

# Installation and use of the CL1 Track Day Kit





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# What's In the Box – Racepak Vantage CL1 Track Day Kit

The CL1 Track Day Kit combines the power of mobile technology with Racepak's CL1 data box and external sensors, providing professional level instrumentation and data analysis, all within Racepak's exclusive D3 app.

Vantage CL1 Data Box	20100-2002
Engine RPM Cable	28101-2001
USB Charging Cable	28118-2001
Charging Cable Adapter	28118-2002
GPS Antenna	ANTG-ANN-05
4 Rechargeable AA Batteries	89118-2001
Rubber Isolation Mounting Feet	89112-2001
OBD2 Cable	28120-2001



# Installation and Use of the CL1 Track Day Kit Requires the Following Items:



CL1 Track Day Kit



Mobile phone with protective case  
(not included with standard kit)



Optional vehicle phone mount -  
(not included with kit)



#8 / 5mm bit for installation of Rubber  
Isolation Mounting Feet



Phillips screw driver

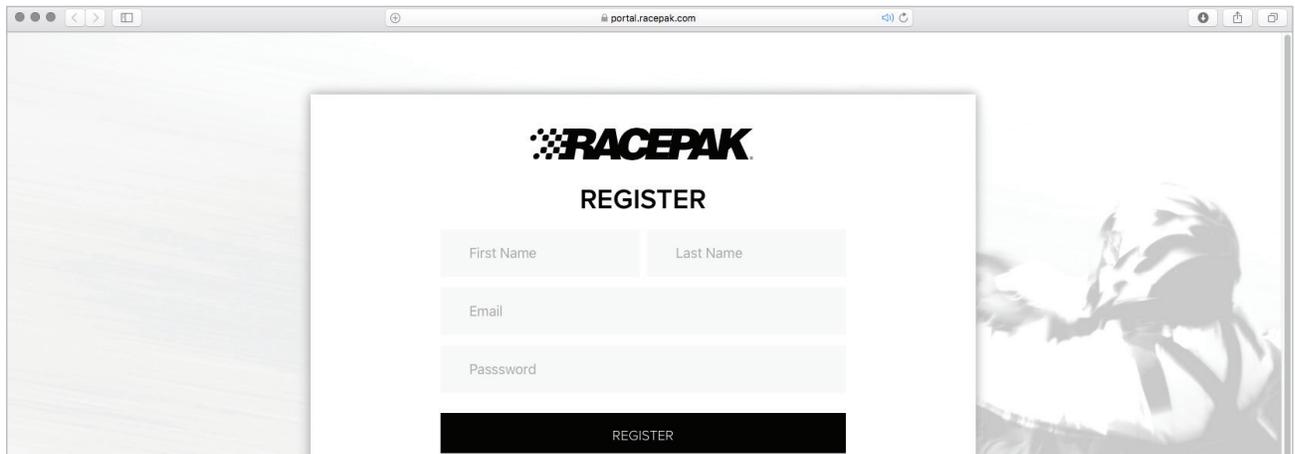


Optional CL1 cup holder mount  
(not included with kit)

# Before you Begin, Register your CL1 Data Box

Log onto [portal.racepak.com](http://portal.racepak.com) and register your CL1 Data Box by following the step by step prompts shown online.

Registration of the CL1 data box is provides a number of benefits, to the customer, and is necessary for use of the CL1 product. There are a number of aspects of device registration that should be reviewed, before the registration process.



## Register Device

1. **Team:** The creation of a team provides a secure location for all cloud based data, related to that particular team and CL1 data box. This action also provides the ability to define the desired Team from the vehicle mounted mobile device running the CL1 app, for cloud data uploading purpose. Teams are also presented to remote viewers, in order to select the correct team for data review.
2. **Device Serial Number:** 12 digit/letter combination found on the bottom of the CL1 data box.
3. **Subscription:** Available on a monthly or yearly basis, providing the ability for users to remotely view data from any location, utilizing an internet connected mobile device, running the D3 app.

## My Teams

1. Provides ability to add individuals, for remote data viewing. A valid email address is required for each team member.
2. The team “owner” has exclusive access to the team, and as such is responsible for the addition or removal of team members, in order to provide access to, or remove access from, reviewing remote data.

# Step 1. Download and Install the Racepak D3 App

Racepak's exclusive D3 app turns a cellular & Bluetooth enabled smartphone into an on-board instrumentation and data analysis device, while simultaneously uploading data via cellular connection to your secure, personal cloud account. Data is stored locally on the mobile phone for instant data analysis, while live or cloud recorded data can be remotely viewed via the same D3 app installed on any web connected tablet or mobile phone.



1. Search the term Racepak D3 in the Google Play or Apple store, then download onto the mobile device which will be mounted on the vehicle.

2. Install the app per your individual mobile device instructions.



Note: Access to cloud data requires a monthly or yearly subscription fee.



Note: Cellular service is not required to utilize the D3 app on a mobile phone for on-board vehicle instrumentation and data analysis, but is necessary in order to upload data to the cloud.



Note: For suggested mobile phone, tablets and protective cases, please see [www.racepak.com](http://www.racepak.com).

## Step 2. Battery Installation

The CL1 arrives from the factory without the rechargeable batteries installed in the unit. Installation of the batteries is a quick and simple process.



1. Locate the four rechargeable batteries found in the CL1 Data Kit.



2. Remove batteries from packaging.



3. Using a small Phillips screwdriver, completely loosen each of the four screws found on each top corner of the CL1 data box.



4. Turn the CL1 upside down.



5. Grip the mounting pads and gentle wiggle, while pulling the base from the housing.



6. Once removed, install each battery, ensuring the battery + and – are oriented as shown on the battery pack case.

## Step 2. Battery Installation



7. Replace the base.



8. Reinstall the four screws, taking care to not overtighten.



9. Charge the batteries following the Charging the CL1 Data Box Batteries section of this manual.

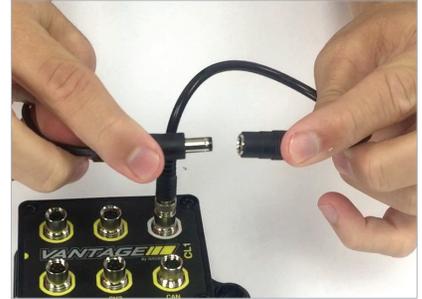
## Step 3. Charging the CL1 Data Box Batteries



1. Locate the USB charging cable and adapter, if the adapter was not attached to the CL1 data box during installation.



2. Connect the short adapter cable to the PWR port of the CL1 data box.



3. Connect the mating single pin male and female on the charging cable and adapter.



4. Power down the CL1 data box.



5. Plug the USB connector into any commonly available USB charger. NOTE: 110v wall adapter is not included with this kit. Shown for illustrative purposes only.



6. Power up the CL1 data box then observe the flashing red LED on the end of the CL1 data box, which indicates charging.



7. When charging is complete, LED flashing will cease and unit will power OFF.



8. IMPORTANT: Remember to power CL1 back ON, before use.



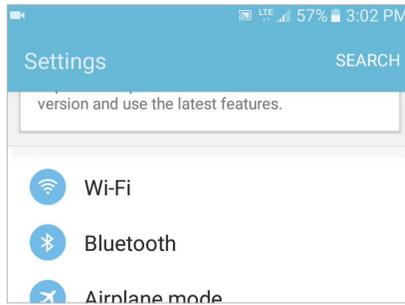
NOTE: DO NOT leave the charger connected to the CL1, when in use on the track!

# Step 4. Pairing of the Mobile Device with the CL1 Data Box - Android

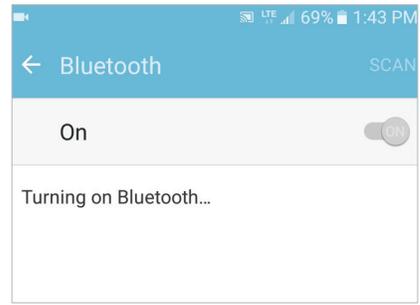
Keeping in mind that the D3 app not only transforms the mobile device into on track instrumentation for the driver, but also functions as the data recorder and uploads data to your optional cloud account, it is necessary to pair the mobile device with the CL1 before use.



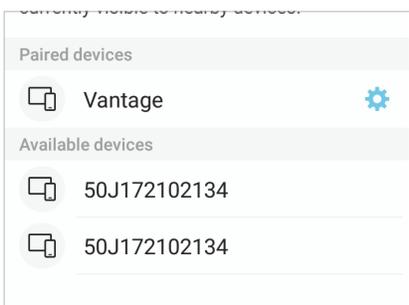
1. Briefly press the power button on the CL1 data box. The LED will turn BLUE.



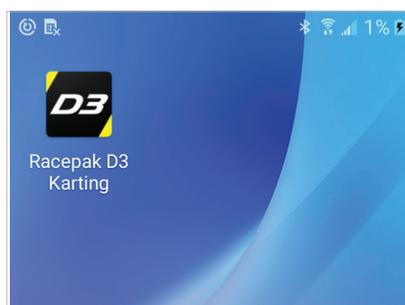
2. Locate Settings in your mobile device, then Bluetooth. For Android, Settings are typically found in Apps on the home page.



3. Turn Bluetooth ON.



4. Vantage should now appear as a device connection option.



5. Open the D3 app.



6. TOUCH and HOLD the mobile device on the CL1 data box.

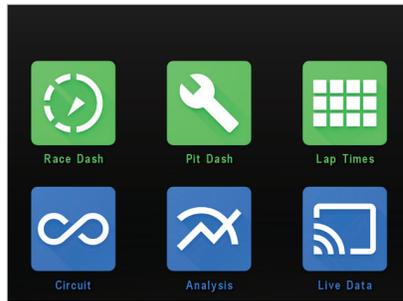


Note: Do not pair from this window!

## Step 4. Pairing of the Mobile Device with the CL1 Data Box - Android



7. The LED will change from solid BLUE to blinking GREEN, indicated phone and CL1 are paired.



8. The top three icons (Race Dash, Pit Dash and Lap Times) will now change from GRAY to GREEN. This indicates the mobile device and CL1 are now paired.



9. If unit fails to pair, power off CL1, then press and hold the power button until the LED turns PURPLE, and repeat starting at step 6.



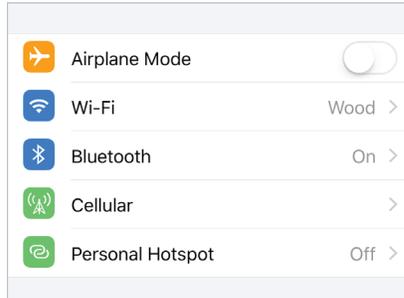
Note: Disable mobile device screen lock, after installation of D3 app.

# Step 4. Pairing of the Mobile Device with the CL1 Data Box - iOS

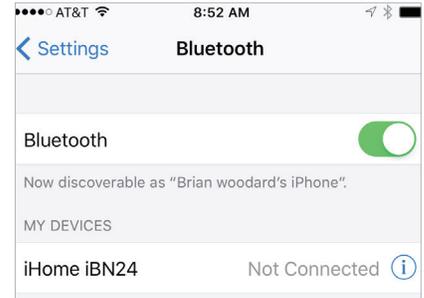
Keeping in mind that the D3 app not only transforms the mobile device into on track instrumentation for the driver, but also functions as the data recorder and uploads data to your optional cloud account, it is necessary to pair the mobile device with the CL1 before use.



1. Briefly press the power button on the CL1 data box. The LED will turn BLUE.



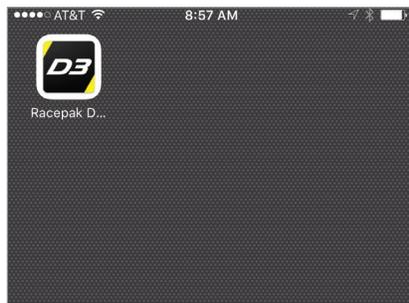
2. Locate Settings in your mobile device, then Bluetooth. For iOS devices, Settings are typically found on the home screen.



3. Turn Bluetooth ON.



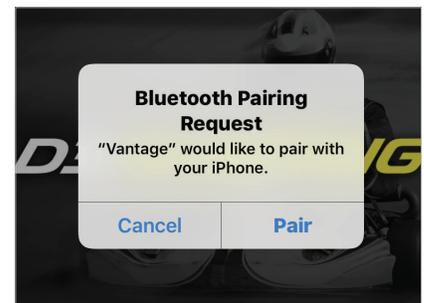
Note: Do not pair from this window!



4. Open the D3 app.



5. TOUCH and HOLD the mobile device on the CL1 data box.

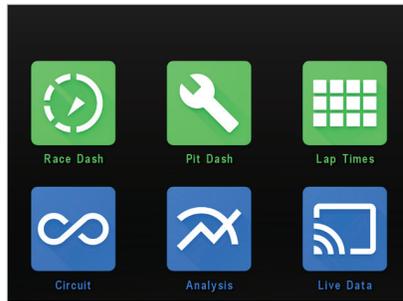


6. Wait for the Bluetooth Pairing Request message. Select Pair.

## Step 4. Pairing of the Mobile Device with the CL1 Data Box - iOS



7. The LED will change from solid BLUE to blinking GREEN, indicated phone and CL1 are paired.



8. The top three icons (Race Dash, Pit Dash and Lap Times) will now change from GRAY to GREEN. This indicates the mobile device and CL1 are now paired.



9. If unit fails to pair, power off CL1, then press and hold the power button until the LED turns PURPLE, and repeat starting at step 6.



Note: Disable mobile device screen lock, after installation of D3 app.

## Step 5. CL1 Data Box Status LED Patterns

A single LED, adjacent to the external GPS connector, provides the current status of the CL1, through a variety of colors and flashing sequences.



**Light Blue, Solid**  
Initializing



**Blue, Solid**  
Ready to connect



**Green, flashing Blue  
once every second**  
Connected, transmitting



**Green, flashing on and off  
every three seconds**  
Connected, waiting (standby)



**Red, flashing on and off  
every three seconds**  
Charging



**Red, solid**  
Powering off



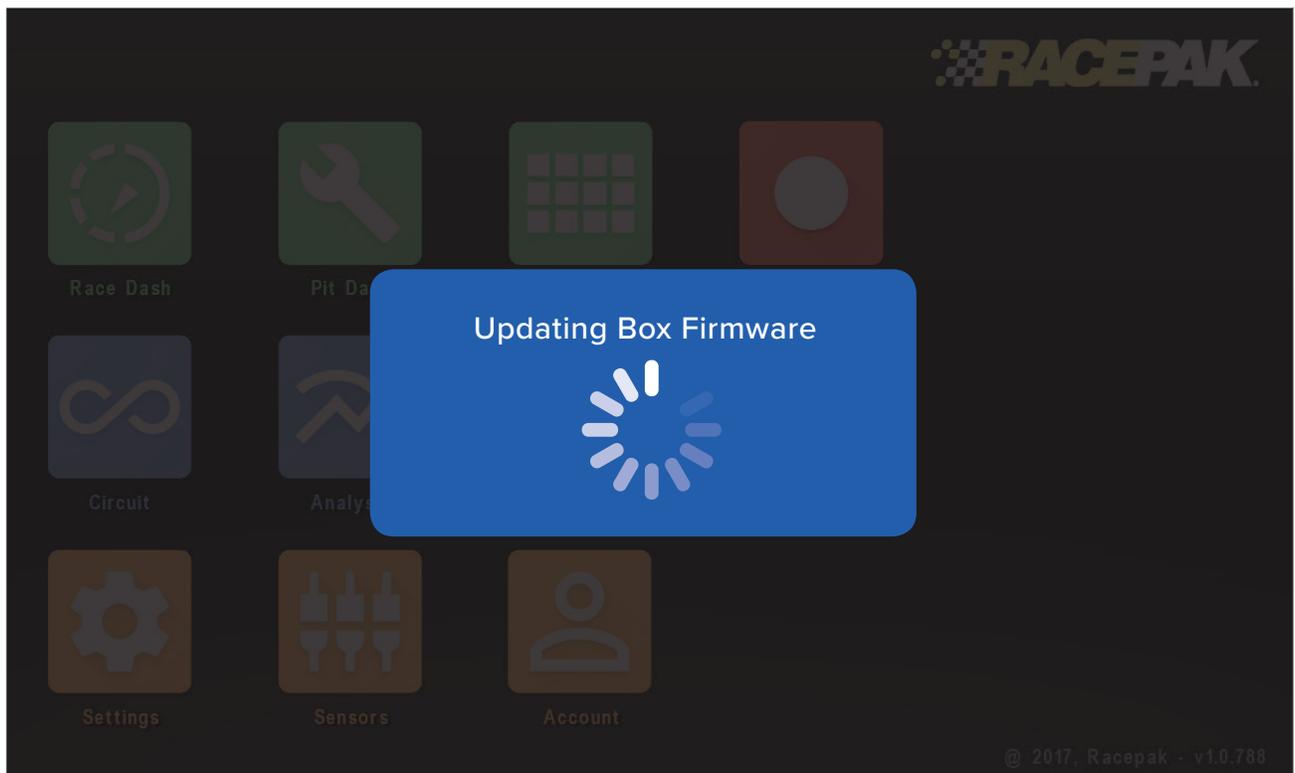
**Purple, solid**  
Reset pairing

## Step 6. Firmware Auto-Update Feature

The CL1 data box contains an automated firmware update feature, utilizing the vehicle mounted mobile device. No action is required from the user. Instead, when powering up the mobile device and the CL1, if new firmware is available, the mobile device connects to the server, retrieves the latest firmware and loads to the CL1. The user is alerted to this action by a message on the mobile device display. Once updated, the display on the mobile device will return to the D3 home page indicating the CL1 is ready for use.



Note: Do not power down the CL1 or the mobile device during the update process.



## Step 7. Mounting the CL1 Data Box



1. Avoid mounting near excessive heat and noise sources.



2. Mounting location of the CL1 data box is determined by the location of the GPS antenna and OBD2 port (if applicable) due to the length of each cable.



3. Racepak suggests mounting the CL1 in a convenient location.



4. The CL1 Data Box can be mounted in any direction, via the three rubber isolation mounting feet.



5. Ensure the Power / LED Status Indicator and sensor ports are in view and accessible.



6. Using a number #8 / 5mm drill and the base of the CL1 data box as a template, drill three mounting holes as needed.

## Step 7. Mounting the CL1 Data Box



7. Locate the three rubber mount feet.



8. Remove the supplied locknut from the rubber mount stud, drop into the recessed hex mount tab on the bottom of the CL1 housing.



9. Thread the rubber mount stud through the bottom of the mount pad, and tighten by hand. Repeat the process for the remaining rubber feet.



10. Locate the three pan head screws and washers, insert through the mount panel, into the mounting feet and tighten.



11. Vehicles utilizing stock style interiors may utilize the optional Racepak CL1 cup holder mount.

## Step 8. Mounting of Mobile Device

Given the nearly unlimited combination of vehicles utilizing the CL1 data box, Racepak recommends the selection of a rugged phone mount capable of securing the phone for any type of motorsports situation.



1. For automotive applications, Racepak offers the Ram X Grip universal holder and Ram Twist Lock Suction mount.



2. Mount the phone within view and reach of the driver, as the D3 app will be used for pit and on track instrumentation.



3. Orient the phone horizontally, with the home button on the right, as viewed from the driver position.



NOTE: Mount the phone as close as possible to the CL1. Remember, all sensor data is transmitted via blue-tooth, from the CL1 to the phone.



NOTE: The D3 app can not be viewed in Portrait orientation. The phone must be mounted with the home button on the right, as viewed from the drivers position.

## Step 9. Mounting and Connecting the GPS Antenna



1. Mount the GPS antenna in a location with an unobstructed view of the sky.



2. Locate the GPS antenna and route from mounting location to the CL1 data box.



3. Connect the GPS antenna cable to the GPS connector on the CL1 data box.

# Step 10. First Time Track Use of the CL1 Track Day Kit

At this time, the CL1 data kit and mobile device is mounted on the vehicle, with the D3 app installed and paired with the CL1 data box and the CL1 is registered (cloud account not required) to your online account. It is now time to turn our attention to the use of the D3 app. Open the D3 app on the vehicle mounted mobile device. The icons are group by color, based on their function.

**Green:**

On-track driver information and CL1 connection status.



Race Dash



Pit Dash



Lap Time

**Blue:**

Data analysis functions and cellular connection status.



Circuit  
(track mapping)



Analysis  
(track map and graphing)



Live Data and  
cellular  
connection status



Weather

**Orange:**

Setup functions.



Log In



Settings



Sensors



Team

**Red:**

Manual record function.



Manual Record

# Step 11. Installation of Engine RPM Cable

The Engine RPM harness provides input for a 12v square wave tach signal typically generated by an aftermarket ignition system.



1. Locate the Engine RPM cable.



2. Connect the M8 connector to Channel 1 on the CL1 data box.



3. Snugly finger tighten the cable connector to the CL1.



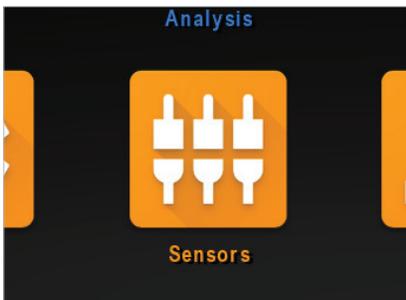
4. Strip and expose the brown and gray wire contained in the RPM harness. Cut 1/2" extra for the remaining three wires and pull over jacket of harness cable.



5. Using electrical shrink tube or similar electrical insulating material, secure remaining three wires to outer jacket of harness, preventing any potential shorting issues.



6. Route the cable to the ignition box, Brown: Ignition box Tach Output Gray: Tach Ground.



7. After pairing mobile device (see Pairing Device in following section) Program the Engine RPM setup found in Setup Prior to First Outing, in this manual.



8. Vehicles utilizing Racepak's OBD2 cable, see Step 12 - OBD2, of this manual, for setup instructions.



Note: Must utilize ignition box ground. Failure to obtain tach signal will prevent CL1 from recording data.

9. Vehicles utilizing Racepak's Vantage EFI Module, see Step 13 of this manual.

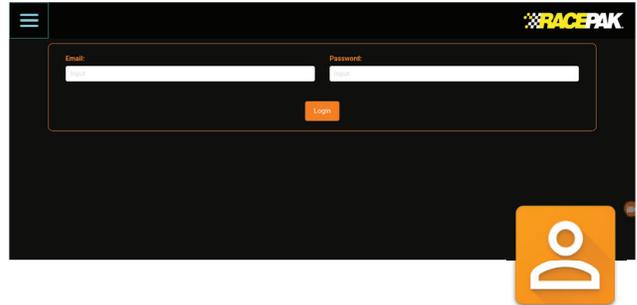
# Step 12. Set Up Prior to First Outing

There are actions that must be taken, in order to ensure the vehicle mounted mobile device is utilizing the track day interface and is transmitting data to the correct device and team cloud account.

## Log In:

**Log In:** From the homepage of the D3 app, tap the Log In icon.

**Email and Password:** Enter the email and password created when registering your CL1 data box.



## Team:

**Driver Name:** Enter the driver name for the upcoming session. This name is part of the data file naming process, so ensure the current driver name is correct for each outing, to simplify the post run data analysis process.

**Team receiving the data:** During the CL1 registration process, a team or teams is set up, which provides a specific location to save both local data on the vehicle mounted phone and to the cloud account. Tap the down arrow to select the correct team for the upcoming outing.

**Live Telemetry:** If a cloud account is in use, tap Yes. If not, tap No.

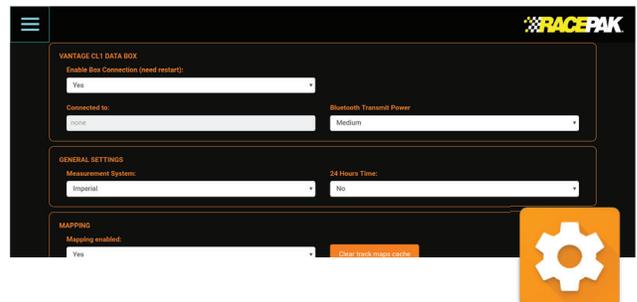
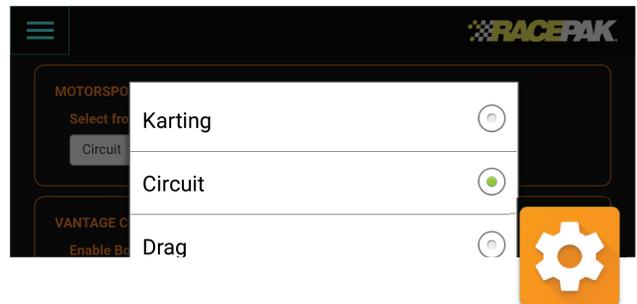
**Cloud Storage:** If a cloud account is in use, tap Yes. If not, tap No.



## Settings:

**Motorsports Type: IMPORTANT!** Tap the down arrow, then tap Circuit. If the incorrect type is selected, data will not display correctly.

**Vantage CL1 Data Box:** Enables communication between the vehicle mounted mobile device and the CL1 data box. Tap Yes for the vehicle mounted and CL1 paired device. Tap No when using a mobile device for remote data analysis, as the device should not be paired with a CL1.



# Step 12. Set Up Prior to First Outing

**Connected to:** When paired with a CL1, the CL1 serial number will appear.

**Bluetooth transmit power:** Tap and set to Medium. If there are connectivity issues, a higher setting can be selected. Be aware that higher settings will decrease data bandwidth and possible data issues.

**Hardware Version:** Displays latest hardware version loaded in CL1.

**Bootloader version:** Displays latest bootloader version loaded in CL1.

**No data timeout:** Indicates the time period after the Engine RPM (or wakeup channel) stops, until the CL1 box returns to sleep status.

**Max sleep time:** Indicates the maximum time the CL1 data will remain in sleep mode, without a wakeup signal, before completely shutting off.

**Measurement System:** Defines measurement values (imperial or metric) for sensor data.

**24 Hour Time:** 24 or 12 hour. Time is used in the data file naming process.

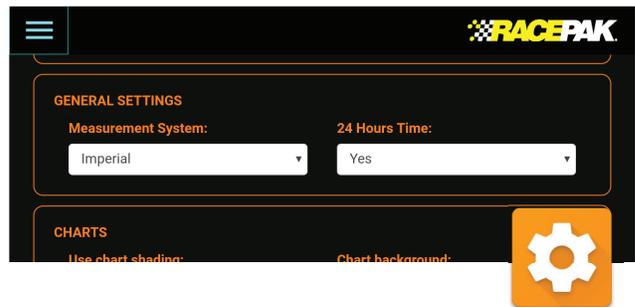
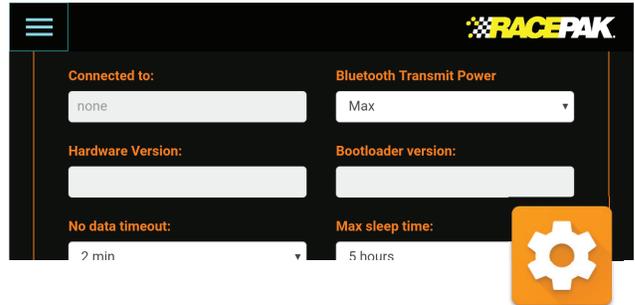
**Use chart shading:** Turns on and off shading graphed data channel traces.

**Chart Background:** Toggles data graph area from black to white.

**Mapping – Mapping Enabled:** Tap Yes to enable track mapping.

**Generic Channel Names:** Text input areas utilized for naming optional analog and rpm sensor channels, as defined in the Sensors input area of the D3 app.

**Engine RPM & Engine Temperature:** Min, Idle, Danger and Max settings define the color schemes on the Pit Dash, for each channel, functioning as “warning” information for the driver.

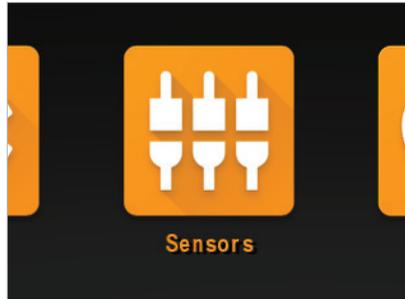


# Step 12. Set Up Prior to First Outing Engine RPM and External Sensors

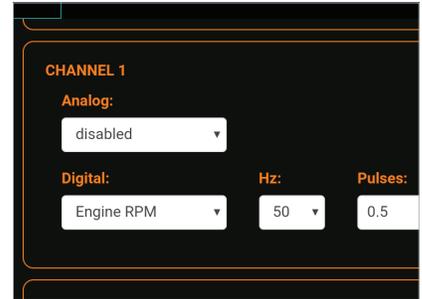
All external sensor are programmed through the Sensors icon found on the home page of the D3 app. Only 1 channel can be utilized for wake up of the CL1 box. Ensure Engine RPM is selected as such.



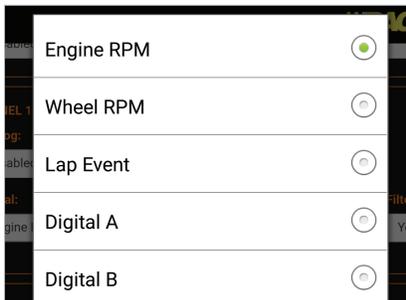
1. Ensure the Engine RPM cable is connected to CH 1 on the CL1 box. While any channel 1-4 can be used, Channel 1 is preset as Engine RPM, to simplify the process.



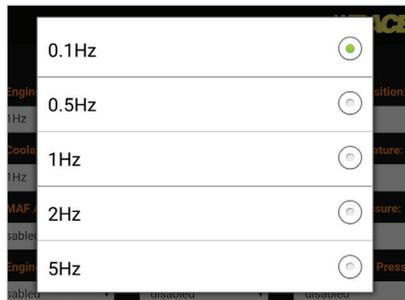
2. Tap the Sensors icon on the D3 home page.



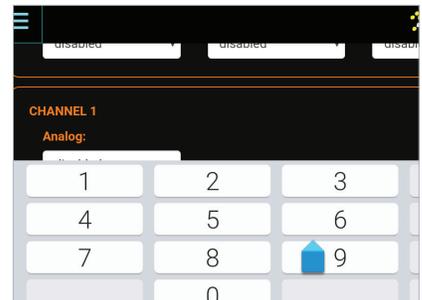
3. Select the Channel number to which the Engine RPM cable was connected.



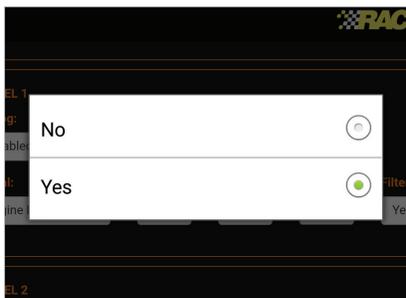
4. Tap the Digital input box and select Engine RPM.



5. Tap Hz and select the desired sample rate per second.



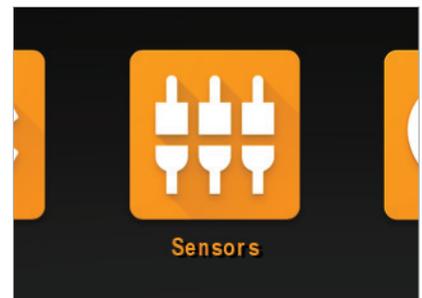
6. Tap Pulses and enter the appropriate number of pulses per revolution for the engine (V8 would be 4).



7. Tap Wakeup and select Yes. This is the channel which wakes up the CL1 box from power save mode.

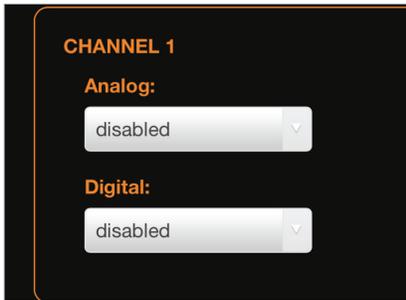


8. Install and connect desired 0-5V analog sensors according to the Adding External Sensors manual found online at [www.cl1.racepak.com](http://www.cl1.racepak.com).

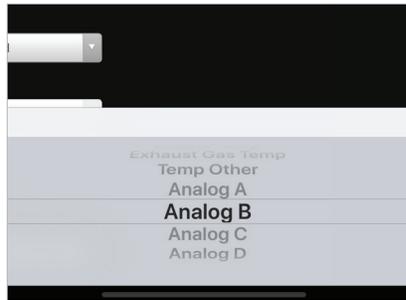


9. Tap the Sensor icon on the homepage of the D3 app

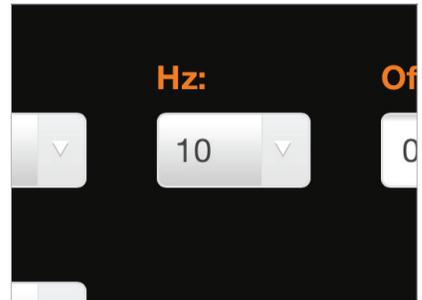
# Step 12. Set Up Prior to First Outing Engine RPM and External Sensors



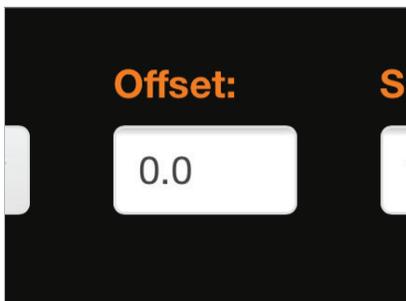
10. Locate the Channel number (1-4) which corresponds with the CH input to which the external analog sensor was connected.



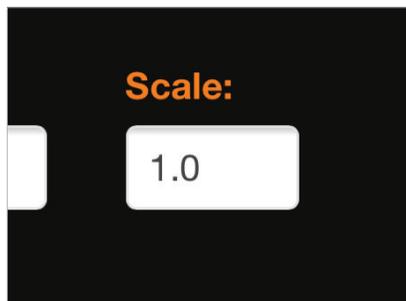
11. Tap Analog, then the desired Analog channel (A-D).



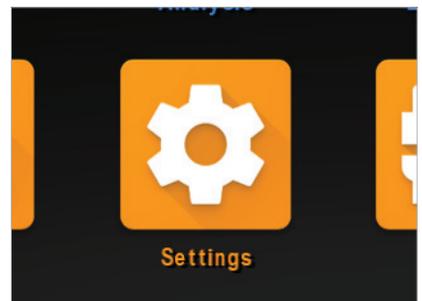
12. Select the desired sample rate per second (Hz).



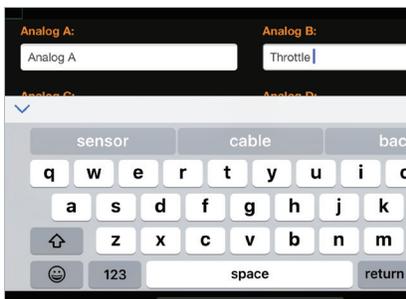
13. Offset: Typically remains at 0.0 unless it is desired to move the graphed channel trace up or down, in downloaded graph data.



14. Scale: Divide the maximum range of the sensor by the maximum voltage value of the sensor, and input that value. *See examples below.*



15. When completed, return to the home page and select Settings



16. Locate the Analog input box corresponding with the recently programmed 0-5V sensor (A-D). Type in the desired channel name. Programming is complete.



Note: Only 1 channel can be utilized for wake up of the CL1 box. Ensure Engine RPM is selected as such.

**Example Travel:** A 0-5V string potentiometer. Maximum desired range is 100 (if the throttle is measured as 0% when closed and 100% when open). Maximum signal voltage is 5.  $100 \div 5 = 20$ . 20 is entered as the Scaling Value.

**Example Pressure:** 0-300 PSI pressure sensor. Maximum range is 300. Maximum signal voltage is 5.  $300 \div 5 = 60$ . 60 is entered as the Scaling Value.

# Step 12. Set Up Prior to First Outing - OBD2

Up to 10 external sensor inputs are available through use of the Racepak CL1 OBD2 cable: PN 28120-2001.

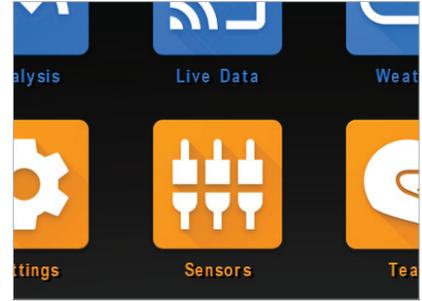
NOTE: OBD2 splitter cables cannot be used with the CL1.



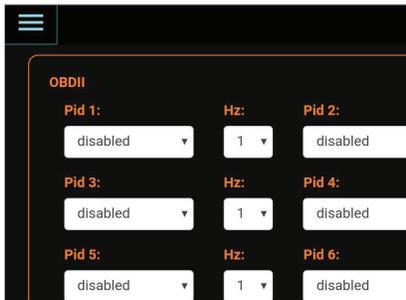
1. Plug the OBD2 connector into the vehicle's OBD2 port.



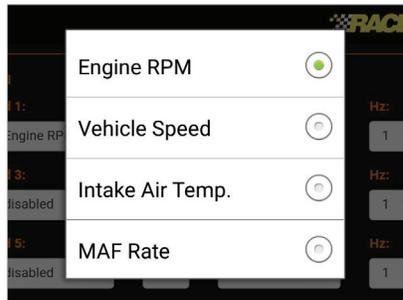
2. Route and connect the OBD2 M8 connector to the CL1 CAN port.



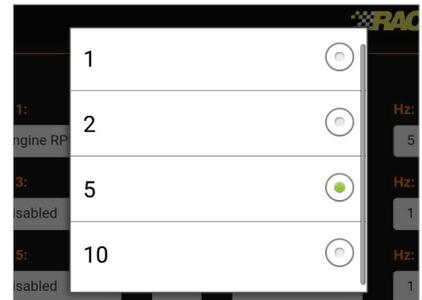
3. With the phone paired to the CL1 via Bluetooth, tap the Sensors icon on the D3 home page.



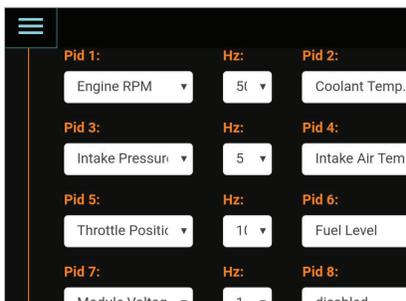
4. Up to 10 total OBD2 channels are available, dependent upon Year, Make and Model.



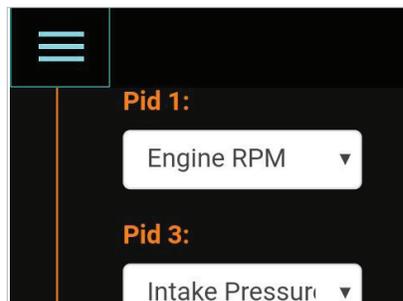
5. Using the down button beside of Pid 1, select the desired OBD2 sensor input channel.



6. Next, tap the Down arrow beside the Hz input area, and select the desired sample rate per second, for the channel. Note: Available sample rates vary, based on selected channel. Do not sample each channel at the maximum rate.



7. Repeat the process for additional OBD2 inputs.



8. Upon completing all programming functions, tap the Home page icon in the upper left corner of the screen.



Note: Only ONE Engine RPM input can be utilized, if both the tach harness and OBD2 are used in combination on the CL1.

Do not use OBD2 splitter with CL1.

## Step 12. Set Up Prior to First Outing – Vantage EFI Interface Module

The optional Vantage EFI module (PN: 22120-2001) interfaces with the following aftermarket ECU's, providing up to 10 EFI sensor inputs.

AEM	Electromotive TEC GT	EMS EM-Tech	Emtron	Fast XFI
Fuel Tech 250 v1	Fuel Tech 300 v1	Fuel Tech 350 v1	Fuel Tech 400 v1	Fuel Tech 500 v1
Fuel Tech 500 v2	Fuel Tech 600 v2	Haltech v1 Protocol	Haltech v2 Protocol	Holley Dominator
InjPro	Life Racing F88	Link G4	MaxxECU	Megasquirt
Motec Set 3	MSD Atomic LS	MSD Atomic TBI	Polaris RZR	



Note: The Vantage EFI module requires use of a specific interface cable, based on the ECU and selected at time of purchase.



Note: The Racepak OBD2 cable and the EFI module both utilize the CAN connector found on the CL1. Both cannot be utilized, at the same time.



1. Plug the 6 pin EFI cable into the CAN port of the CL1 data box.



2. Connect the interface cable to the EFI module.



3. Connect the opposite end of the interface cable to the ECU. Connector varies based on ECU.

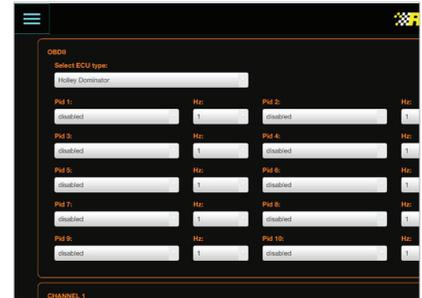
# Step 12. Set Up Prior to First Outing – Vantage EFI Interface Module



4. Locate the red, three pin power cable included with the Vantage EFI interface module. Connect the three pin connector to the PWR port of the CL1.



5. Route and connect the opposite end of the power cable to a switched, 12V power source, in the vehicle. Red=Power Black=Ground



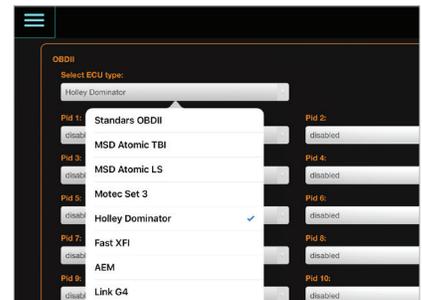
6. 12V power needs to be switched on, when the CL1 and EFI module are in use. Failure to do so will result in no recording of EFI data channels.



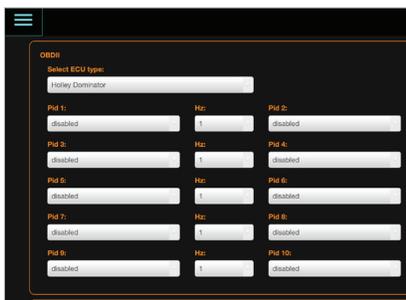
7. The CL1 internal batteries should remain in the unit, and periodically charged.



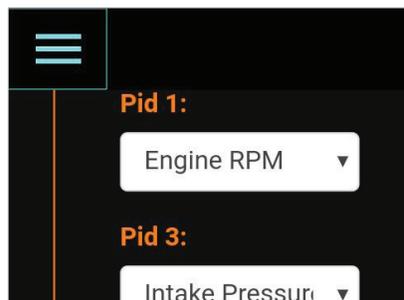
8. With the phone paired to the CL1 via Bluetooth, tap the sensors icon on the D3 app homepage.



9. Tap the down button under Select ECU Type, tap and select the desired ECU.



10. Up to 10 ECU channels and desired sample rate (Hz) can now be programmed, one at a time, using the down arrow under each PID input area.



11. Upon completing all programming functions, tap the Home page icon in the upper left corner of the screen.

## Step 13. Pit & On Track Driver Information

Through the use of Engine RPM and GPS speed, the CL1 data box and D3 app detects and automates the display of driver information based on the drivers needs, at that time.

### Pit Dash:

Upon starting of the engine, the Pit Dash will automatically display or can be manually accessed from the home page of the D3 app. This allows the driver or team to quickly verify the real time values and status of the CL1 and mobile device.

**BOX:** Indicates connection status between CL1 data box and mobile device.

**RED** – No connection.

**GREEN** – CL1 and mobile device are paired.

**GPS:** Indicates GPS status of CL1 data box.

**RED** – No CL1 data box GPS connection (check antenna connection).

**GREEN** – GPS satellites are acquired, with number and strength noticed in the GPS Satellites box.

**Cloud:** Indicates connection between the vehicle mounted mobile device and user's cloud account.

**RED** – No connection

**GREEN** – Mobile device connected to cloud account via cellular service.

**Analog A, B, C, D:** Indicates real time values of external analog sensor inputs.

**Digital A and Digital B:** Indicates real time values of external RPM sensor inputs.

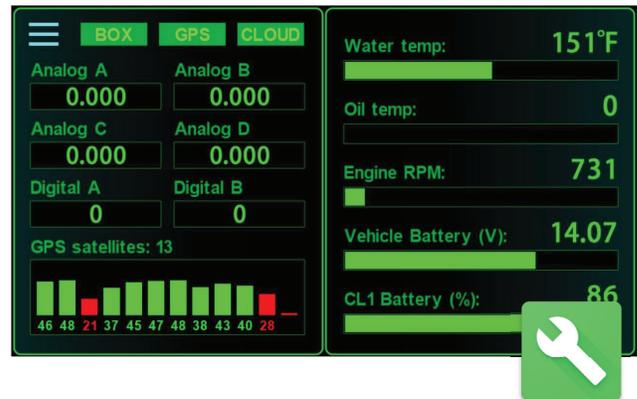
**Water Temp:** Indicates real time values of water temp via OBD2.

**Oil Temp:** Indicates real time value of oil temperature via OBD2. (Based on Imperial or Metric settings).

**Engine RPM:** Displays real time value of Engine RPM.

**Vehicle Battery:** Indicates battery status of the vehicle to which the CL1 is connected.

**CL1 Battery (%):** Battery status of the CL1.



## Step 13. Pit & On Track Driver Information

### Race Dash page:

Now that all functions are verified, the vehicle can now proceed to the track. When the CL1 detects both Engine RPM and GPS speed above 11 MPH, the Race Dash will automatically display or can be manually accessed from the home page of the D3 app.

**Lap Number:** Lap number for the current session.

**Current Lap (Predictive Lap Time):** The values displayed represent both the current lap of the outing and the difference between the fastest lap of the outing and the current lap, updated constantly, for the driver.

**GREEN:** Indicates the driver is FASTER than the current fastest lap of the outing, displayed in 00:00 Minutes / Seconds/ Tenths.

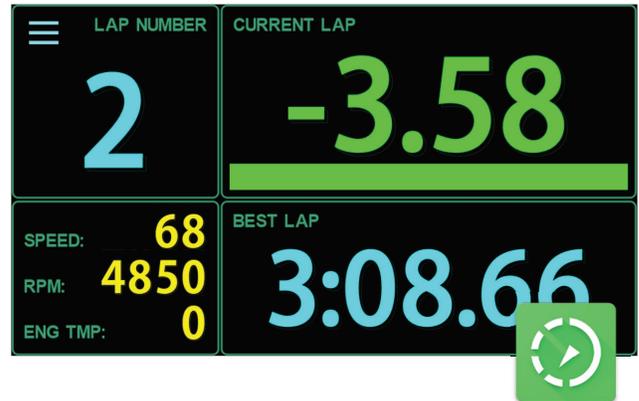
**RED:** Indicates the driver is SLOWER than the current fastest lap of the outing, displayed in 00:00 Minutes / Seconds/ Tenths.

**BEST LAP:** Indicates the quickest lap of the current outing.

**Speed:** Current GPS speed.

**RPM:** Current Engine RPM.

**ENG TMP:** Engine Water Temp obtain from OBD2.



# Step 13. Pit & On Track Driver Information

## Lap Times:

When GPS speed drops to 0 for 30 seconds, or no Engine RPM detected for 20 seconds, all lap times from the current outing will automatically be displayed to the driver, overriding the current page in view on the dash, or accessed from the home page of the D3 app.

**Time:** Lap time(s) from the current outing.

**RPM Max and RPM Aver:** Maximum and average Engine RPM from the current outing.

**Temp Max and Temp Aver:** Maximum and average temperature of sensor connected to the Temperature / RPM harness, from the current outing.

☰	Time	RPM max	RPM aver.	Temp max	Temp aver.
1	-----	10605	7821	131	119
2	1:15.843	11271	6161	144	139
3	0:58.210	10662	8115	153	147
4	0:56.467	11463	8408	160	155
5	0:57.126	11440	8255	165	162
6	0:56.352	11320	8422	170	166
7	0:56.381	11365	8379	170	



## Step 14. Remote Viewing of Live Data

The Racepak D3 App provides both real time, on-track data analysis capabilities, along with post outing data analysis capabilities, utilizing three icons located on the homepage of the D3 app.

### Live Data:

The Live Data icon provides access to live, on-track information, through the use of Racepak's optional cloud service. The following is required to utilize Live Data.

1. Active Racepak cloud account.
2. Vehicle mounted mobile device with active cellular service.
3. D3 app installed on vehicle mounted mobile device, open and paired with vehicle mounted CL1 data box and active Engine RPM input.
4. Vehicle exceeding 11 mph / 5 ms and active Engine RPM signal OR use of Red Manual Record button on D3 app home page.
5. D3 app installed on mobile device utilized for remote viewing.
6. Active internet connection on mobile device utilized for remote viewing.
7. Mobile device logged into a CL1 account, using the Login icon.



**Verification of the remote mobile device connection to the CL1 cloud account is verified by the color of the Live Data icon.**

1. Gray indicates no connection to the cloud account.
2. Blue indicates a valid Email and Password was entered using the Log In feature, and the mobile device is ready to receive cloud data.



Note: A mobile device connected to the internet will display a GRAY Live Data icon, if not connected to a valid CL1 account, using the Login icon on the home page.

## Step 14. Remote Viewing of Live Data

### Optional Racepak Cloud Service

If an optional Racepak cloud service account was activated during the registration of the CL1 data box, and a cellular enabled mobile device is in use on the vehicle, all on track data is automatically streamed real time to the user's account. Live data can be viewed on an internet connected Android or IOS device, running the D3 app and logged in with a valid Email and Password, as provided by the owner of the CL1 data box and cloud account.



1. Open the Racepak D3 app, then tap Log in. Log in using the Account information established during registration of the CL1, or as provided by the owner of a CL1.

2. Return to the home page. The Live Data icon will change from GRAY to BLUE, indicating both correct account information and internet connection.

3. If the Live Data icon remains GRAY, verify all account information is correct and the mobile device is connected to the internet.

4. Next, tap the Live Data, then Live Sessions.

5. If the vehicle is on the track, you will be presented with the driver Name, Track and Session. Session files are identified by time of day. Select the desired file or files.

6. If the vehicle is not currently on the track, no driver name will be presented.

7. At this time, live data will automatically stream with Lap, Engine RPM, Temperature and the current position of the vehicle on the track available for view.

8. To stop the live stream, select Live Data, Stop Receiving.

9. Data can be started and stopped as long as the vehicle remains on the track.

10. See Analysis section of this manual for use of all analysis features.

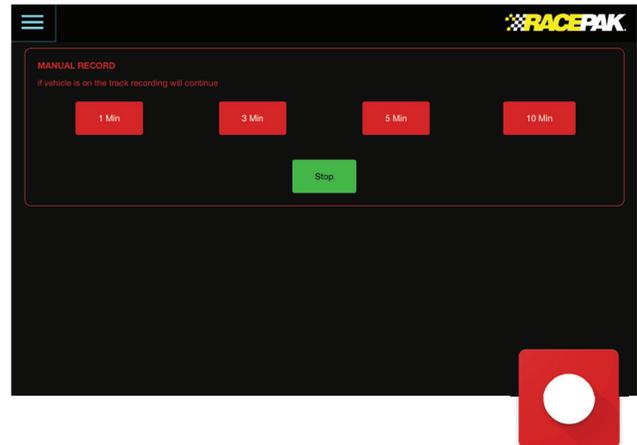
# Step 14. Remote Viewing of Live Data

## Optional Racepak Cloud Service

In addition to viewing live timing data, remote viewers may also view data in a graphical / map format



1. Tap the three bars in the upper left corner of the Live Sessions page to return to the home screen.
2. Tap Analysis. The current live session will now appear in graphical format.
3. To view track map data full screen, simply tap the expanding arrows in the lower right corner of the open page, or return to the Home page and tap the Circuit icon.
4. See Circuit section of this manual, for use of all Circuit features.



### Manual Data Streaming

For pit, dyno or other situations requiring streaming of data to the users optional cloud account, a Manual Record feature is available on the home page of the D3 app icon.

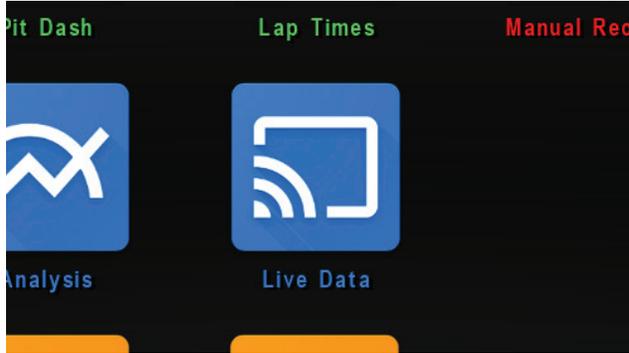
1. Using the mobile device mounted in the vehicle and paired with the CL1: Tap Manual Record from the D3 app home page.
2. Tap the desired time to upload data to the cloud.
3. Live data can now be viewed on a remote, internet connected device running the D3 app.
4. To stop, select the Manual Record icon again, from the home page of the D3 app.

Note: Always stop manual recording, before entering the track, for a live session outing.

### Automatic Data Streaming

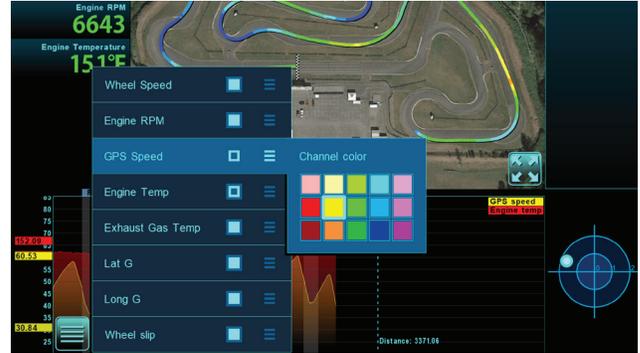
The streaming of data to the users optional cloud account is automatically initiated when the vehicle exceeds 11 mph along with detection of a working tach signal, by the CL1 data box.

# Step 15. Data Analysis Features



**To view data:**

1. Tap the Blue Live Data icon to open the Live Data analysis page.
2. Tap Live Data / Live Session / Driver Name / Track Name. At this point, live data created prior to connection, during the current on track session, will load until the current data is in sync with the current position of the vehicle, on the track.



**To change data in graph area:**

1. Tap the four bar icon in the lower left corner of the graph area.
2. To add or remove data channels, tap any Channel Selection box to the right of the data channel.
3. To change data channel graph colors: Tap the three bar icon next to the Channel Selection box, then tap the desired color.



**Track Map Data:**

1. Tap the Four Bar icon in the lower left corner of the track map area.
2. To add or remove data channels, tap any Channel Selection box to the right of the data channel.
3. To add Min Max values, select Min or Max or both, beside the desired White Outline data channel box.



**Full Page Track Map:**

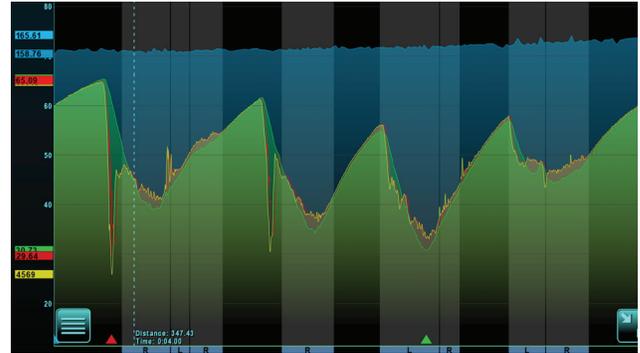
1. Tap the Four Arrow icon in the lower right corner of the track map window.
2. To return, tap the Two Arrow icon in the lower right corner of the track map window.

# Step 15. Data Analysis Features



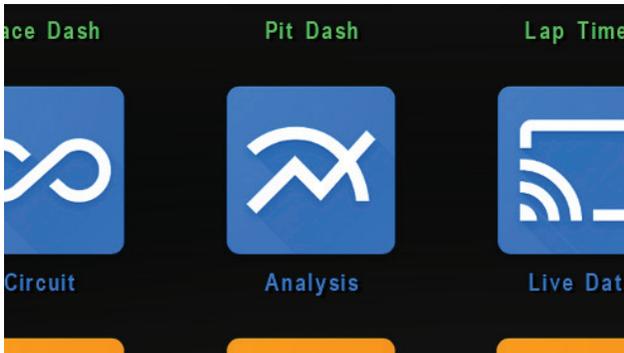
Return to D3 Home Page:

1. Tap the three bar icon in the upper left corner of the Live Data page.



Zoom

1. Touch, hold and pinch graph area with two fingers.



Analysis:

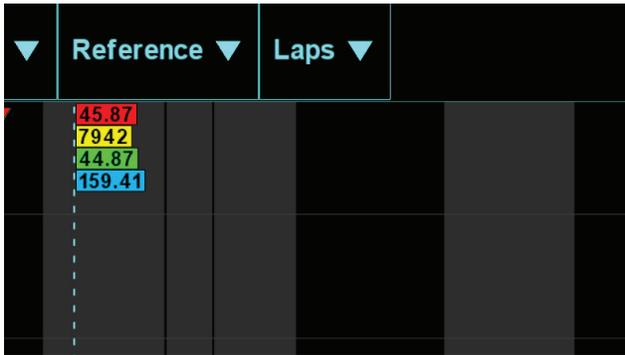
The Analysis page of the D3 app features similar functions of the Live Data page, but with the ability to view live data or recorded data from either a cloud account or data saved to the actual mobile device. To begin, tap the Analysis icon from the homepage of the D3 app.



To Open a Data File:

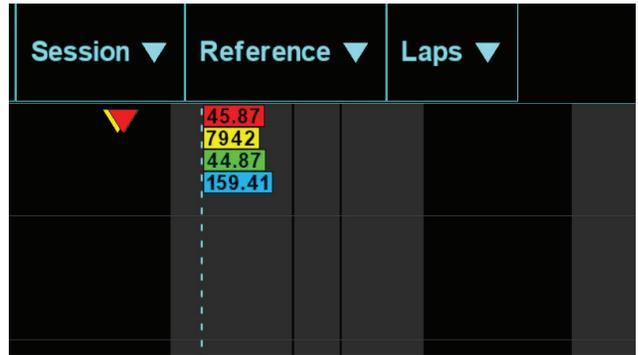
1. Tap Session, then select either either Local or Cloud storage, then Track / Driver Name / Date / Time of the desired data file.

# Step 15. Data Analysis Features



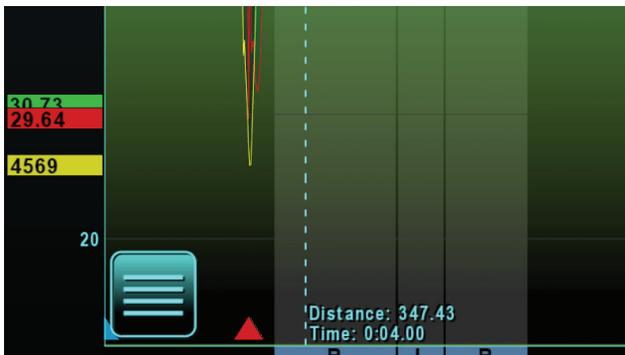
**Data Overlay Multiple Laps:**

1. Select Laps.
2. To add laps, tap the desired Solid White box for the lap(s).
3. To remove laps, tap the desired White Outline box for the lap(s).



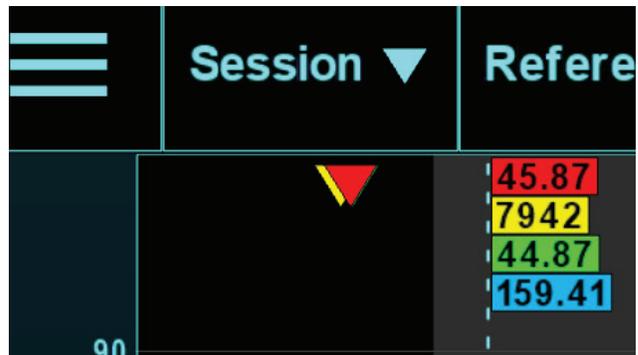
**Current Outing Laps vs Previous Outing Laps**

1. Select Reference, then the desired Track, Driver, Date and Time data file.
2. Select Laps, then Reference. This actions automatically loads data the fastest lap from the selected previous session, over the currently active data.
3. To remove a Datum lap, simple select Laps and tap the Reference box, again.



**Change graphed data in upper or lower graph area:**

1. Tap the four bar icon in the lower left corner of the graph area.
2. To add or remove data channels, Tap any Channel Selection box to the right of the data channel.
3. To change data channel graph colors: Tap the three bar icon next to the Channel Selection box, then tap the desired color.



**Min Max Values:**

1. Minimum and maximum data values for graphed channels are noted by colored arrows in the top and bottom portion of the graph area.
2. Maximum values are noted at the top of the graph area, with the arrow color corresponding with the color of the graphed data channel.

# Step 15. Data Analysis Features



### Full Page Data – Single Graph:

1. Tap the Right arrow icon located beneath the track map.
2. To return to the previous page, tap the Track Map icon located in the lower right corner.



### Circuit:

The Circuit analysis page of the D3 app provide the ability to view information in a decidedly different, but very intuitive manner, compared to graphed data channels.

1. Select the Circuit icon.
2. Tap Session, then select either either Local or Cloud storage, then Track / Driver Name / Date / Time of the desired data file.



### Adding and Removing Data to the Circuit Page:

1. Select the four bar icon in the lower left corner of the track map.
2. Select any Solid White box to enable or disable a channel on the track map.



### 3D Circuit Map View Controls:

1. Elevation view: Using a single finger, touch, hold and slide UP on the up arrow located on the right side of the Circuit map. The same action can be performed on the down arrows.
2. Rotate: To rotate an elevated map, touch, holds and slide the left arrow left, found at the bottom of the Circuit map page.

## Step 15. Data Analysis Features



**Return to Analysis Page:**

1. Tap the four arrow icon in the lower right corner of the Circuit page.

## Step 16. On Track Alerts

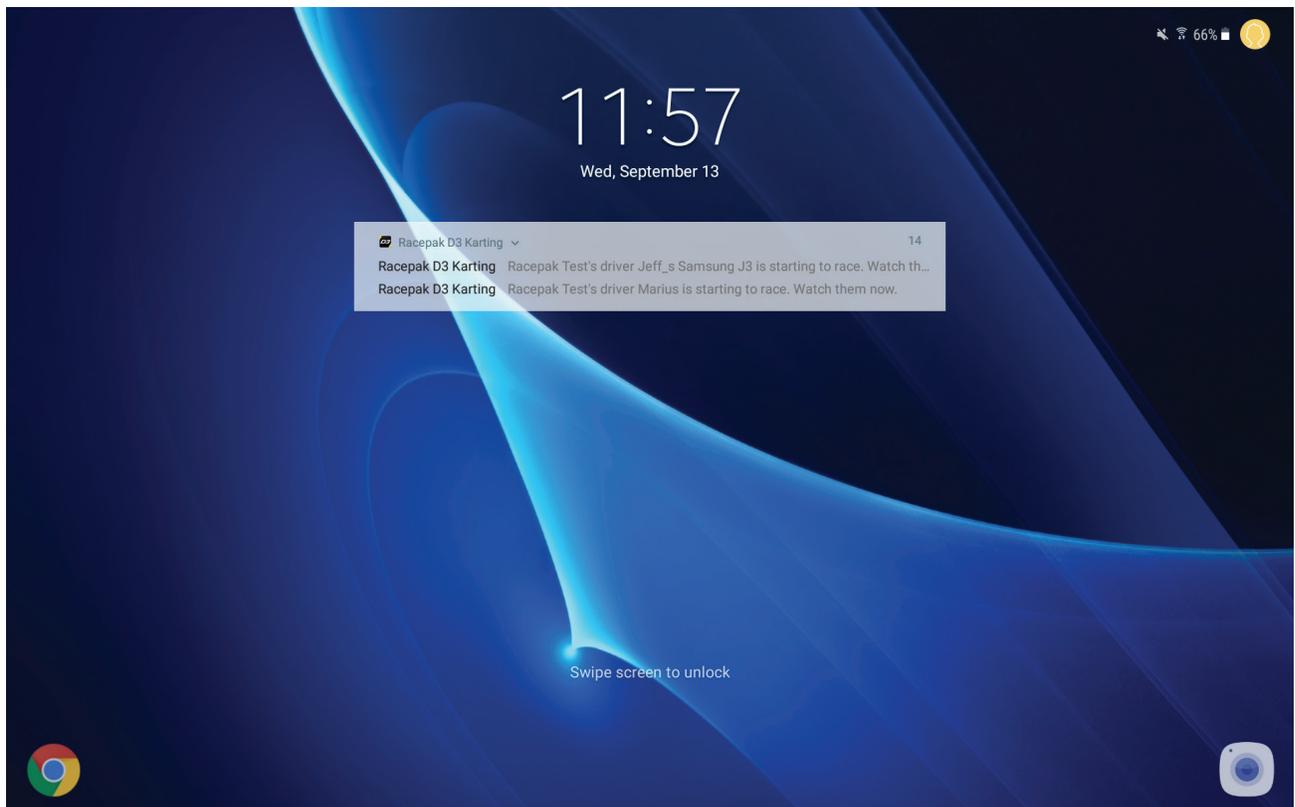
For customers utilizing Racepak's optional cloud account services, alerts are automatically sent to all remote devices, which are logged into a valid user account, any time the CL1 linked to that account begins streaming data to the cloud account. To turn off alerts

### Android:

1. Apps / Settings (from the home screen of the device)
2. Notifications
3. Locate the Racepak D3 app and slide the button to the left.

### iOS:

1. Settings (from the home screen of the device)
2. Notifications
3. Locate the Racepak D3 App and tap.
4. Slide the Allow Notifications button to the left.



# Vantage EFI Module Available Data Channels

ECU	RPM	CLT	IAT	FUEL PRESS	MAP	BAROMETER	SPEED	IGN TIMING	TPS	LAMBDA 1	LAMBDA 2	ECU VOLTAGE	OIL TEMP	OIL PRESS	FUEL LEVEL
MSD Atomic TBI	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓		✓	
MSD Atomic LS	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓		✓	
Motec Set 3	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Holley Dominator	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Fast XFI	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
AEM	✓	✓	✓	✓	✓(Infinity)		✓	✓	✓	✓	✓	✓		✓(Infinity)	
Link G4	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Fuel Tech 250 v1	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Fuel Tech 300 v1	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Fuel Tech 350 v1	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Fuel Tech 400 v1	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Fuel Tech 500 v1	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Fuel Tech 500 v2	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Fuel Tech 600 v2	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Megasquirt	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Microtech	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Electromotive TEC GT	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
InjPro	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Life Racing F88	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
MaxxECU	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
EMS EM-Tech	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Emtron	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Polaris RZR	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Haltech v1 Protocol	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Haltech v2 Protocol	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓