

COPITRAIL

FOR ALL SUPPORTED VEHICLES

BY

 **GAP INNOVATION**

USER MANUAL, VERSION 1.6
FIRMWARE V1.0

**WARNING**

For your safety and that of others, please read this manual before using CoPiTrail. Failure to follow instructions could result in serious consequences.

**WARNING**

CoPiTrail is a navigation unit with embedded dashboard. It is also possible to proceed with diagnostic tasks and analyze engine data. Updating the engine ECU firmware is available and sold separately by third parties remap providers.

Read this instruction manual carefully!

Disclaimers

Neither the distributors nor the manufacturer (GAP Innovation, Inc.) accept any responsibility or liability for damages incurred through use of CoPiTrail. This includes all damages to the vehicle itself, vehicle systems or property. This also includes injuries to the user or other persons. The warranty is limited to the functionality of the CoPiTrail unit itself (for further warranty details, please consult the last page of this document). This includes especially:

- Damages incurred through improper use of CoPiTrail
- Damages incurred through the use of CoPiTrail to change vehicle configuration and / or settings, update the engine ECU, etc.
- Damages incurred through clearing faults without effecting proper repairs
- Damages incurred through usage of any third party products delivered by the CoPiTrail (remap, etc.).

Terms and conditions

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Specifications are subject to change without prior notice.

Suggestions

For convenience and even security purposes, it is suggested that the user keeps an updated version of this manual in PDF format on his or her mobile devices. Thus, accessibility to procedures will be possible anywhere and anytime. By the same token, the computerized version facilitate searching for a particular topic.

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1 Introduction

1.1 Objectives of CoPiTrail

CoPiTrail has been designed to achieve objectives that meet the demands of off road vehicle owners.

- Provide a modern dashboard with GPS navigation, friends localization and more.
- Datalogging and analyzing tool.
- Reading and erasing fault codes.

1.2 Connectors, harness and LED presentation



Figure 1. Micro USB socket for USB cable used to connect the CoPiTrail to a computer. **Remove cover for access**



Figure 2. Connector which connects the CoPiTrail to the supplied wiring harness.

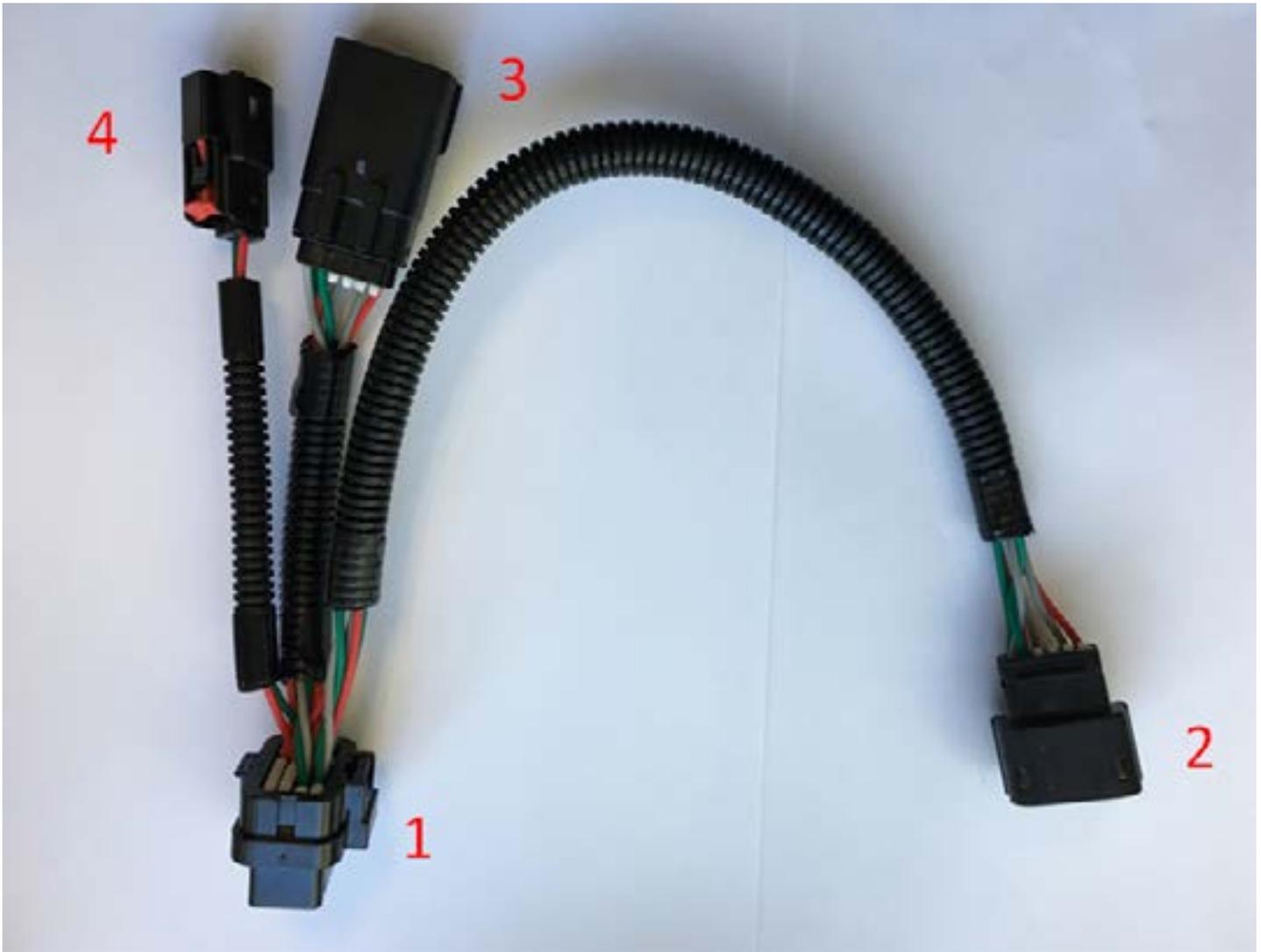


Figure 3. Wiring harness

1. CoPiTrail module connector
2. Original instrument pack connector
3. Vehicle harness connector
4. Heating pad connector



Figure 4. Status LED used for diagnostic purposes.

1.3 Brief description of offered Features and Functions

The features and functions offered by CoPiTrail are categorized in the following tables.

Navigation and Dashboard	CoPi Friends
Complete Navigation system for on and off trail*. Vehicle information displayed on an easy to see numerical layout.	Allows viewing the position of other CoPiTrail owners on the map (cellular connection required)

Table 1. Features offered

Faults	Datalogger	ECU Info	Calibration
Read and clear fault codes	Optional datalogger with export capabilities**.	Reading of the current version of the firmware and serial number of the engine module (ECU)	Speedometer and gearing calibration

Table 2. Functions offered

*Quebec, New Brunswick, New York and Minnesota snowmobile trails at the current time, more will be added as development progresses.

**Optional and sold separately.

1.4 Supported vehicles

Covered vehicles are those for which CoPiTrail can be used.

1.4.1 Model Year Identification

The Model Year is an approximate description of the production time of a vehicle in terms of its specifications or design revisions.

Note : *The Model Year does not coincide systematically with the calendar year at which the vehicle was manufactured.*

You can confirm the model year of a vehicle by checking the 10th character of the Vehicle Identification Number (VIN). It is located on the chassis and analyzed as follows:

	Model Year	
10th Character of the VIN	Years interval	Signification
Numbers, 1 to 9	2001-2009	"1" for 2001 ... 9 for 2009
Letters	2010 and up	"A" for 2010 "B" for 2011 ...

Table 3. Determining a vehicle Model Year using the VIN

10th VIN character	Model Year
4UF17SNW6HT000000	2017
4UF17SNW6J*T000000	2018

Table 4. Model year as per the VIN example

* The letters "I", "O" and "Q" are omitted.

1.4.2 Supported vehicles list

- Yamaha Sidewinder 2017 and up snowmobiles
- Arctic Cat 9000 series including Thundercat 2017 and up snowmobiles

1.5 Interface

An interface is a connecting device which allows exchanges and interactions between the tool and the user.

The application developed for mobile devices (see below for compatibility) can be downloaded free of charge from the Apple App Store under the name CoPiTrail (installation instructions are detailed in [section 2.4](#)).

1.5.1 Compatible mobile devices

CoPiTrail is compatible with the following devices :

Apple mobile devices*
iPad Mini
iPod Touch 5 onwards**
iPad 3rd gen onwards**

Table 5. Compatible mobile devices

*iOS 8 and up. Using the latest release (non Beta) version of iOS is strongly recommended.

** Limited features. Use to update the engine ECU. Navigation not supported.

1.5.2 App Parameters

The App settings are available by pressing the cog wheel located on the top bar, far right ([section 3.1.1](#)).

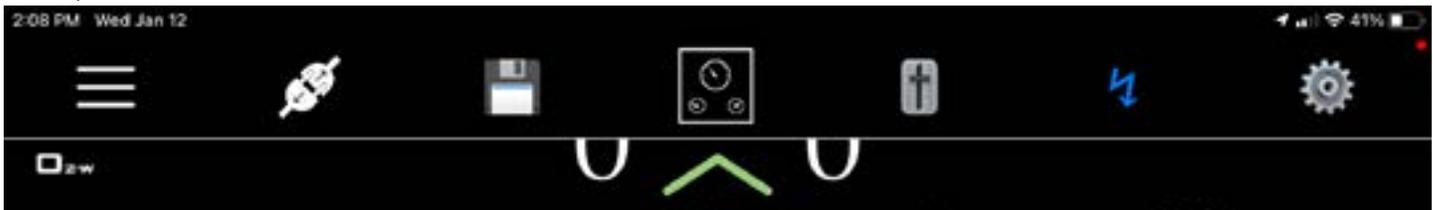


Figure 5. Parameters

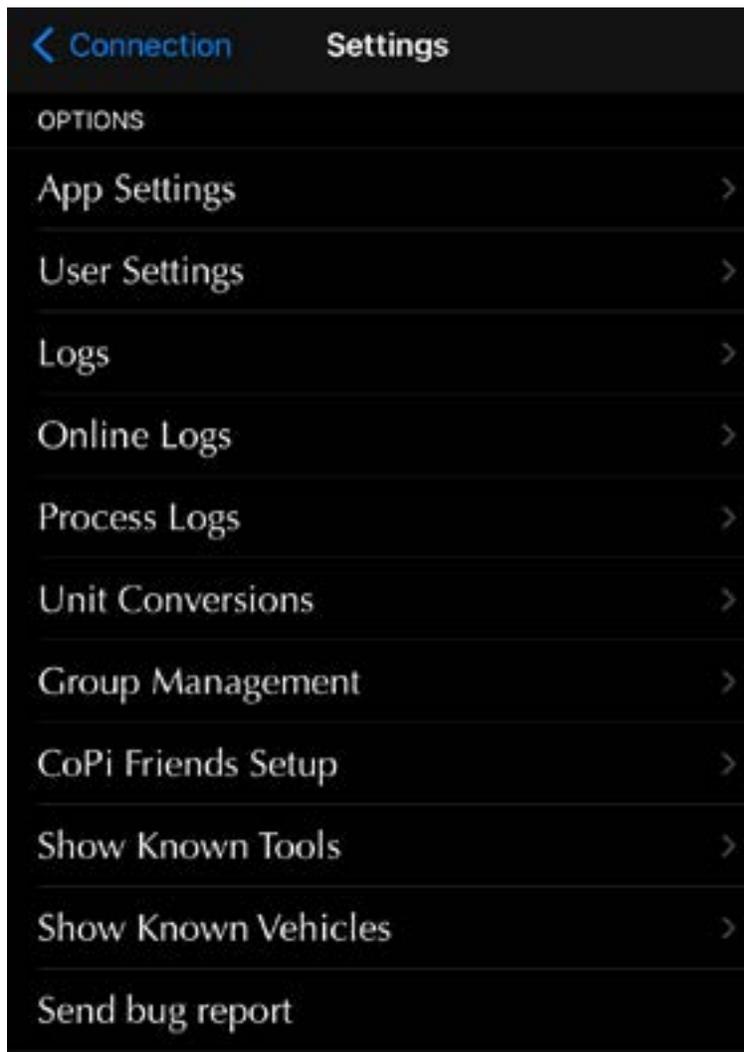


Figure 6. Parameters definition

App parameters list

- **App Settings:** This presents settings related to the general App functioning.
- **User Settings:** User details can be changed, name, email address etc
- **Logs:** This will allow access to data saved by the optional datalogger module. [section 4.2](#)
- **Online Logs:** View the recordings shared by the user and Friends.
- **Unit Conversion:** Allows selection of imperial or metric units. Some values will remain at their initial unit, boost pressure, for example, is only available in PSI.
- **Group Management:** Create groups and add members for the CoPi Friend and log sharing features.
- **CoPi Friends Setup:** Settings relative to the CoPi Friend feature.
- **Show known tools:** Will show details of all CoPiTrails ever connected on this iPad
- **Show known vehicles:** Will show details of all vehicles ever connected on this iPad
- **Send bug reports:** This should only be used when an issue is present and GAP Innovation requires additional data for analysis purposes.

App Settings

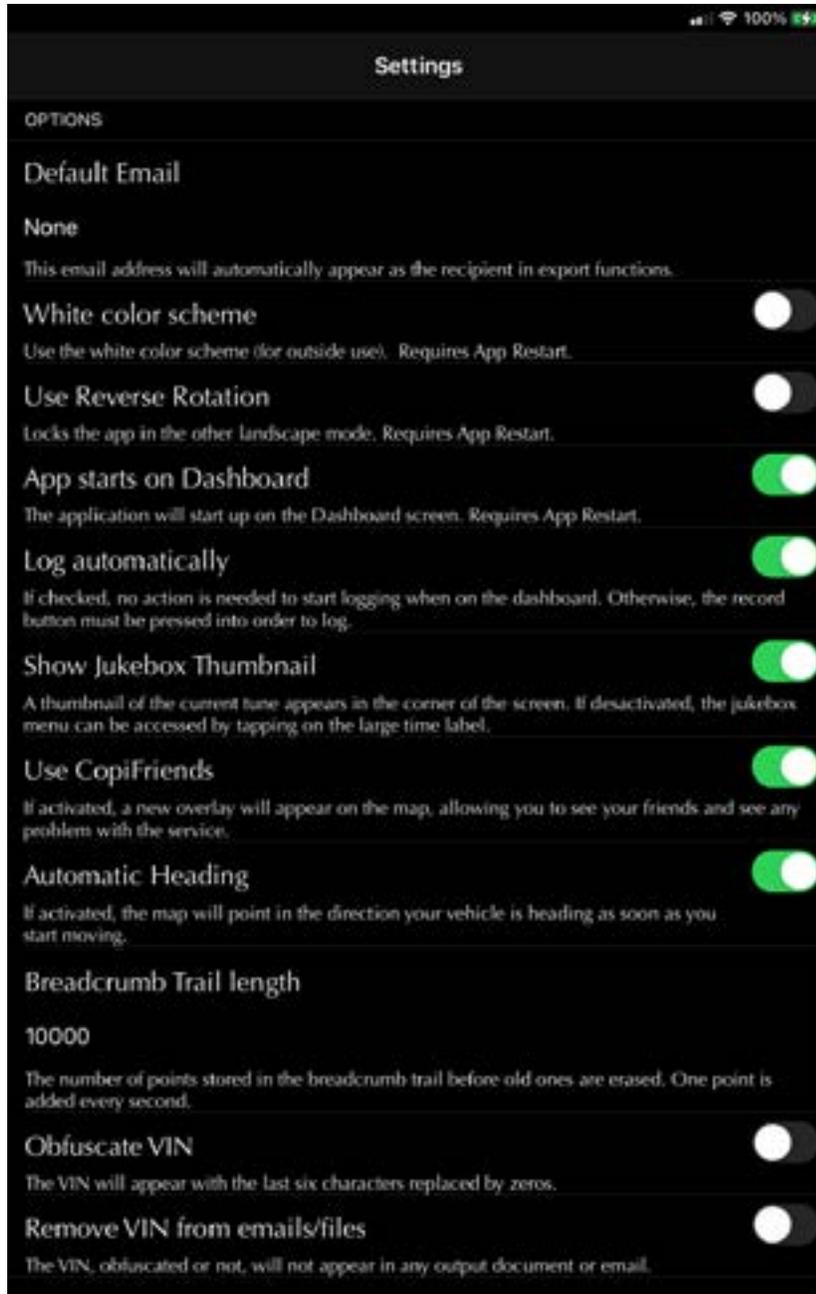


Figure 7. App Settings

While most settings names and definitions speak for themselves, the following will provide additional explanation of more complex ones:

- **Use CoPiFriends:** The location of friends of the selected group is displayed. An Internet connection either from the mobile device or using an access point is required. The position is updated every 2 seconds.
- **Breadcrumb Trail Length:** This will adjust the length of the trace showing where the vehicle was driven,

2 Getting started

2.1 Before first usage

Here is a compendium of operations to be performed before first usage. Each of these operations is described in detail in the referenced section of this manual. This table can serve as a fulfillment check list prior to using the tool.

√	Steps	Operation	Manuel section
	2 ^e	Installation of the updater software on a computer	<i>section 2.2</i>
	3 rd	Interface Installation CoPiTrail mobile App	<i>section 2.3</i>
	4 th	Updating the firmware of the CoPiTrail ECU	<i>section 2.4</i>
	5 th	Synchronizing the Mobile Application, Registering and Binding the CoPiTrail	<i>section 2.5</i>
	7 th	Map download	<i>section 2.6</i>
	8 th	CoPiTrail Installation on the vehicle	<i>See Installation Guide</i>
	9 th	Connecting the mobile App and basic layout	<i>section 2.7</i>

Table 6. Abstract of operations to complete before first usage

2.2 Installing the Updater Software

Purpose

Take full advantage of CoPiTrail with updates.

Principle

Install the free software specifically dedicated to updating the unit, called «CoPiTrail Updater» on a PC.

Note : *Installation of the updater software is required only once. If it turns out that an update of the updater software is required, a message will pop up when launched with directions to follow.*

Prerequisites

- Having access to a PC type personal computer with Windows XP operating system or higher
- Have access to an internet service

Steps for Installing the updater software

- 1- Download the GAP Flasher updater from this location

<https://gapinnovation.com/hurricane/documents/>

or

<https://gapinnovation.com/turbodynamics/documents/>

or

<https://gapinnovation.com/turbor/documents/>

Note: *The Hurricane, Turbo Dynamics or Turbor GAP FLasher updater can be used on a CoPiTrail.*

- 2- Once downloaded, click on the file and follow instructions on the screen to complete the installation. **For computers running Windows, click the right mouse button and select “run as administrator”.**

2.3 CoPiTrail App installation

Purpose

Be able to interact with the CoPiTrail and control it.

Prerequisites

- Own at least one supported mobile device (see [section 1.4](#)).
- Have access to an internet service

Installing the mobile App

Download (free) the CoPiTrail App from Apple App Store or Google Play Store in each mobile device. Before using the App, the files will have to be synchronized with the current CoPiTrail firmware (see [section 2.5](#))

Note : *Occasional updates are recommended. They will be announced by the Applications Manager. Please proceed with updating the CoPiTrail module to the latest firmware when updating the mobile App.*

2.4 Updating the CoPiTrail firmware

Purpose

Allow the evolution of the CoPiTrail, even after its manufacture.

Principle

Updates are made by reprogramming the firmware.

Benefits of updating the CoPiTrail

- Take advantage of bug fixes (if any)
- Take advantage of operational improvements such as execution speed... and more
- New additions in the module and application

Prerequisites

- Having access to a PC type personal computer connected to an internet service
- Having completed installation of the updater software ([section 2.2](#))
- Having completed the mobile App installation or update ([section 2.3](#))

2.4.1 Steps for updating the CoPiTrail

- 1- Connect the tool to the USB port of the computer using the supplied USB cable
- 2- Start the updater software previously installed in the computer
- 3- Click on “FIND DEVICE” and wait until pairing of the tool with the updater software is completed. Once paired, the user information, vehicle information and current firmware version of the tool will be displayed.
- 4- Select the desired version of the firmware in the right combo or radio box (if available).
- 5- Click on “PROGRAM FIRMWARE”. The evolution of each data file is observable in succession on the progress bar.
- 6- A subsequent window will appear with “ACTION NEEDED”. The requested operation is synchronization of the mobile App with the tool. Keep the tool connected to the computer to complete this step described in section, [section 2.5](#). **Note:** Performing synchronization immediately after updating the tool or before first usage will prevent prolong file loading when connected to the vehicle due to a poor internet connection.



Figure 8. Updater software overview

Troubleshooting, updater software

Occasionally, some obstacles can arise when using the updater software. Here are tips to get around them.

Problems	Solutions
The updater software is not working properly or cannot connect to the internet.	Change software permission in Firewall Settings
The updater software is not working properly even after permission was granted in the firewall.	Momentarily disable the computer's firewall
Unable to perform the update (rare)	Try again with : Another USB Port or; Another USB cable or; A different computer
The message "Device Not Found" is displayed after pressing "FIND DEVICE"	Check that the module is recognized by Windows.

Table 7. Troubleshooting, updater software

If other difficulties arise during the firmware update, contact the manufacturer :
support@GAPInnovation.com

2.4.2 Language (coming soon)

You can choose between a firmware in French or English language.

The language of the application is the same as that used by the mobile device. The firmware and the mobile device must be in the same language.

2.5 Synchronizing the Mobile Application

Purpose

Refresh files in the Mobile Application CoPiTrail to achieve consistency with the firmware of the newly updated tool ([section 2.5](#)) or prior to first usage.

Note: Performing synchronization immediately after updating the tool or before first usage will prevent prolong file loading when connected to the vehicle due to a poor internet connection.

Prerequisites

- Having access to a PC personal computer.
- Own a compatible mobile device ([section 1.4](#)) connected on the internet.
- The CoPiTrail App is installed and up-to-date ([section 2.3](#))
- The CoPiTrail firmware was updated ([section 2.4](#)) or a new mobile device is used with the tool for the first time.

2.5.1 Initial Steps

- 1- Connect the CoPiTrail module on the USB port.
- 2- Launch the mobile Application CoPiTrail in the mobile device.
- 3- Click on “ Connect”.
- 4- Select the tool in “Bootloader”. For the first synchronization, fill the required fields.

2.5.2 Registering

- 5- Proceed with registering. This can also be done later if needed. Simply fill up the required field by clicking on Register.

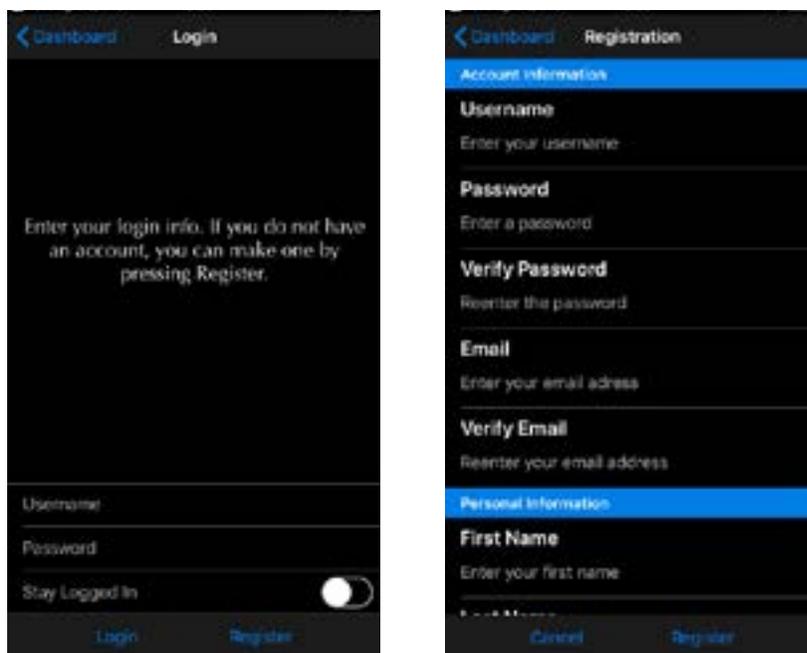


Figure 9. Register the CoPiTrail

Binding

- 6- Binding the tool will allow usage of certain functions including Online Logs and Sharing when not connected to the tool without the need to log in.

Locking the tool will prevent other users from connecting to the tool using another mobile device unless they enter the defined password. This can also be done later if needed.

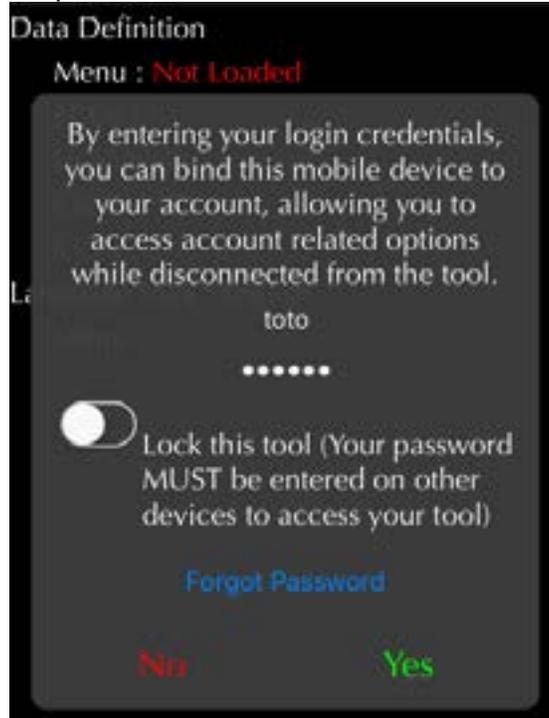


Figure 10. Tool Binding

- 7- Wait while all data files are downloaded : the word “Loaded” indicates completion.
- 8- Exit the application by pressing “Disconnect”.
- 9- Repeat previous steps for each mobile device that may be used with the tool.
- 10- Unplug the tool from the computer.

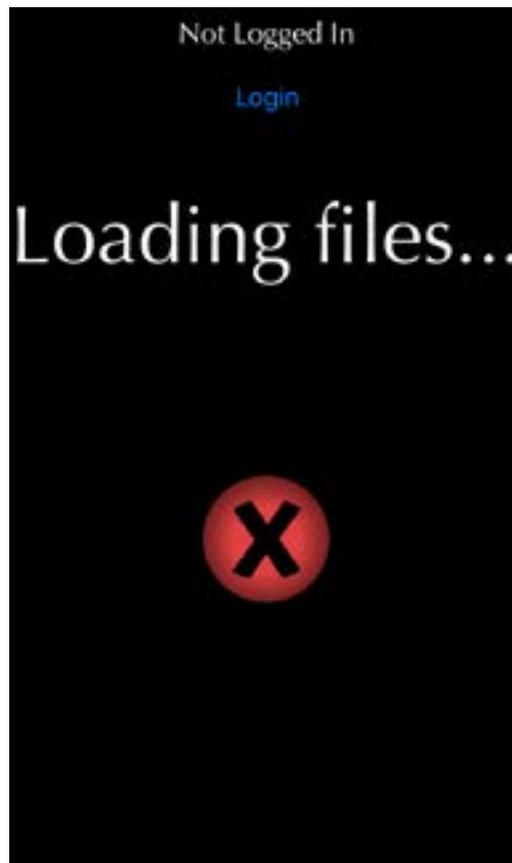


Figure 11. File download or synchronization

2.6 Map download, Trails download and selection

Prerequisites

- That the CoPiTrail mobile application is installed and up-to-date ([section 2.4](#))
- Synchronization and registration has been completed ([section 2.6](#))

This section explains how to download Map images and Trails necessary for all available zoom level. Click on the bottom green arrow and on the following button.

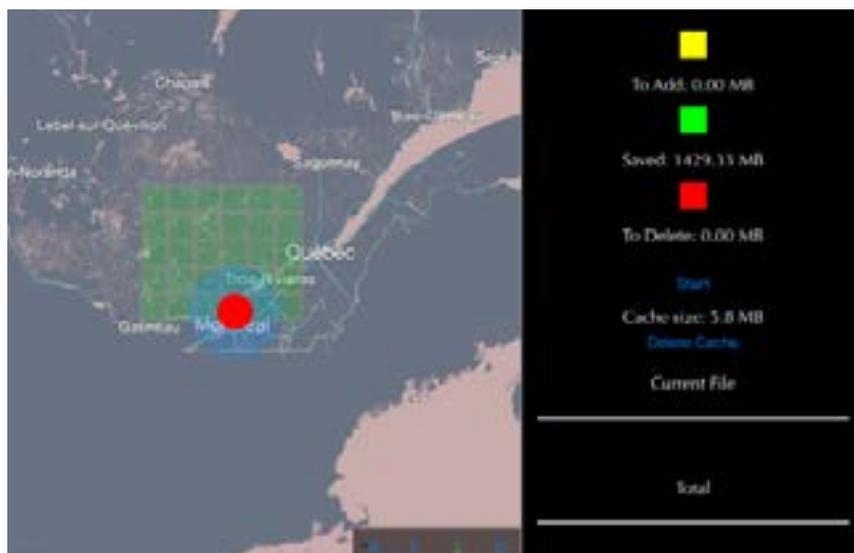


Figure 12. Accessing Map download screen

Note: Make sure the mobile device is connected on a high-speed internet service

2.6.1 Map download

- Select squares to be downloaded by clicking on the desired location on the screen.
- Press and swipe the screen with your finger to select multiple squares.
- Click on Start to begin file download.

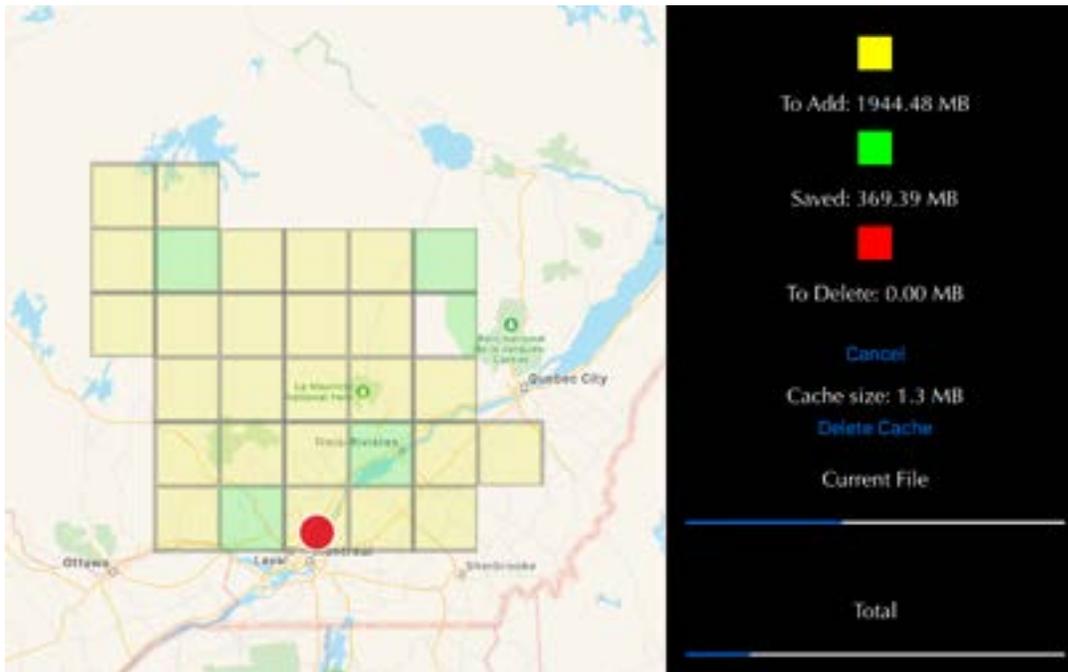


Figure 13. Map download screen

2.6.2 Trails download and selection

Click on the Trails button to access the Trail menu. Click on a file to start downloading or select the desired trails that will be displayed on the Map. Click apply to confirm your selection.



Figure 14. Trail download and selection

2.6.3 Delete Cache

Click on Delete Cache to remove additional data downloaded automatically during usage.

2.7 Connecting the mobile App and basic layout

Definition

The App was developed by the manufacturer with user friendliness in mind.

Prerequisites

- Own a CoPiTrail
- Have access to the vehicle on which CoPiTrail is installed.
- Own a compatible mobile device ([section 1.4](#)) on which the Bluetooth module is “activated” or “ON”?
- CoPiTrail App installed in the mobile device ([section 2.4](#)) and having synchronized it with the tool ([section 2.6](#))

2.7.1 Steps to navigate the Mobile Application

- 1- Turn the ignition ON
- 2- Launch the CoPiTrail App
- 3- Click on “Connect”
- 4- Select the desired tool available in the list (“Available Device”). The App is now paired with the chosen CoPiTrail.

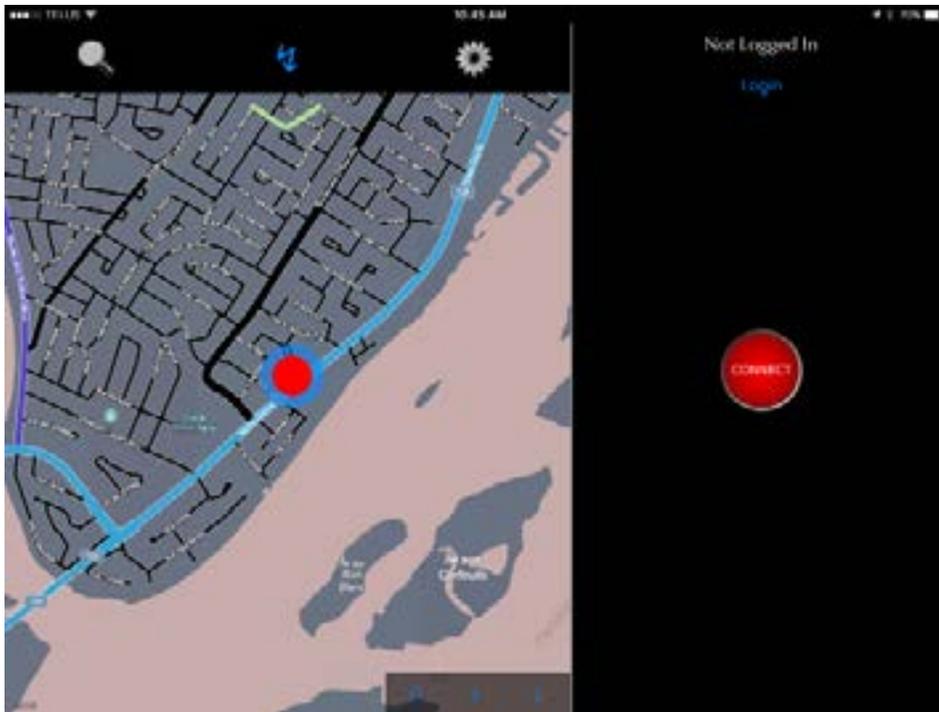


Figure 15. Mobile App connection

Important note: It is not required to add the CoPiTrail to the Device List on the mobile device or to pair. The Application provides connectivity between the two. Disconnect from any other Bluetooth devices before using CoPiTrail.

Unpair

Click on the "X" at the bottom of the connection screen to unpair the App with a previously paired CoPi-Trail module. Clicking on "Connect" will bring the "Available Devices" screen not visible when paired.

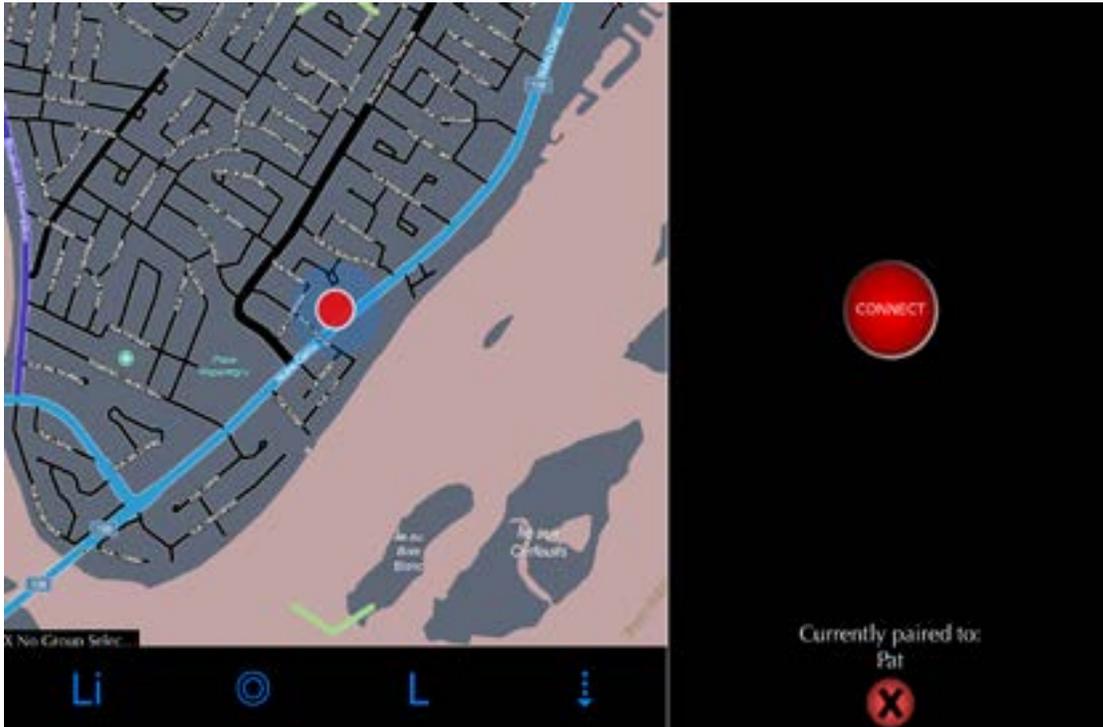


Figure 16. Unpairing

Language

The application is available in French and English. It automatically adjusts to the language of the mobile device.

2.7.2 Log in

Definition

Authentication allows the use of certain functions, including online records and sharing, when not connected to the tool.

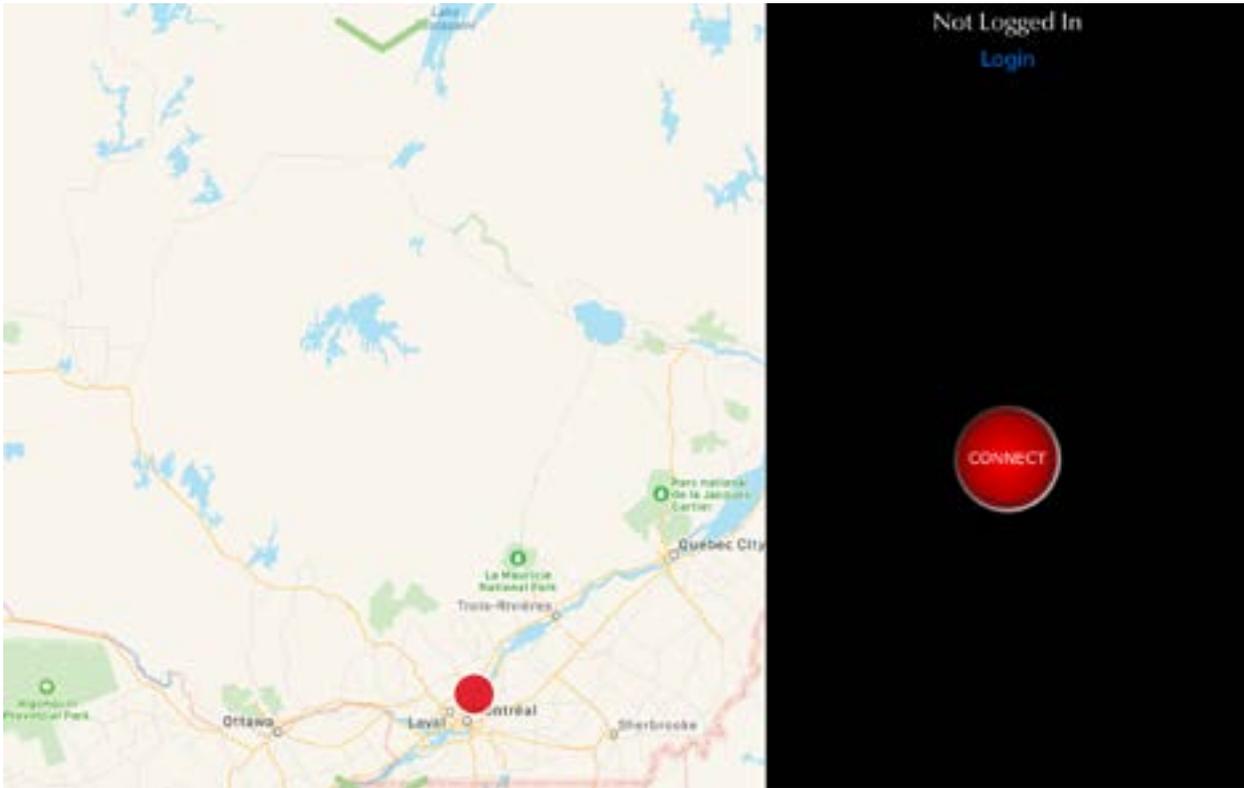


Figure 17. Log in

3 Features definition

3.1 «Navigation and Dashboard» feature

The Navigation system offers a map layout with roads and trails when available. Quebec, New Brunswick, New York, snowmobile trails are currently available while others will be added as development progresses.



Figure 18. Navigation and Dashboard layout

Use two fingers to zoom and one finger to pan the Map. Close up zoom will provide brighter trail colours. Points of interest (POI), if available) will be displayed in more details when zoomed in. Clicking on the POI will show additional details.

Figure 19. Points of interest and trails colours at different zoom level.

3.1.1 Top Bar

The top bar is accessed by clicking on the green arrow.

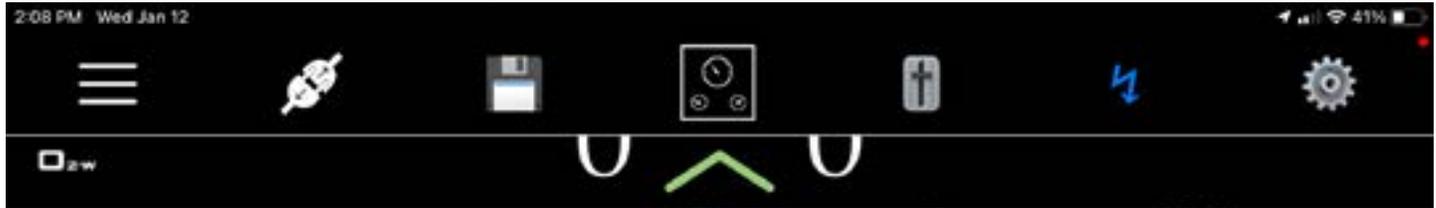


Figure 20. Top Bar

-  **Quit Button**, for quitting the dashboard and access other functions.
-  **Gauge Selection**, for selecting and modifying the dashboard/data view
-  **Disconnect Button**, disconnect from the CoPiTrail module.
-  **Itinerary Button**
-  **App Parameter Button**
This button will show the App Parameter menu. See [section 1.5.2](#) for more details.
-  **Save log Button** This button will be visible when the Log Automatically setting is enabled ([section 1.5.2](#)). En appuyant sur ce bouton, vous sauvegarderez l'enregistrement et démarrerez un nouvel enregistrement.*
-  **Record Button** This button will be visible when Log Automatically setting is not enabled ([section 1.5.2](#)). Click on this button to start the recording.*
-  **Stop Button**. This button will be visible when the Record Button has been pressed. Press this button to stop recording.*
-  **Control Button**. This button will be visible when the Anti-Lag function has been purchased for the vehicle to which the tool is connected. See [section 4.5](#) for more details

Table 9. Top Bar button definitions

Note: The top bar is limited in regards to buttons when not connected to the CoPiTrail module.

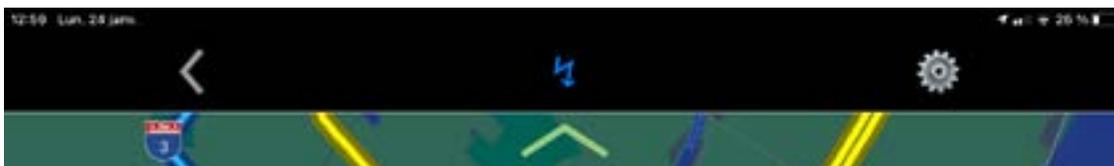


Figure 21. Top Bar, not connected

-  Returns to the connection screen.

3.1.2 Bottom Bar

Click on the bottom green arrow to access the bottom bar.

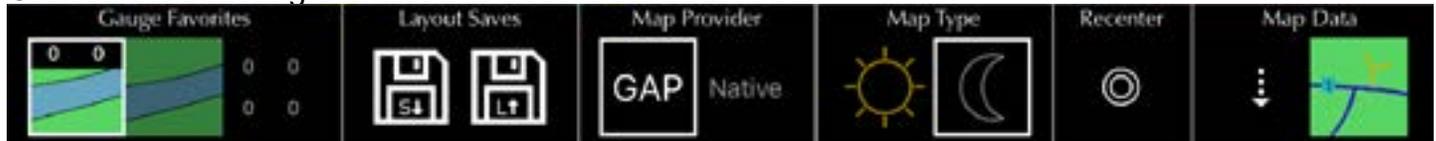


Figure 22. Bottom Bar

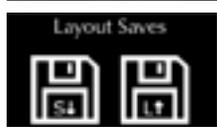
	<p>This field will change the layout to one of your favorite</p>		<p>Colour scheme, between day or, night mode</p>
	<p>Save or load a layout</p>		<p>This will centre the Map to your current position.</p>
	<p>This field will change the Map type, Native (Apple) or GAP</p>		<p>Map download button</p>

Table 10. Bottom Bar button definitions

Note: The bottom bar is limited in regards to buttons when not connected on the CoPiTrail module.

3.1.3 Dashbord live value selection and layout

Live value selection

Click on the desired label (grey circle) to open the live value selection box.



Figure 23. Live Value selection

Press and hold the desired label for 1 second to open the area layout option screen. The area can be divided into 1, 2 or 4 labels. Each label can house one live value.

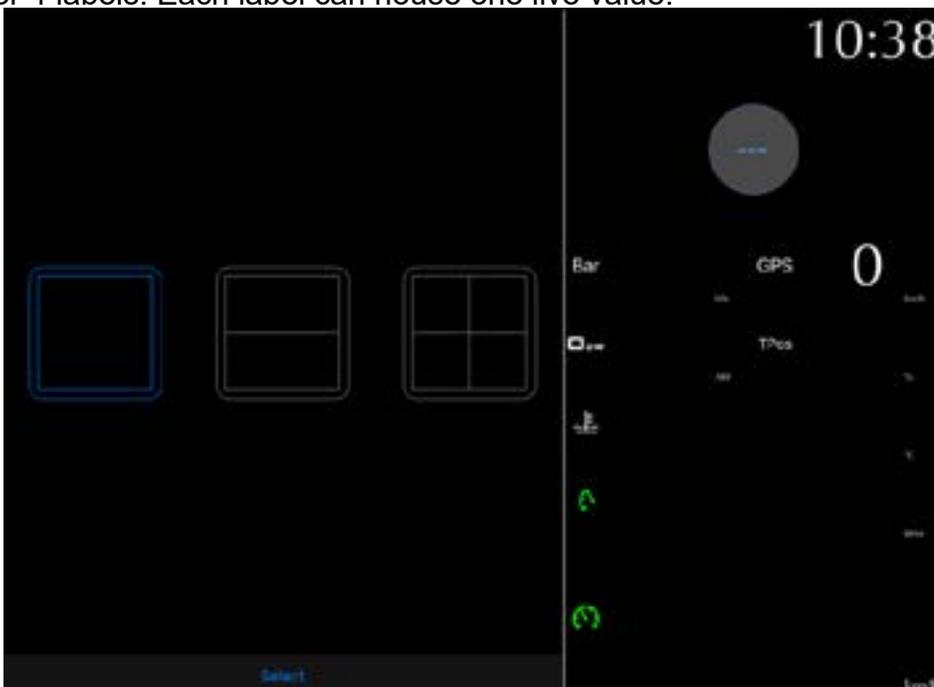


Figure 24. Live Value area layout

The Map and dashboard proportion of the screen can be resized. Press and hold anywhere on the dashboard and move your finger in the desired direction.



Figure 25. Map and dashboard resize 1



Figure 26. Map and dashboard resize 2

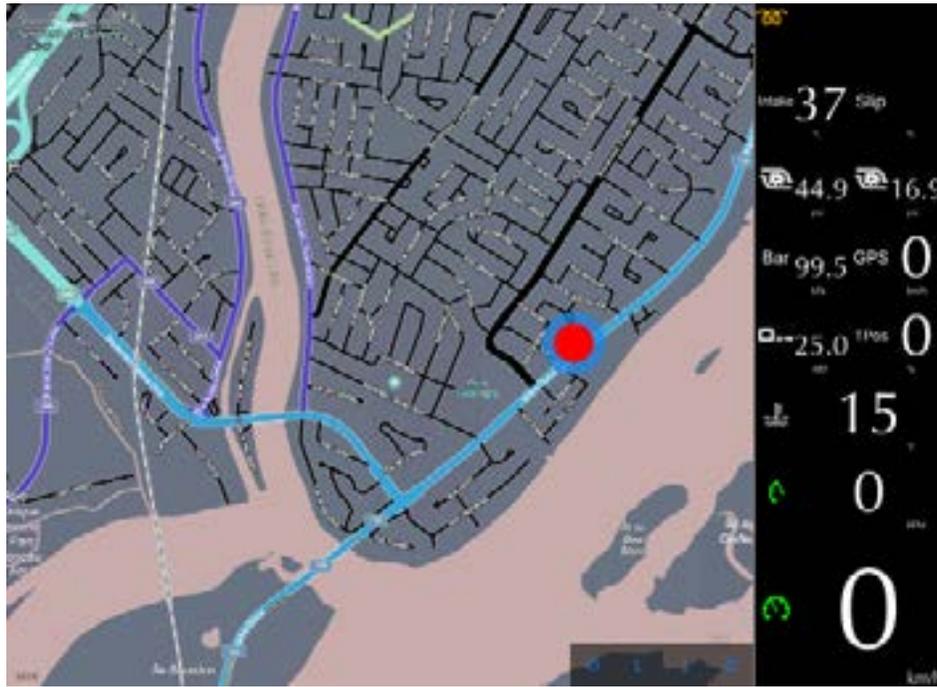


Figure 27. Map and dashboard resize 3



Figure 28. Map and dashboard resize 4

3.1.4 Gauge Selection

Definition

Creating editing and selecting gauges is done in this screen.

Access

The top bar is accessed by clicking on the green arrow. This button will show the Gauge Selection.



Figure 29. Gauge Selection

The user can set the Main and High Speed screens. Clicking on the star will add this layout to the bottom bar (yellow, grey will remove it).



i button, instructions

Click on the i button, bottom right, to see instructions

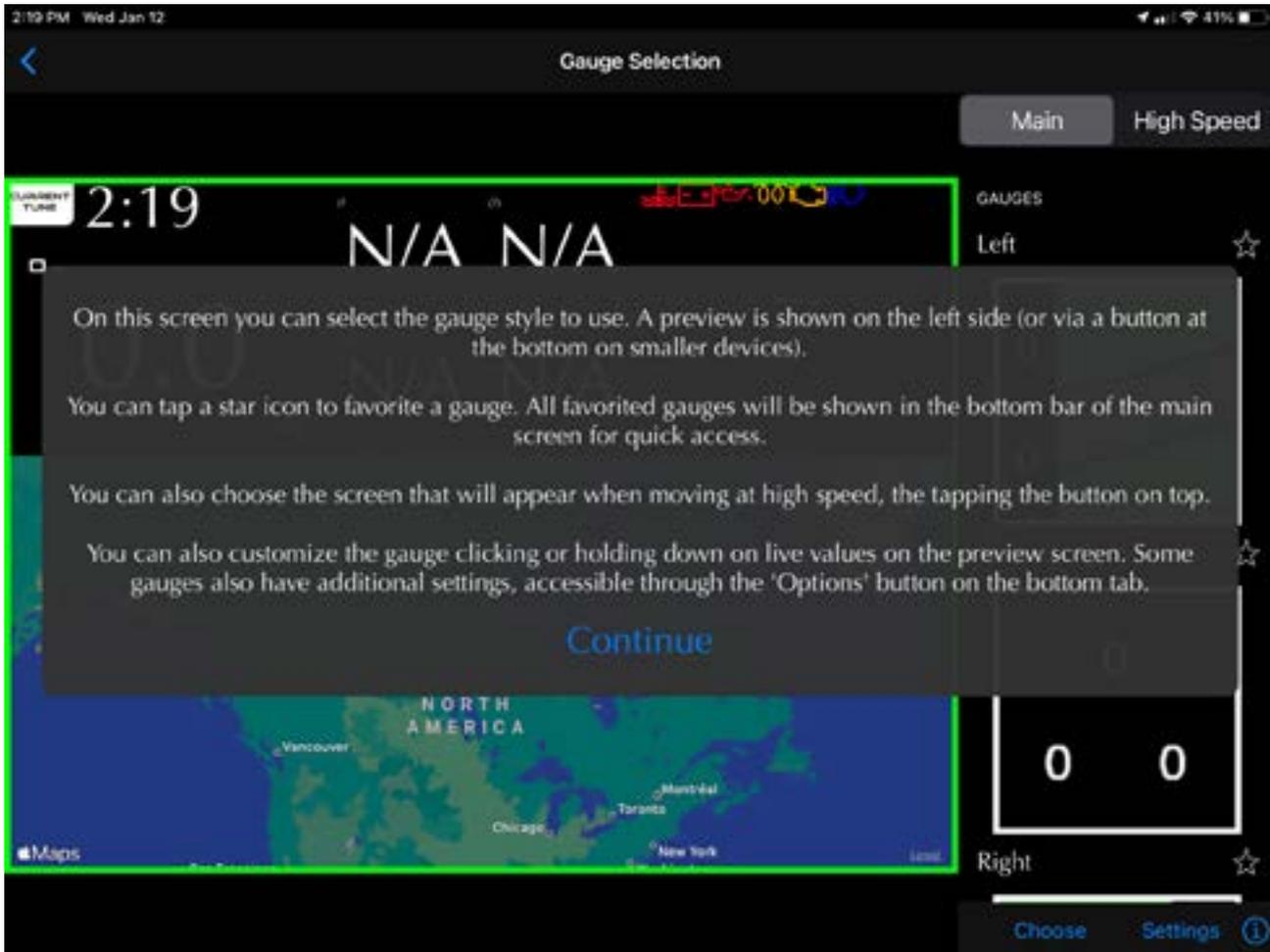


Figure 30. Gauge Selection instructions

Gauge selection, numeric

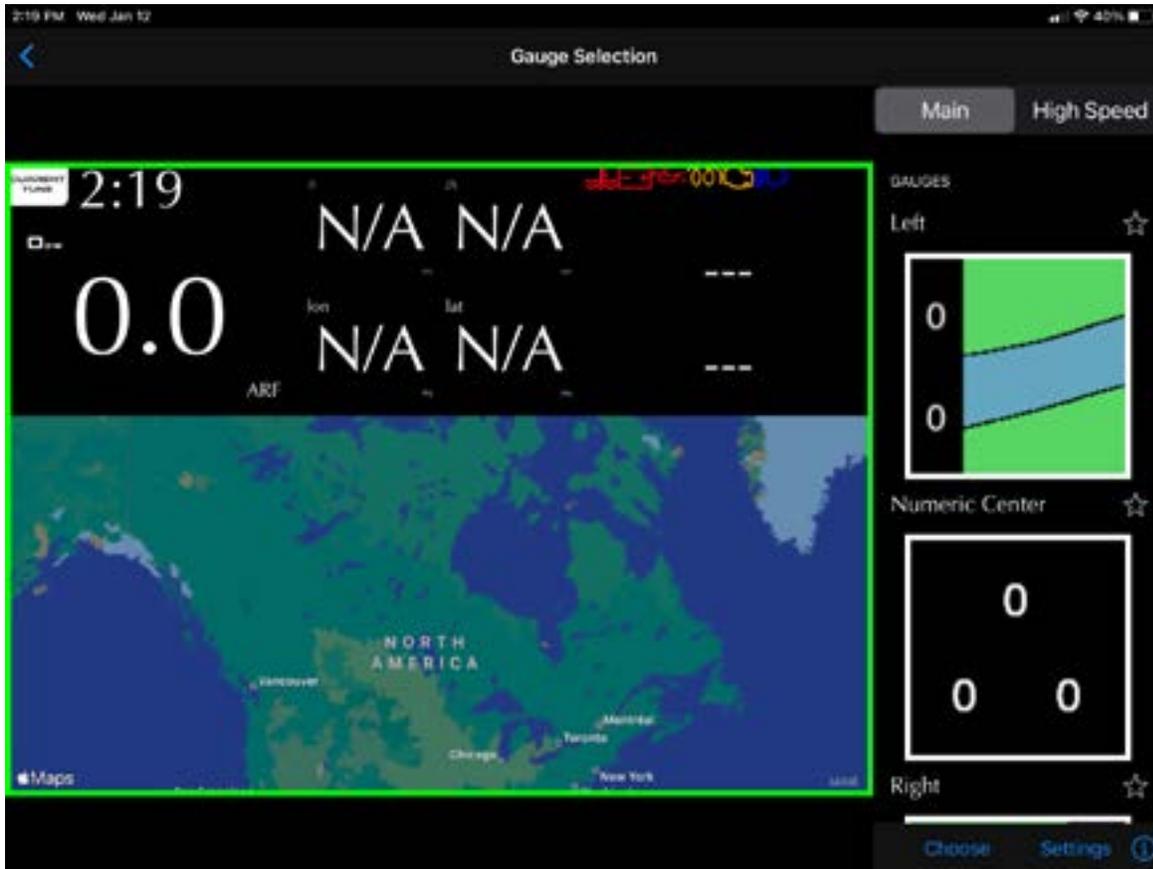


Figure 31. Gauge Selection example, numeric



Figure 32. Gauge Selection example, analog

Gauge selection, resize and selection of live values

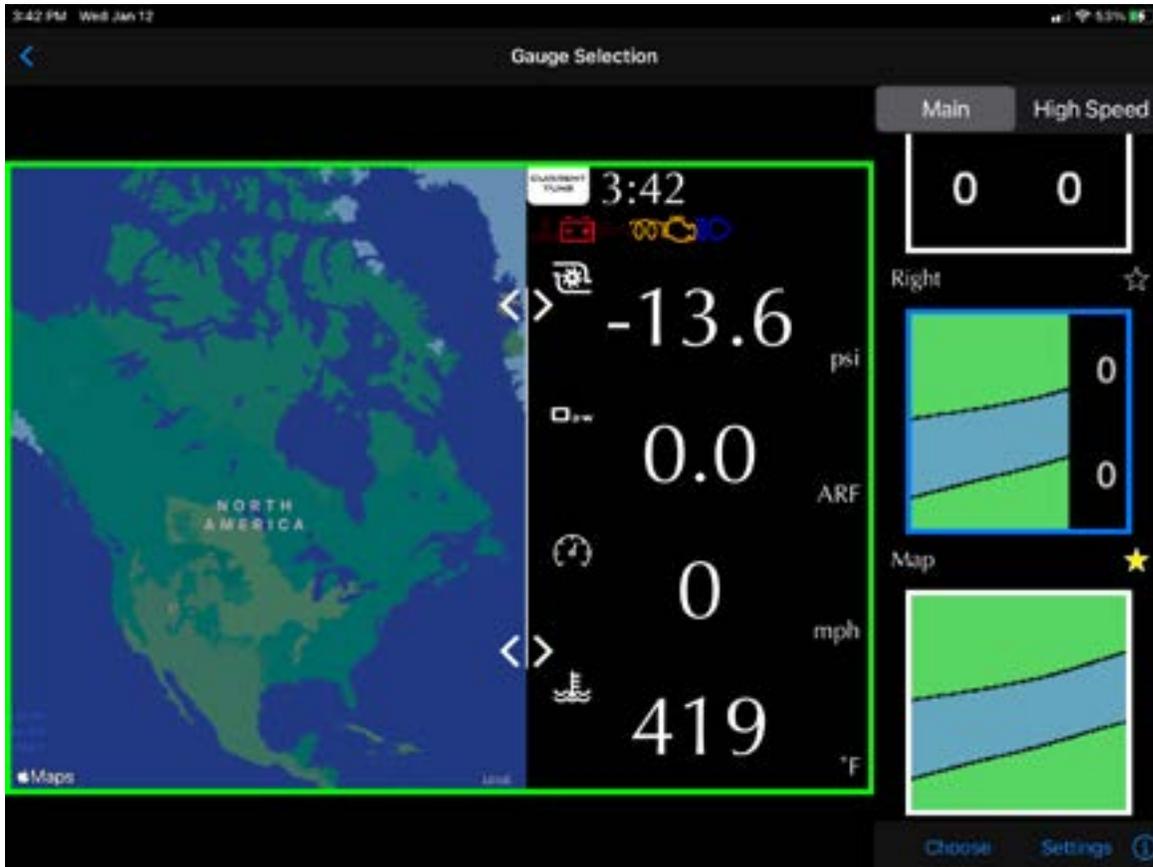


Figure 33. Gauge Selection example, resize

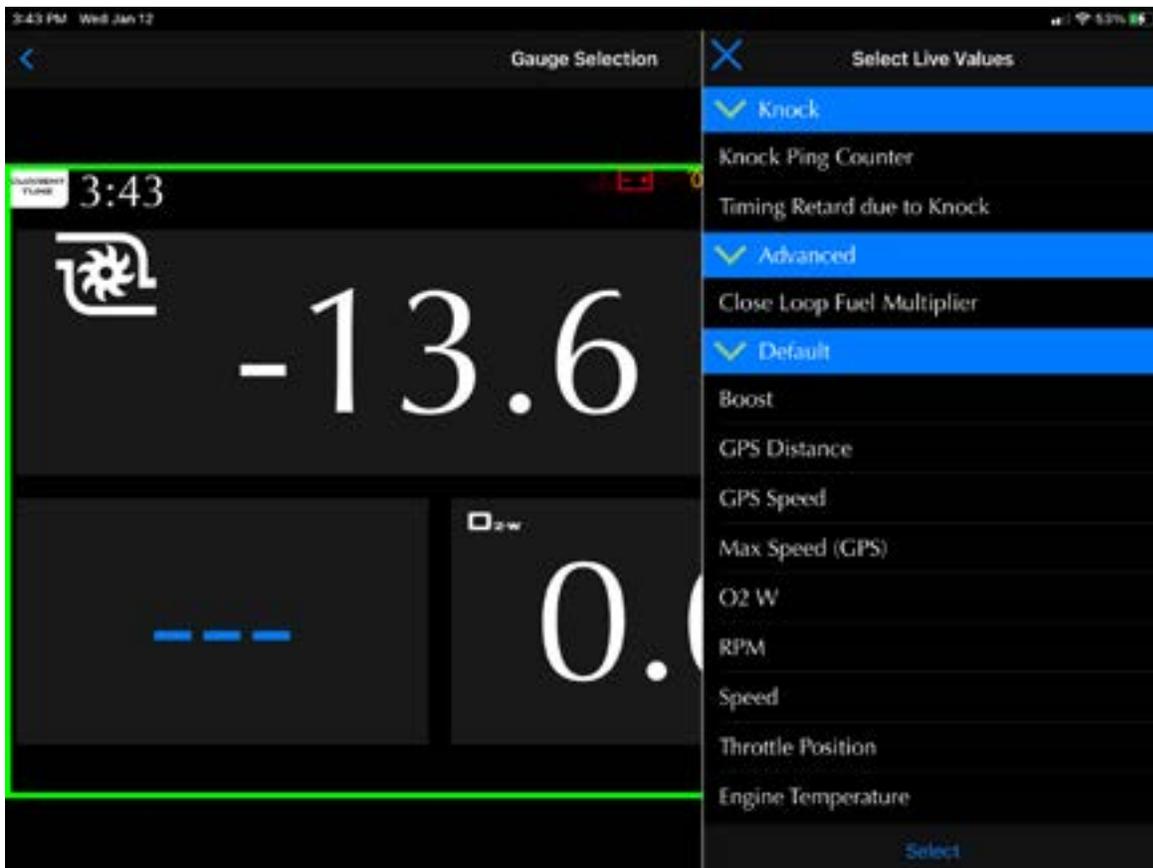


Figure 34. Gauge Selection example, value selection
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High Speed screen

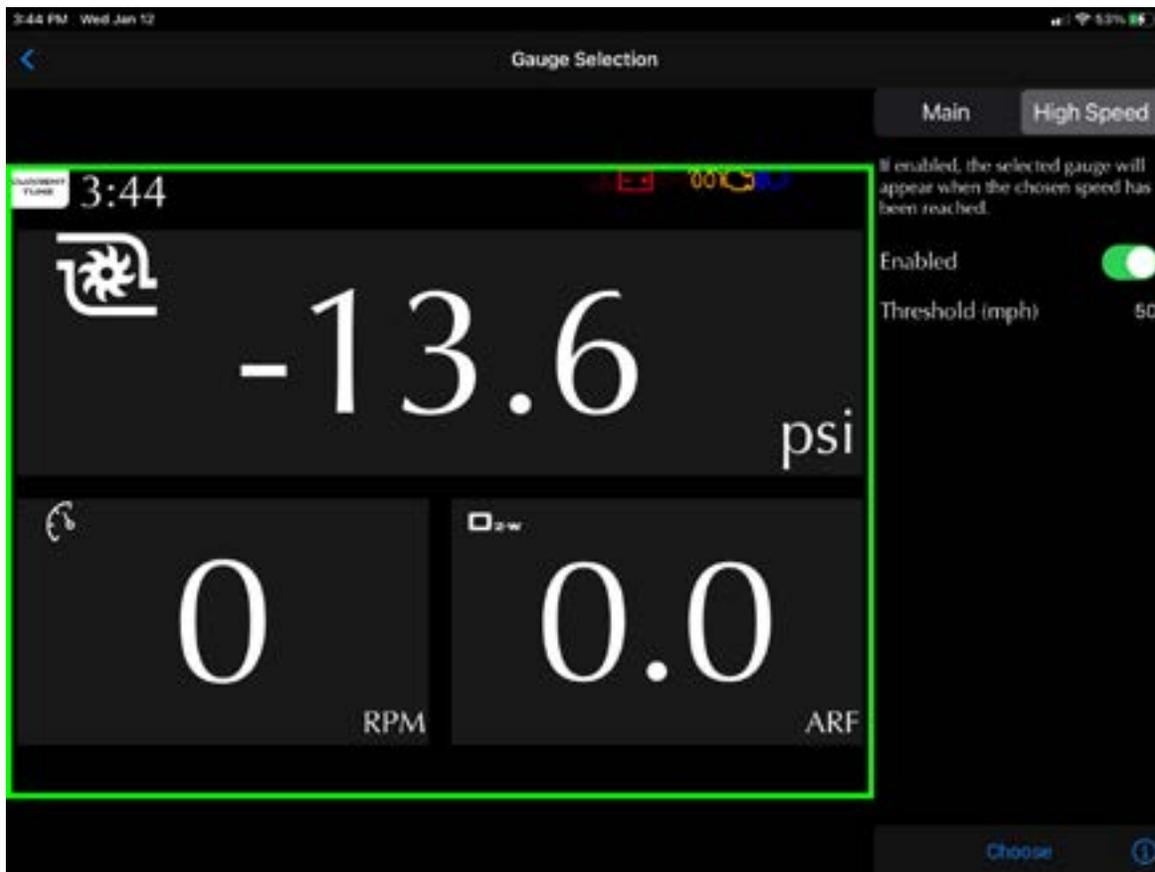


Figure 35. Gauge Selection example, high speed screen

Setting button

Select a layout and click on the Setting button to change the ratio and transparency



Figure 36. Gauge Selection example, setting button

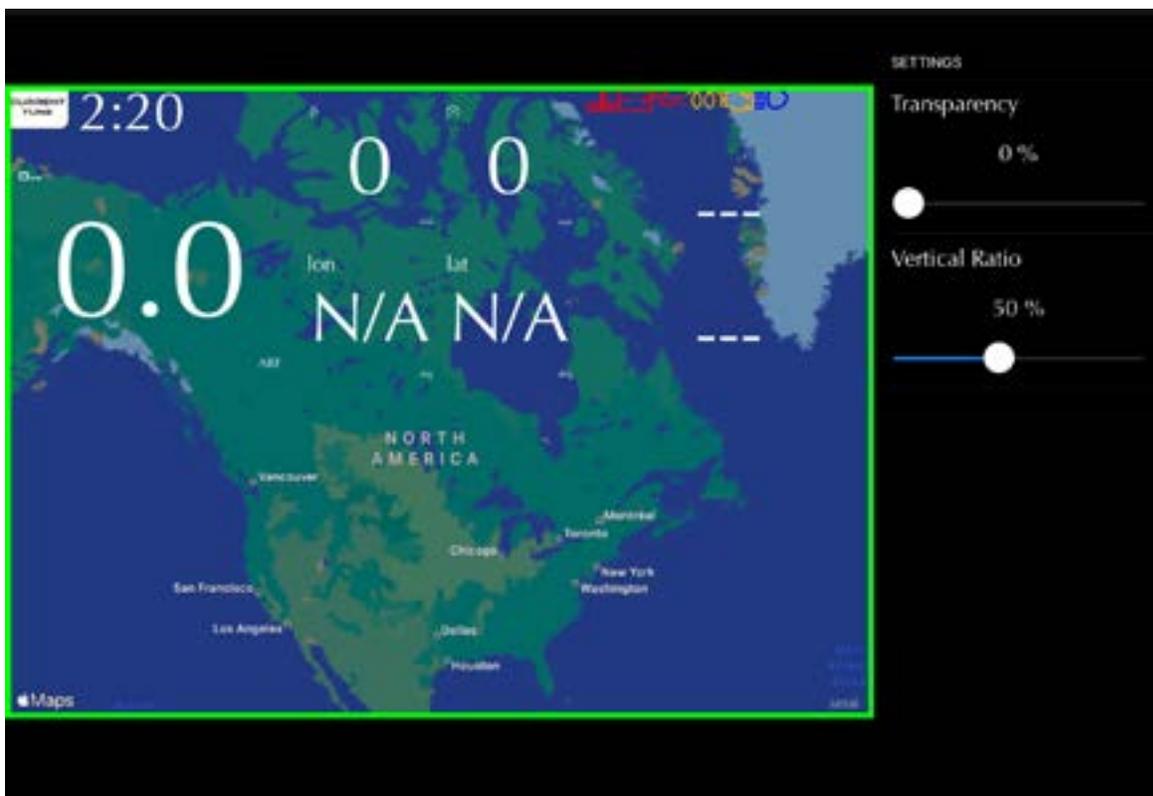


Figure 37. Gauge Selection example, setting button

3.1.5 Points of interest, waypoints and Itinerary

Definition

This feature will allow creation of points of interest (POI), waypoints and itinerary.

Points of interest and waypoints

Usage

- Place the point of interest on the Map by pressing on the desired location.



Figure 38. Points of interest

- Click on Create Waypoint to edit the point. An icon and a name can be associated with the location.



- You can add as many points as necessary.
- Click and hold on a point to make the editing bar appear.
- Points can be moved. Click, hold and move to the desired location.

Itinerary

Usage

- Place a second point or use an existing one on the Map to create the itinerary.
- You can add as many points as necessary.

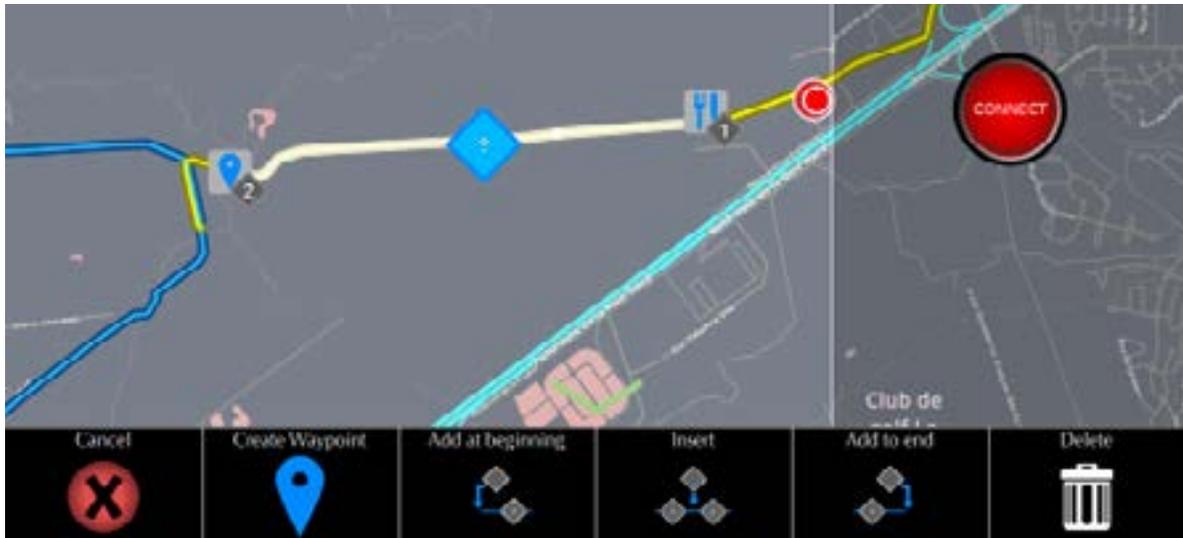


Figure 39. Create an itinerary

- The itinerary can be saved, clear or recalled. The access button is located on the top bar. Please consult [section 3.1.1](#) for additional details.

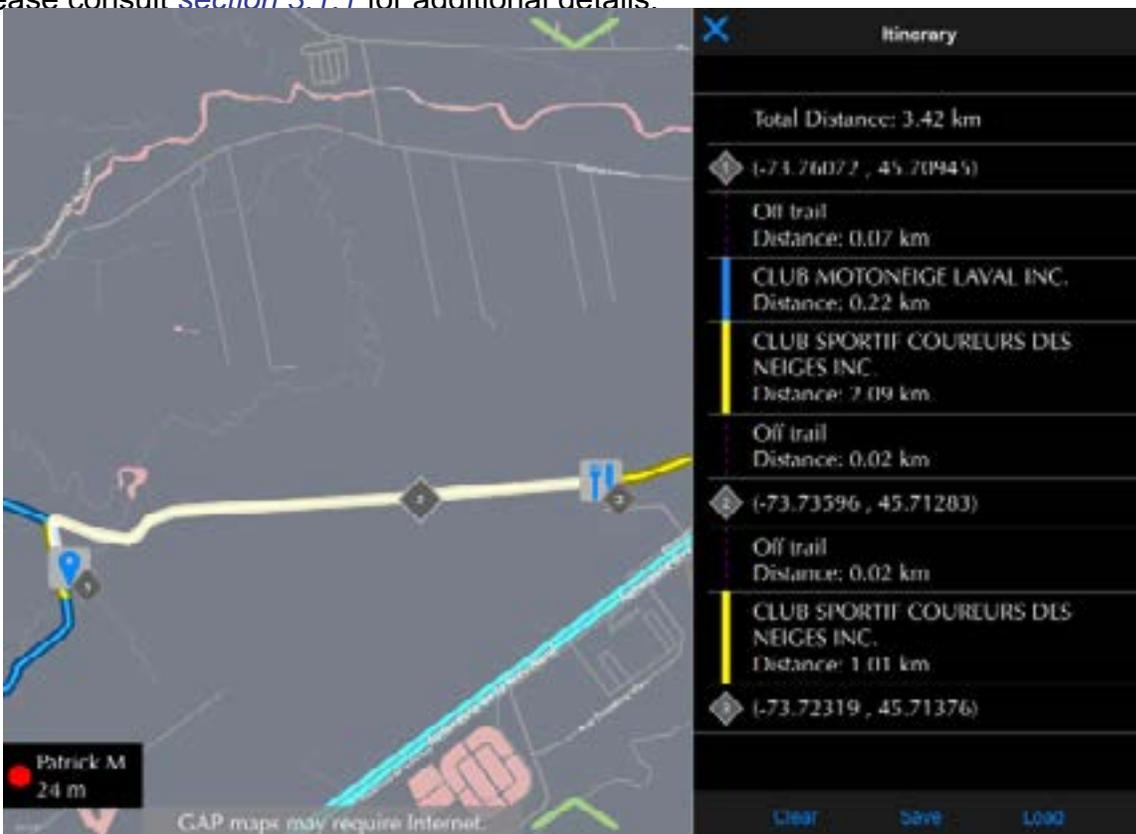


Figure 40. Itinerary

3.2 CoPiFriends

Definition

This feature will allow viewing other CoPiTrail owners position and distance.

Principle

When activated ([section 1.5.2](#)), data is transmitted and received over the internet. Members of a group are visible at the bottom left of the Map.

Prerequisites

- Having access to an internet connection on the iPad itself or hotspot.
- Having at least one friend with a CoPiTrail and internet connection.
- Having created a group and added friends as members ([section 3.1.4](#))

3.2.1 Group managing

Definition

Creating groups will allow sharing itinerary, live data recordings, position and the likes to other CoPi-Trail owners.

Access

The group managing feature is reached in the App Preference menu, [section 1.5.2](#). Use the website login credentials created at [section 2.8.2](#) Groups are created by one user. A request to join the group is automatically sent to potential members who were added to a group.

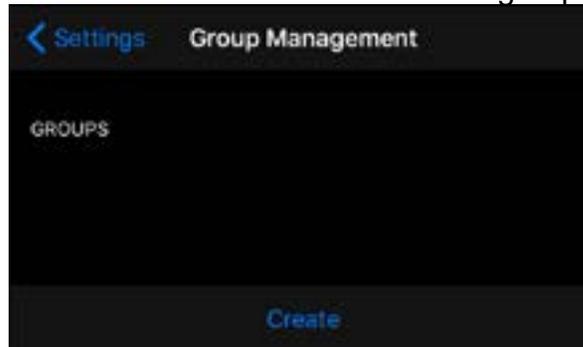


Figure 41. Group management

Group creation

Click on Create to create a new group:

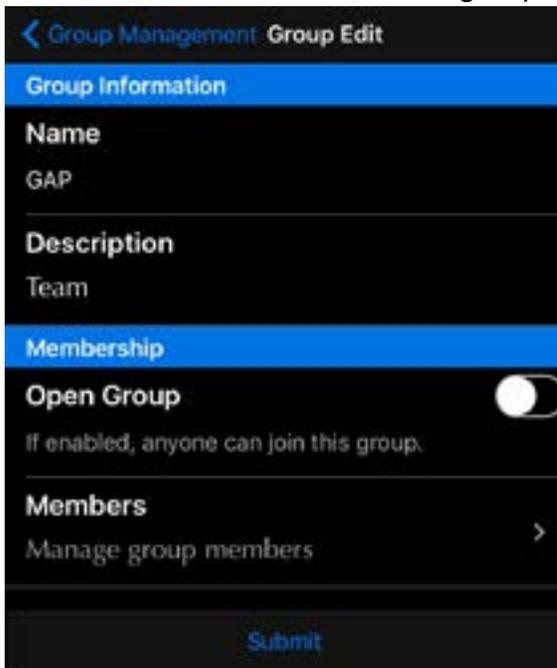


Figure 42. Group creation

- Fill up the information regarding the group name and description.
- Open Group: If enabled, anyone who knows the group existence can join in. No intervention from the manager(s) required.
- Click on Manage group members to add users to the group.

Manage group members

Group Information	Edit Members
Name GAP	Enter a username or email, Validate
Description GAP Team	MEMBERS
Membership	Patrick r / w mod
Open Group <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Member can upload data
If enabled, anyone can join this group.	<input checked="" type="checkbox"/> Member is a moderator
Members >	Christian r / w mod
Manage group members	Eric r / w mod
Submit	Michel r / w mod
	Sylvain r / w mod

Figure 43. Manage Group Members

Adding members

- Enter a username or e-mail address from the credentials used when registering the CoPiTrail module ([section 2.6](#)).
- Click on Validate

Define permissions for each member.

- Upload data: This will allow log, event sharing ([section 4.2.6](#))
- Member is a moderator: When enabled, the member can add, remove and change permission of each member.

Change confirmation

Click on Submit to save changes

Accepting invitation to join a group

When invited to join a group, the following will be displayed.

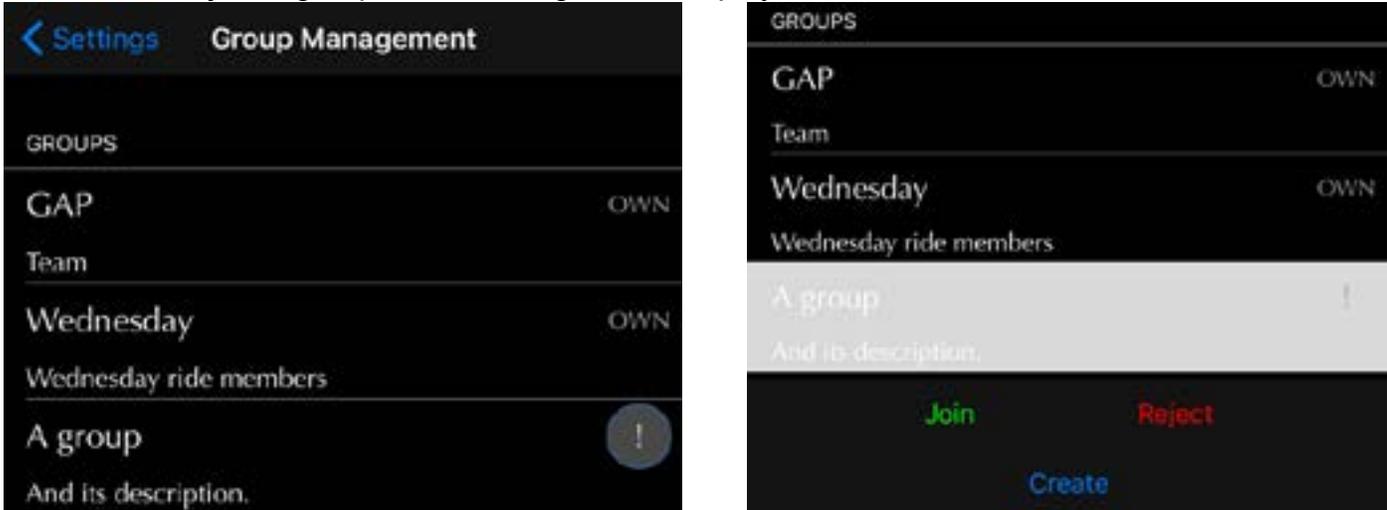
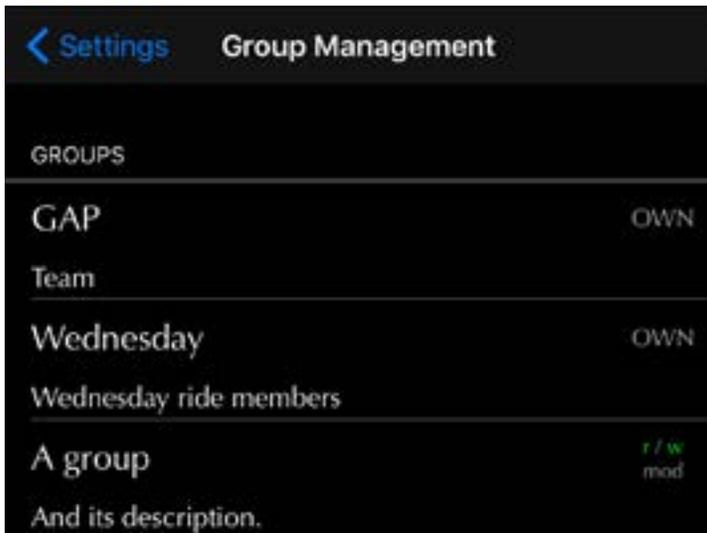


Figure 44. Group invitation



Once joined, permissions are visible.

In this case, the following were set by the moderator:

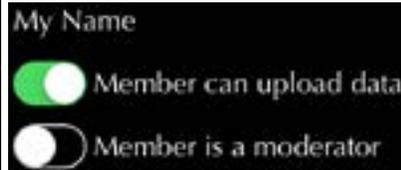
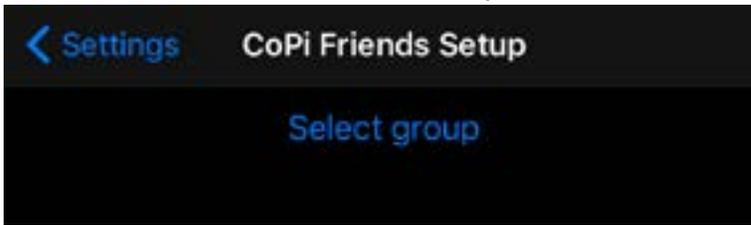


Figure 45. Group invitation, permission

3.2.2 CoPi Friends Setup

This allows selecting which group and members will be visible on the Map. Please consult [section 3.2](#) for access to the CoPiFriends Setup.

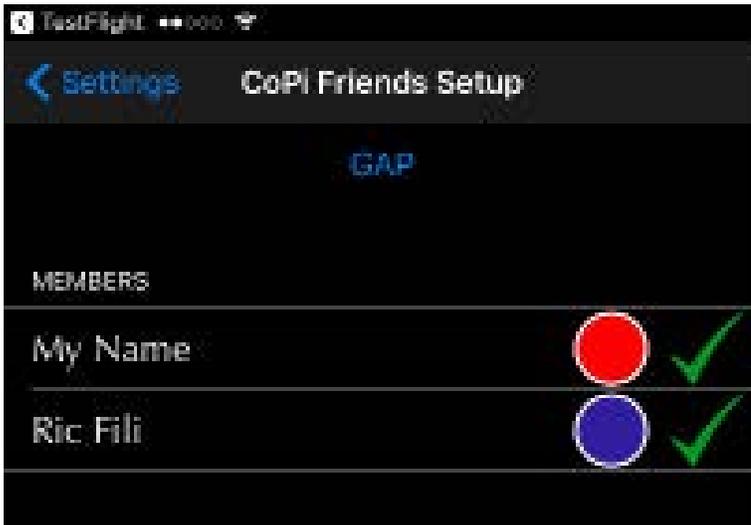


Select group

Click here to select a group (first time use only)

GAP

Click here to select a different group



Select which members will be seen on the Map



This icon indicates the colour which will be associated with this friend. Click on the icon to select a different colour.



Figure 47. CoPi Friends example

4 Functions definition

4.1 «Faults» function

This function is subdivided into 2 sub-functions, that is; The «Fault Reading» and «Fault Clearing».

4.1.1 Definition

This diagnostic function gives access to the list of currently stored faults in covered ECUs. It helps, following the reading, to identify the source of a problem.

4.1.2 Access

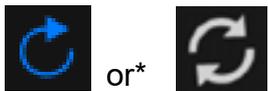
Simply click on the Quit button of the top bar  (section 3.1.1) and enter the Fault function. CoPiTrail will automatically scan the engine ECU to detect the presence of faults.

Buttons :

Definition :



This button will export the list of faults.



When this button is pressed, the GAP Flasher will scan ECUs (“refresh”).



This button clears all faults

*Apple or Android

4.2 « Datalogger » function

4.2.1 Definition

The datalogger function allows visualization of engine and vehicle data. It is optional and purchased separately. Event data is also available. Please contact the manufacturer or your reseller for more details.

Accès

- 1- Perform initial access steps ([section 2.8.1](#))
- 2- The logs are accessible via the cogwheel [section 3.1.1](#). or by quitting the dashboard.

CoPiTrail Pro or when used with more than one licence: The list of vehicles with at least one event will be displayed. Choose the vehicle to display the list.

4.2.2 Live value selection and sampling rate

You can select up to 8 live values in the graph display modes. The sampling rate for each value is 10 per seconds and 30 per seconds for the optional AEM Wideband O2 sensor(s).

Datalogging starts automatically when the engine is started. Logs of 30 seconds or more will be saved automatically when turning the engine off. All available live values are recorded. An optional wideband Air Fuel Ratio sensor is available.

4.2.3 Viewing logs

Once a recording has been made, click the Logs button on the connection screen or go to the app settings ([section 1.5.2](#)) by clicking on the cogwheel and select Logs.

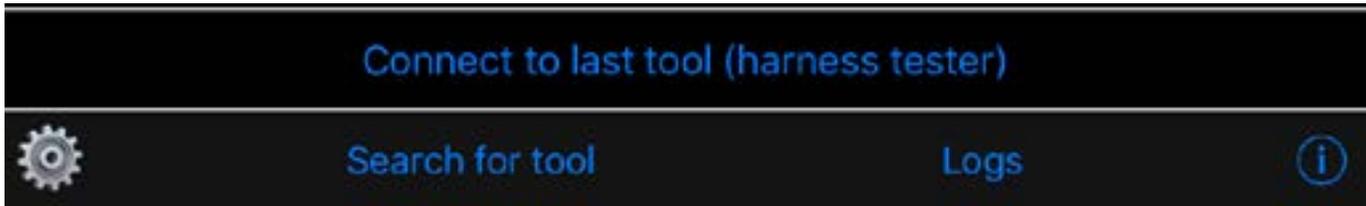


Figure 48. DL : Access log while offline

Select a log and click on View.

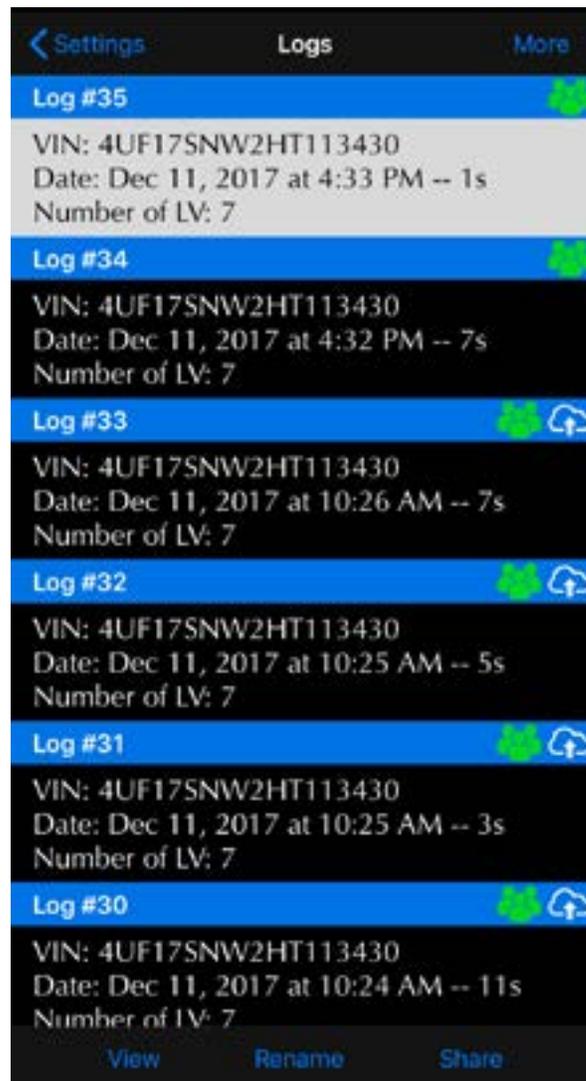


Figure 49. DL : Sélectionner un enregistrement, mode hors ligne

Basic controls

Click on the yellow section to make the top bar appear.

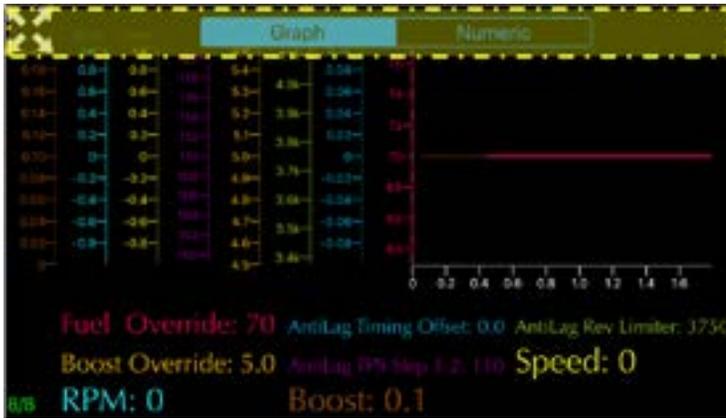


Figure 50. DL : Top bar



Full / Split screen



Switch between graphic or numeric displays. The numerical view shows all the values at a defined point (cursor, see next page)

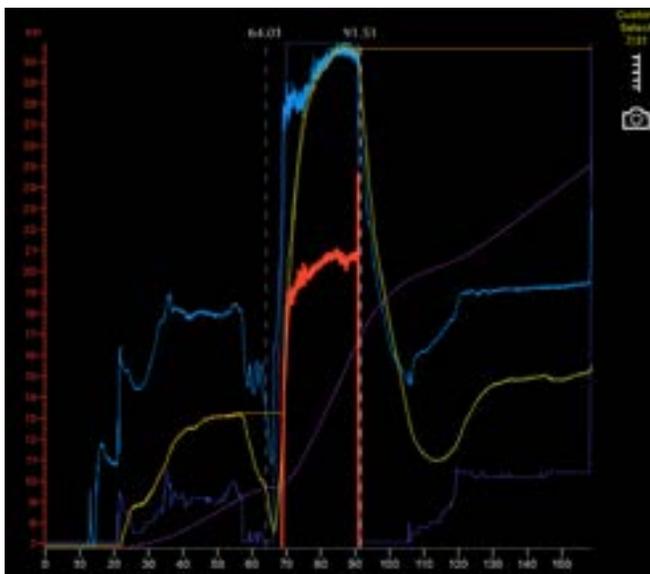


Figure 51. DL : Right quick options



This button selects the values to display and export.



Axis Layout The Y axis and names are displayed. All data will remain visible on the graph. This has been implemented to maximize the available graphic area.

This button is used to take a screenshot which will be store in your photos.

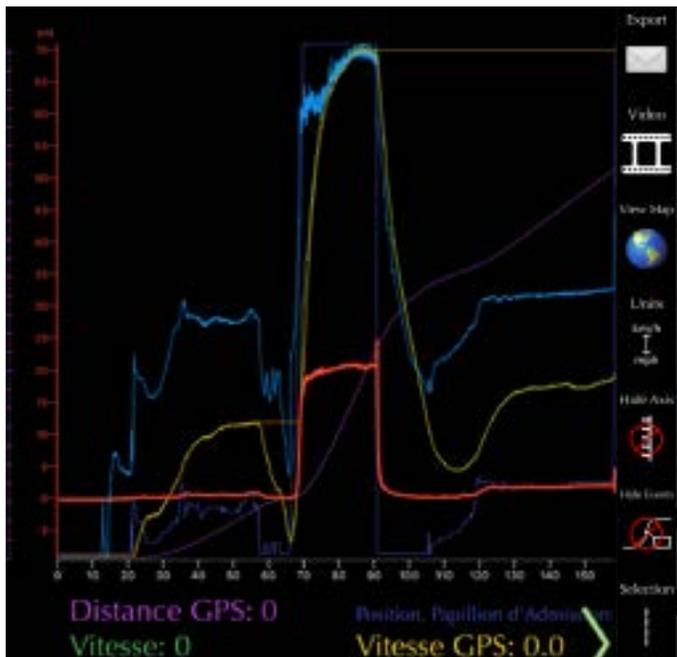
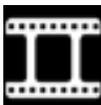


Figure 52. DL : Right bar

Click on the green arrow, bottom right, to access the right bar



Export button, csv, PDF ou Air Print



This button is used to link the data to a video made with a Go Pro. This feature will be available soon.



Allows changing the unit to metric or imperial



To remove or show Events, see [section 4.2.5](#)



Cursor selection, one or two cursors. Having two cursor allows Delta (difference) measuring between two different time.



Two cursors. Click and drag on the desired cursor to move it.



Events

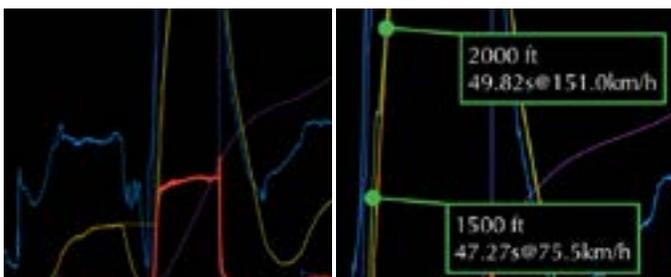


Figure 53. DL : Events button



Shows the vehicle location on a map at a given time

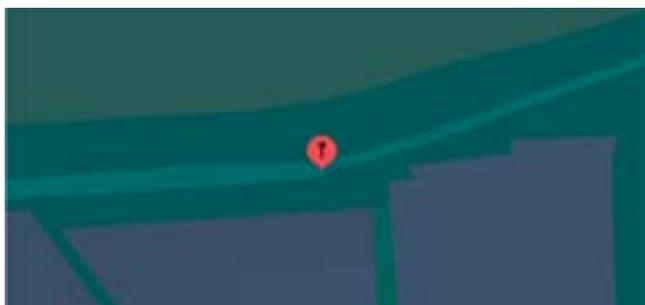


Figure 54. DL : Map button

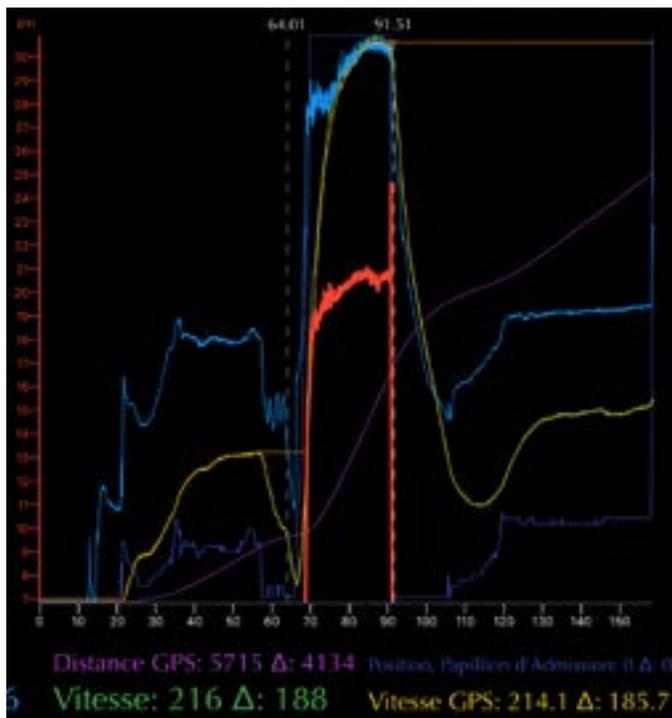


Figure 55. DL : Two cursors

4.2.4 Graph view options

Press in the yellow area to select how many live values Y axis and names are displayed. All the data will remain visible on the graph. This was implemented to maximize available graph area.

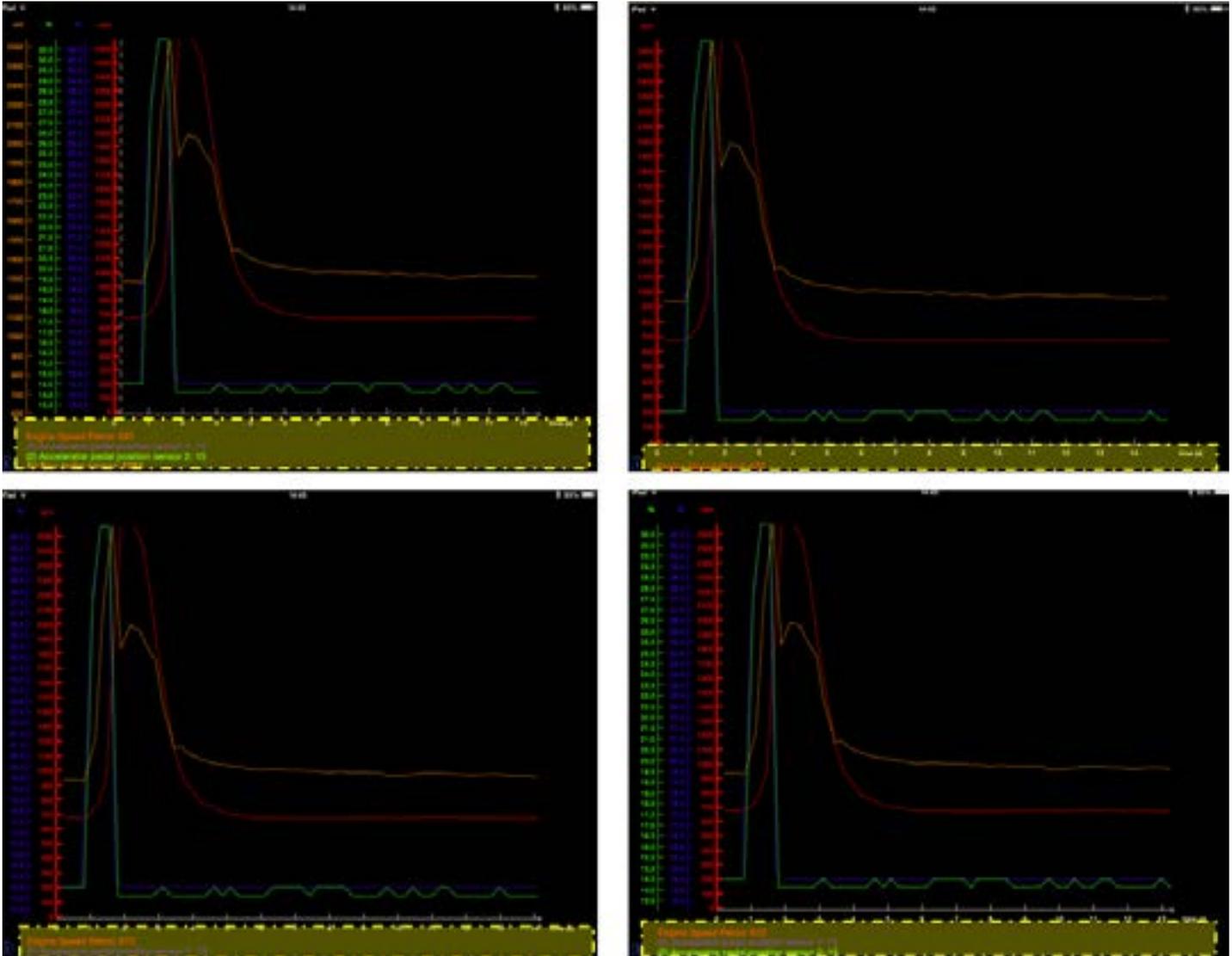


Figure 56. DL : Axis displayed

User can interchange any Y axis position. Press and hold on the desired axis and move it to the new position.

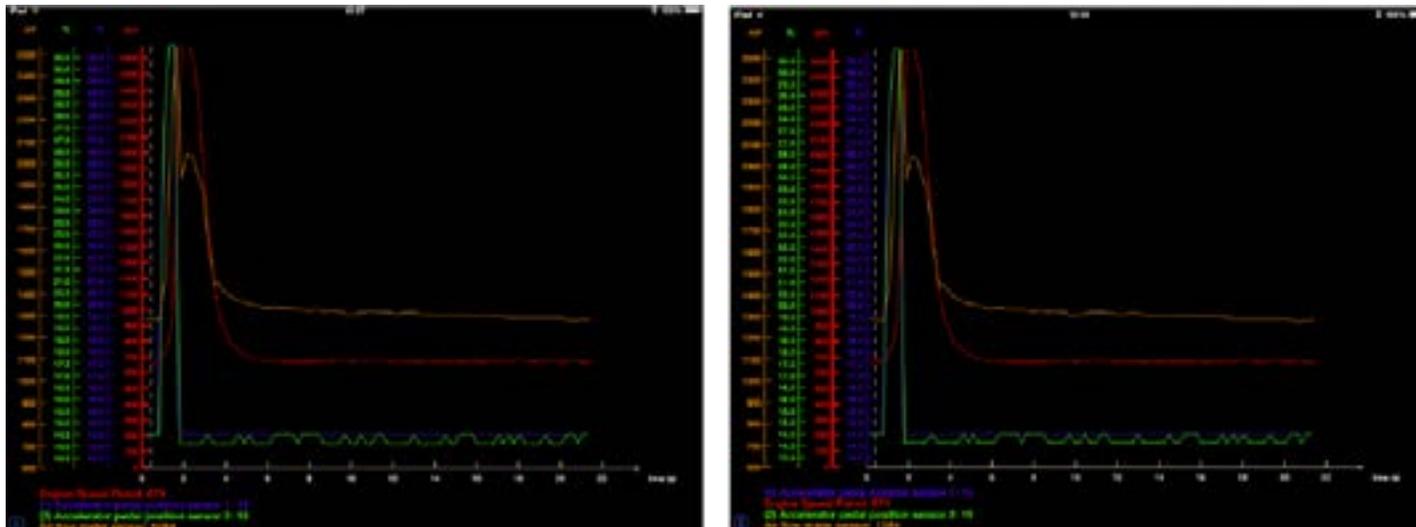


Figure 57. DL : Y axis displacement

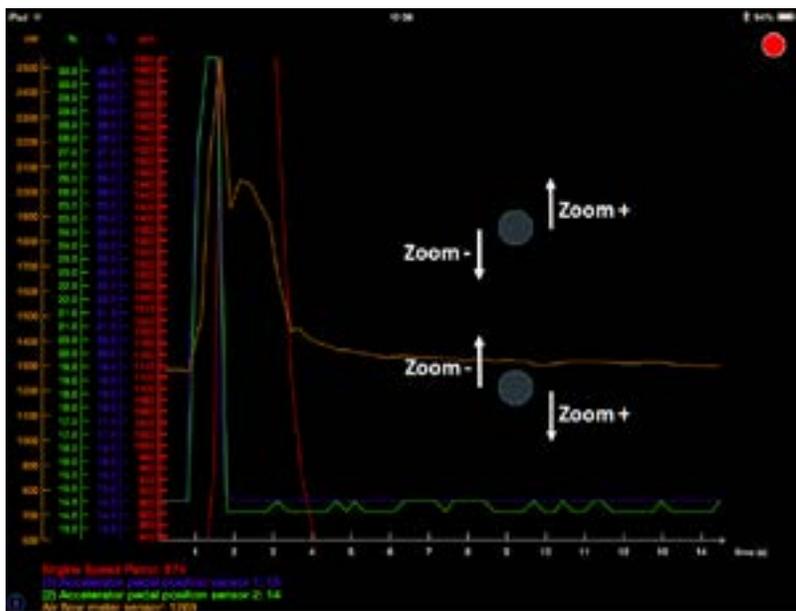


Figure 58. DL : Vertical zooming

Vertical zooming is done on each Y axis separately.

- Select the desired Y axis / live value
- Touch and hold anywhere in the screen with 2 fingers and swipe vertically in opposite directions.

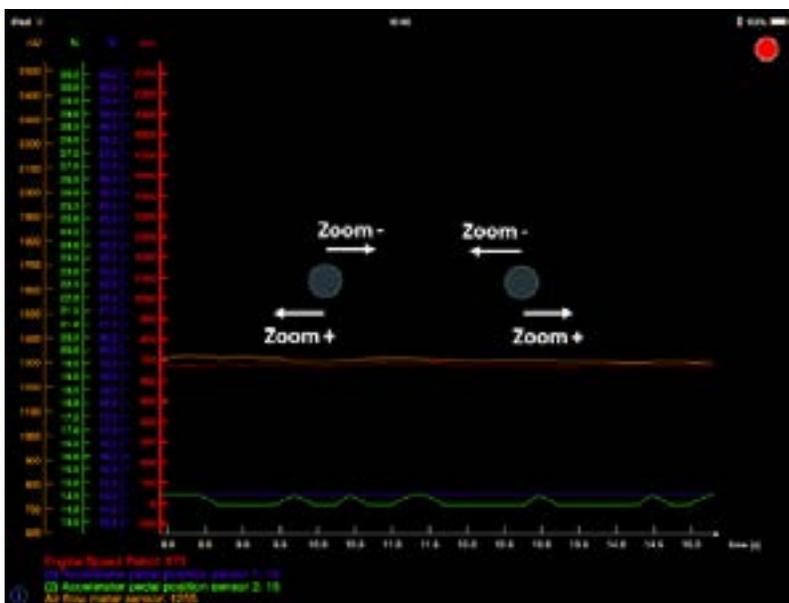


Figure 59. DL : Horizontal zooming

To zoom horizontally, press the screen with 2 fingers and swipe horizontally in opposite directions.

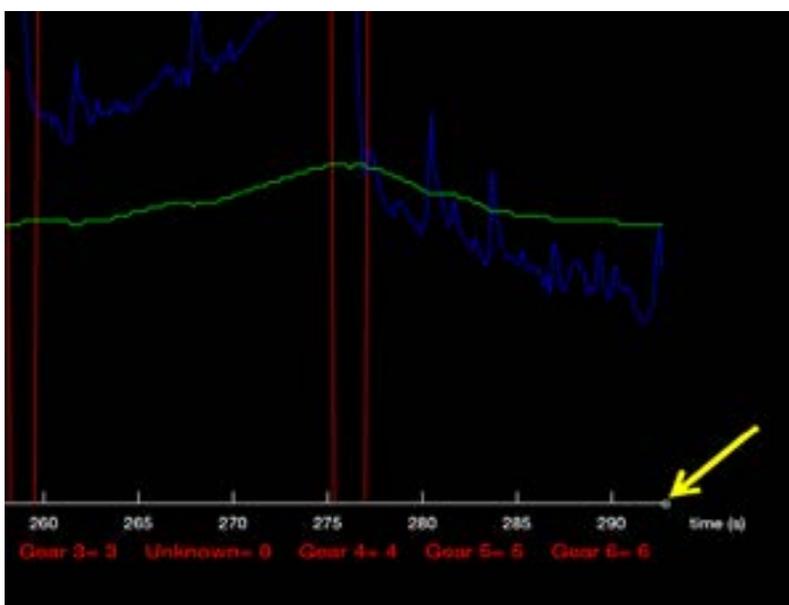


Figure 60. DL : Return to the current time

To return to the current time after zooming or panning horizontally on the X axis, simply press on the white square on the edge of the axis.

The Pan function for both axes is done using only one finger and sliding it in the desired direction.

To re-initialize the graph view, touch the screen twice at one of the following locations:

- On the currently selected Y axis to reinitialize this live value axis only.
- On the X axis to reinitialize the time axis only.
- In the middle of the graph screen to reinitialize all axis simultaneously.

4.2.5 Events

Definition

The following events are logged automatically and can be viewed and sorted for analysis. The results can also be displayed and exported on the graph screen.

- Maximum Speed
- 0 to 60 MPH time and distance
- 0 to 100 KPH time and distance
- 60 feet time and speed
- 330 feet time and speed
- 500 feet time and speed (typical grass drag distance)
- 660 feet time and speed (1/8 mile and Ice racing)
- 1000 feet time and speed
- 1320 feet time and speed (1/4 mile)
- 1500 feet time and speed
- 2000 feet time and speed (typical radar run distance)

Access

Enter the parameter function and select Events. CoPiTrail Pro or when used with more than one licence: The list of vehicles with at least one event will be displayed. Choose the vehicle to display the list.

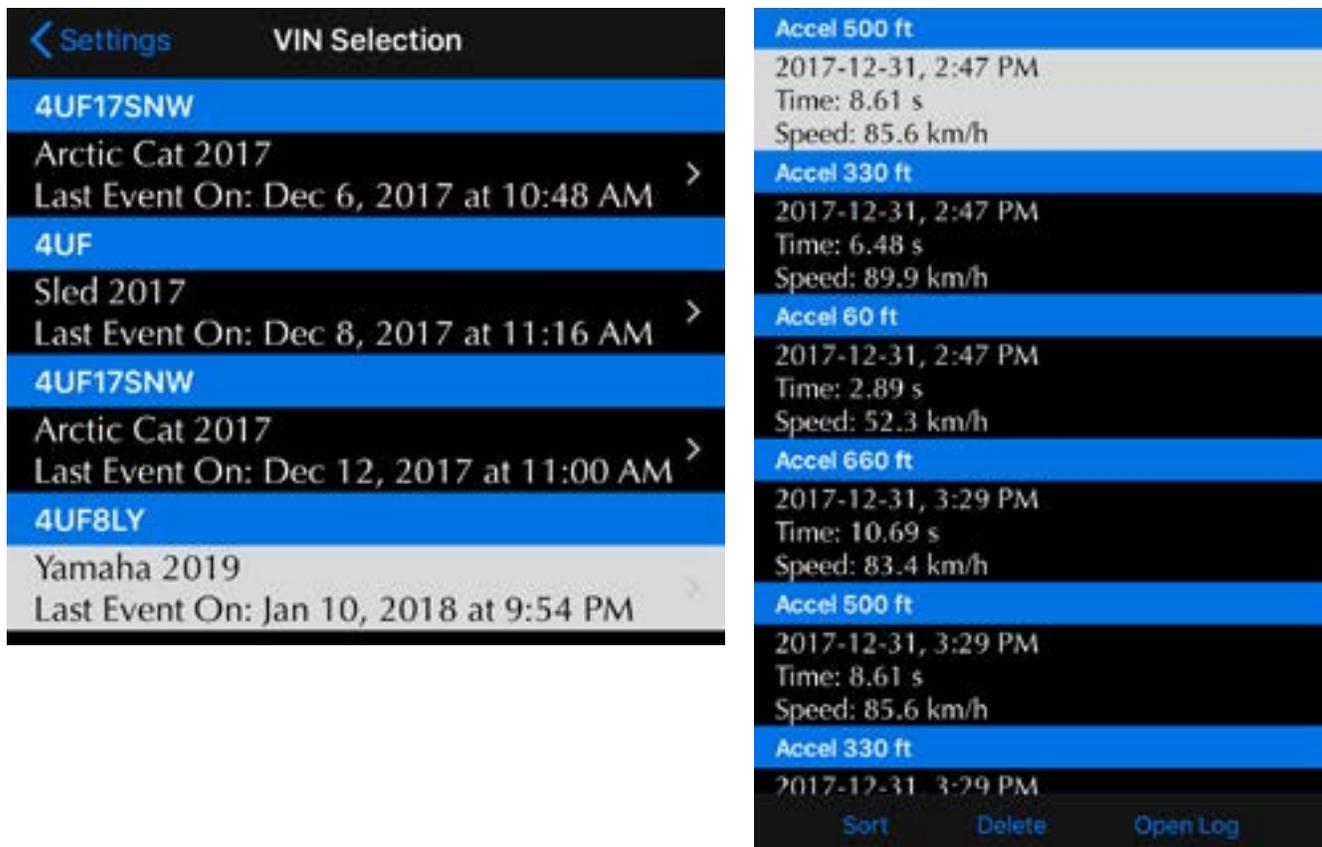
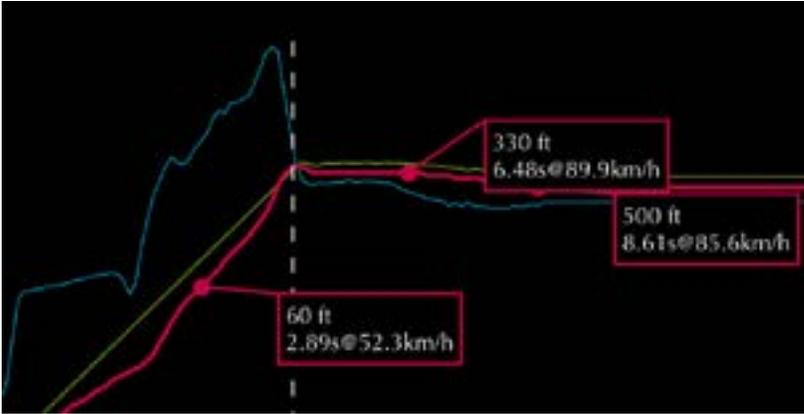


Figure 61. EV : Events, vehicle and events selection

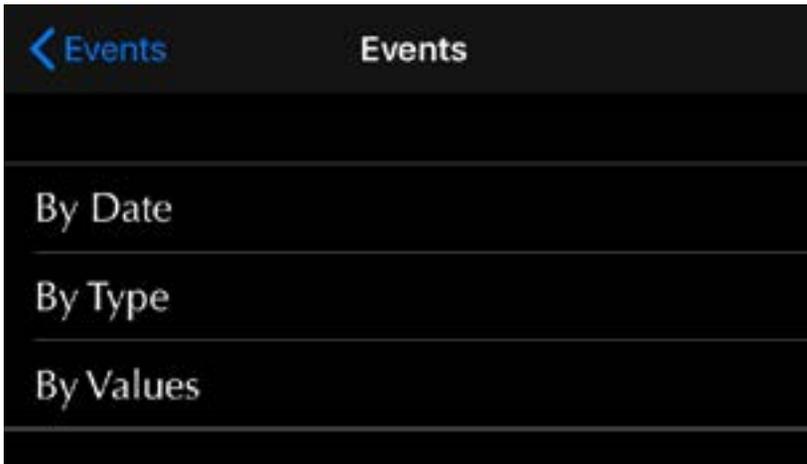
Graph view (logs)



Labels are visible on the speed live value and calculated with the GPS Speed

Figure 62. EV : Show events, graph view

Sorting and filtering Events



Click on the sort button to access the sort menu. Events can be sorted and filtered by event type, date, time and speed. They can be sorted in ascending, or descending order.

Multiple filters and sorting orders can be applied.

Figure 63. EV : Sorting events



Figure 64. EV : Sorting by Date

By Date	Accel 60 ft	✓
By Type	Accel 330 ft	✓
By Values	Accel 2000 ft	✓
	Accel 1500 ft	✓
	Accel 1320 ft	✓
	Accel 1000 ft	✓
	Accel 660 ft	✓
	Accel 500 ft	✓

Figure 65. EV : Sorting by Type

By Date	Time	✓
By Type	< = >	
By Values	Ascending	Descending
	Speed	✓
	< = >	
	Ascending	Descending

Figure 66. EV : Sorting by Values

4.2.6 Sharing logs

Logs can be shared between users. Logs can only be shared with other users who have purchased a CoPiTrail from the same engine mapping provider. Records from different vendors cannot be shared.

Acces

In the Logs function, select one or more recordings and click Share or Upload. Once completed, a copy will be available online for viewing on another mobile device by you or your friends using the Online Logs feature (*section 4.2.7*).

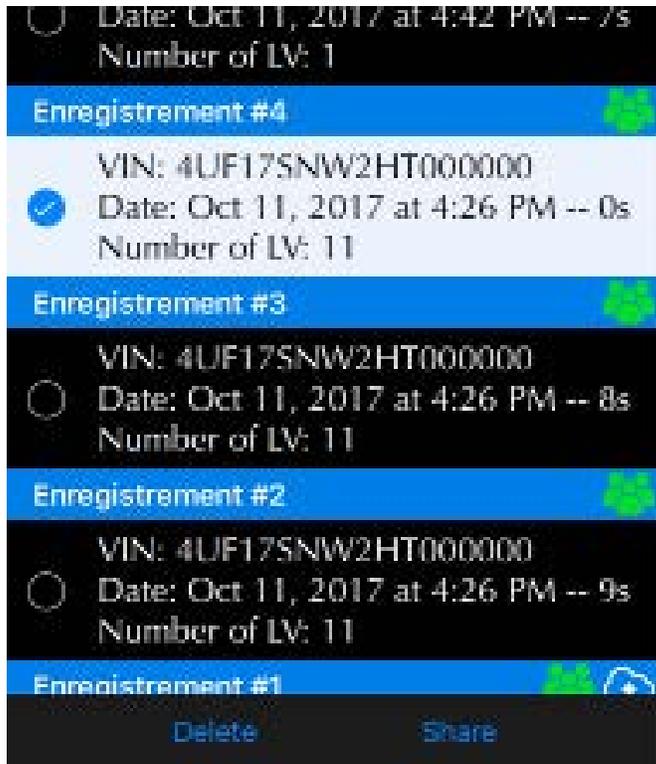
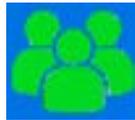


Figure 67. DL : Log sharing 1
Figure 68.



This symbol indicates that you are the owner of this recording, so it can be shared at will with friends.



This symbol indicates that it is already on the server.

The Share button will display the sharing screen.



This symbol indicates that you are not the owner of this record. Therefore, it can be viewed, once downloaded to the server only by the owner.

The upload button will download the record that will be available only to the owner.



Figure 69. DL : Log sharing 2

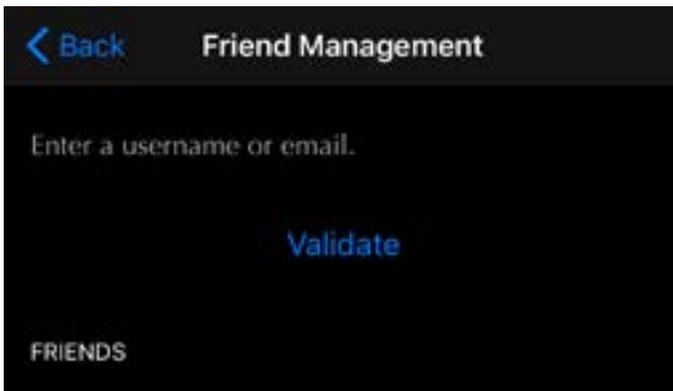
Sharing to friends



Select the friends with whom you want to share the recording and click share.

Click Manage Friends to add or remove friends from your list. See below.

Figure 70. DL : Log sharing screen



Enter a user name, identical to the one used to register the tool, or the email address of a friend and click on Validate. If a match is found, it will be added to the list.

Figure 71. DL : Adding friends

4.2.7 Online Logs

The Online Logs feature allows viewing of records stored on the server. Yours and friends logs will be visible even if the Mobile Device is not connected to the CoPiTrail.

Visualization

The online logs function is part of the App Parameters, [section 1.5.2](#). User must be connected on to CoPiTrail or logged in ([section 2.8.2](#)).

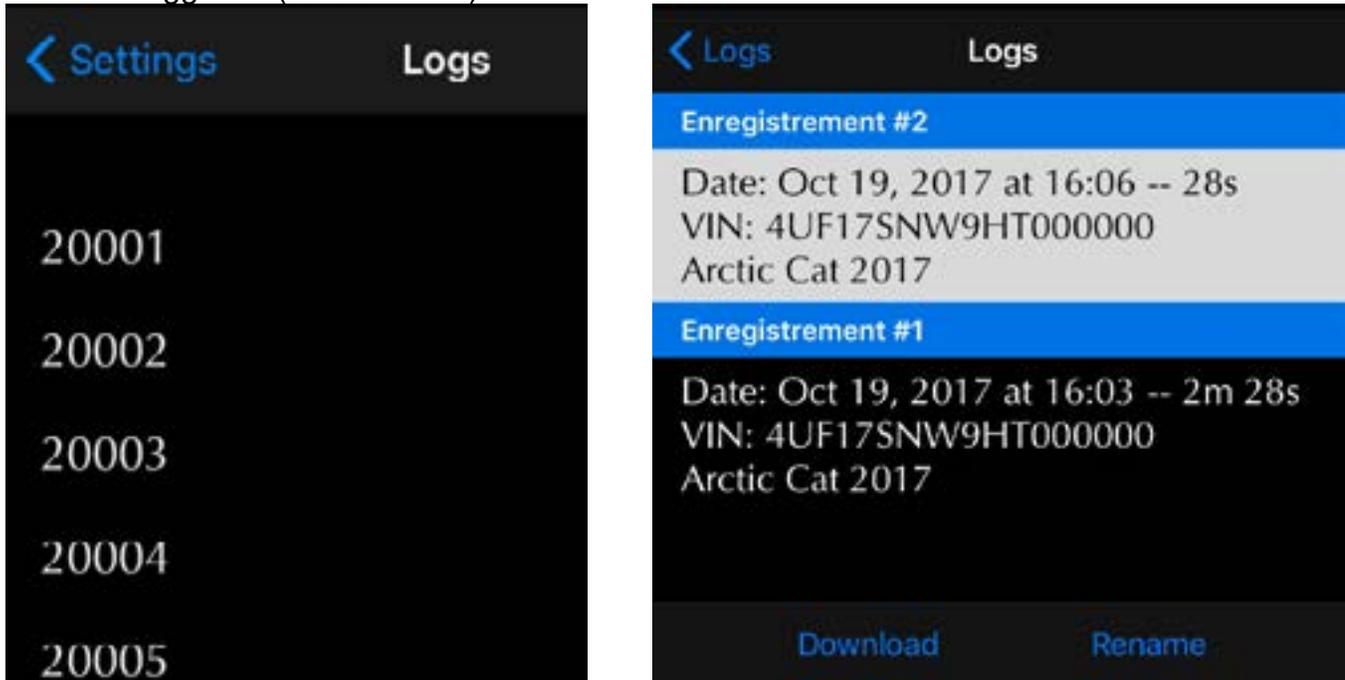


Figure 72. DL : Online logs visualization

Click Download to view the log and rename to edit the name. The name will be changed on the server as well for anyone with access.

4.3 « ECU Info » function

Definition

This function allows viewing the following information of the selected ECU:

- Strategy
- Calibration
- ECU Serial number
- VIN
- Others

Access

- 1- Perform the initial stages of access ([section 2.8.2](#))
- 2- Select the “ECU Info” function
- 3- Wait until the GAP Flasher finishes with interrogating the ECU
- 4- The resulting list will be displayed and can be sent by e-mail by clicking on the  button.



Figure 73. ECU Info example

4.4 Displaying values on the original instrument cluster

This function will display boost pressure or air fuel ratio (AFR) from the optional AEM O2 wideband real-time sensor to the original instrument cluster.

Prerequisites

- Use the latest firmware version of GAP Flasher and latest tune version
- That the GAP Flasher is connected to the vehicle. It is not necessary to connect the mobile device to GAP Flasher
- For air fuel ratio, that the optional sensor is installed

Viewing

Simply select the hour counter using the button at the bottom right of the instrument cluster.



Figure 74. Display, hour counter



Figure 75. Optional AEM O2 broadband sensor, 11.3 AFR in this example

Selection

Selection of the displayed value is done via the Control button, [section 3.1.1](#)

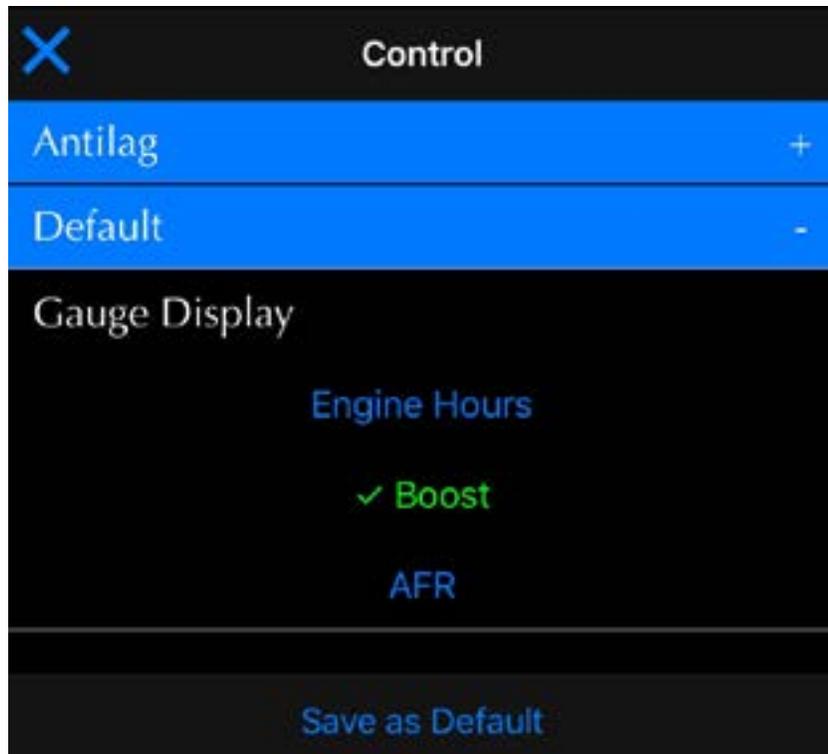


Figure 76. Value selection, hour counter

Limited Warranty

GAP Innovation warrants this product for one (1) full year after the date of purchase with the exception of the AEM Wideband sensor which does not come with a warranty. The warranty covers only the CoPiTrail and accessories of the original purchaser (non-transferable). It covers manufacturing and workmanship defects for the duration defined above. The warranty is limited to the functionality of the system and the system itself. It is the user's responsibility to use CoPiTrail safely.

The user must return the CoPiTrail or accessory to GAP Innovation to have the warranty honoured. The user must provide a proof of purchase.

The warranty is void if:

- The product has been damaged or altered in any way
- The product is damaged by water, fire, accident or other condition beyond the control of GAP Innovation
- The product has been improperly installed or misused

The warranty does not cover:

- Shipping and handling.
- Any material damages other than the CoPiTrail or accessory itself.

Under no circumstances will GAP Innovation be liable whatsoever for incidental or consequential damages. The warranty is limited to the value of the product.

Contact:

GAP Innovation

support@GAPInnovation.com

Glossary

ECU : Electronic Control Unit. An ECU is an embedded system that controls one or more systems or subsystems present in a motor vehicle.

CAN : For Controller Area Network, is a communication protocol which connects ECU's via a two wires interface.

Vehicle control module software updates (Re-Flashing) : The action of programming an ECU firmware. The term flashing comes from the fact that microcontrollers used in ECU's are made with flash memory.

VIN : Vehicle Identification Number. It's a unique code which includes information about the vehicle's configuration and its serial number.

DTC : For Diagnostic Trouble Code or fault code.