

Testing Notes for Ralliart GST Base Map v3.1

Document Revision 2

LIABILITY NOTICE

You assume ALL responsibility for the integrity of your ECU and engine management, vehicle safety, etc. If you are not confident in the procedures/data involved, do not make *any change* to your vehicle ECU's ROM image.

SAFETY NOTICE

It is important to testing any engine management change in a safe and thorough manner.

Logging via EvoScan

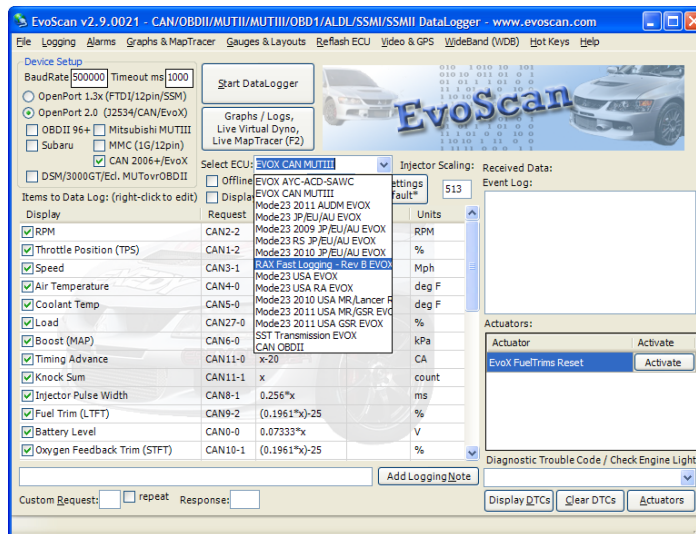
The v31 Base Maps come with the **RAX Fast Logging** patch applied.

To use...

Start EvoScan. Ensure the following are selected:

- OpenPort 2.0 (J2534/CAN/EvoX)
- CAN 2006+/EvoX

Under *Select ECU*, choose the **RAX Fast Logging** option:



If your version does not have this option, please upgrade it to 2.9.0023 or later.

Under *Items to Data Log*, tick every item from top to bottom (including the “External Wideband A/F Ratio” item, if you use a serial link wideband):

The screenshot shows the EvoScan v2.9.0021 software interface. The main window is titled "EvoScan v2.9.0021 - CAN/OBDII/MUTII/MUTIII/OBD1/ALDL/SSMI/SSMII DataLogger - www.evoscanner.com". The interface includes a menu bar with options like "Logging", "Alarms", "Graphs & MapTracer", "Gauges & Layouts", "Refresh ECU", "Video & GPS", "WideBand (WDB)", "Hot Keys", and "Help".

The "Device Setup" section shows "BaudRate" set to 500000 and "Timeout ms" set to 1000. There is a "Start DataLogger" button. Below this, there are radio buttons for "OpenPort 1.3x (FTDI/12pin/SSM)" and "OpenPort 2.0 (12534/CAN/EvoX)". There are also checkboxes for "OBDII 96+", "Mitsubishi MUTIII", "Subaru", "MMC (1G/12pin)", "CAN 2006+/EvoX", and "DSM/3000GT/Ecl. MUTovrOBDII".

The "Select ECU" dropdown is set to "RAX Fast Logging - Rev E". The "Injector Scaling" section has a "Save Settings as Default*" button and a value of "513".

The "Received Data: Event Log" section is currently empty.

The "Items to Data Log: (right-click to edit)" section contains a table with the following items checked (indicated by a red box in the original image):

Request	Function	Reading	Units	
<input checked="" type="checkbox"/>	External Wideband A/F Ratio	WDB	x	a/f ratio
<input checked="" type="checkbox"/>	-----RAX_A_Dat-----	238051AC	x	binary
<input checked="" type="checkbox"/>	STFT	CALC	([(RAX_A_Dat]BI...	%
<input checked="" type="checkbox"/>	LTFT In Use	CALC	([(RAX_A_Dat]BI...	%
<input checked="" type="checkbox"/>	LTFT idle	CALC	([(RAX_A_Dat]BI...	%
<input checked="" type="checkbox"/>	LTFT Cruise	CALC	([(RAX_A_Dat]BI...	%
<input checked="" type="checkbox"/>	-----RAX_B_Dat-----	238051A8	x	binary
<input checked="" type="checkbox"/>	Load	CALC	[RAX_B_Dat]BI...	unit
<input checked="" type="checkbox"/>	Rear O2	CALC	[RAX_B_Dat]BI...	AFR
<input checked="" type="checkbox"/>	IPW	CALC	[RAX_B_Dat]BI...	ms
<input checked="" type="checkbox"/>	Air/Fuel Ratio (Map)	CALC	14.7*128/[RAX_...	a/f ratio
<input checked="" type="checkbox"/>	-----RAX_C_Dat-----	238051B0	x	binary
<input checked="" type="checkbox"/>	LoadTiming	CALC	[RAX_C_Dat]BI...	unit
<input checked="" type="checkbox"/>	TimingAdv	CALC	[RAX_C_Dat]BI...	degrees
<input checked="" type="checkbox"/>	Knock Sum	CALC	[RAX_C_Dat]BI...	knocksui
<input checked="" type="checkbox"/>	RPM	CALC	[RAX_C_Dat]BI...	rpm
<input checked="" type="checkbox"/>	-----RAX_D_Dat-----	238051B4	x	binary
<input checked="" type="checkbox"/>	Baro	CALC	([(RAX_D_Dat]BI...	PSI
<input checked="" type="checkbox"/>	PSIG	CALC	[RAX_D_Dat]BI...	PSIG
<input checked="" type="checkbox"/>	Active WGDC	CALC	[RAX_D_Dat]BI...	percent
<input checked="" type="checkbox"/>	MAF Volts	CALC	[RAX_D_Dat]BI...	V
<input checked="" type="checkbox"/>	IDC	CALC	[IPW]*[RPM]/1...	percent
<input checked="" type="checkbox"/>	-----RAX_E_Dat-----	238051B8	x	binary
<input checked="" type="checkbox"/>	InVVT (target)	CALC	0.15625*([RAX_...	Deg
<input checked="" type="checkbox"/>	EvVVT (target)	CALC	0.15625*([RAX_...	Deg

The "Actuators" section shows a table with one entry: "EvoX FuelTrims Reset" with an "Activate" button.

At the bottom, there are buttons for "Add LoggingNote", "Display DTCs", "Clear DTCs", and "Actuators".

Testing Approach

DO NOT PERFORM FULL-THROTTLE TESTING UNTIL YOU HAVE VERIFIED CORRECT ECU OPERATION IN PART-THROTTLE TESTS

ALWAYS OBEY THE RULES OF THE ROAD – DRIVE SAFELY

Initial Testing - Part Throttle Driving

It is possible to check most of the new Base Map functionality without using *Wide-Open-Throttle* (WOT). A short drive at part-throttle will verify that much of the new ROM processing is operating correctly.

Collect log files from EvoScan, and submit them for review (eg. upload logs as attachments to a posting in the EvolutionM "GST Base Map" thread, or via email).

Once confirmation is received that logs show correct operation, you may proceed to **Limited WOT Testing**.

Limited Wide-Open-Throttle Testing

This test will verify correct operation of boost control during initial throttle application, and on SST upshift.

When rolling in 2nd gear *off-throttle*, wait until engine speed drops to approx. 2000rpm, and then apply full throttle. Shift into 3rd gear around 6500rpm, and stay on throttle for 1-2 seconds after completion of the upshift. Then reduce throttle. The test is complete.

Collect log files from EvoScan, and submit them for review (eg. upload logs as attachments to a posting in the EvolutionM "GST Base Map" thread, or via email).

Once confirmation is received that logs show correct operation, you may proceed to **General Test Driving**.

General Test Driving

You are now clear to test out the Base Maps in a variety of driving conditions.

It is recommended that you continue to log via EvoScan while performing general test-driving.

You can review logs yourself at any time (eg. to check AFR, boost, confirm that **knocksum** does not show counts of 3+).