Vantage CL2 FAQ's

We have listed out the most frequently asked questions and answers on the CL2.

How does the CL2 Kit differ from standard data acquisition systems?
Mobile technology and cloud data. Standard data acquisition systems utilize an on board data recorder, be it a data recorder and separate digital dash, or a data recorder dash. Information is saved and downloaded via either a removable memory card or download cable, to a PC. This method is dated, limiting and time consuming, requiring manually moving data files between multiple PC's for viewing, using 1990's era windows based software for programming and analysis and more importantly, not taking advantage of the mobility aspect of modern day mobile devices and cloud technology.

The CL2 utilizes a vehicle mounted mobile phone, running Racepak's propriety D3 app and a vehicle mounted CL2, to transmit OBD2 or aftermarket EFI sensor data via Bluetooth, from the CL2 to the mobile phone, for driver instrumentation, data recording and automatic uploading of live data to an optional cloud account, for remote live on-track and post outing data review, on an internet connected device, anytime, anywhere in the world.

So how does the CL2 actually work?
At the very basic level, a CL2 is plugged into a 2008 or newer OBD2 port, or select aftermarket EFI using the optional EFI adapter. A mobile phone, running the D3 App, is installed in the vehicle. The mobile phone is paired via bluetooth, then receives sensor data from the CL2, displays pit and race track information for the driver, uploads live data via the cellular service of the phone to an optional cloud account and can also function as a data analysis program, for the driver.

Why use a cell phone for this purpose?
Very simple. Modern cell phones are more rugged, have far superior displays, processing power and wireless capabilities than data logging or display devices currently on the market. They are designed for constant abuse by the consumer, have incredible technical capabilities and the costs to duplicate their properties for data acquisition purposes would be astronomical.

Is the vehicle mounted phone GPS used?
NO. The CL2 contains an onboard 20 Hz GPS system, along with an external GPS antenna, providing highly accurate data for the D3 app.

What is the D3 App?
The D3 app combines driver instrumentation, data recording, data analysis and device programming into a single location, on the vehicle mounted mobile phone.

Why do you call it a "CL2 module" and not a data "recorder?"
The CL2 is merely a collection point for all sensor data, which is then wirelessly transmitted via Bluetooth, to the vehicle mounted phone running the D3 App. The CL2 has no recording capabilities.

How many data channels can the CL2 record?
10 maximum OBD2 or EFI channels can be recorded. The total number of available OBD2 and EFI data channels varies based on year, make and model.

What are the sample rates for the data channels?
User defined from 1Hz to a maximum of 10Hz, per data channel.

What is the sample rate for the CL2 GPS?
Up to 20Hz. Remember, the vehicle mounted phone is not utilized for any GPS or internal sensor data.

What comes with the CL2 kit?
The CL2, GPS antenna and OBD2 extension cable. An optional EFI adapter is available.

How is the CL2 data box powered?
When connected to OBD2, from the vehicles battery via the OBD2 connector. When used with an aftermarket EFI, through an external power/ground via the EFI adapter wire harness.

What about phone battery life, on the vehicle?
The D3 app contains a sleep setting, allowing the phone to sleep until the CL2 awakens (from the tach signal) which then awakens the D3 app and phone. This function is optimized for Android devices, while IOS devices are not optimized for an external wake up signal. Instead, the D3 app can just be quickly tapped, bringing the app from sleep.

Will the CL2 drain the vehicle battery?
The CL2 has a sleep mode setting, programming through the D3 app, which reduces overall current usage. The CL2 can be switched completely off, using the included OBD2 extension cable. It is recommended to unplug or switch off the CL2, after each day of usage.

How are EFI sensors channels input, through the CL2 OBD2 connector?
Through the use of an optional EFI adapter. The adapter simple plugs into the CL2 OBD2 connector, with external power/ground and CAN Hi/CAN Low input via a four wire harness.

How are OBD2 or EFI sensors programmed?
From the Settings icon on the homepage of the D3 app. Remember the phone functions as the data recorder, so no need to "send" programming changes to the CL2.

Does the CL2 utilize internal G meters?
No. The processing properties of the D3 app and mobile phone provides highly accurate lateral and accel g data.
What type of Bluetooth is used between the CL2 and the vehicle mounted mobile phone running the Racepak D3 app?
Low energy Bluetooth (BTLE) as it has proven to be highly robust and dependable in a variety of conditions. Remember, the onboard mobile phone is only receiving data from the nearby mounted CL2, so there is no need for long range Bluetooth capabilities.

Do you trust a mobile phone to survive the racing environment?
Yes. Consider the demands placed on a consumer electronic device, which typically lives in our pockets and is subject to constant abuse. Water, heat, cold, sand, dirt. Constantly taken in and out, turned off and on. Subject to continual drops, slips, and g forces and they typically continue to work.

Will it work on Android and IOS?
Yes.

What mobile devices do you recommend?
Specifications can be found online at www.racepak.com

What happens if I do not have cellular service on the phone? Can I still have a cloud account?
Yes. Since the phone functions as the data recorder, all data is stored locally on the phone. If the phone has Wi-Fi capabilities, as soon as the phone can access a Wi-Fi network, data is automatically uploaded to the customers optional cloud account.

How much is the cloud account?
It varies by the number of users. The account holder plus two remote user accounts is $9.99 month / $100 year.

Why do I need to register the CL2?
Each CL2 has a serial number, unique to that particular CL2. In order to provide secure access to your data and to associate your CL2 with you, your team and remote users, that unique serial number that must be registered to your team, before first use.

Where do I register the CL2?
Go to portal.racepak.com and follow the online prompts.

Can the Bluetooth fail to connect from electrical interference?
We have not found any issues with connectivity, at this time.

Why should I trust Racepak's cloud service?
Racepak's cloud service can upload and live stream data and has been tested with thousands of users, with no issues. Our software team has extensive experience in both the gaming and cloud industry, providing the most rugged, reliable and secure motorsports cloud data service, in the industry.

Where are the Racepak servers located?
Racepak's dedicated servers are located in the United States and hosted by one of the top ten cloud service providers, in the industry. This ensures reliable, 24-7 service with redundant backup and security measures for all your data.

Can you lose my data?
While no technology is 100% fool proof, the hosting company selected by Racepak is ranked within the top 10 for cloud providers, servicing a number of Fortune 500 companies. Your data is in good hands.

Can more than one person remote view my data?
Yes. Depending upon the optional cloud program chosen during the CL2 registration process, anywhere from 1 to 100 or more can view your data.

How can other remote viewers not see my data?
Only authorized remote viewers, with a unique passcode, can access your data.

Where do the Google overlay track maps come from?
Racepak has pre-loaded more than 2000 worldwide track maps into our map data base, providing simple and automatic overlay. This includes both circuit and drag tracks.

Do I need to mark start finish when I am on the track?
No, each track map contains the start finish coordinates, providing immediate lap time data to the driver and remote view- ers. On the rare occasion a track has not been pre-mapped, the D3 app will automatically mark start/finish in the middle of the longest straight.

How does the drag racing version of the D3 app know where the start line is, and the difference between a burnout and run, in order to auto zero the run data?
The D3 app analyzes the acceleration and speed of the vehicle over a given period of time. Once a determination is made the vehicle is continuing down the track on a run, the D3 app will then "back up" and initiate recording of the actual run, sending of data up to your cloud account and auto zero the run based on where the car started.

What starts data recording and uploading to my cloud account?
For closed course, when the vehicle exceeds 11 mph / 5 ms and Engine RPM is detected, data transmission is initiated. For drag racing, see above explanation.

Can I use any phone on the vehicle?
The short answer. Yes. The key area is display brightness, or Nits. A list of technical specifications can be found on this website.

Can I use any tablet for remote analysis?
Yes. As long as it has working Wi-Fi. We recommend any of the Samsung or Apple products.

Can I use a phone for remote analysis?
Yes, remember the D3 app provides the same analysis functions regardless of the device on which it is installed.

Can I use a tablet on the vehicle?
Technically, yes.If the table has active Bluetooth, you can pair with the vehicle mounted CL2 . You would not have on track live cloud upload, unless the tablet has cellular service. However, once connected to Wi-Fi (such as in the pit area) it will automatically upload data from the just completed outing. To use a tablet, under Settings / Enable Box Connection, set YES.

What happens if I uninstall the app from the mobile phone?
If a cloud account is active, the data remains saved on the cloud server. If no cloud account is active, then all locally saved data on the mobile phone, is lost.

How does the data analysis differ?
As the D3 app is designed for use with mobile devices, all the intuitive actions such as touch, swipe and pinch can be utilized. In addition, the superior resolution capabilities of modern tablets exceeds the capabilities of most laptops and PC's proving greater detail.

Is the same D3 app used for the vehicle mounted mobile phone and the tablet used for remote viewing?
Yes. But when installed on a tablet, only analysis and log in capabilities are automatically enabled. A tablet can be paired with a CL2 and used on a vehicle by selecting Settings / Enable Box Connection / Yes on the D3 app.

What can remote viewers see, when I am on the track?
Everything available in the analysis portion of the D3 app. Lap times, lap time differential, track position, speed, engine temperature, graphing of all data channels and track mapping with 3D view capabilities.

What is the "3D" track mapping view?
Unlike standard PC software, the use of mobile devices greatly expands and simplifies the data analysis aspect. Standard top view track maps can now be rotated into a 3D format, providing a total different method of viewing data.

What about firmware updates?
Automatic. When the vehicle mounted phone and CL2 powers up, the CL2 is "checked" by the D3 app for the latest software version. If a newer version is detected, it is automatically installed and the viewer notified of the current installation action.

Is the D3 app available on Google Play and the Apple store?
Yes

What is the GPS accuracy?
Lap timing is consistently within hundredths or less of beacon or embedded, while driving line data is quoted within less than 1 meter, but typically within a much smaller range.

How do I build a closed course track map?
No need. The D3 app and GPS information from the CL2 data box automatically handles all mapping, for you. The mapping data is automatically placed over the google map view along with start finish location.

How do I mark start / finish on closed course maps?
No need. The start finish is automatically assigned by the D3 app.

How do I build a drag race track map?
No need. Maps are automatically loaded by the D3 app, based on your location. To have a map added, simply email support@racepak.com with the track name and address, Maps are typically updated within 24 hours or less.

Can I manually start uploading to the cloud, such as warming up in the pit area, for my engine builder in his shop, to view the data?
Yes, the D3 app home page contains a Manual Record icon. When selected, data is streamed to an active cloud account, available for immediate viewing by authorized team members.

What if my track is not in your data base?
No problem. The D3 app will still utilize Google maps when overlaying driving data. The map will be zoomed out more than if Racepak pre-mapped. Start finish will automatically set at the center of the longest straight. To have a map added, simply email support@racepak.com with the track name and address, Maps are typically updated within 24 hours or less.

Where can I find Racepak's list of track maps?
Support / Available Maps, on the CL1 landing page.

Visit portal.racepak.com for additional information and videos on the Racepak Vantage product line.