesn't allow for a very nice polynomial.

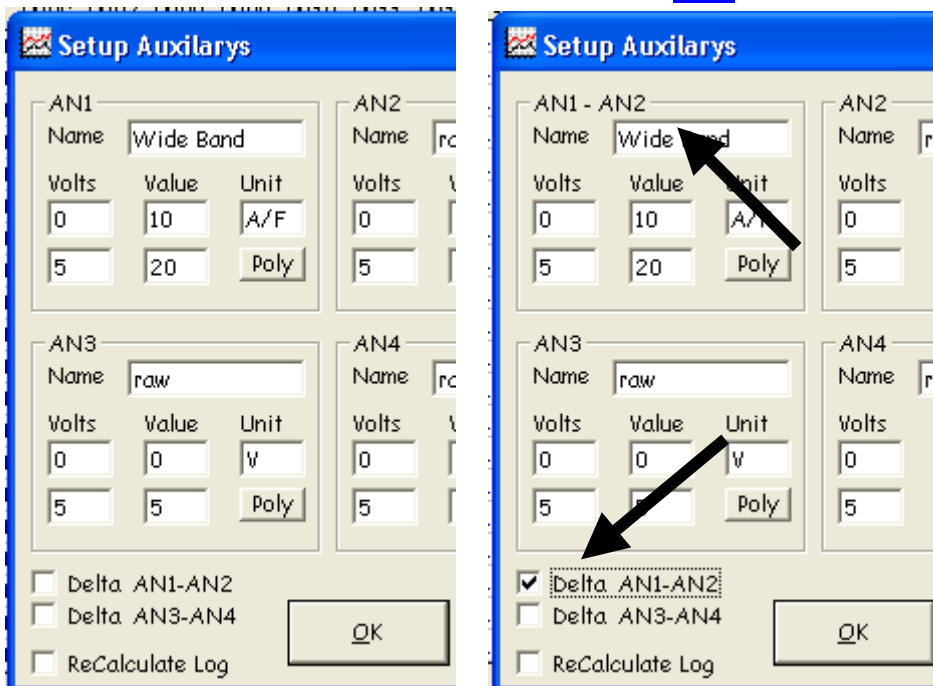


- Above is a picture of the same values from the DIY A/F vs. Voltage and the resulting polynomial. The values for a, b and c are unusable because the curve they describe is not close enough to the actual curve of the plotted values.
- Luckily we are really only interested in the values that represent the A/F ratio between 10:1 ~15:1. If we limit the graph to that range and create the polynomial we get the following graph;

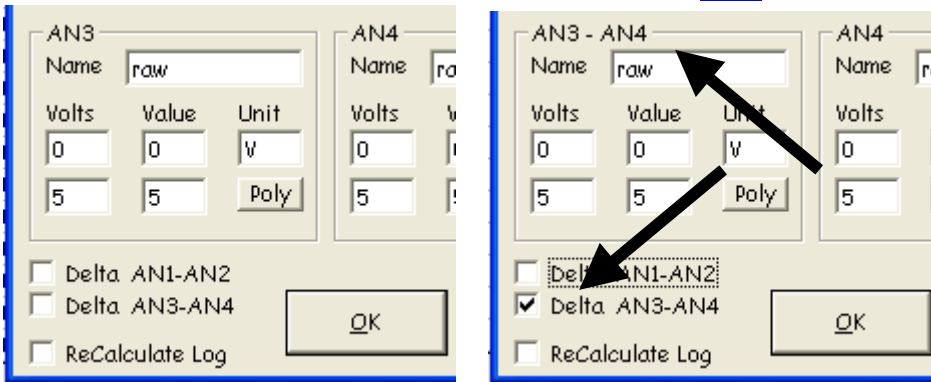


- This graph gave us the values we use for our DIY wideband.
- $A=1.6344$   $b=2.1693$  and  $C= 9.9414$ 
  - You can follow the same procedure to create a polynomial for other sensors.

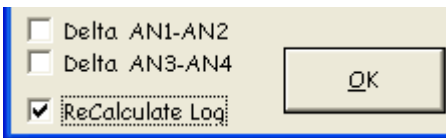
## 1-3-2-2 Delta AN1- AN2 ^



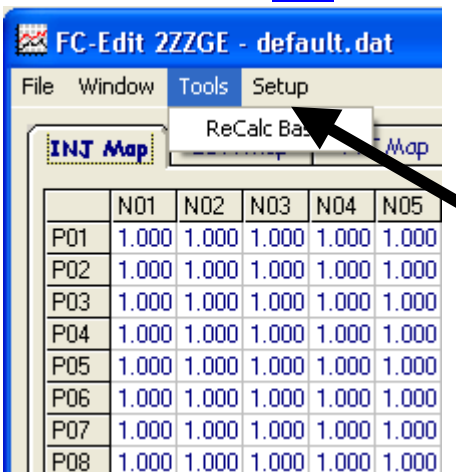
## 1-3-2-3 Delta AN3 – AN4 ^



## 1-3-2-4 ReCalculate Log ^

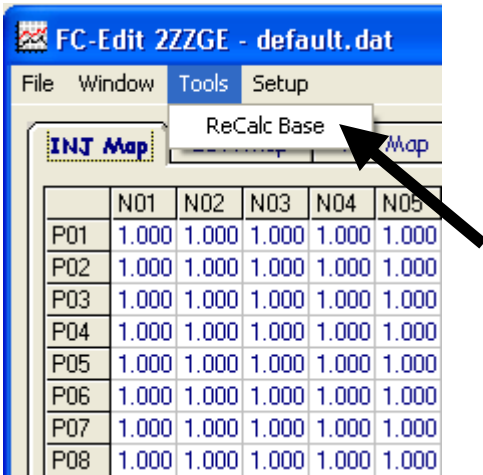


## 1-4 Tools ^



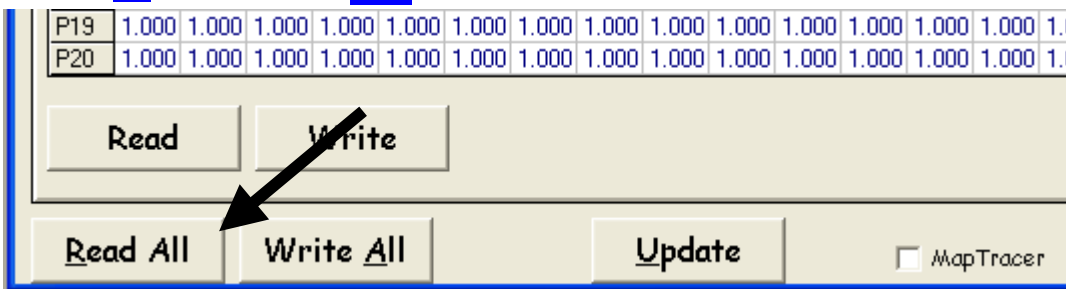
- o Drop down Tools menu (Alt w)
  - To access the ReCalc Base window
    - o To open the drop down Setup menu, Left Click "Setup", once

## 1-4-1 ReCalc Base ^



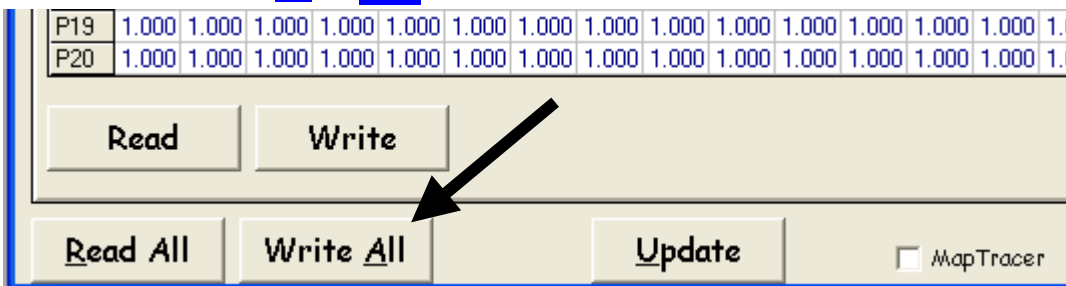
- o ReCalc Base
  - Resets all values in the INJ (correction) map to 1.000 and recalculates the base fuel map accordingly
    - o To open ReCalc, Left Click "ReCalc", once in the Tools drop down menu

## 1-5 Read All <sup>^</sup>



- o Read All (Alt r)
  - Copy ALL SETTINGS AND MAPS from a Power FC to FC-Edit
    - Read ALL SETTINGS AND MAPS held in the Power FC memory and copy ALL to the appropriate windows in FC-Edit so they can be saved and edited
  - o Click the "Read All" Button on the Bottom of FC-Edit
    - ⚠ There is no auto save so "Read All" will delete the current settings in FC-Edit
    - ⚠ Save files or you will loose the data!

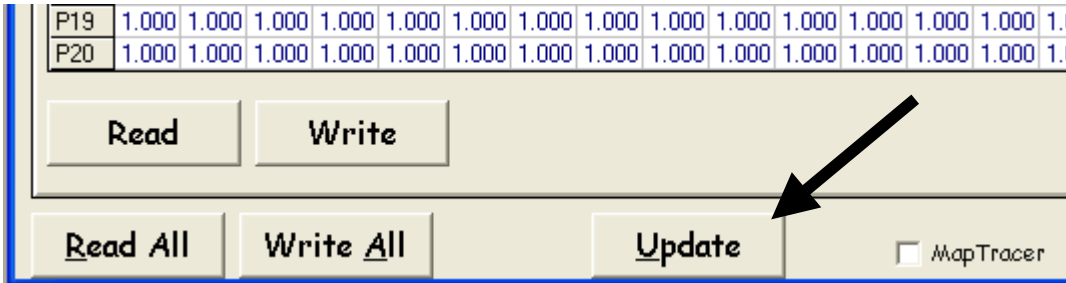
## 1-6 Write All <sup>^</sup>



- o Write All (Alt a)
  - Transfer ALL SETTINGS AND MAPS from FC-Edit to a Power FC
    - Copy ALL SETTINGS AND MAPS held in FC-Edit and write ALL to the Power FC memory
  - o Click the "Write All" Button on the Bottom of FC-Edit

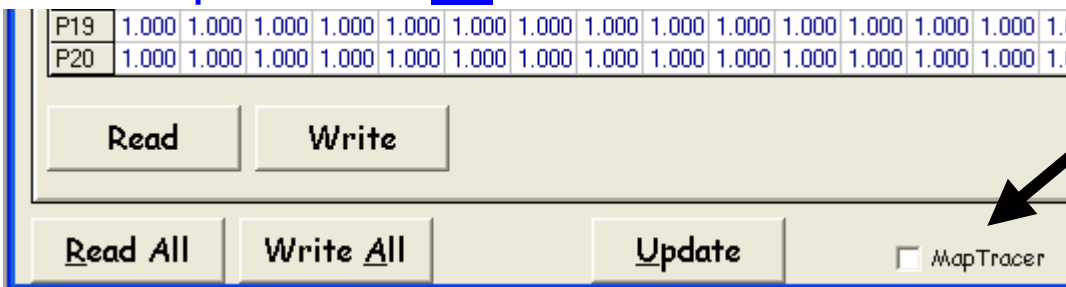
- ✖ We suggest you "Read all" the settings and maps and save the file before you start editing
- ✖ Save files or you will lose the data!
- ✖ Before you "Write All", We suggest you Switch Off the engine and turn the ignition to "on"

## 1-7 Update [^](#)



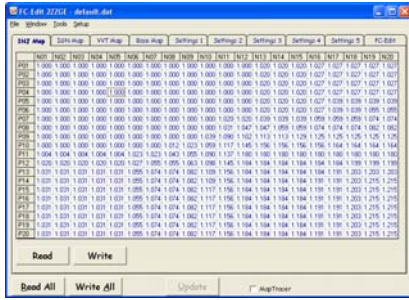
- o UpDate (Alt u)
  - Transfer altered SETTINGS and INDIVIDUAL CELLS from FC-Edit to a Power FC
    - Copy SETTINGS and INDIVIDUAL CELLS from Maps that have changed recently and in FC-Edit and write them to the Power FC memory
  - o Click the "Update" Button on the Bottom of FC-Edit
    - ✖ We suggest you "Read all" the settings and maps and save the file before you start editing
    - ✖ Save files or you will lose the data!
    - ✖ Before you "Update", We suggest you Switch Off the engine and turn the ignition to "on"

## 1-8 Map Tracer [^](#)



- o Map Trace
  - Highlight current P and N cell in use in the map windows
    - Shows you which cells are used for the current live engine condition so you know which ones to edit
  - o Check the "Map Tracer" check box at the Bottom of FC-Edit

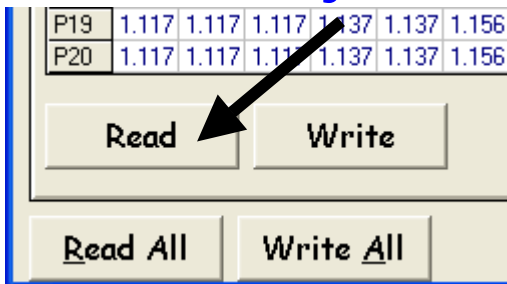
## 2- Fuel Correction Map (Inj Map)



Click for Screen Capture {[INJ Map](#)}

- o The Base fuel maps
  - The Base fuel maps represent a mixture of 14.57:1 for a stock engine. The Fuel Correction Map is used to achieve a more suitable mixture
- o The Values in the Fuel Correction Map theoretically equal 14.57 / desired mixture
  - i.e. If you want a mixture of 12:1 then the correction value would be  $14.57 / 12 = 1.214$ .
  - This is the theory but you really need to confirm the mixture with a wideband O2 sensor
- o Altering values in the Fuel Correction Map
  - You can enter a new value directly into a cell (or a range of cells) in the map. Left click on the desired cell (left click drag, release, to select a range of cells) then type in the new value and hit "enter".
  - You can increase or decrease the value of one cell (or a range of cells) by left clicking on a cell (left click drag, release, to select a range of cells),
    - "+" or "-" The value will increase or decrease by 0.0039.
    - "Ctrl +" or "Ctrl -" and the value will increase or decrease by 0.039
  - You can copy (Alt c) or paste (Alt v) values to and from or around the map
    - Tuning required for a modified engine may exceed the range of the Fuel Correction Map. You might need to adjust the values in the Base Fuel Maps
    - P01~P20 {[N-3](#) Pressure Value} in the Fuel and Ign Maps
    - N01~N20; RPM. See {[C-1](#) Map Reference}
      - Scales for P and N can be adjusted, see section {[C-1](#) Map Reference} for more information

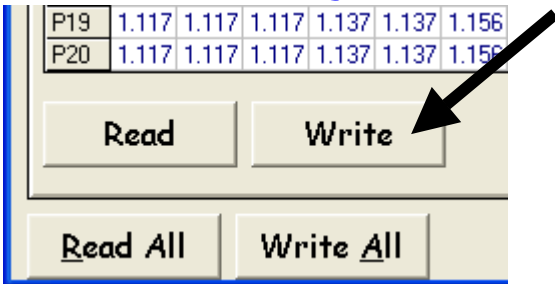
### 2-1 Read Injection Map



- o Copy the Fuel Correction Map from a Power FC to FC-Edit
  - Read the Fuel Correction Map held in the Power FC memory and copy it to the "Injector Map" window in FC-Edit so it can be saved and edited

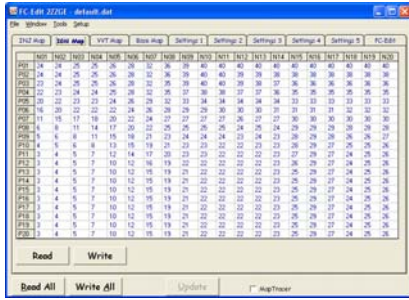
- Click the "Injector Map" Tab to bring the Injector Map window to the front
- Click the "Read" Button on the Injector Map window

## 2-2 Write Injection Map ^



- Transfer the Fuel Correction Map to a Power FC from FC-Edit
  - Copy the Fuel Correction Map from the "Injector Map" window in FC-Edit and write it in the Power FC memory
    - Click the "Injector Map" Tab to bring the Fuel Correction Map window to the front
    - Click the "Write" Button on the Fuel Correction Map window

### 3- Ignition Map



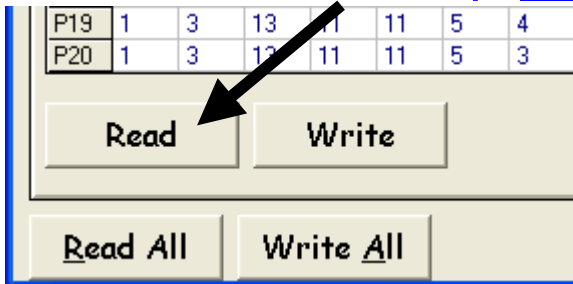
Click for Screen Capture [{IGN Map}](#)

o Ignition Map

➤ Altering values in the Ignition Map

- o You can enter a new value directly into a cell (or a range of cells) in the map. Left click on the desired cell (left click drag, release, to select a range of cells) then type in the new value and hit "enter".
- o You can increase or decrease the value of one cell (or a range of cells) by left clicking on a cell (left click drag, release, to select a range of cells)
  - "+" or "-" The value will increase or decrease by 1 deg
  - "Ctrl +" or "Ctrl -" The value will increase or decrease by 10 degrees
  - You can copy (Alt c) or paste (Alt v) values to and from or around the map
    - P01~P20 [{N-3 Pressure Value}](#) in the Fuel and Ign Maps
    - N01~N20; RPM. See [{C-1 Map Reference}](#)
    - Scales for P and N can be adjusted, see section [{C-1 Map Reference}](#) for more information

### 3-1 Read IGN Map



o Copy the Ignition Map from a Power FC to FC-Edit

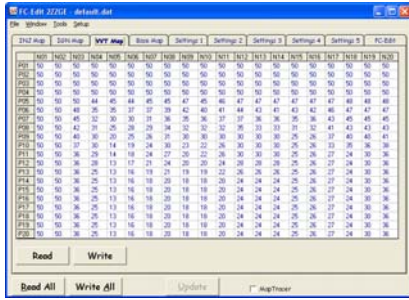
- Read the Ignition Map held in the Power FC memory and copy it to the "IGN Map" window in FC-Edit so it can be saved and edited
  - o Click the "IGN Map" Tab to bring the Ignition Map window to the front
  - o Click the "Read" Button on the IGN Map window

### 3-2 Write IGN Map



- o Transfer the IGN Map to a Power FC from FC-Edit
  - Copy the Ignition Map from the "IGN Map" window in FC-Edit and write it in the Power FC memory
    - o Click the "IGN Map" Tab to bring the Ignition Map window to the front
    - o Click the "Write" Button on the Ignition Map window

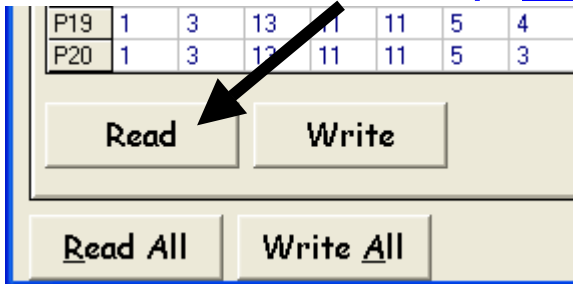
## 4- VVT Map



Click for Screen Capture {[VVT Map](#)}

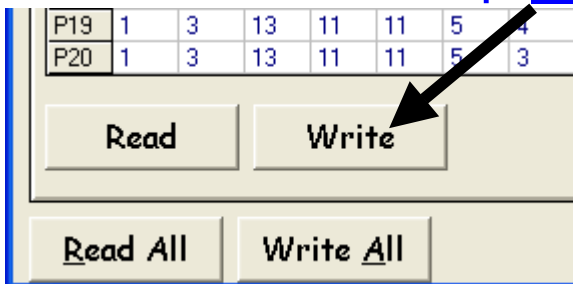
- o VVT Ignition Map
  - Altering values in the VVT Map
    - o You can enter a new value directly into a cell (or a range of cells) in the map. Left click on the desired cell (left click drag, release, to select a range of cells) then type in the new value and hit "enter".
    - o You can increase or decrease the value of one cell (or a range of cells) by left clicking on a cell (left click drag, release, to select a range of cells)
      - "+" or "-" The value will increase or decrease by 1 deg
      - "Ctrl +" or "Ctrl -" The value will increase or decrease by 10 degrees
      - You can copy (Alt c) or paste (Alt v) values to and from or around the map
        - P01~P20 {[N-3](#) Pressure Value} in the Fuel and Ign Maps
        - N01~N20; RPM. See {[C-1](#) Map Reference}
        - Scales for P and N can be adjusted, see section {[C-1](#) Map Reference} for more information

### 4-1 Read VVT Map



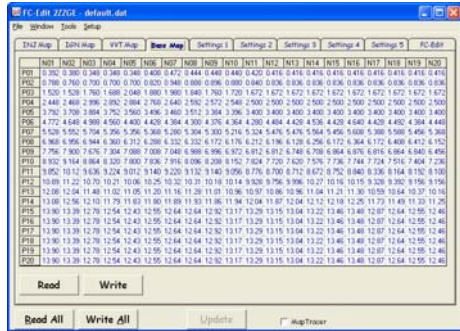
- o Copy the VVT Map from a Power FC to FC-Edit
  - Read the VVT Map held in the Power FC memory and copy it to the "VVT Map" window in FC-Edit so it can be saved and edited
    - o Click the "VVT Map" Tab to bring the VVT Map window to the front
    - o Click the "Read" Button on the VVT Map window

### 4-2 Write VVT Map



- o Transfer the VVT Map to a Power FC from FC-Edit
  - Copy the VVT Map from the "VVT Map" window in FC-Edit and write it in the Power FC memory
    - o Click the "VVT Map" Tab to bring the VVT Map window to the front
    - o Click the "Write" Button on the VVT Ignition Map window

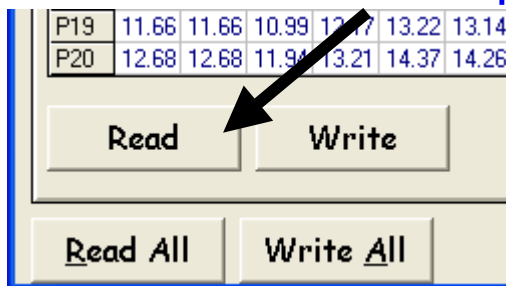
# 5- Base Fuel Map



Click for Screen Capture { [Base Map](#) }

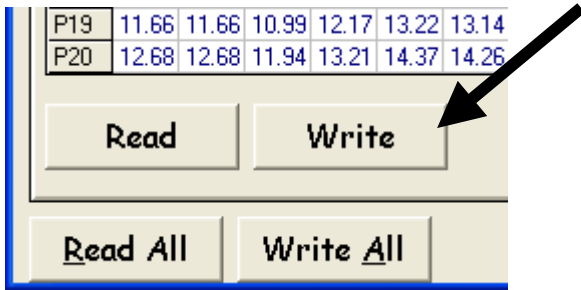
- o The Base fuel map represents the a mixture of 14.57:1 for a stock engine
  - Values are Injector pulse width in mil/sec
  - Tuning required for a modified engine may exceed the range of the { [2 Fuel Correction Map](#) } You might need to adjust the values in the Base Fuel Map
- Altering values in the Base Fuel Map
  - o You can enter a new value directly into a cell (or a range of cells) in the map. Left click on the desired cell (left click drag, release, to select a range of cells) then type in the new value and hit "enter".
  - o You can increase or decrease the value of one cell (or a range of cells) by left clicking on a cell (left click drag, release, to select a range of cells)
    - "+" or "-" The value will increase or decrease by 0.0039.
    - "Ctrl +" or "Ctrl -" and the value will increase or decrease by 0.039
    - You can copy (Alt c) or paste (Alt v) values to and from or around the map
  - P01~P20 { [N-3 Pressure Value](#) } in the Fuel and Ign Maps
  - N01~N20; RPM. See { [C-1 Map Reference](#) }
  - Scales for P and N can be adjusted, see section { [C-1 Map Reference](#) } for more information

## 5-1 Read Base Map



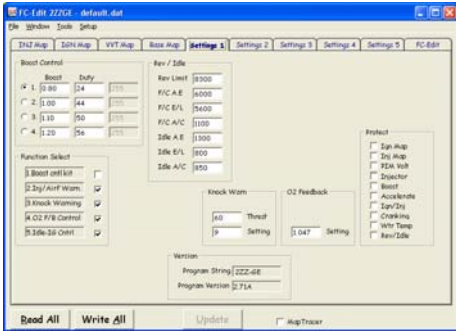
- o Copy the Base Fuel Map from a Power FC to FC-Edit
  - Read the Base Fuel Map, held in the Power FC memory and copy it to the "Base Map" window in FC-Edit so it can be saved and edited
    - o Click the "Base Map" Tab to bring the Base Fuel Map window to the front
    - o Click the "Read" Button on the "Base Map" window

## 5-2 Write Base Map



- o Transfer the Base Fuel Map, to a Power FC from FC-Edit
  - Copy the Base Fuel Map, from the "Base Map" window in FC-Edit and write it in the Power FC memory
    - o Click the "Base Map" Tab to bring the Base Fuel Map window to the front
    - o Click the "Write" Button on the Base Fuel Map, window

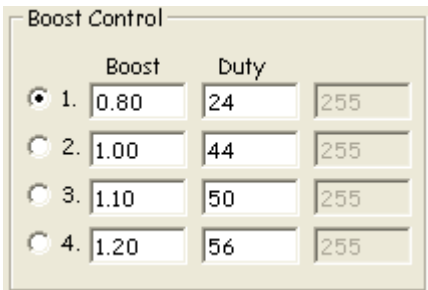
## A- Settings One



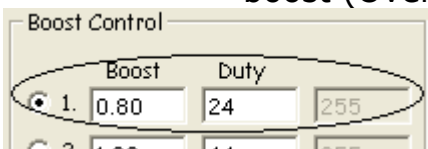
Click for Screen Capture {[Settings 1](#)}

- o Page one of the setting windows
  - The following settings are on “Settings 1” and can be edited and transferred between FC-Edit and the Power FC
    - Boost Control
    - Rev / Idle
    - Function Select
    - Knock Warning
    - O2 Feedback
    - Map / Settings Protection
    - Version
- o Click the “Settings 1” Tab to bring Page one of the setting windows to the front

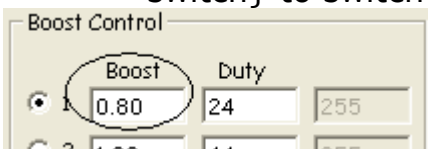
## A-1 Boost Control



- o Boost Control Setting
  - Boost settings; there are four setting groups 1, 2, 3 and 4
    - You could set one for low boost (cruising?) and another for a higher boost (Overtaking?)

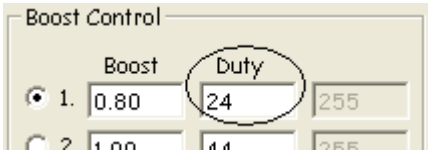


- Setting group 1
  - o Use mouse to select which boost setting group you want to use, Click the appropriate switch
  - o Or you can use the FD-Box Remote Boost Switch {[E-3-2](#) Remote boost switch} to switch between settings 1 and 3 “on the fly”



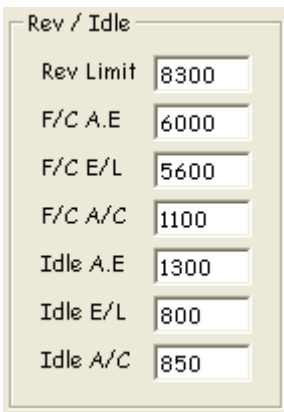
- o Boost

- Boost value is the target boost value the Boost Control System tries to reach and hold
  - Click in the box and type in the desired Value
    - ⚠ {W-2 BOOST CUT}, Fuel cut will occur if boost reaches 0.25 Bar above the Target Boost value
    - ⚠ {W-3 Exhaust Temp Light flashing!} Over 1.2 Bar the factory Map sensor will not be accurate. Exhaust Temp Light will flash when Boost is over 1.1 Bar {N-1 Factory Boost Sensor}



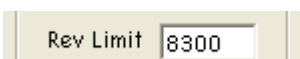
- Duty
  - Duty setting determines the Waste Gate Control Solenoid’s initial position (% opening) before the Boost Control system starts to control boost
    - Click in the box and type in the desired Value
      - If the number is too LOW, boost will lag and take more time to reach the desired Boost level. This will cause no damage but may make the car feel sluggish
      - If the number is too HIGH, boost may spike and over shoot the desired boost level before settling back down
      - ⚠ A Boost Spike out of the range of your INJ and IGN maps may cause engine damage. Be careful!

## A-2 Rev / Idle ^



- Adjust Engine speed for various conditions
  - For all Rev Idle Settings, Choose the parameter and type in the new value
    - Use mouse to select the desired text box and type in the new value

### A-2-1 Rev Limit ^



- Max Rev Limit.
  - Set the max revs the engine will rev to
    - Click in the text box and type in the new value
      - ⚠ Hard fuel cut so use it as a safety device
      - Power FC Pro version uses the same box but is ignition cut instead of fuel cut. Much safer

- If you use an auxiliary Rev Limiter, increase A-2-1 Rev limit to a higher value than you set the auxiliary Rev Limiter so Power FC Rev limiter doesn't function
- The commander will only let you set the rev limiter to a maximum of 9999 rpm... With Datalogit you can set the rev limit to values greater than 9999. If you set the limit to 12,000 the commander will show 2000 rpm because it can only display 4 numbers.

## A-2-2 F/C A.E

F/C A.E

- o Deceleration Fuel cut recovery when no Electric Load present and Air conditioning is off
  - Set the revs the injectors will turn back on when decelerating
    - o Click in the text box and type in the new value

## A-2-3 F/C E/L

F/C E/L

- o Deceleration Fuel cut recovery when Electric Load is present
  - Set the revs the injectors will turn back on when decelerating
    - o Click in the text box and type in the new value

## A-2-4 F/C A/C

F/C A/C

- o Deceleration Fuel cut recovery when Air conditioning is on
  - Set the revs the injectors will turn back on when decelerating
    - o Click in the text box and type in the new value

## A-2-5 Idle A.E

Idle A.E

- o Idle when no Electric Load present and Air conditioning is off
  - Set the RPMs the power FC will try to get the engine to idle at
    - o Click in the text box and type in the new value
      - ! Idle. The Power FC has a built in learning function for idle stabilization. When you first get your Power FC and plug it in you should make sure the air-con and other accessories are switched off, turn on the engine and let it sit for 10 minutes. The idle should stabilize (Assuming your car is not too heavily modified that it wont idle and you still have an O2 sensor and [A-4-4](#) O2 F/B Control is activated)

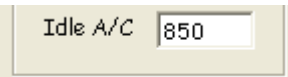
## A-2-6 Idle E/L

Idle E/L

- o Idle when Electric Load present

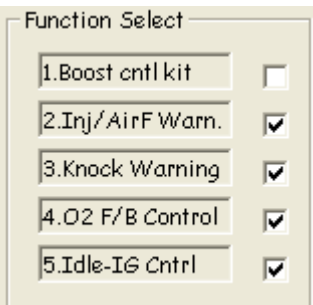
- Set the RPMs the power FC will try to get the engine to idle at
  - Click in the text box and type in the new value
    - ! Idle. The Power FC has a built in learning function for idle stabilization. When you first get your Power FC and plug it in you should make sure the air-con and other accessories are switched off, turn on the engine and let it sit for 10 minutes. The idle should stabilize (Assuming your car is not too heavily modified that it wont idle and you still have an O2 sensor and [A-4-4](#) O2 F/B Control is activated)

## A-2-7 Idle A/C [^](#)



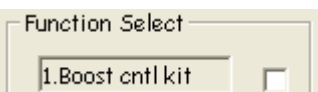
- Idle when Air Conditioning is on
  - Set the RPMs the power FC will try to get the engine to idle at
    - Click in the text box and type in the new value
      - ! Idle. The Power FC has a built in learning function for idle stabilization. When you first get your Power FC and plug it in you should make sure the air-con and other accessories are switched off, turn on the engine and let it sit for 10 minutes. The idle should stabilize (Assuming your car is not too heavily modified that it wont idle and you still have an O2 sensor and [A-4-4](#) O2 F/B Control is activated)

## A-3 Function Select [^](#)



- Function Selection
  - Switch on or off the following Functions;
    - Boost Control Kit
    - Injector / Airflow Warning
    - Knock Warning
    - O2 F/B Control
    - Idle-IG Control

### A-3-1 Boost Control Kit [^](#)



- Boost control Kit
  - Switch Boost control Kit Control {[A-1](#) Boost Control} on or off
    - Check box for Boost control Kit
    - Uncheck box for N/A

- Use mouse to Check or Uncheck the "Boost control Kit" check box
  - Use; {[A-1 Boost Control](#)} to edit actual Boost Control Settings
  - Apexi single turbo boost control kit {[N-4 Boost Control Kit for single turbo](#)}

## A-3-2 Injector / Air Flow Warn [^](#)

2.Inj/AirF Warn.

- Injector / Air Flow Warning
  - Switch Injector / Air Flow Warning {[W-4 Check Engine Light Flashing Slowly! Injector Duty / Map Warning](#)} on or off
    - Check box for Injector / Air Flow Warning.
    - Uncheck box if you DON'T want Injector / Air Flow Warning
      - Use mouse to Check or Uncheck the "Injector / Air Flow Warn" check box

## A-3-3 Knock Warn [^](#)

3.Knock Warning

- Knock Warning
  - Switch Knock Warning {[W-5 Check Engine Light Flashing Quickly! Knock Warning](#)} on or off
    - Check box for Knock Warning. Uncheck box if you DON'T want Knock Warning
      - Use mouse to Check or Uncheck the "Knock Warn" check box
        - Use; {[A-5 Knock Warning](#)} to edit actual Knock Warning Settings
        - {[N-2 Knock Value](#)}
        - {[W-5 Check Engine Light Flashing Quickly! Knock Warning](#)}

## A-3-4 O2 F/B Control [^](#)

4.O2 F/B Control

- O2 Feedback Control
  - Switch O2 Feedback Control on or off
    - Check box for O2 F/B Control.
    - Uncheck box if you DON'T want O2 F/B Control
      - Use mouse to Check or Uncheck the "O2 F/B Control" check box
        - Use; {[A-6 O2 Feedback](#)} to edit actual O2 Feedback Settings
        - Switch off if your O2 sensor is faulty or "missing"

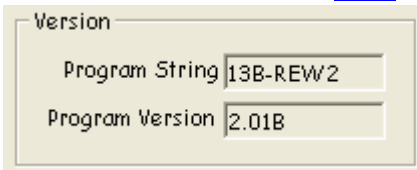
## A-3-5 Idle-IG Control [^](#)

5.Idle-IG Ctrl

- Idle Ignition Control
  - Switch Idle Ignition Control on or off
    - Check box for Idle-IG Control.
    - Uncheck box if you DON'T want Idle Ignition Control

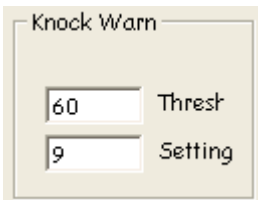
- Use mouse to Check or Uncheck the "Idle-IG Control" check box
  - Switch off if you want to check ignition timing with a timing light

## A-4 Version [^](#)



- o Version Display
  - When FC-Datalogit is connected to a Power FC this Displays the Power FC's model and software version
- o Program String
  - Displays which Model Engine the Power FC is designed to control
- o Program Version
  - Displays which software / program version is in the Power FC

## A-5 Knock Warning [^](#)



- o Adjust Knock Warning {[W-5](#) Check Engine Light Flashing Quickly! Knock Warning} Thresh hold and Setting
  - Knock Warning can be switched off, see; {[A-3-3](#) Knock Warn}

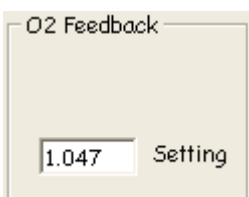


- Enter Value Knock Warning Thresh hold Value. Peak Knock Value to turn on Check Engine Light
  - o Use mouse to Enter desired Value for Knock Warning Thresh hold in "Thresh" Box.
    - {[N-2](#) Knock Value}



- Enter Setting Value. Flashing Interval time for Check Engine Light
  - o Use mouse to Enter desired Flashing Interval Time Value for Knock Warning in "Setting" Box

## A-6 O2 Feedback [^](#)



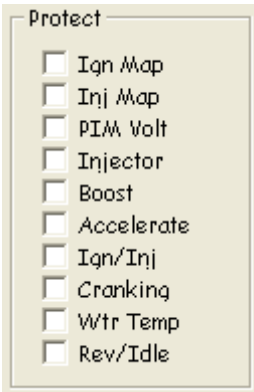
- o Adjust O2 Feedback Control Setting
  - Used to (self learn) fine tune mixture at idle for emission control and idle stabilization

- Is used for "Lean Cruise". Leans mixture if TPS value doesn't change for a while. Saves gas on long trips
  - O2 Feedback Control can be switched off, see; {[A-3-4](#) O2 F/B Control}



- Enter Setting Value
  - Use mouse to Enter desired O2 Feedback Control in "Setting" Box
    - Switch off if your O2 sensor is faulty or "missing"

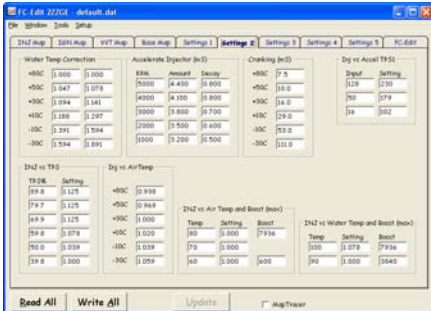
## A-7 Protect



### o Protect

- Protect or Un-Protect Maps and Settings
  - Check or Uncheck check boxes
  - Use mouse to Check the check box of the item you want to protect
  - Or Uncheck the items you want to edit
    - Stops unauthorized people from looking at or altering your settings with a commander
    - Won't stop unauthorized people from looking or adjusting if they also have Datalogit :)
    - Lets you un-protect Maps and Settings protected with Power Exel
    - The following items can be protected (or unprotected)
      - IGN Map; {[3](#)- Ignition Map}.
      - Inj Map; {[2](#)- Fuel Correction Map (Injector Map)}.
      - PIM Volts
      - Injector Settings
      - Boost Settings
      - Accelerate Settings
      - Ign and Inj; Tuning Adjust Settings
      - Cranking
      - Water Temp Settings
      - Rev / Idle Settings

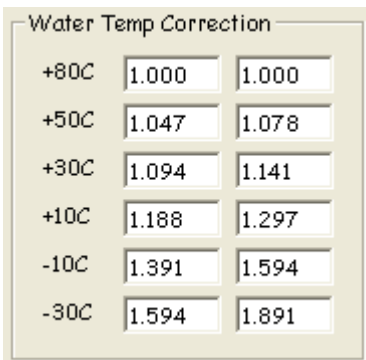
## B- Settings Two



Click for Screen Capture { [Settings 2](#) }

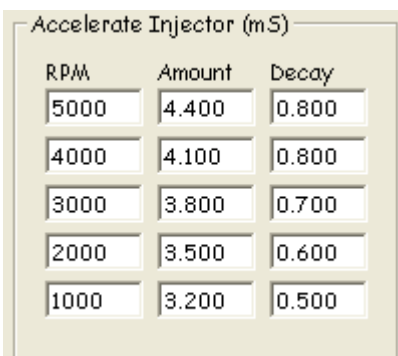
- o Page two of the setting windows
  - The following settings are on "Settings 2" and can be edited and transferred between FC-Edit and the Power FC
    - o Water Temp Correction
    - o Accelerate Injector Time
    - o Cranking Time
    - o Injection vs. Acceleration TPS1
    - o Injection vs. TPS
    - o Injection vs. Air Temp
    - o Injection vs. Air Temp and Boost
    - o Injection vs. Water Temp and Boost
  - o Click the "Settings 2" Tab to bring Page one of the setting windows to the front

### B-1 Water Temp Correction



- o Adjust Fuel mixture for varying engine operation temperature as engine comes up to normal operating temp
  - For each temperature range, choose the parameter and type in the new value
    - o Use mouse to select the desired text box and type in the new value

### B-2 Accelerate Injector Time



- o Fuel enrichment for sudden acceleration (Like an accelerator pump)
  - For each RPM range, choose the parameter and type in the new value
    - o Use mouse to select the desired text box and type in the new value

## B-3 Cranking Time [^](#)

Cranking (mS)	
+80C	7.5
+50C	10.0
+30C	16.0
+10C	29.0
-10C	53.0
-30C	111.0

- o Injector on time while cranking the engine (ms)
  - For each temperature range, choose the parameter and type in the new value
    - o Use mouse to select the desired text box and type in the new value

## B-4 Injection vs. Acceleration TPS1 [^](#)

Inj vs Accel TPS1	
Input	Setting
128	230
50	179
16	102

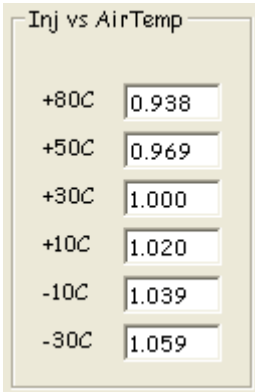
- o Injector enrichment
  - Injector enrichment vs. acceleration of the throttle
    - o Use mouse to select the desired text box and type in the new value

## B-5 Injection vs. TPS [^](#)

INJ vs TPS	
TPS%	Setting
89.8	1.125
79.7	1.125
69.9	1.125
59.8	1.078
50.0	1.039
39.8	1.000

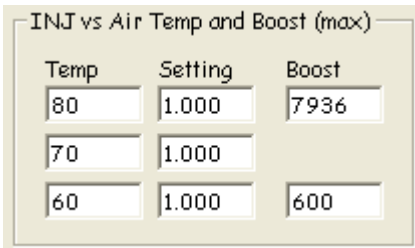
- o Fuel correction
  - Adjust Fuel correction vs. Throttle Position
    - o Use mouse to select the desired text box and type in the new value

## B-6 INJ vs. Air Temp [^](#)



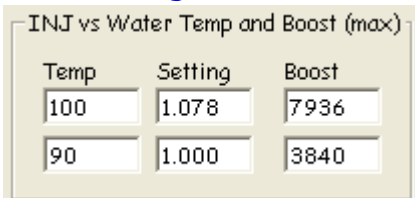
- o Injector enrichment vs. Air temp
  - Adjust Fuel mixture for varying Manifold air temperature as engine comes up to normal operating temp
    - o Use mouse to select the desired text box and type in the new value

## B-7 INJ vs. Air Temp & Load ^



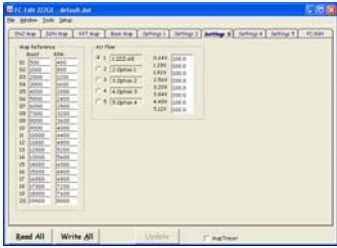
- o Injector enrichment vs. Air temp and load
  - Adjust Fuel mixture for varying Manifold air temperature and Boost
    - o Use mouse to select the desired text box and type in the new value

## B-8 Inj vs. Water Temp & Load ^



- o Injector enrichment vs. Water temp
  - Adjust Fuel mixture for varying engine operation temperature around normal operating temp
    - o Use mouse to select the desired text box and type in the new value

## C- Settings Three



Click for Screen Capture {[Settings 3](#)}

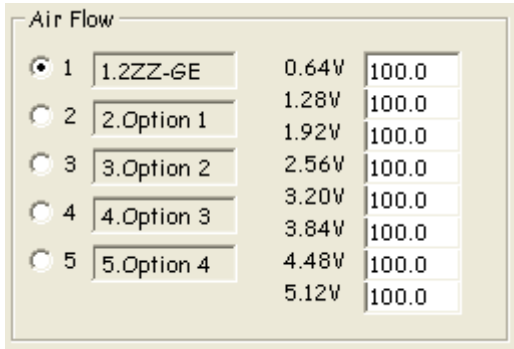
- o Page three of the setting windows
  - The following settings are on "Settings 3" and can be edited and transferred between FC-Edit and the Power FC
    - o Map Reference
    - o Air Flow
    - Click the "Settings 3" Tab to bring Page one of the setting windows to the front

## C-1 Map Reference

Map Reference		
	Boost	RPM
01	500	400
02	1000	800
03	2000	1200
04	3000	1600
05	4000	2000
06	5000	2400
07	6000	2800
08	7000	3200
09	8000	3600
10	9000	4000
11	10000	4400
12	11000	4800
13	12000	5200
14	13000	5600
15	14000	6000
16	15000	6400
17	16000	6800
18	17000	7200
19	18000	7600
20	19000	8000

- o Calibrate P and N
  - This Table allows you to recalibrate the scale of P and N for the main maps
    - o Enter desired values into the Map Reference Table
      - There is only one Map reverence Calibration table for all four maps; Fuel correction, Base fuel, Ign and VVT
      - P01~P20 {[N-3](#) Pressure Value}
      - N01~N20; Engine RPM

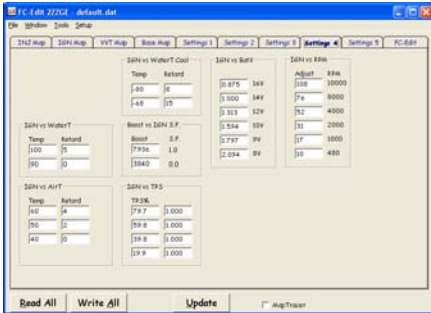
## C-2 Air Flow



o Air Flow Meter

- With some Power FC models the user can install a larger airflow meter to reduce restriction
  - All voltages set at 100.00 for the stock airflow meter
  - o If a different meter is installed type in new values to calibrate it

## D- Settings Four



Click for Screen Capture {[Settings 4](#)}

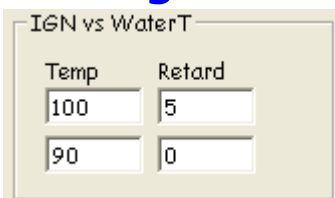
- o Page four of the setting windows
  - The following settings are on "Settings 4" and can be edited and transferred between FC-Edit and the Power FC
    - o Ignition vs. Water Temp (cool)
    - o Ignition vs. Water Temp
    - o Boost vs. IGN S.F.
    - o Ignition vs. Air Temp
    - o Ignition vs. TPS
    - o Ignition vs. Battery Voltage
    - o Ignition vs. RPM
  - o Click the "Settings 4" Tab to bring Page one of the setting windows to the front

### D-1 Ignition vs. Water Temp (cool)



- o Ignition vs. Water Temp (cool)
  - Ignition vs. Water temperature during warm up
    - o For the standard setting; ignition is retarded by an extra 15 degrees until the water temperatures reaches 60 degrees C, then reduces retard until no extra retard at 65 degrees C or over
    - o Use mouse to select the desired text box and type in the new value

### D-2 Ignition vs. Water Temp



- o Ignition vs. Water Temp
  - Ignition vs. Water temperature if the engine starts getting too hot
    - For the standard setting; at 90 degrees C or less ignition timing is not corrected. From 90 ~ 100 timing is additionally retarded lineally to a max of 5 degrees. All temperatures over 100 degrees are retarded 5 degrees

- Use mouse to select the desired text box and type in the new value

## D-3 Boost vs. IGN S.F. ^

Boost vs IGN S.F.	
Boost	S.F.
<input type="text" value="7936"/>	<input type="text" value="1.0"/>
<input type="text" value="3840"/>	<input type="text" value="0.0"/>

- Boost vs. IGN Scale factor
  - Scale factor for {[D-4](#) Ignition vs. Air Temp} and {[D-2](#) Ignition vs. Water Temp}
    - Use mouse to select the desired text box and type in the new value

## D-4 Ignition vs. Air Temp ^

IGN vs AirT	
Temp	Retard
<input type="text" value="60"/>	<input type="text" value="4"/>
<input type="text" value="50"/>	<input type="text" value="2"/>
<input type="text" value="40"/>	<input type="text" value="0"/>

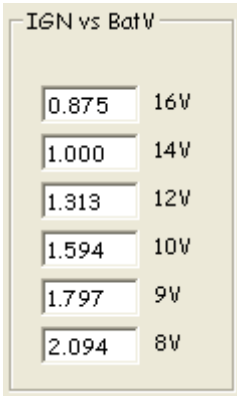
- Ignition vs. Air Temp
  - Ignition is retarded if Air temp is too high
    - For the standard setting: at 40 degrees C or less ignition timing is not corrected. From 40 ~ 50 timing is additionally retarded to a max of 2 degrees. From 50 ~ 60 timing is additionally retarded to a max of 4 degrees. All temperatures over 60 degrees are also retarded 4 degrees
  - Use mouse to select the desired text box and type in the new value

## D-5 Ignition vs. TPS ^

IGN vs TPS	
TPS%	
<input type="text" value="79.7"/>	<input type="text" value="1.000"/>
<input type="text" value="59.8"/>	<input type="text" value="1.000"/>
<input type="text" value="39.8"/>	<input type="text" value="1.000"/>
<input type="text" value="19.9"/>	<input type="text" value="1.000"/>

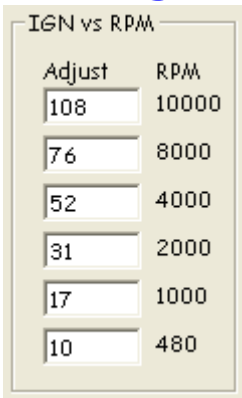
- Ignition vs. TPS
  - Ignition correction based on throttle position
    - Standard Settings = no correction
  - Use mouse to select the desired text box and type in the new value

## D-6 Ignition vs. Battery Voltage ^



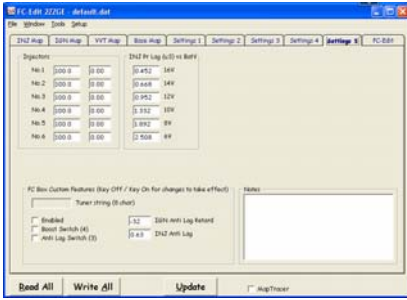
- o Ignition vs. Battery Voltage
  - Probably increases "dwell angle" if battery voltage is low
    - o Use mouse to select the desired text box and type in the new value

## D-7 Ignition vs. RPM ^



- o Ignition s. RPM
  - Adjusts something to do with ignition (dwell?) vs. RPM
    - o Use mouse to select the desired text box and type in the new value

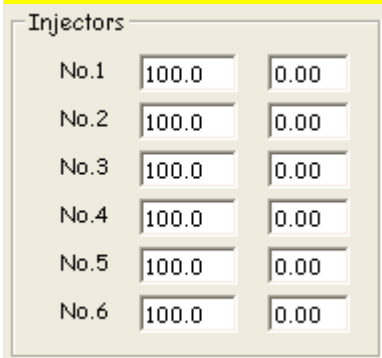
## E- Settings Five



Click for Screen Capture {[Settings 5](#)}

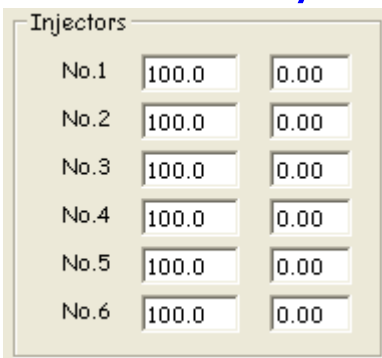
- o Page five of the setting windows
  - The following settings are on "Settings 5" and can be edited and transferred between FC-Edit and the Power FC
    - o Injectors
    - o Primary Injectors Off (uS) vs BatV
    - o Secondary Injectors Off (uS) vs BatV
    - o Injector Primary > Secondary Transition Overlap
    - o FC-Box Custom Features
  - o Click the "Settings 5" Tab to bring Page one of the setting windows to the front

## E-1 Injectors



- o Injector settings
  - Can be used to compensate for true injector flow rates after they have been flow tested
  - Can also be used to give more fuel to a lean piston or take fuel away from a rich one
    - o Use mouse to select the desired text box and type in the new value

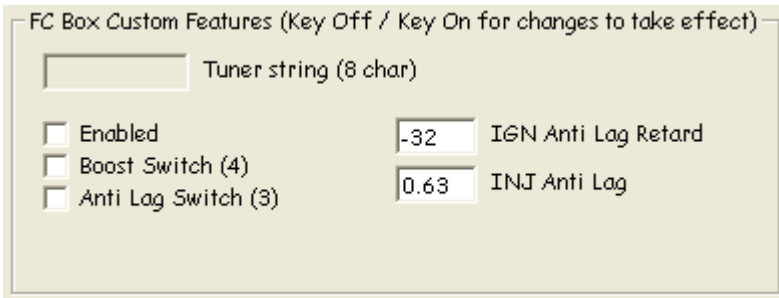
## E-2 Primary Injector lag (uS) vs. BatV



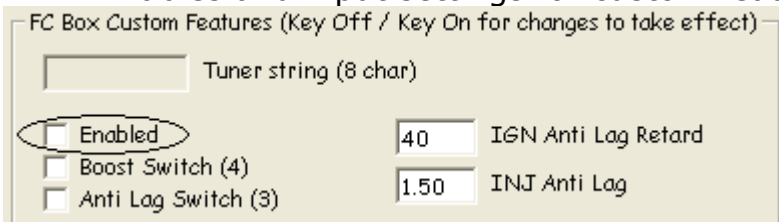
- o Primary Injector lag vs. Bat Volts

- Corrects primary injector lag time vs. battery volts
  - Use mouse to select the desired text box and type in the new value

## E-3 FC-Box Custom Features ^



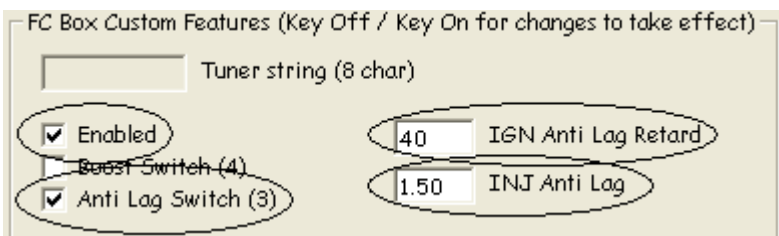
- FC-Box Custom Features
  - Enables and input settings for custom features



- Check the enabled check box to activate the FC-Box special features

### E-3-1 Anti lag 😊 (AKA Stutter box, Launch box, Pro start and "Bang Bang") ^

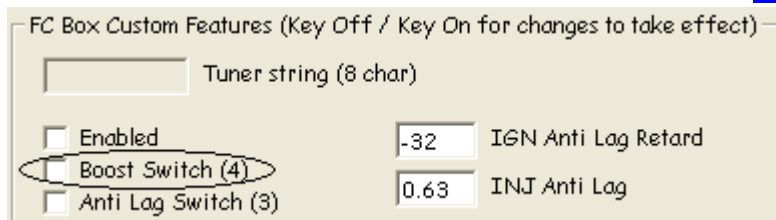
- Anti lag
  - Spools up your turbo for a quick drag launch
    - Assuming you will use the standard clutch switch (+ arming switch)
      - Cut clutch switch wire
      - Connect one end of the wire through an additional (arming) switch from the standard clutch switch to terminal "SW3" on the FC-Box {[FC2 FC-Box 4 Switches](#)}
      - The additional switch is used to turn anti lag on and off (arm the system). Mount this within easy reach of your driving position
    - Ground the other end of the clutch switch wire



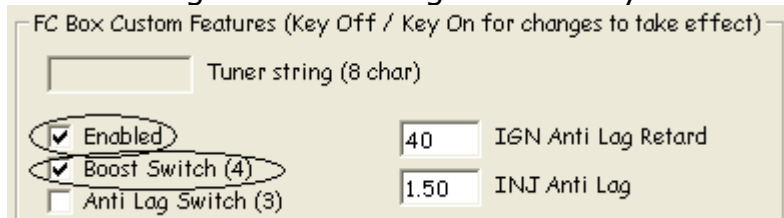
- Check the enabled "check box" to enable FC-Box Custom features
- Check the Anti lag Switch (SW3) "check box" to enable Anti lag
- Enter the amount of ignition retard you want in the "IGN Anti lag retard" text box
  - We found 40 degrees (= 40 degrees of retard) to be quite good but you might want to experiment
- Enter the amount of extra fuel you want in the "INJ Anti lag" text box

- We found 1.50 (= add 50% more fuel to base map) to be quite good but you might want to experiment
- Push the "Update" button on FC-Edit
- Turn the ignition key off and then back on
- Arm the system with the additional arming switch
- When the clutch is depressed the FC-Box will retard the ignition and add fuel to the values you have entered in the appropriate text boxes. RPMs will drop so you need to depress the accelerator to compensate. More boost will be created
- When the clutch is released the timing and fuel will return to normal
  - ✖ **DANGER! Anti lag has a tendency to foul spark plugs**
  - ✖ **Extra heat will be generated in the exhaust manifold which may shorten the life of turbos and the exhaust system**
  - ✖ **Anti lag creates A LOT OF NOISE! And flames out the exhaust ☺**

## E-3-2 Remote boost switch ^

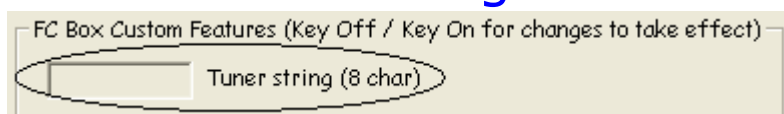


- Remote boost switch
  - Change boost settings "on the fly"



- Check the enabled check box to activate the FC-Box special features
- Check the Boost Switch (SW4) "check box" to enable the switch
- You must connect a switch to terminal "SW4" on the FC-Box {[FC2](#) FC-Box 4 Switches}
- Connect the switch between "SW4" and ground
  - When switch is open boost setting one will be selected
  - When switch is closed boost setting two will be selected
  - Switch will not function if a single turbo boost kit is in use
  - If you enable the feature but don't connect a switch, {[A-1](#) Boost Control} will be set to Boost setting one

## E-3-3 Tuner String 8 characters (read only) ^



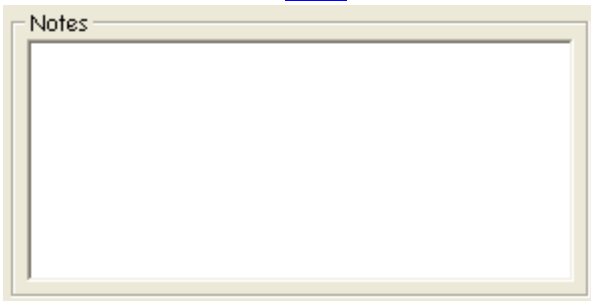
- Power Excel Dealer id
  - There is an 8-character string in the Power FC used for tuner details or something. We have used the string to store the FC-Box custom features data.

There is a remote chance that a combination of characters used for an Excel dealer id could be the same as the characters we have use to enable the custom features

- We suggest you plug in the FC-Box then turn on the ignition (two clicks) and "Read All" before starting the engine. Check that a stray string hasn't enabled the custom features. If it has, disable it by unchecking the "enabled" check box and "Update".
- Set the value of "IGN Anti lag retard" and "INJ Anti lag" to zero until you wish to use the function {[E-3-1](#) Anti lag ☺}
  - When you are ready to use the custom features check the enable box

**W-1 "Read all" the settings and maps and save the file!**

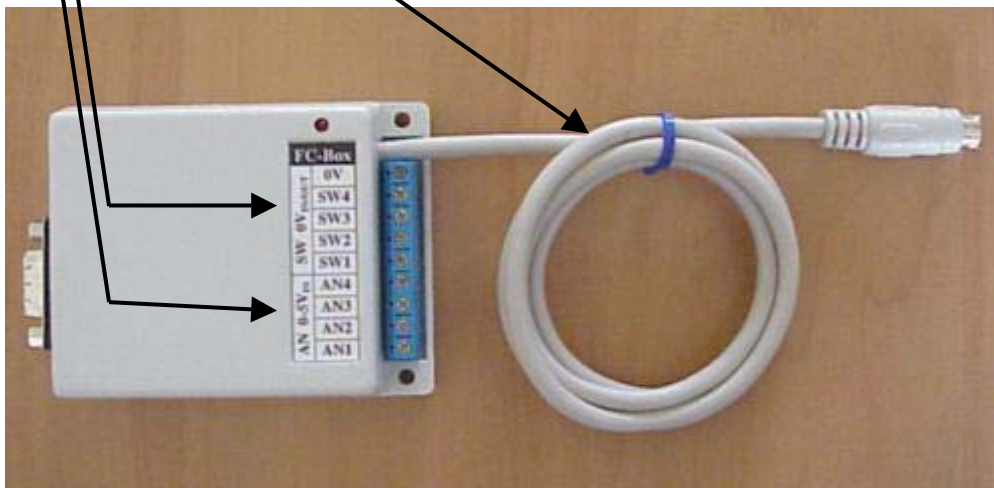
## E-4 Notes ^



- Notes
  - This text box is where you type information you want to save with your settings
    - Just click in the box and type in what you like
      - The text will be saved with the other settings and Data
    - If you wish to share your settings, you might like to list your mods in "notes text box"

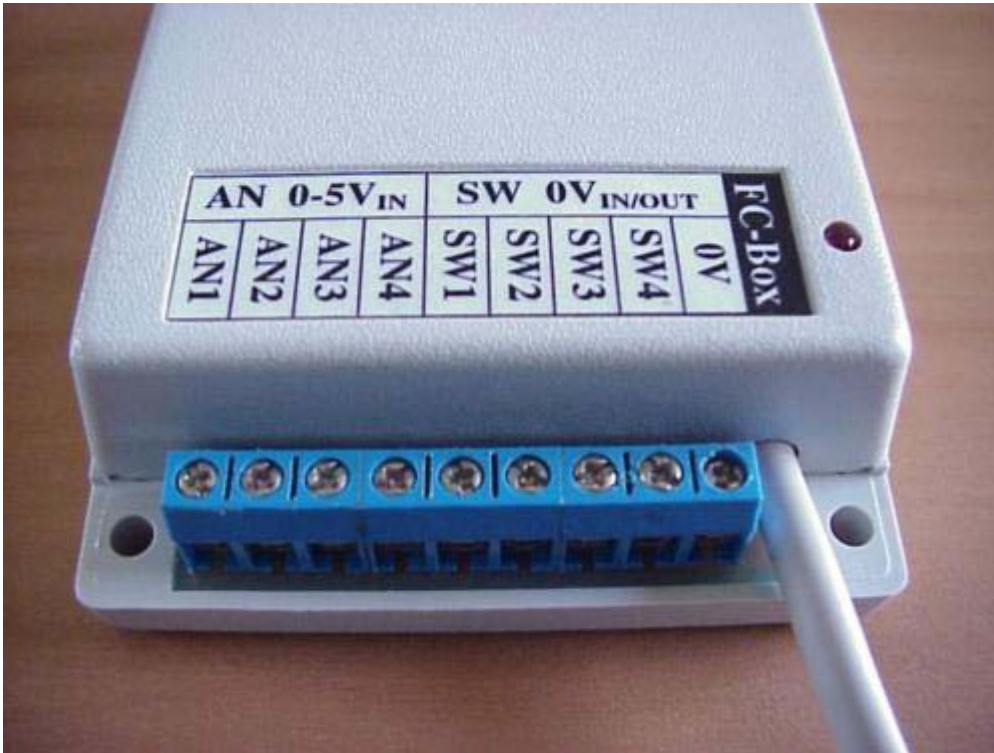
## F- FC-Box

- o FC-Box, the interface between the Power FC and a personal computer (PC).
  - The FC-Box is connected to the Power FC via the Commander socket and connected to a PC via the serial cable (or optional USB converter)
    - [Connection](#)
  - A Power FC sends data to the Commander. The FC-Box is between the Power FC and the Commander. The F-Box copies that data, translates it and redirects it down the serial cable to the PC. FC-Datalogit software, FC-Edit is installed on the PC. FC-Edit software displays the data
  - The FC-Box also has some additional features
    - o {[FC1](#) FC-Box 4 Additional inputs} Connect up to 4 x 0~5v inputs so you can log them
    - o {[FC2](#) FC-Box 4 Switches} 1 & 2 aren't functional. 3 is the Antilag trigger, 4 remote boost switch trigger
    - o {[FC3](#) Mini din cable} is connected to the Power FC via the Commander socket



- FC-Box
  - o Left: Mini din socket for Power FC Commander {[FC4](#) Mini din Socket}. Using the Commander is optional and doesn't effect FC-Datalogit
  - o Right; Serial socket for serial cable to a Laptop {[FC5](#) Serial Socket}





## FC1 FC-Box 4 Additional inputs [^](#)

### o "AN 0-5V in"

- Info on logging additional inputs
  - See {[1-2-1-3](#) Auxiliary AD Zone}
  - {[1-3-2](#) Auxiliary (Setup)} t up scale and values for A/d

## FC2 FC-Box 4 Switches [^](#)

### o "SW 0V in/out"

- SW1; Switch one unused
- SW2; Switch two unused
- SW3; Switch three anti lag trigger
  - The standard clutch switch with an additional series switch to ground is required
  - See {[E-3-1](#) Anti lag ☺} for additional settings
- SW4; Switch four is boost select switch
  - {[E-3-2](#) Remote boost switch}
  - Connect the switch between SW 4 and ground
  - When switch is open boost setting one will be selected
  - When switch is closed boost setting two will be selected
  - Switch will not function if a single turbo boost kit is in use

## FC3 Mini din cable [^](#)

### o Mini din cable

- Connect "Mini din cable" to Power FC's Commander socket to allow FC-Datalogit to communicate with Power FC

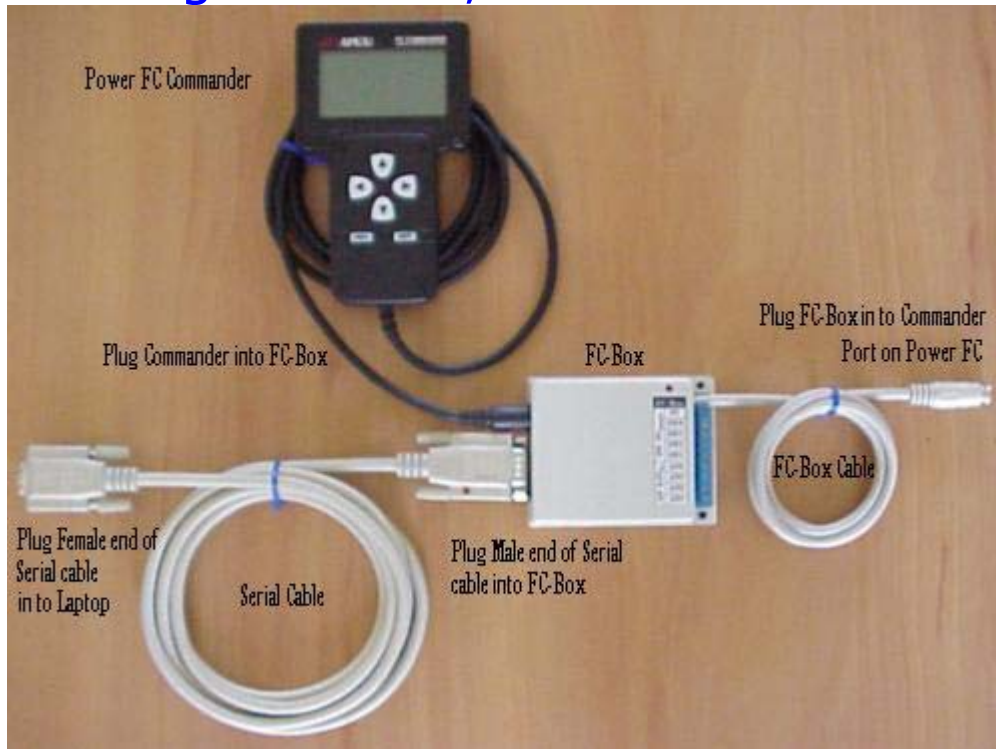
## FC4 Mini din Socket [^](#)

- o Min din Socket
  - o Plug Power FC commander into "Min din Socket" so commander will function
    - A Power FC Commander will pause while FC-Edit or FC-Datalogit is communicating with the Power FC.
    - A Power FC Commander doesn't update while you are data logging.

## FC5 Serial Socket [^](#)

- o Serial socket
  - For serial cable to connect to a Laptop

## Datalogit FC-Box; Connection



## N- Notes

### N-1 Knock Value is Arbitrary

- Sensor is just a microphone and picks up a range of frequencies.
- Values under 60 are considered "Safe". Small values are desirable :)
- ✖ [{W-5 Check Engine Light Flashing Quickly! Knock Warning}](#)
- ✖ [Knock Warning can be switched off, see; {A-3-3 Knock Warn}](#)
- ✖ [Or Thresh hold adjusted, see; {A-5 Knock Warning}](#)

### N-2 Boost Control Kit for single turbo

- Switch on [{A-3-1 Boost Control Kit}](#)
- Only setting group "1" from [{A-1 Boost Control}](#) is used. [{E-3-2 Remote boost switch}](#) switch is disabled
- If you are using a single turbo and are relying on the pressure of a waste gate spring to control boost, make sure you set the boost in setting group "1" from [{A-1 Boost Control}](#) to a value higher than the waste gate spring allows, so you don't hit the Power FC Over Boost Fuel Cut [{W-2 BOOST CUT}](#)
- Apexi single turbo boost control kit for Power FC comes with a 3 bar Absolute sensor

### N-3 Mac Laptop & FC-Datalogit

FC-Datalogit takes no responsibility for the accuracy of the following installation and procedure.

Mac installation and procedure was created by Michel

If anyone needs any assistance, feel free to contact Him. [rx7tt95@aol.com](mailto:rx7tt95@aol.com)

#### Getting Started

1. You'll need a Mac laptop, at the very least 400mhz Powerbook (Bronze Keyboard, otherwise known as Lombard, or the later Pismo model with built-in Firewire). Any of the newer I-books (magnesium case, all white) should work even better. My system configuration is: 400mhz G3, 320mb of ram, and a 6Gig hard drive and a swappable SuperDrive so I can read floppies. Virtual PC requires at least 192mb to run in OSX, 128mb in OS9. The Serial to USB adapter comes with it's own driver, on a 1.44mb floppy. You will have to either download the disk to a hard drive and transfer it somehow, or purchase your own adapter that utilizes a more modern disk to store the driver on. Most Wintel-based PC's still come with a floppy drive.
2. I'd recommend that you have OSX installed (10.1) instead of OS9.2. Why? Virtual PC version 5.0 (what I recommend) is much snappier on OSX and has more functionality. You loose a bit of function when running in "classic" mode. However, it'll work with both.
3. You'll need Virtual PC 5.0 with either Windows 98 or Win 2000. I recommend Windows98 as it's less problematic than Win2000 and it's a bit cheaper to boot. Virtual PC is pre-packaged with either one or several other Windows packages for that matter.

4. You will need a serial to USB converter. I'd imagine you could purchase these at most large computer stores. (The FC-Datalogit optional version requires either Windows 98 or Windows 2000. See "Third").
5. You will need FC-Datalogit, FC\_Edit v1.04, (or later), as it has settings for Com1-Com4. (Com is short for communications port in Windows 98). For some reason, Windows 98 assigns Com1 and Com2 to something else (it may be Virtual PC doing this, or the Mac OS). The point being that in v1.03 of FC\_Edit, you only had the choice of Com1 or Com2, which are taken. In v1.04, there are two additional Com ports, 3 and 4 (Latter versions have settings for 8 Com ports).

### [Installing Virtual PC on your Mac](#)

After you have all of the above, you'll need to install Virtual PC on your Mac. Follow the instructions and read the manual first, as there's some new lingo. I named my virtual pc engine "FC\_Edit".

I would recommend that you choose the 'easy install' option.

Once installed, quit the installer and go through the steps.

There's one section of the set-up where it allows you to choose the "parameters" of your Virtual PC. Think of it like you're actually setting up preferences on a PC.

In it, it'll allow you to choose how much RAM is allocated to the program. Give it as much ram you can, as it'll speed things up a bit.

I believe I'm running a 144mb allocation of RAM, per the Virtual PC program.

### [Install the FC Edit program](#)

After I installed it I then found FC Edit.exe, it looks something like this; C:\Program Files\FCEdit.exe and dragged it to the Windows Desktop which created an automatic shortcut so I don't have to go digging for it on the hard drive.

### [Serial to USB converter installation](#)

For the following, you must do it just as I (and the adapter directions) specify.

Once you have Virtual PC installed and running, shut down Windows 98 and Virtual PC.

Install the Serial to USB converter in USB port #2 (#1 may work as well).

Once it's hooked up, boot Virtual PC and your "virtual" machine (whatever you named it), will launch Windows 98.

Once it's up and running, it'll auto detect a new device and search for the appropriate driver.

The install new hardware program will launch and you should insert the floppy (or CD), which contains the driver.

Follow the instructions and complete the installation.

### [Datalogging!](#)

With the car turned off...

Once the driver is installed, and with the converter still plugged into the back of the computer, connect the serial end to the FC-Datalogit box.

Turn the car on and launch FC\_Edit, (which you should have installed already).

It may say "Error opening Com2" or something like that.

Com2 is the default and it tries that Com first. Click "ok".

You'll have to go under the menu at the top to "Setup" and choose Com3.

Once that's done, try "reading" your PFC.

If you get an "interface not responding", try quitting FC\_Edit and launching it again.

If that doesn't work, shut down Windows 98 and restart it with everything plugged in and the car off.

Once it's fully boots, turn the car on to accessory (engine not running) and launch FC\_Edit again.

If that doesn't work yet again, go down to the USB symbol at the bottom of Virtual PC and click on it, then USB Settings.

Once the "Settings" window for your Virtual PC pop up, click on USB and make sure the driver for the Serial to USB adapter is enabled as well as the USB itself.

Once it's enabled, close the window and you should be able to read and write to the Power FC and to of course, Datalog!

## T-Tips [^](#)

### T-1 To view the settings in two files simultaneously [^](#)

- o Open two sessions of FC-Edit
  - Opening a session without the interface plugged in (or a second session, while the interface is already in session) will cause an "Interface not responding!" prompt, in this case ignore and click OK
  - Opening a second session will cause an "Error opening Com1" prompt, in this case ignore and click OK
  - Open one of the files you want to compare in one FC-Edit session and the other file in the other session
  - Use Compare on the first session to find which settings are different, then switch between the two sessions of FC-Edit (Alt Tab) to view the different values
  - OR size the two session windows so you can see both at the same time

### T-2 How the sample chart was created, Chart tutorial [^](#)

#### [Sample chart](#)

We often get asked, "Why can't I make my chart look like the sample in the manual" Well... you should be able to...

First I must point out that there are two elements shown in the picture. The chart (actually two charts) and 3 map watches (RPM, Speed and Water Temp) I'll start with the chart.

This is how we did it:

- o Charts
  - Two charts, one above the other
  - The top chart has a grey background and a minimum 0 and a maximum of 100. The bottom has a blue background, a minimum of 0 and a maximum of 250

#### [Lets see how that was done](#)

- o To open 'Setup Chart' window
  - o Open the 'chart' window
    - From the 'window' drop down menu click 'Chart'
  - o Open the 'Setup Chart' window
    - From the Chart's 'Setup' drop down menu click 'Chart'
  - 'Setup Chart' window
    - You will see that items along the first row are for setting up the charts. This is where you select how many charts you want in the chart window and their format. You can have up to 4 charts
  - 'Charts'

- This is where you choose how many charts you want on the chart window
  - I chose '2', so I could have two charts on the same window
- 'Chart'
  - This is where you choose the attributes for each chart
- 'Chart' '1'
  - I left the background grey. I left the minimum value at '0' and changed the maximum value to '100'
- 'Chart' '2'
  - I changed the background to blue. I left the minimum value at '0' and the maximum value at '250'
    - Now if you have been following along you should have two charts. I did have to drag the window a bit bigger. Note that if you click and hold down your left mouse button between the charts you can drag up and down. Stretching one while squashing the other. Neat!
- Traces
  - The traces on chart '1'
    - RPM (red), Boost (red), Speed (in blue) and Water Temp (also in red)
  - The traces on chart '2'
    - Knock, in red
      - If you have been following along you probably need to open a log file now otherwise you won't see anything on the charts

### Lets see how that was done

- From the 'Chart setup' Window you will see that the items along the first row are to do with setting up the charts.
- The items along the second row and 'Item' and 'Caption' are for setting up traces you want on plot on the charts.
- You can have up to 20 traces and plot them on any one chart. If you want the same item on two charts you must create two traces of the same data and place one on each chart
- Trace '1'
  - The item I chose was 'Advanced RPM'. I put trace '1' on chart '1', colour is 'red', min value '0' and max value '6000', 'Caption' automatically came up with '- RPM' You can change this if you want
    - The max value of '6000' may have confused some people. I have a max value on chart '1' of '100' and a max value of trace '1' of '6000', so at 6000 rpm the trace will be at 100 on the chart. Why didn't I set the max value of the chart at '6000'? Because it wouldn't suit a trace like water temp, for example... I set the chart at '100' and think of it as 100%. Then I set the max values for the traces I want to plot at about 100% of what I expect them to reach. It makes it easy to see plots that exceed the max value... they go off the top of the chart!
- Trace '2'
  - The item I chose was 'Basic Boost'. I put trace '2' on chart '1', colour is 'red', min value '0' and max value '100', 'Caption' automatically came up with '- Boost'
- Trace '3'

- The item I chose was 'Advanced Speed'. I put trace '3' on chart '1', colour is 'Blue', min value '0' and max value '150', 'Caption' automatically came up with '- Speed'
- Trace '4'
  - The item I chose was 'Advanced Knock'. I put trace '4' on chart '2', colour is 'Red', min value '0' and max value '250' (Because I forgot to set it to 100), 'Caption' automatically came up with '- Knock'
    - The traces are listed down the right hand side of the chart window in the order you number them. So if you want to change Knock you know it's the 4<sup>th</sup> one down so it's Trace '4'
- Trace '5'
  - The item I chose was 'Advanced Water Temp'. I put trace '5' on chart '1', colour is 'Red', min value '0' and max value '250' (Because I forgot to set it to 100), 'Caption' automatically came up with '- WtrT'
    - Scrolling. There are two little white scrolling tags down the bottom of the bottom chart. The numbers down the bottom are seconds. If you drag the tags closer together 'time' will be stretched out. If you right click on the chart you can drag along the time axis. I dragged the right tag to the extreme right of the charts to the end and I dragged the left tag to 150 seconds
    - Now you should have the same chart set-up as the sample. It is just a sample you should set it up to display what ever you want to view...
- The Watches in the sample
  - Watch '1' RPM, Big and bold!
  - Watch '2' Speed, red...
  - Watch '3' Water temp

### Lets see how that was done

- Open the 'Setup Watch' window
  - From the 'window' drop down menu click 'Add Watch' 'Setup Watch' window
    - The 'Setup Watch' window is where you choose the attributes of a watch. You can return and create more watches or edit the attributes of your watches by double clicking on an existing watch face or by choosing 'Add Watch' from the 'Window' drop down menu
- Watch '1' RPM, Big and bold!
  - From the Setup Watch window 'Watch' 1. Watch 1. 'Item' I chose 'Advanced RPM'. 'Caption' Rpm. 'Font', Click the 'Font' button and you can select font type, style, Size, then click OK, I chose; 'Comic Sans MS' 'Regular' 'Size 36'.
- Watch '2' Speed, red...
  - From the Setup Watch window 'Watch' 2. Watch 2. 'Item' I chose 'Advanced Speed'. 'Caption' Speed. 'Font', I left standard.
    - I wanted the Watch text to change colour at 100 km/h (The open road speed limit here in New Zealand), 'Colours' I chose '2', Colour '1' I left black but I changed the 'Max Val(ue)' to '100', Colour '2' I changed to 'red', The result is at 100 km/h or over the text changes to red.
      - There is also a 'Decimal Places' drop down menu this selects how many decimal places are displayed on the watch

- Watch `3` Water temp.
  - I chose `Advanced Water temp` and left everything standard

## W- WARNING!

- ⌘ Some of these warnings may not be applicable to your vehicle

## W-1 "Read all"

- ⌘ We suggest you "Read all" the settings and maps and save the file before you start editing
- ⌘ "Read all" the settings before you enable the FC-Box special features.
- ⌘ See {[E-3-3 Tuner String](#)} for a special message

## W-2 BOOST CUT

- ⌘ Fuel cut will occur if boost reaches 0.25 Bar above the Boost value set in {[A-1 Boost Control](#)}

## W-3 Exhaust Temp Light flashing!

- ⌘ If you exceed the factory Map / pressure sensor the Check engine light will flash.

## W-4 Check Engine Light Flashing slowly! Injector Duty / Map Warning

- ⌘ If Injector on time is over 98% or the Map sensor is over 5V,
- ⌘ Check Engine Light will flash in 0.5 sec intervals.
- ⌘ Injector Warning can be switched off, see; {[A-3-2 Injector Warning](#)}

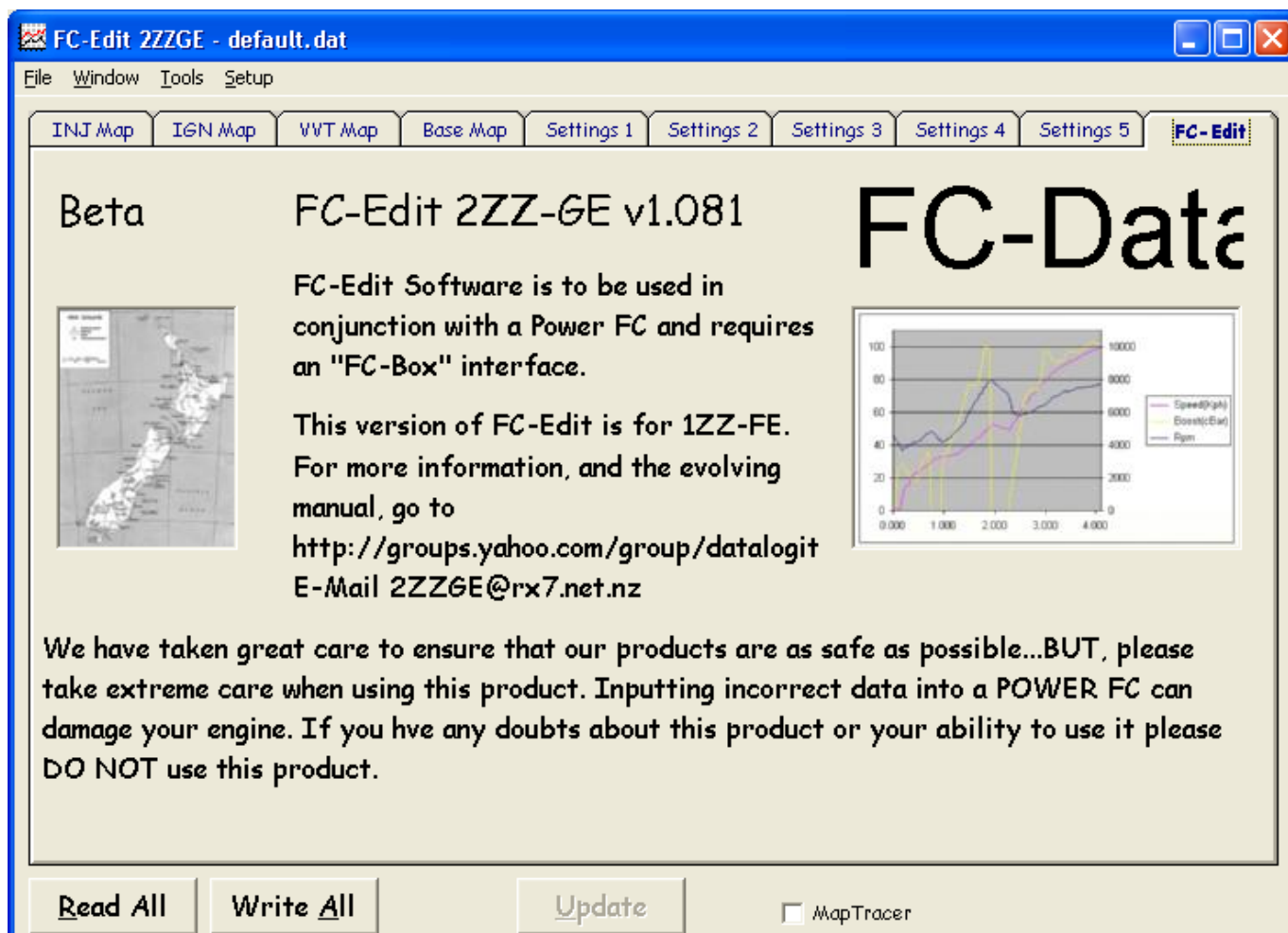
## W-5 Check Engine Light Flashing Quickly! Knock Warning

- ⌘ If Detonation is over "60" Check Engine Light will Flash in 0.1 sec intervals three times
- ⌘ Knock Warning can be switched off, see; {[A-3-3 Knock Warn](#)}
- ⌘ Or Thresh hold adjusted, see; {[A-5 Knock Warning](#)}
- ! {[N-1 Knock Value](#)}

## Z-FC-Edit Screen Captures

! Pages contain standard Power FC data, which may or may not be applicable to your vehicle

- o Cover Page
  - [FC-Edit](#)
- o Maps
  - [INJ Map](#)
  - [IGN Map](#)
  - [VVT Map](#)
  - [Base Map](#)
- o Settings
  - [Settings 1](#)
  - [Settings 2](#)
  - [Settings 3](#)
  - [Settings 4](#)
  - [Settings 5](#)
- o Monitor
  - [Monitor Window](#)
- o Chart
  - [FC-Datalogit Chart window](#)
  - [Sample chart](#)
- o Graph windows "3D View"
  - [INJ](#)
  - [IGN](#)
  - [IGT](#)
  - [VVT](#)
  - [Base](#)
- o Set-Up
  - [Set-up Watch](#)
  - [Set-up Chart](#)
  - [Set-up Aux](#)
  - [Set-up Polynomial](#)
- o Map watch
  - [Map watch](#)



FC-Edit 2ZZGE - default.dat

File Window Tools Setup

INJ Map IGN Map VVT Map Base Map Settings 1 Settings 2 Settings 3 Settings 4 Settings 5 FC-Edit

	N01	N02	N03	N04	N05	N06	N07	N08	N09	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20
P01	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.020	1.020	1.020	1.027	1.027	1.027	1.027	1.027
P02	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.020	1.020	1.020	1.027	1.027	1.027	1.027	1.027
P03	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.020	1.020	1.020	1.027	1.027	1.027	1.027	1.027
P04	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.020	1.020	1.020	1.027	1.027	1.027	1.027	1.027
P05	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.020	1.020	1.020	1.027	1.039	1.039	1.039	1.039
P06	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.020	1.020	1.020	1.027	1.039	1.039	1.055	1.055
P07	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.020	1.020	1.039	1.039	1.039	1.059	1.059	1.059	1.074	1.074
P08	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.047	1.047	1.059	1.059	1.074	1.074	1.074	1.082	1.082
P09	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.039	1.090	1.102	1.113	1.113	1.129	1.125	1.125	1.125	1.125	1.125
P10	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.012	1.023	1.059	1.117	1.145	1.156	1.156	1.156	1.156	1.164	1.164	1.164	1.164
P11	1.004	1.004	1.004	1.004	1.004	1.023	1.023	1.043	1.055	1.090	1.137	1.180	1.180	1.180	1.180	1.180	1.180	1.180	1.180	1.180
P12	1.020	1.020	1.020	1.020	1.020	1.027	1.055	1.055	1.063	1.098	1.145	1.184	1.184	1.184	1.184	1.184	1.184	1.199	1.199	1.199
P13	1.031	1.031	1.031	1.031	1.031	1.055	1.074	1.074	1.082	1.109	1.156	1.184	1.184	1.184	1.184	1.184	1.191	1.203	1.203	1.203
P14	1.031	1.031	1.031	1.031	1.031	1.055	1.074	1.074	1.082	1.109	1.156	1.184	1.184	1.184	1.184	1.191	1.191	1.203	1.215	1.215
P15	1.031	1.031	1.031	1.031	1.031	1.055	1.074	1.074	1.082	1.117	1.156	1.184	1.184	1.184	1.184	1.191	1.191	1.203	1.215	1.215
P16	1.031	1.031	1.031	1.031	1.031	1.055	1.074	1.074	1.082	1.117	1.156	1.184	1.184	1.184	1.184	1.191	1.191	1.203	1.215	1.215
P17	1.031	1.031	1.031	1.031	1.031	1.055	1.074	1.074	1.082	1.117	1.156	1.184	1.184	1.184	1.184	1.191	1.191	1.203	1.215	1.215
P18	1.031	1.031	1.031	1.031	1.031	1.055	1.074	1.074	1.082	1.117	1.156	1.184	1.184	1.184	1.184	1.191	1.191	1.203	1.215	1.215
P19	1.031	1.031	1.031	1.031	1.031	1.055	1.074	1.074	1.082	1.117	1.156	1.184	1.184	1.184	1.184	1.191	1.191	1.203	1.215	1.215
P20	1.031	1.031	1.031	1.031	1.031	1.055	1.074	1.074	1.082	1.117	1.156	1.184	1.184	1.184	1.184	1.191	1.191	1.203	1.215	1.215

Read Write

Read All Write All Update  MapTracer



FC-Edit 2ZZGE - default.dat

File Window Tools Setup

INJ Map **IGN Map** VVT Map Base Map Settings 1 Settings 2 Settings 3 Settings 4 Settings 5 FC-Edit

	N01	N02	N03	N04	N05	N06	N07	N08	N09	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20
P01	24	24	25	25	26	28	32	36	39	40	40	40	40	40	40	40	40	40	40	40
P02	24	24	25	25	26	28	32	36	39	40	40	39	39	38	38	38	38	38	38	38
P03	23	24	25	25	26	28	32	35	39	40	40	39	38	37	36	36	36	36	36	36
P04	22	23	24	24	25	28	32	35	37	38	38	37	37	36	35	35	35	35	35	35
P05	20	22	23	23	24	26	29	32	33	34	34	34	34	33	33	33	33	33	33	33
P06	16	20	22	22	22	24	26	28	29	29	30	30	30	31	31	31	31	32	32	32
P07	11	15	17	18	20	22	24	27	27	27	27	26	27	27	30	30	30	30	30	30
P08	6	8	11	14	17	20	22	25	25	25	25	24	25	24	29	29	29	28	28	28
P09	5	6	8	11	15	18	21	23	24	24	24	23	24	23	28	29	28	26	26	27
P10	4	5	6	8	13	15	19	21	23	23	22	22	23	23	28	29	27	25	25	26
P11	3	4	5	7	12	14	17	20	23	23	22	22	22	23	27	29	27	24	25	26
P12	3	4	5	7	10	12	16	19	22	22	22	22	22	23	26	29	27	24	25	26
P13	3	4	5	7	10	12	15	19	21	22	22	22	22	23	25	29	27	24	25	26
P14	3	4	5	7	10	12	15	19	21	22	22	22	22	23	25	29	27	24	25	26
P15	3	4	5	7	10	12	15	19	21	22	22	22	22	23	25	29	27	24	25	26
P16	3	4	5	7	10	12	15	19	21	22	22	22	22	23	25	29	27	24	25	26
P17	3	4	5	7	10	12	15	19	21	22	22	22	22	23	25	29	27	24	25	26
P18	3	4	5	7	10	12	15	19	21	22	22	22	22	23	25	29	27	24	25	26
P19	3	4	5	7	10	12	15	19	21	22	22	22	22	23	25	29	27	24	25	26
P20	3	4	5	7	10	12	15	19	21	22	22	22	22	23	25	29	27	24	25	26

Read Write

Read All Write All Update  MapTracer



FC-Edit 2ZZGE - default.dat

File Window Tools Setup

INJ Map IGN Map **VVT Map** Base Map Settings 1 Settings 2 Settings 3 Settings 4 Settings 5 FC-Edit

	N01	N02	N03	N04	N05	N06	N07	N08	N09	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20
P01	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
P02	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
P03	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
P04	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
P05	50	50	50	44	45	44	45	45	47	45	46	47	47	47	47	47	47	48	48	48
P06	50	50	48	35	35	37	37	39	42	40	41	44	43	41	43	42	46	47	47	47
P07	50	50	45	32	30	30	31	36	35	36	37	37	36	36	35	36	43	45	45	45
P08	50	50	42	31	25	28	29	34	32	32	32	35	33	33	31	32	41	43	43	43
P09	50	50	40	30	20	25	26	31	30	30	30	30	30	30	25	26	37	40	40	41
P10	50	50	37	30	14	19	24	30	23	22	26	30	30	30	25	26	33	35	36	38
P11	50	50	36	29	14	18	24	27	20	22	26	30	30	30	25	26	27	24	30	36
P12	50	50	36	28	13	17	21	24	20	20	24	28	28	28	25	26	27	24	30	36
P13	50	50	36	25	13	16	19	21	19	19	22	26	26	26	25	26	27	24	30	36
P14	50	50	36	25	13	16	18	20	18	18	20	24	24	24	25	26	27	24	30	36
P15	50	50	36	25	13	16	18	20	18	18	20	24	24	24	25	26	27	24	30	36
P16	50	50	36	25	13	16	18	20	18	18	20	24	24	24	25	26	27	24	30	36
P17	50	50	36	25	13	16	18	20	18	18	20	24	24	24	25	26	27	24	30	36
P18	50	50	36	25	13	16	18	20	18	18	20	24	24	24	25	26	27	24	30	36
P19	50	50	36	25	13	16	18	20	18	18	20	24	24	24	25	26	27	24	30	36
P20	50	50	36	25	13	16	18	20	18	18	20	24	24	24	25	26	27	24	30	36

Read Write

Read All Write All Update  MapTracer



FC-Edit 2ZZGE - default.dat

File Window Tools Setup

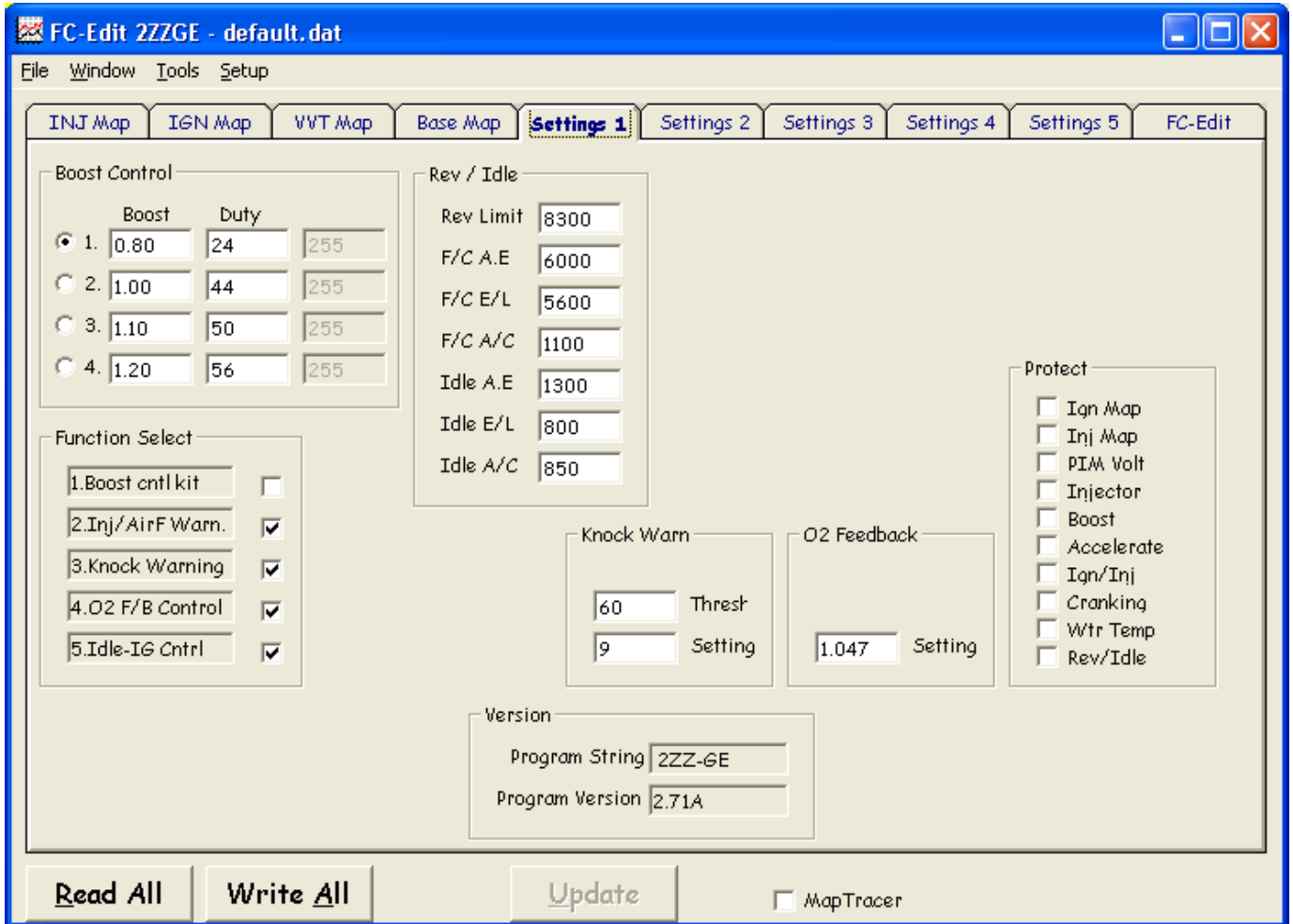
INJ Map IGN Map VVT Map **Base Map** Settings 1 Settings 2 Settings 3 Settings 4 Settings 5 FC-Edit

	N01	N02	N03	N04	N05	N06	N07	N08	N09	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20
P01	0.392	0.380	0.348	0.348	0.348	0.408	0.472	0.444	0.448	0.440	0.420	0.416	0.416	0.416	0.416	0.416	0.416	0.416	0.416	0.416
P02	0.788	0.760	0.700	0.700	0.700	0.820	0.948	0.888	0.896	0.880	0.840	0.836	0.836	0.836	0.836	0.836	0.836	0.836	0.836	0.836
P03	1.520	1.528	1.760	1.688	2.048	1.880	1.980	1.840	1.760	1.720	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672	1.672
P04	2.448	2.468	2.996	2.892	2.884	2.768	2.640	2.592	2.572	2.548	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
P05	3.792	3.708	3.884	3.752	3.560	3.496	3.460	3.512	3.384	3.396	3.400	3.400	3.400	3.400	3.400	3.400	3.400	3.400	3.400	3.400
P06	4.772	4.648	4.988	4.560	4.400	4.428	4.384	4.300	4.376	4.364	4.280	4.484	4.428	4.536	4.428	4.640	4.428	4.492	4.384	4.448
P07	5.528	5.552	5.704	5.356	5.356	5.368	5.280	5.304	5.300	5.216	5.324	5.476	5.476	5.564	5.456	5.608	5.388	5.588	5.456	5.368
P08	6.968	6.956	6.944	6.360	6.312	6.288	6.332	6.332	6.172	6.176	6.212	6.196	6.128	6.256	6.172	6.364	6.172	6.408	6.412	6.152
P09	7.756	7.900	7.676	7.304	7.088	7.008	7.048	6.988	6.996	6.972	6.812	6.812	6.748	6.708	6.864	6.876	6.816	6.864	6.840	6.456
P10	8.932	9.164	8.864	8.320	7.800	7.836	7.916	8.096	8.208	8.152	7.824	7.720	7.620	7.576	7.736	7.744	7.724	7.516	7.404	7.236
P11	9.852	10.12	9.636	9.224	9.012	9.140	9.220	9.132	9.140	9.056	8.776	8.700	8.712	8.672	8.752	8.840	8.336	8.164	8.192	8.100
P12	10.89	11.22	10.70	10.21	10.06	10.25	10.32	10.31	10.18	10.14	9.928	9.756	9.996	10.27	10.16	10.15	9.328	9.392	9.156	9.156
P13	12.08	12.04	11.48	11.02	11.05	11.20	11.16	11.28	11.01	10.96	10.97	10.86	10.96	11.04	11.21	11.30	10.59	10.64	10.37	10.16
P14	13.08	12.56	12.10	11.79	11.83	11.80	11.89	11.93	11.86	11.94	12.04	11.87	12.04	12.12	12.18	12.25	11.73	11.49	11.33	11.25
P15	13.90	13.39	12.78	12.54	12.43	12.55	12.64	12.64	12.92	13.17	13.29	13.15	13.04	13.22	13.46	13.48	12.87	12.64	12.55	12.46
P16	13.90	13.39	12.78	12.54	12.43	12.55	12.64	12.64	12.92	13.17	13.29	13.15	13.04	13.22	13.46	13.48	12.87	12.64	12.55	12.46
P17	13.90	13.39	12.78	12.54	12.43	12.55	12.64	12.64	12.92	13.17	13.29	13.15	13.04	13.22	13.46	13.48	12.87	12.64	12.55	12.46
P18	13.90	13.39	12.78	12.54	12.43	12.55	12.64	12.64	12.92	13.17	13.29	13.15	13.04	13.22	13.46	13.48	12.87	12.64	12.55	12.46
P19	13.90	13.39	12.78	12.54	12.43	12.55	12.64	12.64	12.92	13.17	13.29	13.15	13.04	13.22	13.46	13.48	12.87	12.64	12.55	12.46
P20	13.90	13.39	12.78	12.54	12.43	12.55	12.64	12.64	12.92	13.17	13.29	13.15	13.04	13.22	13.46	13.48	12.87	12.64	12.55	12.46

Read Write

Read All Write All Update  MapTracer





FC-Edit 2ZZGE - default.dat

File Window Tools Setup

INJ Map IGN Map VVT Map Base Map Settings 1 **Settings 2** Settings 3 Settings 4 Settings 5 FC-Edit

Water Temp Correction

+80C	1.000	1.000
+50C	1.047	1.078
+30C	1.094	1.141
+10C	1.188	1.297
-10C	1.391	1.594
-30C	1.594	1.891

Accelerate Injector (mS)

RPM	Amount	Decay
5000	4.400	0.800
4000	4.100	0.800
3000	3.800	0.700
2000	3.500	0.600
1000	3.200	0.500

Cranking (mS)

+80C	7.5
+50C	10.0
+30C	16.0
+10C	29.0
-10C	53.0
-30C	111.0

Inj vs Accel TPS1

Input	Setting
128	230
50	179
16	102

INJ vs TPS

TPS%	Setting
89.8	1.125
79.7	1.125
69.9	1.125
59.8	1.078
50.0	1.039
39.8	1.000

Inj vs AirTemp

+80C	0.938
+50C	0.969
+30C	1.000
+10C	1.020
-10C	1.039
-30C	1.059

INJ vs Air Temp and Boost (max)

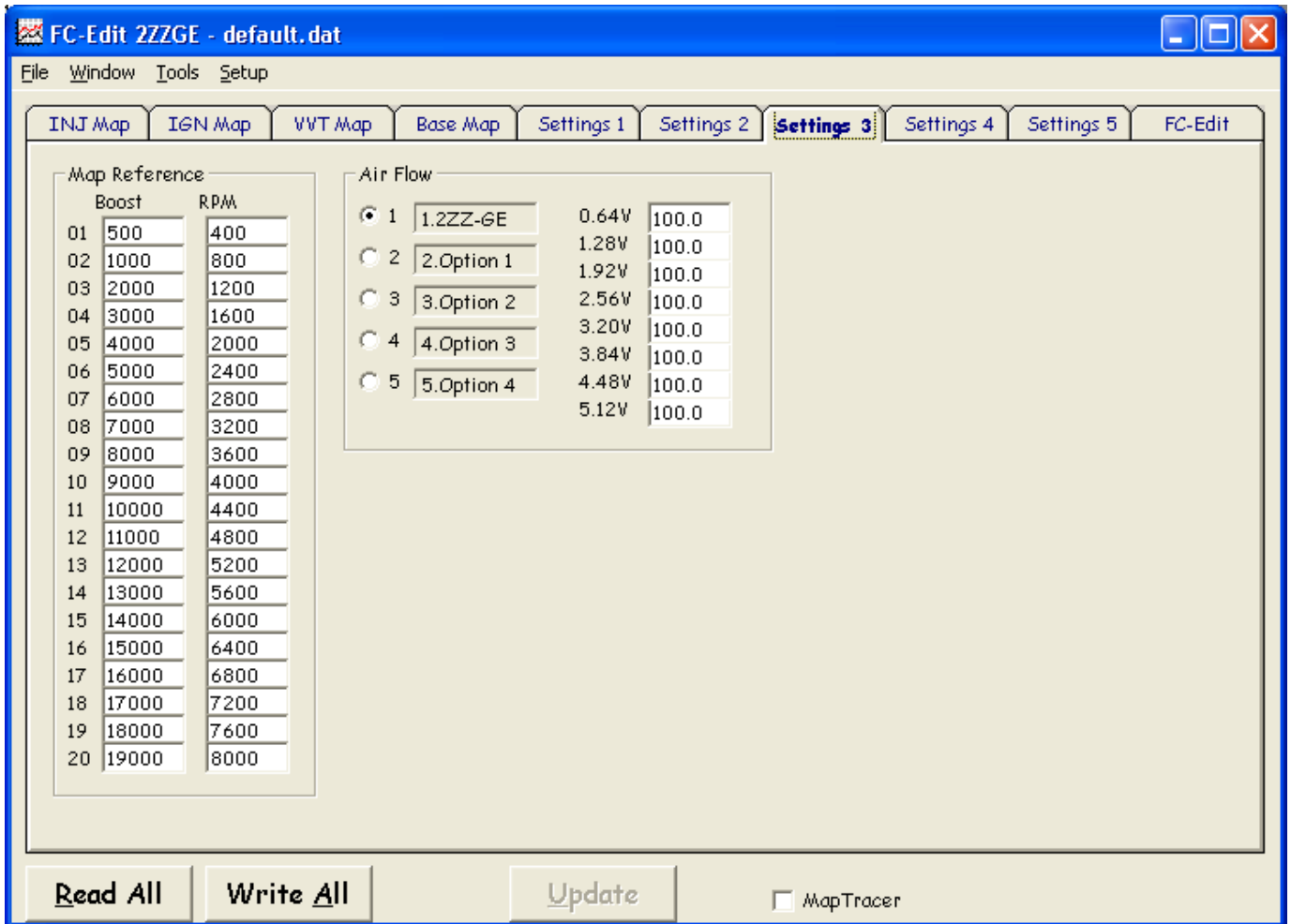
Temp	Setting	Boost
80	1.000	7936
70	1.000	
60	1.000	600

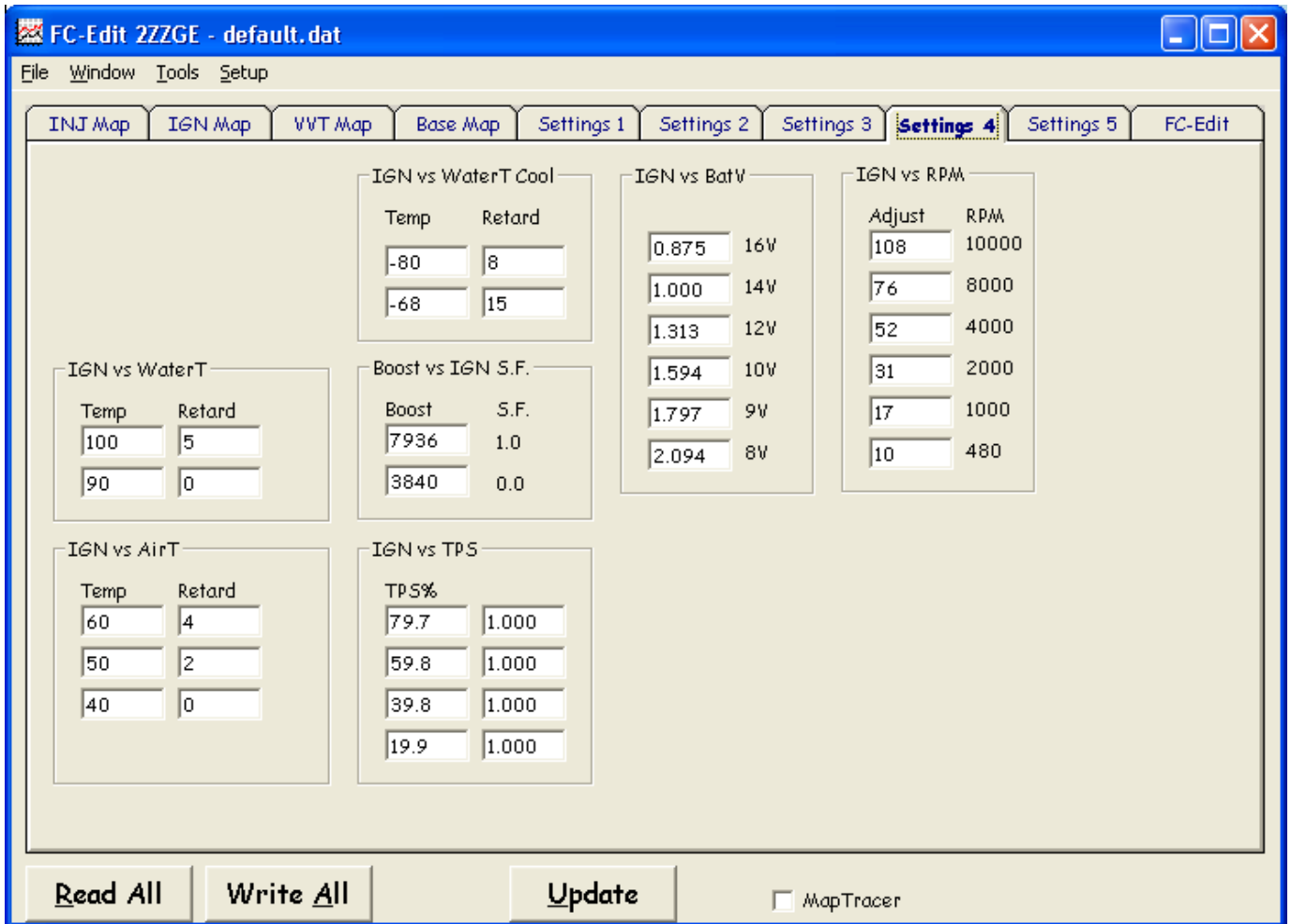
INJ vs Water Temp and Boost (max)

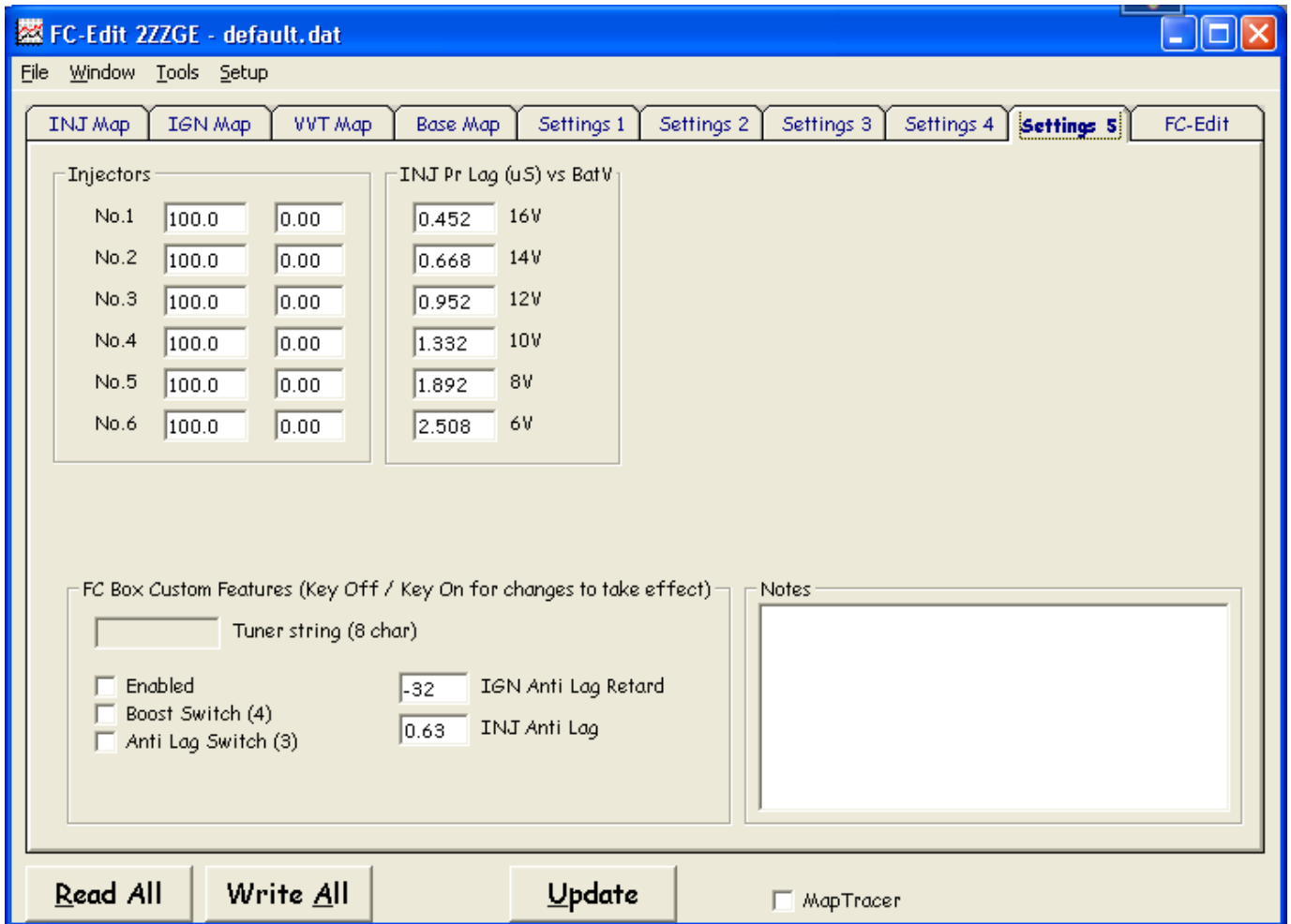
Temp	Setting	Boost
100	1.078	7936
90	1.000	3840

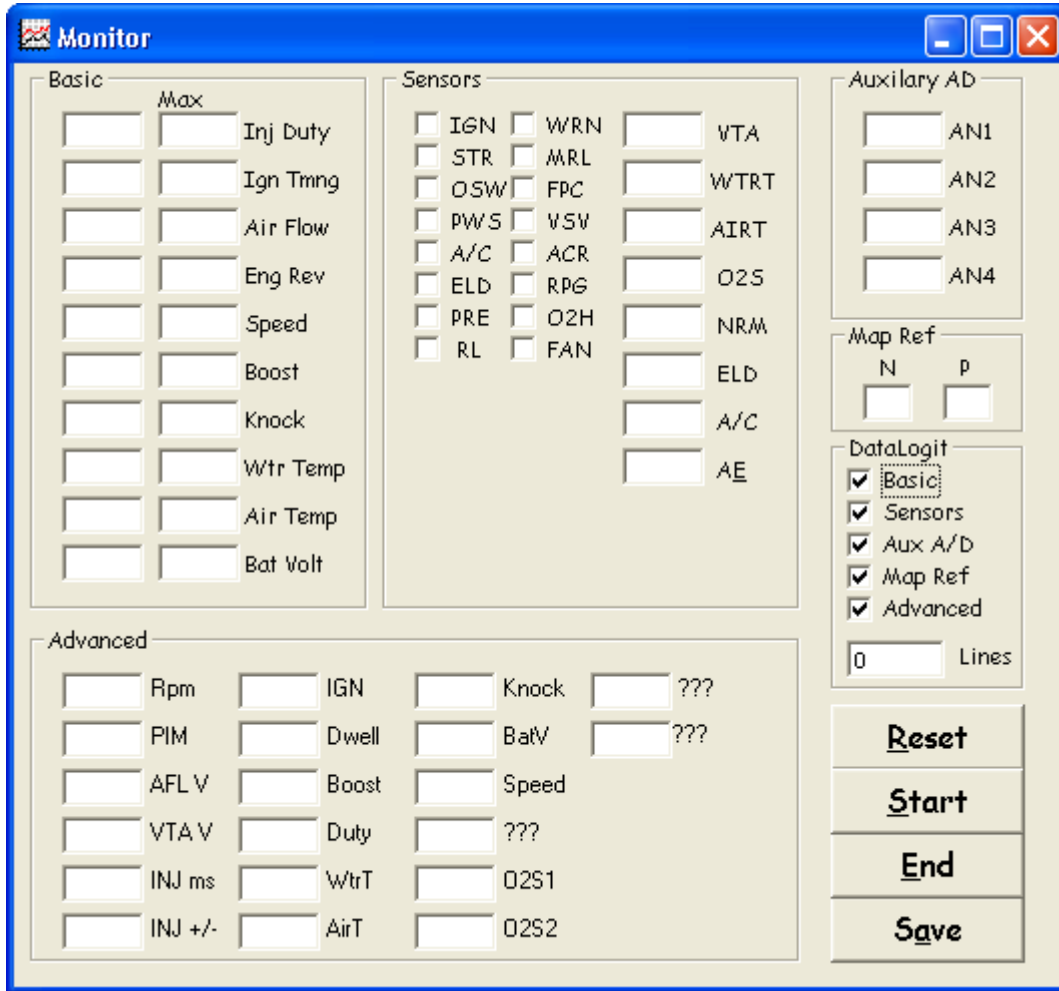
Read All Write All Update  MapTracer

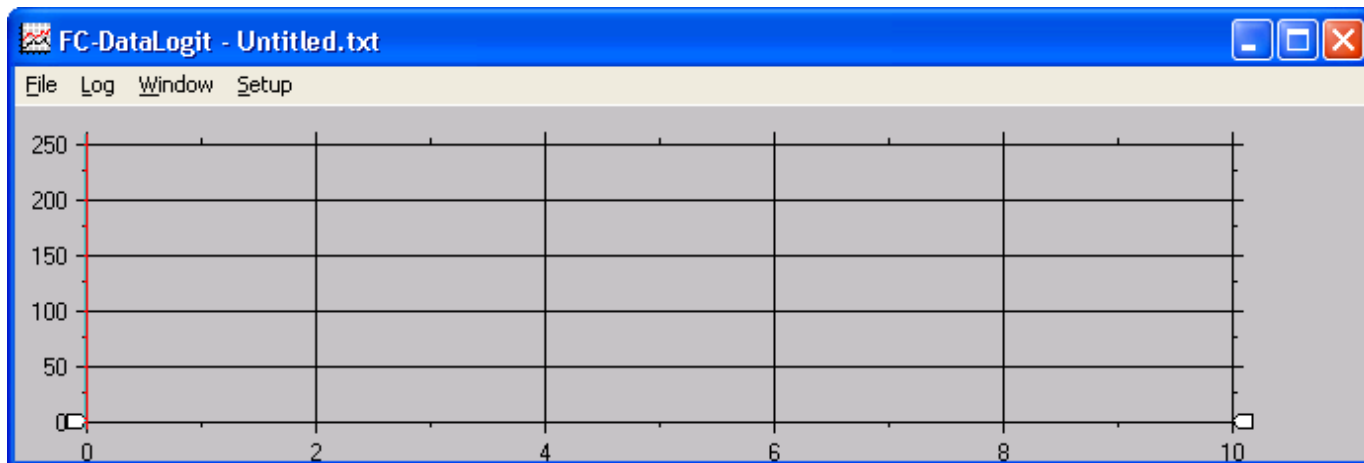


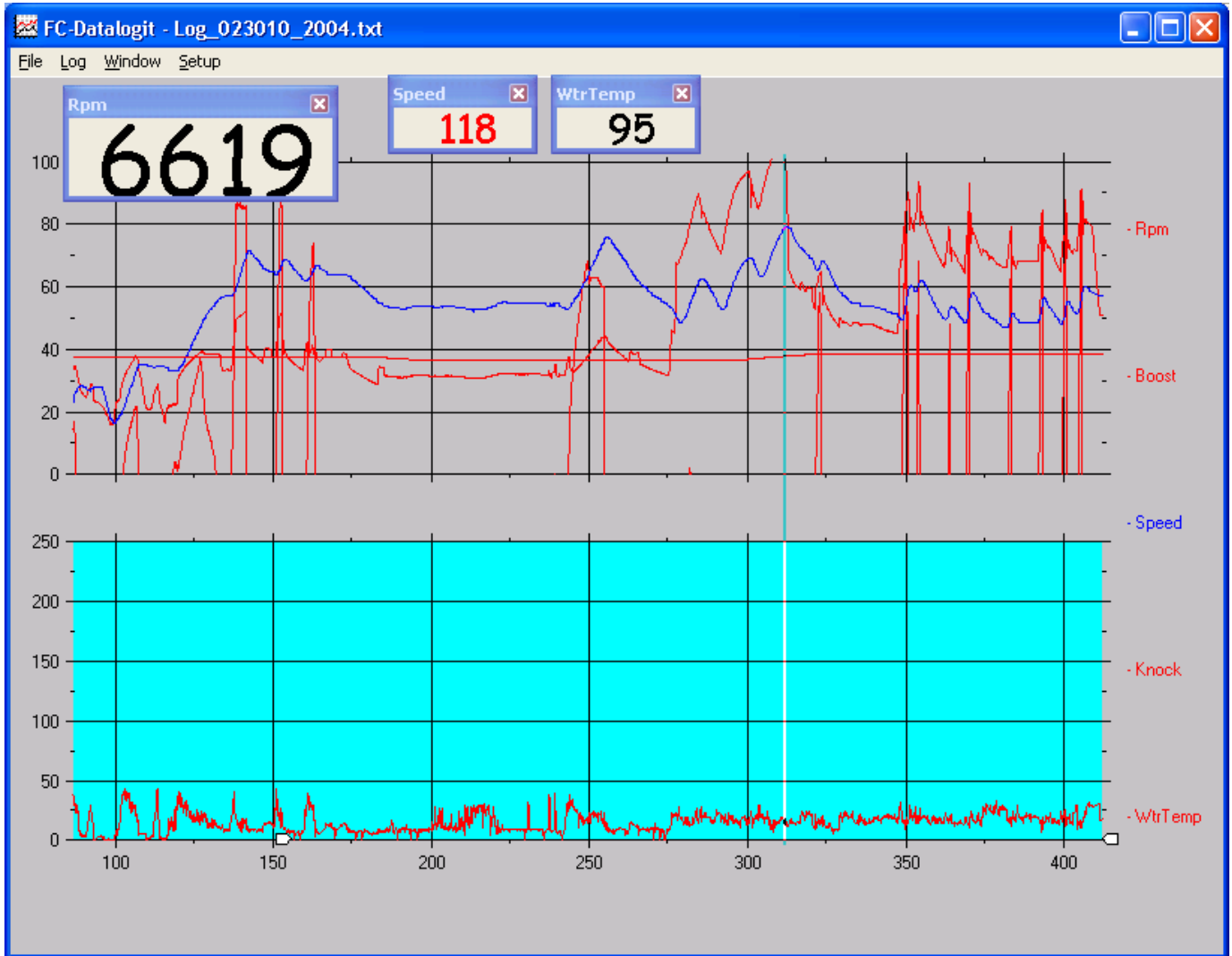






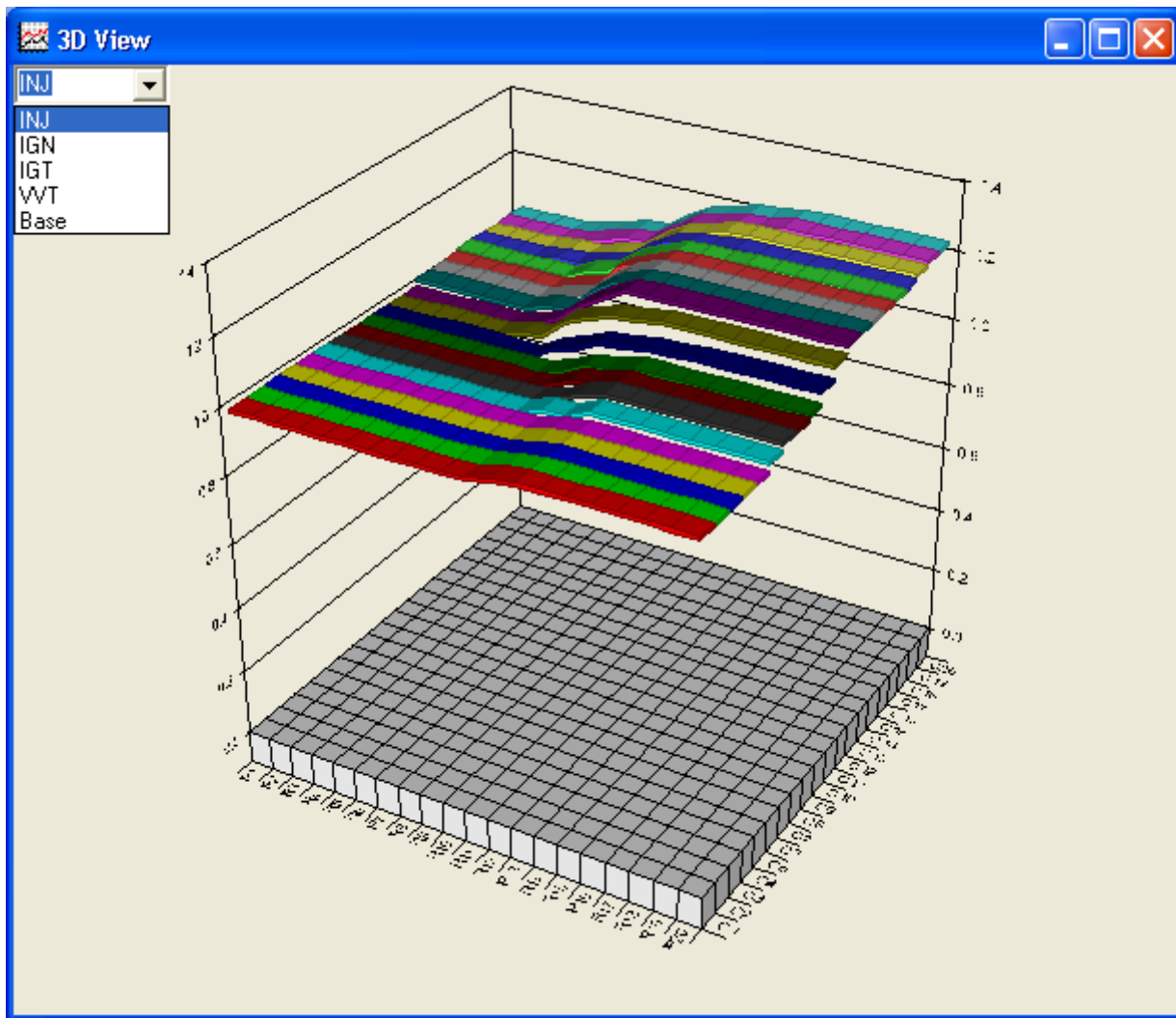




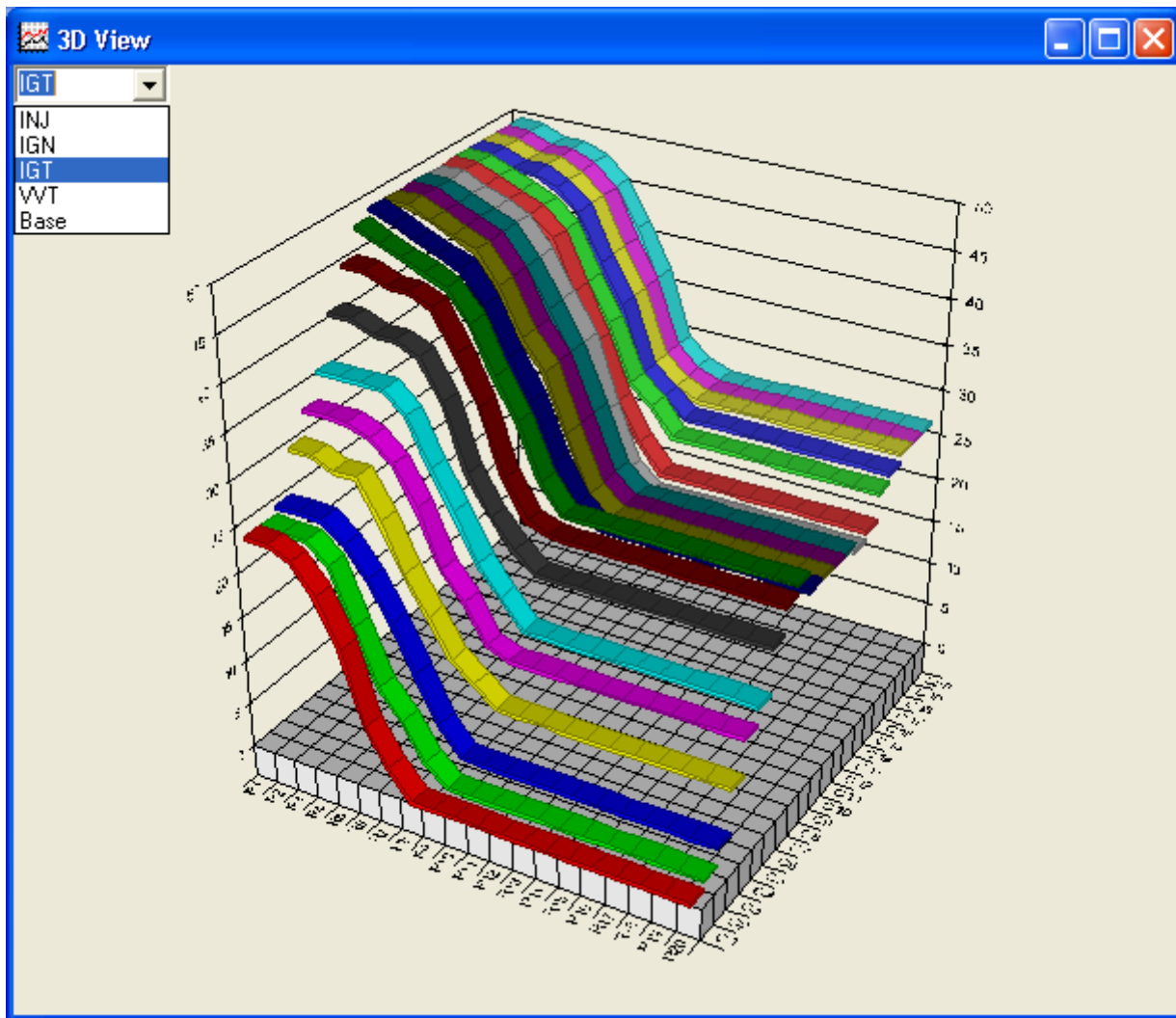


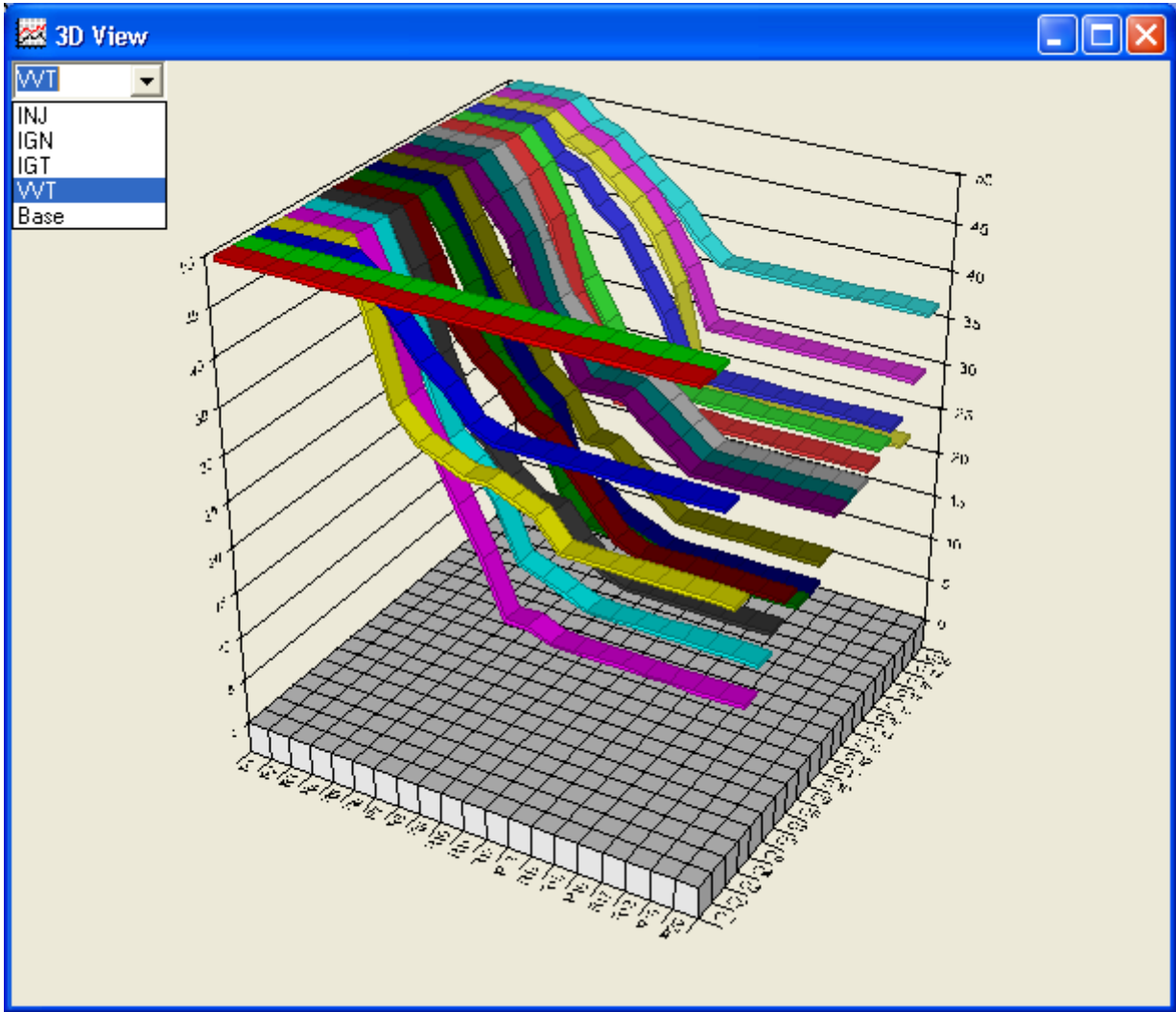
➤ A sample of a set-up chart with watches and an open log

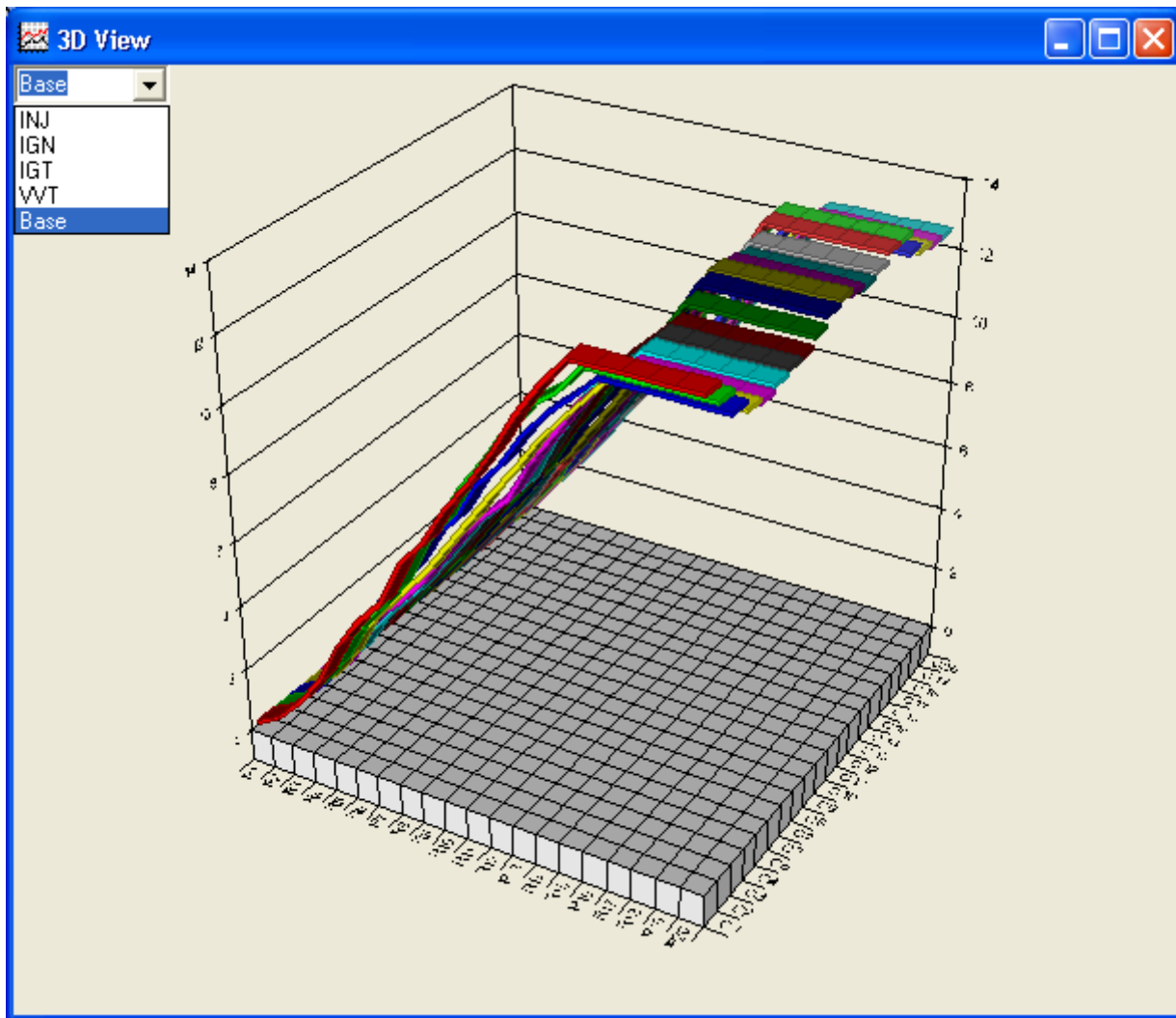


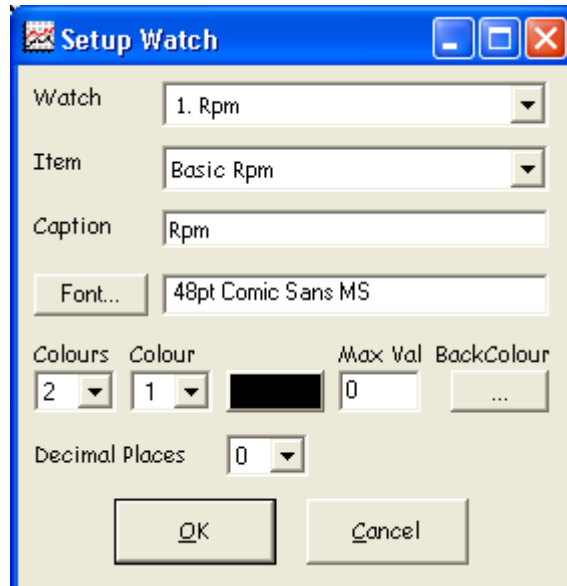


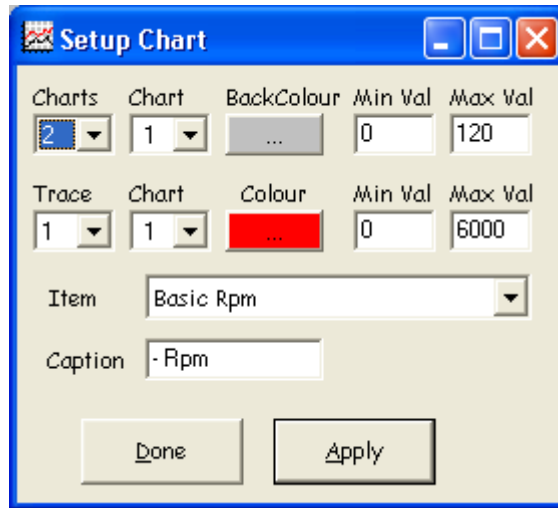












Map Watch																				
File Log View Window Options																				
Advanced Knock <span style="float:right">Max</span> <span style="float:right">10</span> Hold off (mSec) <span style="float:right">120</span> Max Val																				
	N01	N02	N03	N04	N05	N06	N07	N08	N09	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20
P01																				
P02							23	32	111	11	10	8	7							
P03					22	25	33	42	34	14	9	7	12	24	2					
P04			3	14	18	34	43	44	45	15	37	14								
P05		0	9	18	31	39	59	50	57	34	25									
P06		17	10	16	14	46	68	54	65	31	45	31								
P07		4	5	17	23	43	69	55	63	31	28									
P08		1	6	13	31	44	54	72	65	67	76									
P09		0	4		31	37	62	65	70	47	73	92	34							
P10				11		44	49	41	56	53		102	97							
P11						31	43	50	60	60	80	90	69							
P12							63	39	53	66	86	101	104	35						
P13							54	63	67	62	50	99		13						
P14								64	49	72	78	95	89	19						
P15								55	49	91	70	83	68	76						
P16								53	54	64	102	96		74		58				
P17									53		85	104			22					
P18									43	67	64	89	72							
P19									41	72		105	80							
P20										55	85		87	5						



**Setup Auxilarys**

AN1			AN2		
Name	Wide Band		Name	raw	
Volts	Value	Unit	Volts	Value	Unit
0	10	A/F	0	0	V
5	20	Poly	5	5	Poly

AN3			AN4		
Name	raw		Name	raw	
Volts	Value	Unit	Volts	Value	Unit
0	0	V	0	0	V
5	5	Poly	5	5	Poly

Delta AN1-AN2  
 Delta AN3-AN4  
 ReCalculate Log



