Guides

These guides will help you to use the features of eCtune and illustrates how to setup certain options.

- Create a basemap
- Setting up injectors
- Tps calibration
- Why use a calibration?
- Electronic boost controller
- Setting up scalars
- Using Map Trails
- Using Snapshot Manager
- Working with Secondary Maps
- 3-Step
  - Anti-lag
  - Full Throttle Shift
  - Launch Control
Creating a basemap

Select file -> New or press the new basemap button on the toolbar.

Mapsensor: Select a predefined mapsensor or fill in the min and max mbar.
Note: If you want to know if your configuration is good. The KOEO mbar displayed shouldn't differ much from the PA(barO) mbar
Injector Setup: Select the injector size (this will adjust injector fuel trim and crank fuel trim) select the correct battery offset table
Boost Setup:

-Not Boosted (10 columns) NA cars
-Boosted:
   -Boost columns: Select the amount of columns you want (max 14). Your map scalars will be setup. You can change them later
- Boost cut: You can enable a boostcut during creation
- Boost fuel: Boost fuel sets how much additional fuel to add to the boost portion of the basemap. The more efficient the turbo is, the higher you want to set this number. A good starting point is usually 120%
- Boost retard: This will retard a specified amount timing per PSI (starting at the first boost column)

Base: This will show you which codebase and version is in the basemap creator.

**Setup these parameters and press "NEXT"**

![Select Ecu Type](image_url)

**New BaseMap Creator -> Ecu Type**

Here you need to select the ecu type you have.
This will set:
- ELD
- Baro sensor
- Knock sensor
- Injector test
- O2 heater
- VTEC enable/disable
- VTEC points
- Rev limit points (cold/hot)

**After selecting the ecu type press "NEXT"**
New BaseMap Creator -> Base map

Here you select which fuel and ignition map you will start with.

Ecu: Which ecu the map was orginally
Region: JDM/EDM/USDM/CDN
Engine: which engine the stock map was designed
Description: About the map
Note: You can select a map with extended high cam rpm scale(11000 rpm)
These are basemap. Tuning is always required.

After selecting the right ignition and fuel map press "Finish".
Injector calibration

Parameters/information:
- Old injector size
- New injector size
- Overall fuel trim
- Injector deadtime compensation (injector offset)
- Battery compensation table
- Fnl multiplier: Injector fuel trim (multiplier) due to an other injector size

Notes:
1) You must first setup your wideband to read correctly in eTune.
2) Changing the injector size adjusts the final multiplier and the cranking multiplier. Cranking multiplier can be adjusted in “Fuel Trims”.
3) Injector offset can be used the adjust for injector latency (In Fuel Values).
4) Overall fuel trim can be used to add/substract fuel op top of injector trim.

Steps:
- Let your car IDLE
- Put in the information about your injectors. (already done if you used the basemap creator)
- You want to adjust injector offset and overall fuel trim during idle.
- Adjust injector offset and/or overall trim until you get a reading round 14.75 afr or 1 lambda
**Tps calibration**

Select Tools -> Tps Calibration

Notes:
- This only works during KOEO: Key on engine off
- Datalogging must be turned on

![Ecu disconnected](image1)

Datalogging not connected

![Set throttle at 0%](image2)

0.45v

if your throttle at 0% press "NEXT"

![Set throttle at 100%](image3)

0.45v

Set your throttle at 100% and press "NEXT"

![Finished, 0%: 0v; 100%: 0v](image4)

0.45v

Press "Close". Settings will be saved in the calibration.
You will see your tps volt at 0% and at 100%
Why use a calibration?

This section details the benefits of using a calibration file (.cal) instead of a .bin file for editing the ROM's parameters.

Note: Bin saving is only possible in Tuner Version of eCtune

Calibration Benefits

- Calibration Holds all the settings of the tune.
  - Tables
  - All settings
  - Comments
  - EVERYTHING
- Calibrations are universal
- Calibration are backwards compatible
- Calibration can be opened in eCtune, eCtune will use the baseRom stored in the program.
- File extension *.cal
- Tuner version can import/export calibrations

Example:
If you make a tune with rombase 0.0.35 and save a calibration.
Then, if you open the calibration with an updated ectune version/rombase e.g. 0.0.37 -- Every setting will be in the new bin with rombase 0.0.37. New settings/options in 0.0.37 rom that are not in 0.0.35 will not be overwritten. They will have the default values.
Electronic boost controller
Setting up Scalars

NOTE: This will adjust the map scalar for the selected map set (primary or secondary)

Increment:
- Start psi: The first boost value for the first column. Specify 0 here and the first column with get the increment.
- Increase: Amount of psi the load increments each column
- Column: The first boost column
- Note: You can specify 1 psi increment for the first 3psi (e.g., column 11, 12, 13) then 2 psi increments for the following 4 columns

Divide:
- Column: Fill in the first boost column
- Start pressure: The start psi for the first given column
- End pressure: End psi for the last column
- This will divide the boost range over the boost columns of your map
Note: This will adjust the current rpm scale. E.g. if low cam primary map is selected this scalar will change.

**Increment:**
- **Start rpm:** The rpm the first given row will get
- **Increase:** Amount of rpm the following row get increased
- **Starting row:** Which row you start adjusting
- **Note:** You can make the first row increase e.g. 300 rpm and afterward 500 rpm

**Divide:**
- **Start rpm:** The start rpm of your rpm band
- **End rpm:** The end rpm of your rpm band
- **Starting row:** Start row
- **Note:** The rpm band will be divide into row(start) till the last row.
Map trace trails

**What is map trails?** Map trails highlights the area of the fuel maps where the ECU read during a pull. This for quick reference to find where the AFR was not what you want.

To use live plot Rpm vs Afr/Boost wideband O2 logging must be enabled

**Steps for map trails:**
Enable map trails
Enable Live plot Rpm vs Afr/Boost
Make a pull(dyno/street)
Look at the plot
Spot a wrong AFR and lookup in the table with map trail where that spot is

**Enabling Map Trails**

Enable map trails by clicking the map trace trail menu item

**Clearing Map Trails:**

Click this icon to clear map trails
Click the menu item Clear Map Trace Trail from above screen.

**Example:**

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*Note:* The images and diagrams are not fully visible in this text format. The content should be considered as text-only presentation.
At 8000 rpm you see that the afr dipped to 12. So you need to know fast where that was read of the fuel table. With map trails you see where the ecu read during a pull. You know where the dip happen and you can change the 2 rows(8000/8300)(maybe from column 14 to the end)
**Snapshot Manager**

**What is Snapshot Manager?** During tuning I always used to put names like try00, try001, try003. I did this to save the rom if I made a lot of changes. Snapshot manager does the same. You save the base then after doing things you save another time. If you don't like the changes just roll back an older version.

To open snapshot manager go to "View" -> "Snapshot list"

Click snapshot on the toolbar  

![Snapshot list](image)

**Snapshot manager**

Save: Click save to save the current rom as a snapshot  
Load: Select which snapshot to roll back  
Clear: Remove all the snapshots
Working with Secondary Maps
3-Step

**Type:**
- TPS Based
- VSS Based

**General**
Activation input: Here you can select which input(switch) you want to use as activation
You can choose "always off" to disable FTL or "always On" to enable it full time
This can be a clutch switch or a on/off toggle switch

**TPS Based:**
Tps based launch control the driver can adjust the launch rpm on the fly. Just rev to that rpm point
and cross the tps engage threshold after that you can give less tps but the lock will stay. If you drop
below the disengage threshold the lock is removed.
Minimum rpm: The minimum rpm for 2-Step cut to work. Putting this to low(when always enabled)
can cause ftl locks in city traffic. High tps and low minimum rpm will cause FTL to engage.
Below vss: 2-Step will be active below this vss
TPS engage: If you cross the tps therhold the rpm will be lock
TPS disengage:If you come below this tps threshold the rpm lock will be released

**VSS Based:**
Launch rpm: specified rpm where the 2-Step will cut
Below vss: speed at which ftl lock deactivates.
To use clutch based just select in activation input that is connected to the clutch.
Full-Throttle Shift

**Full Throttle Shift**

Clutch input: Select which input is connected to the clutch
Shift rpm: The rpm where the engine will hold during shifts.

Note: If you enable Ignition cut or Ignition and fuel cut you keep your boost up during shifts (anti-lag effect)

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**Anti-Lag**

- **Enable Anti-Lag**

<table>
<thead>
<tr>
<th>TPS threshold</th>
<th>Extra Fuel</th>
<th>Ignition Retard</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 %</td>
<td>60.00 F%</td>
<td>15.00 degrees</td>
</tr>
</tbody>
</table>

See anti-lag setup guide
Anti-Lag

Anti-lag helps you build boost (spool turbo) at the start line when 2-Step is active. You can pre-stage on 2-step and the tps threshold decides when anti-lag starts.

Enable anti-lag: Enables/Disables anti-lag feature
Tps threshold: Anti-lag will start pulling timing and throw extra fuel above this tps threshold (only when 2step active)
Extra Fuel: Amount of fuel to dump during anti-lag (Fuel value between 0 -255)
Ignition Retard: Amount of retard during anti-lag (positive value)
Apply to final ignition: The anti-lag value will be subtracted from the final ignition. Otherwise it will be subtracted from the ignition table lookup

Note: Anti-lag disengage as soon as the wheels spin
eCtune

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- List of usable Inputs
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- Shortcut Keys
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- Advanced Tables
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  - Upload Calibration
  - Upload Base ROM
  - Verify
Installation of eCtune

Content body
List of usable Outputs

- ACC (AC Clutch A15)
- PCS (Purge Valve A20)
- PC2H (O2 Heater A6)
- FANC (Radiator Fan Relay A12)
- MIL (Check Engine Light A13)
- FPR (Fuel Pump Relay A7)
- IAR (Intake Butterflys A17)
- VTS (Vtec Solenoid A4)

These are the selectable outputs for eCtune.
- Ac clutch (A15)
- Purge valve (A20) out->ground
- O2 heater (A6) out->ground
- Radiator Fan Relay (A12) out->ground
- Check engine light (A7) out->ground
- Fuel Pump (A7) out->ground
- Intake butterflys (A17) out->ground
- Vtec solenoid (A4) out->12v

Notes: Most outputs can also be inverted.
## List of usable Inputs

<table>
<thead>
<tr>
<th>Service Check Connector (D4)</th>
<th>Start Signal (B9)</th>
<th>Vtec Pressure Switch (D6)</th>
<th>AC request (B5)</th>
<th>Brake Switch (D2)</th>
<th>Park/Neutral Input (B7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Service Check connector (d4)
Start Signal (B9)
Vtec Pressure Switch (D6)
AC request (B5)
Brake Switch (D2)
Park/Neutral Input (B7)

Brake switch is not available on EDM ecus
Park/Neutral is available on NON-AUTO ecu's
Registration

Fill in your details (name, organization, email) and press "Register Online"
The information will be received by eCtune Webserver.
After the license payment is received you will receive an email.

Follow the steps in the email to complete the registration. If you have
the reg key you don't have to fill in your information. Just paste the key in "Serial Key",
If your key is valid you will see your name, organization and email.
"Register Online" will be disabled.
**Your software is now registered.** you can press "Close".

**Note:** You need to fill in a valid email address.
Your reg key will be send to that address.
Shortcut keys

Content body
Settings

Content body
Advanced Tables

**Advanced Tables:**
Most advanced tables are correction tables.
Shortcuts:
- Ctrl + Arrow up (increase selection)
- Ctrl + Arrow down (decrease selection)
- Page up (increase selection)
- Page down (decrease selection)

**Context menu:**
- Set Selection
- Adj Selection(+/−)
- Adj Selection(%)
- Show 2d graph

---

**IAT fuel corrections:**

<table>
<thead>
<tr>
<th></th>
<th>-26</th>
<th>-21</th>
<th>-13</th>
<th>-1</th>
<th>20</th>
<th>50</th>
<th>70</th>
<th>99</th>
<th>141</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle &amp; Light Load</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>-1</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>Mid Load</td>
<td>14</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>-1</td>
<td>-2</td>
<td>-2</td>
<td>-3</td>
</tr>
<tr>
<td>High Load</td>
<td>19</td>
<td>15</td>
<td>12</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>-2</td>
<td>-4</td>
<td>-6</td>
</tr>
</tbody>
</table>
Advance Table Trace:
When datalogging is active you will see in most advance tables a trace where the current ecu reads.

Advance Table graph
After clicking the 2d button or Right click "show 2d graph", you will see a 2d graph of the data.
Import/Export

Content body
Chip Operations

Content body
Communication Errors

Content body
Error (MIL) Codes

When you have an error code:
MIL led will turn on
MIL in the datalogging data(parameters) window will turn ON(RED) (double clicking will open the error code window)

To view error codes:
Click "Error codes" on the view toolbar
Click "View Error Codes" after right-click on the datalog grid

Clear Error Codes:
Click "Clear DTC(error codes)" after right-clicking on the datalog grid
Click "Clear DTC(error codes)" after right-clicking on the error code list
Click "Tools"->"Clear DTC(error codes)"
Updating eCtune

Methods to update:

- During loading
- Force update
- Check for update

If there is an update and you update your installation these are the step you will see.

During update you will see this

Finished

After the update completes the changelog will be displayed and you will be able to use the latest version of eCtune.
**Force update**

To force a update go to **Start-> All programs -> eCtune -> eCtune Force Update**
Check for update

To check to see if you are using the latest version of eCtune, select **Help -> Check for update** from eCtune's menu.

*If there is an update you will see:*

![Image of update dialog box]

*If there is no update you will see:*

![Image of no update dialog box]
Check for update on load

This setting allows eCtune to automatically check for updates when the program is first ran. To enable this feature in eCtune, select Settings, then the Main tab.

![Loading screen eCtune]
Tools

- Injector Calibration
- Tps Calibration
- Timing Sync
- Kill Injectors
- Boost Table Setup
- Rpm Scalar Setup
- Map Scalar Setup
Timing sync

To Sync your ignition to 16.5 go to Tools -> Ignition Sync

Startup screen ignition sync

Ignition lock at 16.5°
Ignition sync lock 16.5 enable

Note: For ignition lock to work an emulator must be connected and real-time update enabled.
Kill Injectors

When this feature is enabled, the injectors will not fire. This feature can be useful to free-air calibrate a wideband or measure your compression.

Click Kill Injectors to turn off your fuel injectors.
Boost table setup:
1: Select which map set you want to adjust
2: Fuel Adjustment:
   Boost fuel sets how much additional fuel to add to the boost portion of the basemap. The more efficient the turbo is, the higher you want to set this number.
   A good starting point is usually 120%
3: Ignition Adjustment:
   Retard per psi: This will retard a specified amount timing per PSI (starting at the first boost column)
   Step retard: This will retard your ignition in steps. Lower boost less retard
   Click here to read more on Step Retard.
**RPM scalar setup**

Note: This will adjust the currently selected rpm scale. For example if the low cam primary map is selected, then the scalar changes will be applied to that table only.

**Increment**
- Start rpm: The rpm the first given row will get
- Increase: Amount of rpm the following row get increased
- Starting row: Which row you start adjusting
- Note: You can make the first row increase e.g. 300 rpm and afterward 500 rpm

**Divide**
- Start rpm: The start rpm of your rpm band
- End rpm: The end rpm of your rpm band
- Starting row: Start row
- Note: The rpm band will be devide into row(start) till the last row.
Map scalar setup

NOTE: This will adjust the map scalar for the selected map set (primary or secondary)

**Increment**
Start psi: The first boost value for the first column. Specify 0 here and the first column with get the increment.
Increase: Amount of psi the load increments each column
Column: The first boost column

Note: You can specify 1 psi increment for the first 3psi (e.g. column 11,12,13) then 2 psi increments for the following 4 columns.

**Divide**
Column: Fill in the first boost column
Start pressure: The start psi for the first given column
End pressure: End psi for the last column
This will divide the boost range over the boost columns of your map
Tables and Graphs

- Table Editing
- Graphs
Table Editing

Content body
**Graphs**

*Graphs window*

<table>
<thead>
<tr>
<th>Menu Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoom In</td>
<td></td>
</tr>
<tr>
<td>Zoom Out</td>
<td></td>
</tr>
<tr>
<td>Zoom Full</td>
<td></td>
</tr>
<tr>
<td>Set Plot Start:</td>
<td>00:29:20</td>
</tr>
<tr>
<td>Set Plot End:</td>
<td>00:29:20</td>
</tr>
<tr>
<td>Set Marker at:</td>
<td>00:29:20</td>
</tr>
<tr>
<td>Clear All Markers</td>
<td></td>
</tr>
<tr>
<td>Edit Templates</td>
<td></td>
</tr>
<tr>
<td>Show Data at cursor</td>
<td></td>
</tr>
</tbody>
</table>

*Graphs Context menu (right-click)*

**Datalogging Graphs:**
- Template: Select the template you want to use
- Show data at cursor: This will show the data from the plots at the current cursor.
- Zoom In: This will zoom in the datalog
- Zoom out: This will zoom out if the datalog is zoomed in
- Zoom full: this will show the complete datalog
- Set Marker: This will put a cursor marker with data where the mouse is. We scrolling through the log file you can see where you put flags(markers)
- Clear all markers: This will remove all the markers currently set.
- Set plot start: This will set the plot start frame(time)
- Set plot end: This will set the plot end frame(time)

Note: If a datalog is fully plotted you can zoom in on a piece of the log with plot start and plot end

Example Dyno Run:

![Datalogging Graphs](image)

**Full datalog**

Used plot start at the beginning of the run
Used plot end at the end of the run

**Datalogging Graphs Information:**

<table>
<thead>
<tr>
<th>00:00:24.819</th>
<th>00:00:37.159</th>
<th>Cursor: 00:00:24.933</th>
</tr>
</thead>
</table>

1: Plotted graph start time
2: Plotted graph end time
3: Cursor time
Graph Shortcuts:
Left/Right: Scroll through log file
Ctrl + Left: Move datalog cursor left(small step)
Ctrl + Right: Move datalog cursor right(small step)
Ctrl + Shift + Left: Move datalog cursor left(large step)
Ctrl + Shift + Right: Move datalog cursor right(large step)
Ctrl + Shift + Up: Zoom in
Ctrl + Shift + Down: Zoom out
Datalogging

- Logging
- Graphs
- Graph Templates
- Review Log File
- Datalog Display
- Customize Datalog Display
- Datalog Parameters
- Sensor Setup
# Logging

<table>
<thead>
<tr>
<th>Datalog Menu</th>
<th>Emulator</th>
<th>Tools</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connect</td>
<td>Ctrl+Alt+D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record</td>
<td>Ctrl+Alt+R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Save</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Minimal Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Log File</td>
<td>Ctrl+Alt+L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close Log File</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export Log File</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play</td>
<td>Ctrl+Alt+Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pause</td>
<td>Ctrl+Alt+Down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Datalogging Menu**

**Connect To Ecu:**
Click "Datalog "->"Connect"
Click Connect Icon(first from left) on the tool bar
Note: If auto-scan datalogging is enabled in setting it takes a little longer to connect to the ecu.

**Record datalog:**
The datalog will be recored in a temp log file(eCtune directory ~tmp.elf).
If eCtune ever crashes you can open that file to review your last log.
Click "Datalog" -> "Record"
Click Record icon(second from left) on datalog toolbar

**Save datalog:**
Click "Datalog" -> "Save"
Click Save icon on the datalog toolbar

**Datalogging Options(Settings menu):**
Sampling rate: Set how fast your display will be updated. To much data to fast makes your screen unreadable
Load datalog after recording: If this is enabled after recording the temporary log file is loaded after recording stopped. You view graphs to see where something went wrong.
Add data and time to log file: This will add the time and date to filename when saving a log file
Record on connection: This will start recording as soon as a connection to the ecu is made
Play datalog on load: This will start playing the datalog when opened

**Shortcuts:**
Connect to ecu: CTRL + ALT + D
Record: CTRL + ALT + R
Templates

**Graph Templates:**
You can make different templates to see data you want easy.
- Add: Click "Add" to add a new template to the template collection
- Name: The name of the template
- Remove: Click "Remove" to remove the current template
- Graphs: Enable how many plots there will be in this template
- Plot1-5: Select the sensor(parameters) you want to view(also set the color)

Example:
Closeloop(if you are testing wideabnd closeloop)
Tuning(to see all important tuning sensors)
EBC(to see your duty and target/current)
Review log file

Review a datalog file:
1: Open a log file
2: Close a log file
3: Play a log file in reverse mode
4: Play log file
5: Play log file a in fast mode
6: Pause a log file
7: Stop a log file
8: Current index time and total log file time
9: Track bar to scroll through the log file
Note: during play back you can move the trackbar
Datalog Display

Datalogging display:
This displays all necessary data you need during tuning. You can customize this display(click here).

Data Display(example INJ):
INJ: Injector data
Primary data: Duty cycle
Secondary Data: Injector duration
Warning color: If you setup warning colors in sensor setup the background will color orange to red(click here).

Context menu display item(Exmaple right click on o2 display item)

Context menu:
Add Data display: This adds a new data display(see customize display)
Add Led display: This adds a new led display
Remove o2: This removes the current display
Move left: Move the current item one to the left
Move right: Move the current item one to the right
Restore defaults: This restore the default display items
Show Secondary data: This enable/disable secondary data for current display item
Note: Some display items have extra options
Customize Display

Click "add data display". You will see the following in your display window.(note if you don't see it make your display window bigger)

Right click the "New" Item. Then go to "Set type" and select the display you want.

Note: Expect this list to get bigger
### Datalog Paramers

<table>
<thead>
<tr>
<th>Data</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td></td>
</tr>
<tr>
<td>VSS</td>
<td>kmh</td>
</tr>
<tr>
<td>Gear</td>
<td></td>
</tr>
<tr>
<td>MAP</td>
<td>mBar</td>
</tr>
<tr>
<td>Boost</td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>mBar</td>
</tr>
<tr>
<td>TPS</td>
<td>%</td>
</tr>
<tr>
<td>TPS Voltage</td>
<td>V</td>
</tr>
<tr>
<td>INJ duration</td>
<td>ms</td>
</tr>
<tr>
<td>INJ duty</td>
<td>%</td>
</tr>
<tr>
<td>Fuel Value</td>
<td></td>
</tr>
<tr>
<td>IGN Final</td>
<td>*</td>
</tr>
<tr>
<td>IGN Table</td>
<td></td>
</tr>
<tr>
<td>ECT</td>
<td>°C</td>
</tr>
<tr>
<td>IAT</td>
<td>°C</td>
</tr>
<tr>
<td>A/F Ratio</td>
<td>afr</td>
</tr>
<tr>
<td>O2 V wideband</td>
<td>V</td>
</tr>
<tr>
<td>BAT Voltage</td>
<td>V</td>
</tr>
<tr>
<td>ELD Voltage</td>
<td>V</td>
</tr>
<tr>
<td>MAP Voltage</td>
<td>V</td>
</tr>
<tr>
<td>MIL</td>
<td></td>
</tr>
<tr>
<td>Frame</td>
<td></td>
</tr>
<tr>
<td>Interval</td>
<td>ms</td>
</tr>
<tr>
<td>Duration</td>
<td></td>
</tr>
</tbody>
</table>

**Datalogging Data(Parameters):**
This displays all the data collected from the ecu.

**Context Menu:**
- Sensor Setup
- Clear DTC(error codes)
- View error Codes
- Log minimal
Sensor Setup

Sensor setup

Sensor List:
_all the datalogging parameters_
Sensor tag: The internal name of the sensor in eTune
Display name: This name will be displayed in the datalogging data window
Description: Description for the parameter

Sensor Detail:
Here you can change: display name, sensor description, warning min and warning max.
Warning: you can fill in a min and max value. The background(grid/display) will go from orange to red.
Tuner Tools

- Map Trace Trails
- Live Plots
- Live Plot Time Vs AFR
- Live Plot RPM Vs AFR/Boost
- Live Plot RPM Vs Accel
- Smart Tracking
Live plots

- Time Vs AFR
- RPM Vs AFR/Boost
- RPM Vs Accel
Time vs AFR

Content body
RPM Vs AFR/Boost

Content body
RPM Vs Accel

Content body
Smart Tracking

Content body
Realtime programming

- Downloading
- Upload Calibration
- Upload Base ROM
- Verify
Downloading

Content body
Upload Calibration

Content body
Upload Base ROM

Content body
Verify

Content body
Rom Parameters

These topics will guide you through the rom parameters

- Main Settings
- Fuel and Ignition corrections
- Features
- Boost settings
Main Settings

- Rom Options
- Map Sensor
- Idle Settings
- Vtec Settings
- IAB Settings
- Rev Limiter Settings
- Fuel Cut Settings
- Closeloop
- Tps Sensor
- Rom Comments
- Fuel & Ign Table settings
- Purge Valve(PCS)
Rom Options

- Rom Options:
  - Disable knock sensor
  - Disable ELD
  - Disable PAt
  - Disable Injector Test
  - Disable O2 heater
  - Disable Closeloop Only
  - Disable Closeloop + VE correction (Stock)
  - Disable VTEC
  - Disable VE correction
  - Disable Auto tranny
  - Disable IAB
  - Disable STS (Starter Signal) input
  - Disable Alternator Control

Ignition Corrections:
- Disable ignition correction above 1023 mBar

Caution: This disables stock ignition corrections. Ect/Iat/Cylinder/Gear/Relay corrections are still active.

Gear Ratio:
- Tranny: Integra GSR USD.M 94+
- Custom Ratio

Ratio's Raw
- gear 1: 70
- gear 2: 110
- gear 3: 154
- gear 4: 198

Rom options
MAP Sensor

Map sensor

Map Sensor Settings

Reset Map Scalars?
Boost section map scalar will reset!

Yes  No

Map Sensor Settings

Reset mbar setting found in "Boost options" to default values. Are you sure?

Yes  No
Idle Settings

Target Idle: 949 rpm

IACV Settings:

IACV duty: 18%

Disable IACV error

Target Idle Map:

<table>
<thead>
<tr>
<th>ECT (C)</th>
<th>0</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>141</th>
</tr>
</thead>
<tbody>
<tr>
<td>rpm 1</td>
<td>1599</td>
<td>1599</td>
<td>1450</td>
<td>1300</td>
<td>1000</td>
<td>950</td>
<td>950</td>
</tr>
<tr>
<td>rpm 2</td>
<td>1599</td>
<td>1599</td>
<td>1450</td>
<td>1300</td>
<td>1000</td>
<td>950</td>
<td>950</td>
</tr>
</tbody>
</table>
# VTEC Settings

- **Vtec Settings:**
  - Enable VTEC routine

- **Vtec Options:**
  - Disable VTEC speed check
  - Disable VTEC act check
  - Disable VTEC pressure sensor
  - Disable VTEC solenoid error
  - Disable VTEC error check (Race use only!)
  - Disengage VTEC below minimum load

| Minimum Load | 100 mBar |
| Minimum Ect | 57 C |
| Minimum Speed | 8 kmh |
| Disengage | 500 rpm below engage rpm |

- **Vtec Points:**
  - Low load: 5600 rpm 15 tps %
  - High load: 5100 rpm 40 tps %

Note: Vtec rpm will be interpolated when tps is between tps low load and tps high load.
IAB Settings

- IAB Settings:
  - IAB enable
  - USDM/EDM ccu(gnd output)

- IAB rpm:
  - Set: 5750 rpm
  - Reset: 5450 rpm
# Rev Limits

## Rev limits & Options:

<table>
<thead>
<tr>
<th></th>
<th>Low cam</th>
<th>Set</th>
<th>7022 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reset</td>
<td>6970 rpm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High cam</td>
<td>8600 rpm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reset</td>
<td>9561 rpm</td>
</tr>
</tbody>
</table>

## Rev Limiter Type:
- [ ] Fuel Cut
- [ ] Ignition Cut
- [x] Fuel + Ignition Cut
Fuel Cut Settings

Decel FuelCut Conditions:
Below tps: 5 %
Below load: 128 mBar
Fuel cut delay: 500 mSec

Overrun Tps vs Rpm:

Overrun: When fuelcut active(mbar/tps based) fuel will be restored when current rpm is below the rpm from the table above.
Closeloop

Options:
- [x] Disable Closeloop
- [x] Disable O2 heater
- [ ] Wideband as closeloop input

Closeloop Settings:
- Target O2 volt: 0.51 V
- Max load for closeloop: 750 mBar
- Minimum ECT for closeloop: 01 C
- Maximum IAT for closeloop: 74 C
- Maximum O2 volt for closeloop: 1.51 V

Stock Closeloop Disable by Tps:

<table>
<thead>
<tr>
<th>rpm</th>
<th>8000</th>
<th>4000</th>
<th>3000</th>
<th>2000</th>
<th>1500</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td>open loop tps(%)</td>
<td>44</td>
<td>44</td>
<td>37</td>
<td>29</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>close loop tps(%)</td>
<td>41</td>
<td>41</td>
<td>35</td>
<td>25</td>
<td>19</td>
<td>13</td>
</tr>
</tbody>
</table>

Correction Settings:
- Minimum closeloop adjustment: -30 %
- Maximum closeloop adjustment: 47 %
# TPS Sensor

Enable tps sensor rescaling

### Tps Volt Settings:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tps sensor</td>
<td>Stock Honda</td>
<td></td>
</tr>
<tr>
<td>Min (0%)</td>
<td>0.47</td>
<td>V</td>
</tr>
<tr>
<td>Max (100%)</td>
<td>4.55</td>
<td>V</td>
</tr>
</tbody>
</table>

TPS sensor
ROM Comments

Here you can add comments to the calibration. Comments are save both in the binary(tuner version) and calibration.
## Fuel And Ign Table Settings

| High Cam Map only: |  
|-------------------|---
| Secondary Maps only: |  
| Fuel & Ign table columns: | 10  
| Fuel & Ign table rows: |  

### Table Indexing:

**Primary Tables:**
- Map Sensor indexing
- TPS Sensor indexing
- Alpha-N indexing

**Secondary Tables:**
- Map Sensor indexing
- TPS Sensor indexing
- Alpha-N indexing

### Alpha-N Settings:
- MAP value with tps 0%: __ อิลล__
- MAP value with tps 100%: __ อิลล__
- Alpha-N Tps crossover: __ อิลล__
- Alpha-N Map crossover: __ อิลล__

---

*Ignition Table settings*
**Purge Valve (PCS)**

<table>
<thead>
<tr>
<th>Purge Valve (PCS) Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Disable PCS</td>
</tr>
<tr>
<td>☐ Invert PCS (obd2b)</td>
</tr>
</tbody>
</table>

**Purge Valve (PCS) Settings**

**Disable PCS:** Disables the Purge valve function in the ECU.

**Invert PCS:** Some obd2 cars have their PCS signal inverted. You may need to invert the output otherwise it may cause the PCS to stay open causing a vacuum leak.
Fuel And Ignition Corrections

- Ignition & Fuel Corrections
  - Injector Calibration
  - Fuel Trims
  - ECT Corrections
  - IAT Corrections
  - Individual Cyl Corrections
  - Gear Corrections
  - Crank Fuel Map
  - Post Fuel Map
  - VE Correction
  - Dwell Ignition Corrections

- Injector calibration
- Fuel Trims
- ECT corrections
- IAT corrections
- Individual Cylinder Corrections
- Gear Corrections
- Crank Fuel Map
- Post Start Map
- VE correction
- Dwell Ignition Corrections
- About Advance Tables
Injector Calibration

Injector Calibration:

- Injector Size:
  - Stock Injector Flow Rating: 240 cc
  - Current Injector Flow Rating: 1000 cc

- Injector Trim:
  - Injector (Final) multiplier: 0.240
  - Injector offset: 91.00 FV
  - Overall Fuel Trim: 0 %

Battery Offset Table:

- Injectors (bat offset): Precision Turbo 100Ccc (96lb) 2ohm

<table>
<thead>
<tr>
<th>Volts (V)</th>
<th>Offset (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.90</td>
<td>1.03</td>
</tr>
<tr>
<td>14.01</td>
<td>1.05</td>
</tr>
<tr>
<td>13.02</td>
<td>1.50</td>
</tr>
<tr>
<td>11.58</td>
<td>1.70</td>
</tr>
<tr>
<td>10.99</td>
<td>2.03</td>
</tr>
<tr>
<td>9.02</td>
<td>3.02</td>
</tr>
<tr>
<td>6.99</td>
<td>4.58</td>
</tr>
</tbody>
</table>

Graph:

Note:
1) Changing the injector size adjusts the final multiplier and the cranking multiplier. Cranking multiplier can be adjusted in "Fuel Trim".
2) Injector offset can be used to adjust for injector latency in Fuel Values.
3) Overall fuel trim can be used to add/substract fuel on top of injector trim.

Injector calibration
## Fuel Trims

<table>
<thead>
<tr>
<th>Fuel Trims</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Injector(Final) Multiplier:</td>
<td>0.240</td>
</tr>
<tr>
<td>Overall Fuel Trim:</td>
<td>0 %</td>
</tr>
<tr>
<td>Cranking Trim:</td>
<td>-76 %</td>
</tr>
<tr>
<td>Post Start Trim:</td>
<td>0 %</td>
</tr>
<tr>
<td>O2 correction Trim:</td>
<td>0 %</td>
</tr>
<tr>
<td>Tps Tipin:</td>
<td>50 %</td>
</tr>
</tbody>
</table>
### ECT Corrections

**ECT corrections:**

- ECT fuel correction:

<table>
<thead>
<tr>
<th>ECT (C)</th>
<th>-25</th>
<th>-21</th>
<th>-13</th>
<th>-1</th>
<th>20</th>
<th>40</th>
<th>75</th>
<th>81</th>
<th>141</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correction</td>
<td>40</td>
<td>35</td>
<td>25</td>
<td>21</td>
<td>15</td>
<td>10</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- ECT ignition correction (negative values retard):

<table>
<thead>
<tr>
<th>ECT (C)</th>
<th>-25</th>
<th>-21</th>
<th>-1</th>
<th>20</th>
<th>50</th>
<th>75</th>
<th>99</th>
<th>112</th>
<th>141</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ign Trim</td>
<td>23.75</td>
<td>28.75</td>
<td>19.00</td>
<td>8.50</td>
<td>3.00</td>
<td>0.00</td>
<td>0.00</td>
<td>-3.00</td>
<td>-5.00</td>
</tr>
</tbody>
</table>

**Graph:**

![ECT Corrections Graph](image)
IAT corrections

IAT fuel corrections:

<table>
<thead>
<tr>
<th>IAT (°C)</th>
<th>-26</th>
<th>-21</th>
<th>-13</th>
<th>-1</th>
<th>20</th>
<th>50</th>
<th>70</th>
<th>99</th>
<th>141</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle &amp; Light Load</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>Mid Load</td>
<td>14</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>-1</td>
<td>-2</td>
<td>-3</td>
</tr>
<tr>
<td>High Load</td>
<td>19</td>
<td>16</td>
<td>12</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>-2</td>
<td>-4</td>
<td>-6</td>
</tr>
</tbody>
</table>

IAT ignition corrections (negative values retard):

<table>
<thead>
<tr>
<th>IAT (°C)</th>
<th>-26</th>
<th>-13</th>
<th>-1</th>
<th>20</th>
<th>50</th>
<th>73</th>
<th>81</th>
<th>141</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ign. Tim</td>
<td>1.00</td>
<td>0.50</td>
<td>0.25</td>
<td>0.00</td>
<td>0.00</td>
<td>-0.25</td>
<td>-0.50</td>
<td>-1.00</td>
</tr>
</tbody>
</table>

Graph:

```
  2
  1.2
  1
  0.4
  0.2
  0
-0.4
-0.2
-2

-26  -5  15  37  58  78  99  120  141
  IAT
```
### Individual Cylinder Corrections

**Cylinder fuel trim**

<table>
<thead>
<tr>
<th>Cylinder</th>
<th>1</th>
<th>3</th>
<th>4</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel trim</td>
<td>0</td>
<td>9</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

**Cylinder ignition trim (negative values retard):**

<table>
<thead>
<tr>
<th>Cylinder</th>
<th>1</th>
<th>3</th>
<th>4</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ign trim</td>
<td>0.00</td>
<td>-0.50</td>
<td>-0.25</td>
<td>0.00</td>
</tr>
</tbody>
</table>
## Gear Corrections

### Gear Corrections

<table>
<thead>
<tr>
<th>Gear</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel trim</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Gear Ignition Trim (negative values retard)

<table>
<thead>
<tr>
<th>Gear</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ign trim</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Crank Fuel Map

Crank Fuel Table:

<table>
<thead>
<tr>
<th>Crank</th>
<th>ECT (°C)</th>
<th>26</th>
<th>-21</th>
<th>-13</th>
<th>-1</th>
<th>20</th>
<th>40</th>
<th>61</th>
<th>141</th>
<th>141</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Value</td>
<td>7500</td>
<td>7500</td>
<td>4375</td>
<td>3125</td>
<td>1562</td>
<td>937</td>
<td>750</td>
<td>600</td>
<td>500</td>
<td></td>
</tr>
</tbody>
</table>

Graph:

Fuel Corrections
Post Start Map

Post Start Correction:

Post Start Table:

<table>
<thead>
<tr>
<th>Value</th>
<th>40.00</th>
<th>40.00</th>
<th>28.00</th>
<th>24.00</th>
<th>16.00</th>
<th>12.00</th>
<th>9.00</th>
<th>9.00</th>
<th>9.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT (C)</td>
<td>-26</td>
<td>-21</td>
<td>-13</td>
<td>-1</td>
<td>20</td>
<td>40</td>
<td>75</td>
<td>141</td>
<td>141</td>
</tr>
</tbody>
</table>

Graph

Correction

Post Start
**VE Corrections**

**VE correction settings:**
- Checked: Disable VE correction
- Unchecked: VE Overheat Fuel disable

**Minimum coolant temp ve correction:**
- 52.00°C

**VE Overheat Fuel Correction:**

<table>
<thead>
<tr>
<th>ECT (°C)</th>
<th>26</th>
<th>90</th>
<th>99</th>
<th>106</th>
<th>112</th>
<th>141</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Correction</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>9.00</td>
<td>9.00</td>
<td>9.00</td>
</tr>
</tbody>
</table>

**Graph:**

![Graph showing fuel correction vs. ECT (°C)]

*Corrections setting*
Dwell Ignition Corrections

Note: This is the stock dwell compensation table. Don't change it unless you know what you are doing!

Dwell Ignition settings
Features

- Service Check Connector
- Fuel Pump Settings
- Secondary Map Settings
- Output Control
- 3-Step Settings:
  - Anti-lag
  - Full Throttle Shift
  - Launch Control
- GPO
- GPO Fuel and Ignition Settings

- 3-Step Settings
- MIL ShiftLight
- Air Conditioning
- Radiator Fan Settings
- Anti-Start Device
**Service check connector**

<table>
<thead>
<tr>
<th>Service Check Connector Input:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCC input:</td>
</tr>
<tr>
<td>Service Check Connector (D4)</td>
</tr>
<tr>
<td>Invert Input</td>
</tr>
</tbody>
</table>

**NOTE:**
By selecting "KOEO TPS BASED" your MIL can flash ECU codes without placing a jumper in the service connector.
To flash codes, turn the key on, engine off, and press the throttle more than 50%.
To clear MIL error codes, simply press the brake pedal when codes are flashing.

**SCC Input:** Use any input as SCC connector

**KOEO TPS BASED:** Your MIL will flash ecu codes.
To flash codes, turn the key on, engine off and press the throttle more than 50%
To clear the current error codes, press the brake pedal while codes are flashing.
Fuel Pump control

<table>
<thead>
<tr>
<th>Fuel Pump Settings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Pump:</td>
</tr>
<tr>
<td>Normal</td>
</tr>
<tr>
<td>Always On (Drain Tank)</td>
</tr>
<tr>
<td>Always Off (Fuel Off)</td>
</tr>
</tbody>
</table>

Fuel Pump:
Normal: The fuel pump will work as stock.
    If you switch your key, your pump will prime and turn off again.
    After starting your car the fuel pump will turn back on (when starter signal input is active)
Always ON: You fuel pump will be on as soon as your key is ON.
    This can be useful to drain your fuel tank
Always OFF: Your fuel pump will be always off.
    This can be useful to free-air calibrate a wideband or measure your compression (no fuel in the cylinders)
**Secondary Map Settings**

<table>
<thead>
<tr>
<th>Secondary Map Settings:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Secondary Map Activation:</strong></td>
</tr>
<tr>
<td>- Activate with General Purpose Output</td>
</tr>
<tr>
<td>- Input Switch</td>
</tr>
<tr>
<td>- Condition Based</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Maps Input Switch:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input:</strong> Disabled</td>
</tr>
<tr>
<td>[Invert Input]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Map Crossover:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Minimum Load: 35 nbar</td>
</tr>
<tr>
<td>- Minimum Throttle: 12 %</td>
</tr>
<tr>
<td>- Above RPM: 1000</td>
</tr>
</tbody>
</table>
General Purpose output

- GPO
- Adjustments
## Fuel And Ignition Corrections

<table>
<thead>
<tr>
<th>Engine Speed (rpm)</th>
<th>11000</th>
<th>10000</th>
<th>9000</th>
<th>8000</th>
<th>7000</th>
<th>6000</th>
<th>5000</th>
<th>4000</th>
<th>3000</th>
<th>2000</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Value</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engine Speed (rpm)</th>
<th>11000</th>
<th>10000</th>
<th>9000</th>
<th>8000</th>
<th>7000</th>
<th>6000</th>
<th>5000</th>
<th>4000</th>
<th>3000</th>
<th>2000</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>3.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

_GPO fuel and ignition corrections_
General Purpose Output

GPO 1 Output:
- Enable GPO 1
- Output: MIL (Check Engine Light A13)
- Invert Output

GPO 1 Input:
- Input: Power Steering Switch (B6)
- Invert Input

GPO 1 Options:
- Switch to secondary maps on output
- Switch to high gain maps on output
- Disable output if MIL (error) code
- Disable output if RFI/FMS/Boostout active

GPO 1 Activation Conditions:
- Engine Speed: Minimum 3000 rpm, Maximum 8223 rpm
- Load: Minimum 145 mBar, Maximum 1790 mBar
- Coolant Temp: Minimum -23 °C, Maximum 141 °C
- Intake Temp: Minimum -23 °C, Maximum 141 °C
- Speed: Minimum 0 km/h, Maximum 248 km/h
- Throttle Position: Minimum 75 %

General Purpose Output Settings
3-Step Settings

Launch control settings

Anti-lag Settings

Full throttle Shift Settings

See 3-Step guide
Full Throttle Shift

Content goes here
Launch Control

Content goes here
MIL shiftlight

MIL Shiftlight settings:
- Enable MIL shiftlight

Shiftlight rpm: 8012 rpm

- Gear based shiftlight

<table>
<thead>
<tr>
<th>Gear</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rpm</td>
<td>8012</td>
<td>8012</td>
<td>8012</td>
<td>8012</td>
<td>8012</td>
</tr>
</tbody>
</table>
## Air Conditioning

<table>
<thead>
<tr>
<th>Air Conditioning Settings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Disable AC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AC idle recovery:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disengage below: 500 rpm</td>
</tr>
<tr>
<td>Engage above: 600 rpm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AC cut settings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Enable AC cut</td>
</tr>
<tr>
<td>Disengage above rpm: 5000 rpm</td>
</tr>
<tr>
<td>Disengage above tps: 86 %</td>
</tr>
</tbody>
</table>
# Radiator Fan Settings

## Fan Control

<table>
<thead>
<tr>
<th>Enable</th>
<th>Fan Ctrl:</th>
<th>°C</th>
</tr>
</thead>
</table>

## Fan Control Output

Output: ACC (AC Clutch A15)

Invert Output

## Idle Extra Cool

<table>
<thead>
<tr>
<th>Enable</th>
<th>Max Vss:</th>
<th>vss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min Ect:</td>
<td>ect</td>
<td></td>
</tr>
</tbody>
</table>

Above Rpm: | ect |

This option can be used to pull air thru your intercooler at the drag line. If vss is higher then threshold the fan will turn on at "Fan Ctrl".
Anti-Start Device

Content goes here
Boost settings

- Options
- Boostcut Settings
- Electronic Boost Controller Settings
  - EBC Settings
  - Solenoid Sonfiguration
  - Duty Lookup Map
  - Boost on Error Map
  - IAT Compensation Map
  - Gear Based Target Maps
  - RPM Based Target Maps
- Manual Boost Controller settings

See guide how to setup EBC
Options

Content goes here
Boost Cut Settings

- Enable boost cut

<table>
<thead>
<tr>
<th>Boostcut Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit at current rpm</td>
<td></td>
</tr>
<tr>
<td>Limit at 1200 rpm</td>
<td></td>
</tr>
</tbody>
</table>

- Enable boostcut if check engine code

Cold | Hot ECT | 
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>C</td>
</tr>
</tbody>
</table>

Cold boostcut: 1404 mbar 5.51 psi
Hot boostcut: 2345 mbar 19.16 psi
Electronic Boost Controller Settings

- Electronic Boost Controller Settings
  - Solenoid Configuration
  - Duty Lookup Map
  - Boost On Error Map
  - IAT Compensation Map
  - Gear Based Target Maps
  - Rpm Based Target Maps

- EBC Settings
- Solenoid Configuration
- Duty lookup map
- Boost on error map
- IAT compensation map
- Gear Based Target Maps
- Rpm Based Target Maps

See guide how to setup EBC
**EBC Settings**

**Ebc Activation Input:**
- Activation: Service Check Connector (D4)
- Invert Input

**Ebc Hi/Lo switch:**
- Hi/Lo Select: AC request (B5)
- Invert Input

**Ebc Feedback Method:**
- Duty Lookup
- Boost On Error

**Ebc Feedback Activation:**
- 1473 mbar 6.51 psi

**Ebc Target Method:**
- Fixed Duty Cycle
  - Lo: 40.00%
  - Hi: 15.00%
- Gear Based
- RPM Based

**Ebc FastSpool:**
- FastSpool Activation: 100 mbar -13.40 psi
- FastSpool Duty: 100.00%

**Ebc Feedback Settings:**
- Overshoot Timer: 2 x 10 nSec
- Undershoot Timer: 100 x 10 nSec
- Deadband error: 1 psi

**Ebc Steps:**
- Check if input switch active
- Fast spool e.g. 1040 mbar: holds the wastegate @ fastspool duty cycle (100% can be used)
- Feedback/Controller Activation e.g. 5 psi: Looks up your target psi with Fpm/Gear based
  - Target Psi found:
    - Checks if Duty Lookup or Boost on error is used
    - Determines the duty cycle
    - If Duty Lookup is used, adjust duty cycle with IAT compensation

**EBC Settings**
## Solenoid Configuration

<table>
<thead>
<tr>
<th>Electronic Boost Controller Solenoid Configuration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ebc Output</td>
</tr>
<tr>
<td>- Pin A11 (EGR)</td>
</tr>
<tr>
<td>- Pin A17 (AT Lookup/tab)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solenoid Configuration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Normally Open 0% duty maximum boost; 100% duty Minimum boost (GM)</td>
</tr>
<tr>
<td>- Normally Closed 100% duty maximum boost; 0% duty Minimum boost</td>
</tr>
</tbody>
</table>

*EBC solenoid configuration*
Duty Lookup map

EBC Duty Cycle Lookup Maps:

Target Boost(psi) vs Duty Cycle:

<table>
<thead>
<tr>
<th>Target Boost(psi)</th>
<th>Duty (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.86</td>
<td>45</td>
</tr>
<tr>
<td>21.85</td>
<td>40</td>
</tr>
<tr>
<td>19.73</td>
<td>32</td>
</tr>
<tr>
<td>17.74</td>
<td>25</td>
</tr>
<tr>
<td>15.75</td>
<td>20</td>
</tr>
<tr>
<td>13.76</td>
<td>18</td>
</tr>
<tr>
<td>11.76</td>
<td>16</td>
</tr>
<tr>
<td>9.78</td>
<td>14</td>
</tr>
<tr>
<td>7.79</td>
<td>10</td>
</tr>
<tr>
<td>5.8</td>
<td>8</td>
</tr>
<tr>
<td>-0.17</td>
<td>8</td>
</tr>
</tbody>
</table>

Target Boost(psi) vs Duty Cycle graph:

Note Psi vs % table:
Most Left biggest target
Most right smallest target

Example:
20psi 15psi 10psi 5psi 0psi
50% 40% 32% 10% 0%

EBC duty lookup map
Boost on error map

Boost On Error Map:

Target Error vs Duty Adjustment:

<table>
<thead>
<tr>
<th>Target Error (psi)</th>
<th>-4.3</th>
<th>-4</th>
<th>-2.9</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>2.9</th>
<th>4</th>
<th>4.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duty Adjustment(%)</td>
<td>3</td>
<td>3</td>
<td>2.5</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>-2</td>
<td>-3</td>
<td>4</td>
<td>-4</td>
</tr>
</tbody>
</table>

Center column(s) will always be 0
Left from center column target error should be negative and duty cycle should be positive
Right from center column target error should be positive and duty cycle should be negative

EBC boost on error map
IAT compensation map

Content goes here
Gear Based target maps

EBC Gear Based Target Maps:

Low Boost Setting:

<table>
<thead>
<tr>
<th>Gear</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target (psi)</td>
<td>8.32</td>
<td>8.32</td>
<td>8.32</td>
<td>8.32</td>
<td>8.32</td>
</tr>
</tbody>
</table>

High Boost Setting:

<table>
<thead>
<tr>
<th>Gear</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target (psi)</td>
<td>10.91</td>
<td>10.91</td>
<td>10.91</td>
<td>10.91</td>
<td>10.91</td>
</tr>
</tbody>
</table>

EBC Rpm Based Target Graph:

EBC gear based target maps
Rpm Based target maps

### Ebc Rpm Based Target Maps:

#### Low Boost Setting:

<table>
<thead>
<tr>
<th>Rpm</th>
<th>11000</th>
<th>10000</th>
<th>9000</th>
<th>8000</th>
<th>7000</th>
<th>6000</th>
<th>5000</th>
<th>4000</th>
<th>3000</th>
<th>2000</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target [psi]</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
<td>7.73</td>
</tr>
</tbody>
</table>

#### High Boost Setting:

<table>
<thead>
<tr>
<th>Rpm</th>
<th>11000</th>
<th>10000</th>
<th>9000</th>
<th>8000</th>
<th>7000</th>
<th>6000</th>
<th>5000</th>
<th>4000</th>
<th>3000</th>
<th>2000</th>
<th>0</th>
</tr>
</thead>
</table>

### Ebc Rpm Based Target Graph:

EBC rpm based target maps
# Manual Boost Controller

**Manual Boost Controller Settings:**

**Boost Controller Enable:**
- **Input:** Disabled
  - [ ] Invert Input

**Settings:**
- Minimum Engine Speed: 1000 rpm
- Minimum Coolant Temp: -26°C
- Minimum Throttle: 3%
- Stage 1 Ignition Retard: 0°
- [ ] Disable boost controller if MIL (error) code
- [ ] Disable boost controller if F1/F2/Boostout active

**Stage 2:**
- **Output:** ACC (AC Clutch A15)
  - [ ] Invert Output
- Speed: 0 km/h

**Stage 3:**
- **Output:** ACC (AC Clutch A15)
  - [ ] Invert Output
- Speed: 0 km/h

**Stage 4:**
- **Output:** ACC (AC Clutch A15)
  - [ ] Invert Output
- Speed: 0 km/h
Snapshot Manager

See snapshot manager guide