



Race-Keeper Predictive iDash User Guide v1.1
September 2012



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Document Version Control

Current version highlighted in red.

Document Version #	Release Date DD/MM/YY	Revision(s)
v1.0 – September 2012	11/09/12	Initial document Coincidental with release of Predictive iDash
V1.1 – September 2012	14/09/12	Added section to Course Database regarding operation of Predictive iDash at a new course



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Race-Keeper Predictive iDash

Predictive iDash is Race-Keeper's lap timing software which delivers live in-car performance data and predictive lap times using innovative timing and velocity methods derived from 10Hz GPS and vehicle data.

Predictive iDash gives racers valuable real-time comparisons of current lap vs. best lap, and critical decision-making data to continue driving a qualifying lap or to throttle back to save precious resources, including tires and fuel, for the next lap or session. With predictive lap times and min corner/max straight data, racers also can test different lines, different corner entry speeds, and different gears to identify the optimal approach to the fastest lap.

Predictive iDash works on Apple and Droid devices, with HD graphics that automatically resize to accommodate all display resolutions.

<u>Features</u>	<u>iDash 1.0</u>	<u>Predictive iDash</u>
Lap #	Yes	Yes
Current rolling lap time	Yes	Yes
Last lap time	Yes	Yes
Best lap time	Yes	Yes
Predicted lap time on current lap		Yes
Graphical time comparison to best recorded lap at track		Yes
Minimum corner speed		Yes
Max straight speed		Yes
Large text lap time		Yes
Enhanced track and pit timer		Yes
Track database saves start line position for all tracks visited		Yes
Outing database saves all lap times for every outing		Yes
User selected default page		Yes
User selectable data elements on the three live screens		Yes
RPM	Yes	Yes
Flashing RPM color shift bar	Yes	Yes
Configurable gear shift points	Yes	Yes
Gear #	Yes	Yes
MPH/KPH	Yes	Yes
Enhanced GPS signal strength		Yes
Enhanced on-board media capacity status		Yes
Enhanced vehicle battery status		Yes
Stored track sessions and lap times on device		Yes



What You Need

- Race-Keeper video data system
- Predictive iDash application download for free from [Apple iTunes](#) or [Google Play](#)
- Predictive iDash software license available at Race-Keeper web site (www.race-keeper.com/store)
- Unbreakable WiFi router + cables (shipped to you) to connect the router to Race-Keeper
- Display device (use Race-Keeper's optional 7" High-Res Color Display or your own Apple iPhone/iPod Touch/iPad, Droid smartphone/tablet)

Race-Keeper iDash 1.0 Upgrade

If you're a Race-Keeper iDash 1.0 user, you can download the Predictive iDash application for free from Apple iTunes or Google's Play Store.

If you experienced WiFi connection issues, we recommend that you upgrade to Unbreakable WiFi, a router that connects to Race-Keeper and which streams data continuously to the display device via WiFi. Unbreakable WiFi is superior in scope and performance to the previously-used WiFi dongle that shipped with Race-Keeper iDash 1.0.

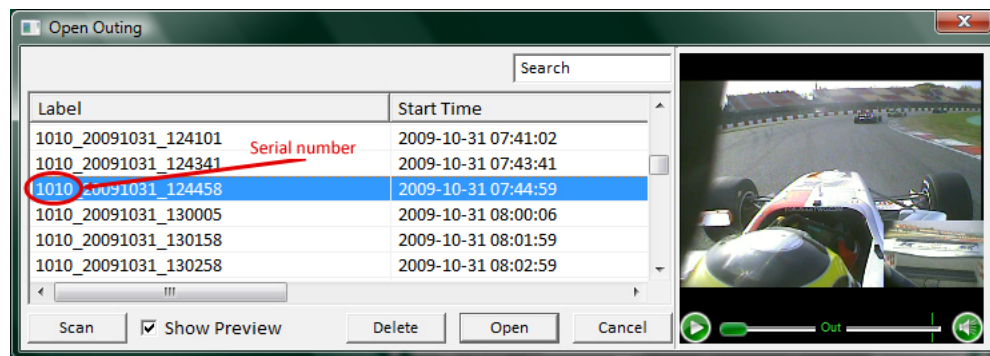
Before You Begin

Your Race-Keeper system serial number is required to activate your Race-Keeper iDash software license.

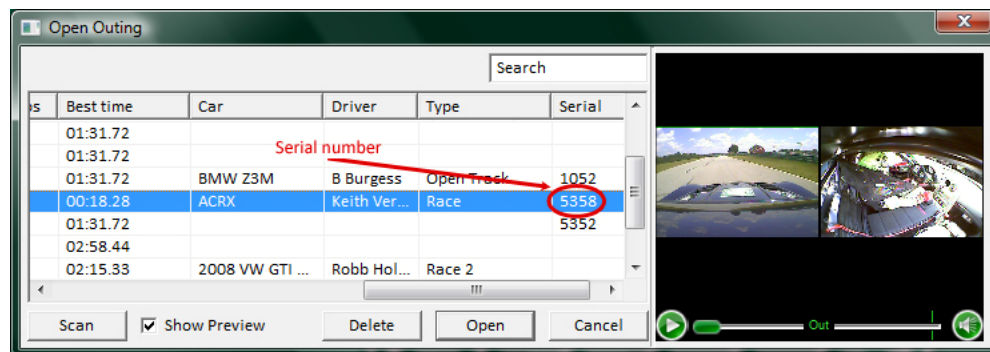
- Your serial number is four digits, starting with 1/2 (Race-Keeper SE) or 5/7 (Race-Keeper HE) or 9 (Race-Keeper Black).
- Your serial number is located on your Race-Keeper video data system *and* on all track session folders.

To quickly obtain your serial number, open Race-Keeper Comparo software and select File → Open Outing.

If you don't rename your track sessions before importing, your session names include your serial number.



You can also identify your serial number by scrolling to the right.





When You're Ready

Summary steps are listed below; however, we highly recommend that you follow the detailed instructions for each of the steps.

Upgrade Customers

Follow three steps to upgrade to Predictive iDash.

1. Download Predictive iDash from Apple iTunes or Google Play
2. Consider purchasing Unbreakable WiFi (www.race-keeper.com/idadash_upgrade1)
3. Consider purchasing 7" High-res Color Display (www.race-keeper.com/idadash_upgrade2)

To use your Apple or Droid device with Unbreakable WiFi, see details below for new customers.

New Customers

Follow six steps to purchase, activate and update your system for Predictive iDash.

1. Update your Race-Keeper System Software
2. Purchase Predictive iDash software license (at www.race-keeper.com/store)
3. Open Race-Keeper Comparo and activate Predictive iDash software license
4. Copy license file to a blank SD card or USB stick and copy to your Race-Keeper system
5. Connect Unbreakable WiFi to your Race-Keeper system
6. Download Predictive iDash from Apple iTunes or Google Play

1. Update Your Race-Keeper System Software

- Open Race-Keeper Comparo software and select Help → Check for Race-Keeper System Updates OR
 - Go to www.race-keeper.com/support/downloads to download current system software to a **BLANK** SD card or USB stick
- Power on your Race-Keeper video data system and wait until the system boots
- **Do not remove or interrupt power during the system software update process**
- Insert SD into the Race-Keeper system
- Transfer LED will illuminate solid for up to several minutes
- System should automatically reboot and continue the update sequence
- System update may require the system to update and restart twice
 - If system has been unresponsive for five minutes, reboot your Race-Keeper system manually and permit the system to continue updating
- When system has booted up and is ready, your system has been properly updated
- Delete system update file(s) from SD before recording a video data session to that media



2. Purchase Predictive iDash Software License

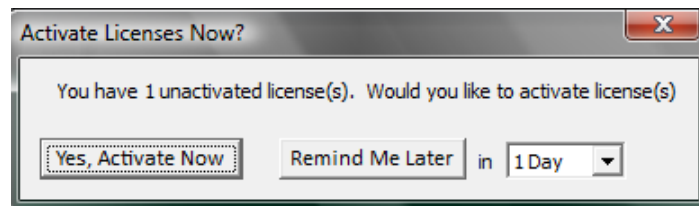
- Go to the Race-Keeper web site store (www.race-keeper.com/store)



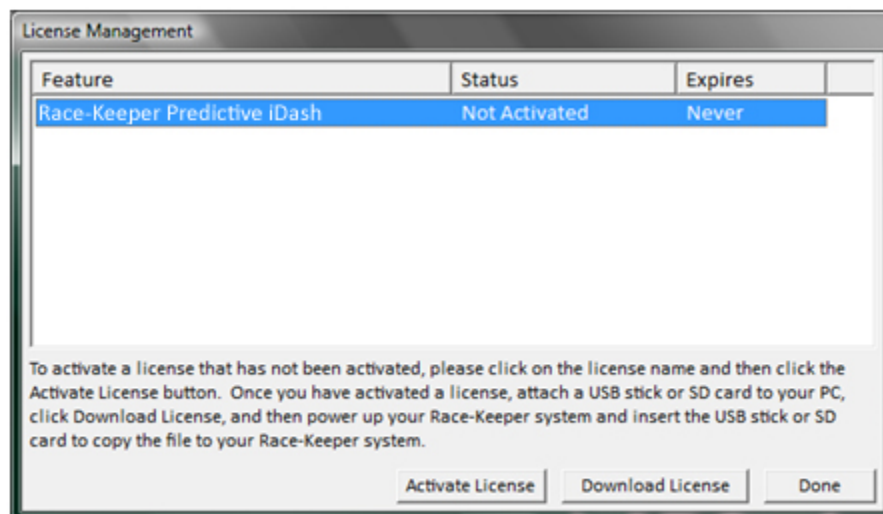
- Select and purchase one of the following:
 - Predictive iDash: Software License + Unbreakable WiFi (www.race-keeper.com/idadash_license_plus_unbreakableWiFi)
 - Predictive iDash: Software License + Unbreakable WiFi + 7" Color Display (www.race-keeper.com/idadash_license_plus_unbreakableWiFi_plus_display)
- Upon purchase, Predictive iDash software license will be available in Race-Keeper Comparo
- We will ship the Unbreakable WiFi router to you

3. Open Race-Keeper Comparo and Activate Race-Keeper iDash Software License

- Open Race-Keeper Comparo and follow instructions to activate your iDash software license using your Race-Keeper serial number
- Note: If Race-Keeper Comparo doesn't display an alert about licensing when the application starts, select Configure → License Manager and enter your Race-Keeper.com username and password when prompted
- When Race-Keeper displays the following prompt, Select "Yes, Activate Now"

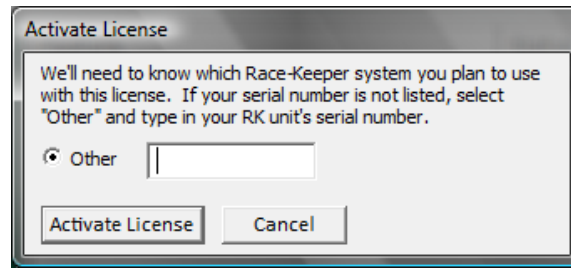


- When Race-Keeper displays the following prompt, click on the license name and then click on "Activate License"





- When Race-Keeper displays the following prompt, enter the serial number from your Race-Keeper video data system and then click on “Activate License”



- Note: The easiest method to determine your serial number is to navigate to one of your recorded track sessions; your serial number is always the first four digits of every folder name. The Race-Keeper serial number also is printed on the bottom on your Race-Keeper video data system.
- When Race-Keeper displays the following prompt, click on “Download License” to download the update file to a **BLANK** SD card or USB stick.



4. Copy License File to Your Race-Keeper System

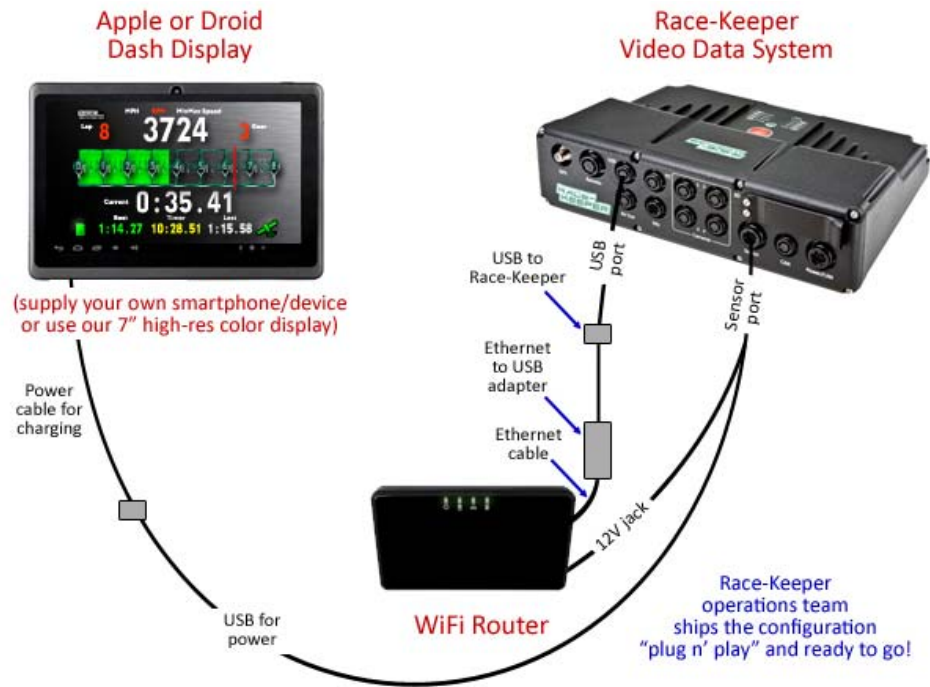
- Power on your Race-Keeper video data system and wait until the system boots
- Insert the SD card or USB stick with **only** the iDash license file into the Race-Keeper system
 - Note: The Transfer LED will illuminate momentarily when the Race-Keeper system copies the iDash license file from the SD card or USB stick
- **Reboot your Race-Keeper system**

5. Attach Unbreakable WiFi to Race-Keeper System

- Attach Unbreakable WiFi router to your Race-Keeper system
- If you have a Race-Keeper SE system (green), plug the adapter into an available USB port
- If you have a Race-Keeper HE/Black system (black), attach the provided cable to the USB connector and then attach the WiFi adapter to the USB connector



- See interconnection diagram below

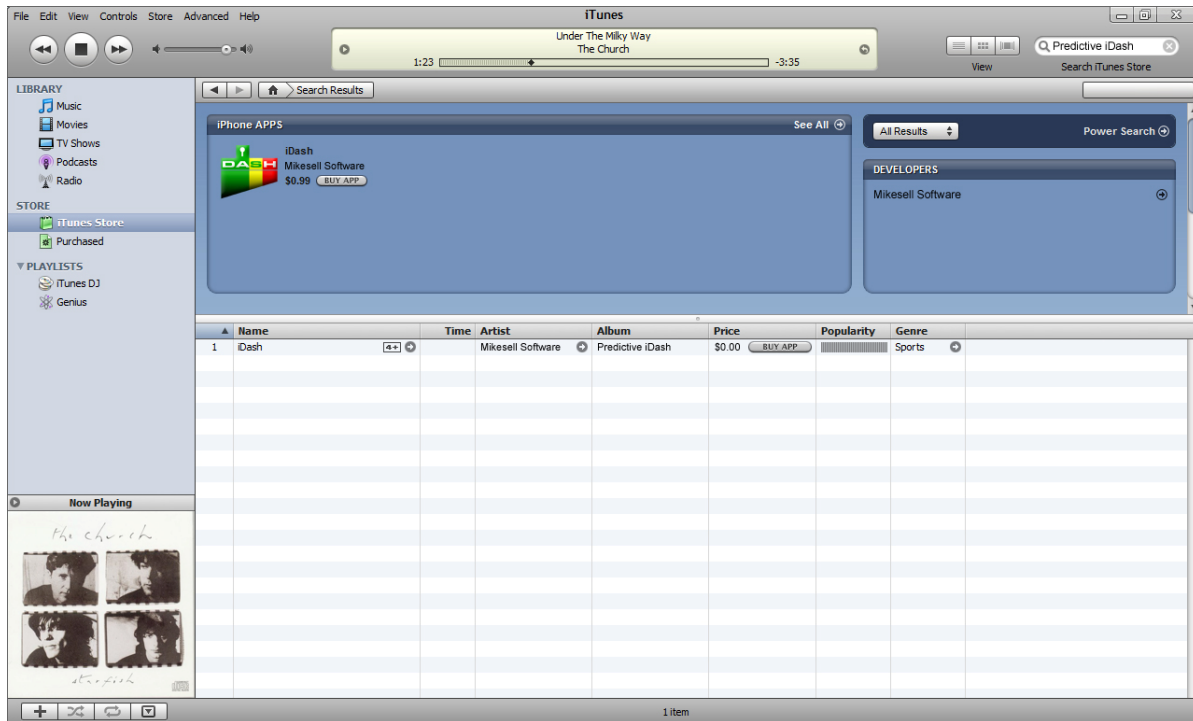


- Reboot your Race-Keeper system

6. Download Race-Keeper iDash

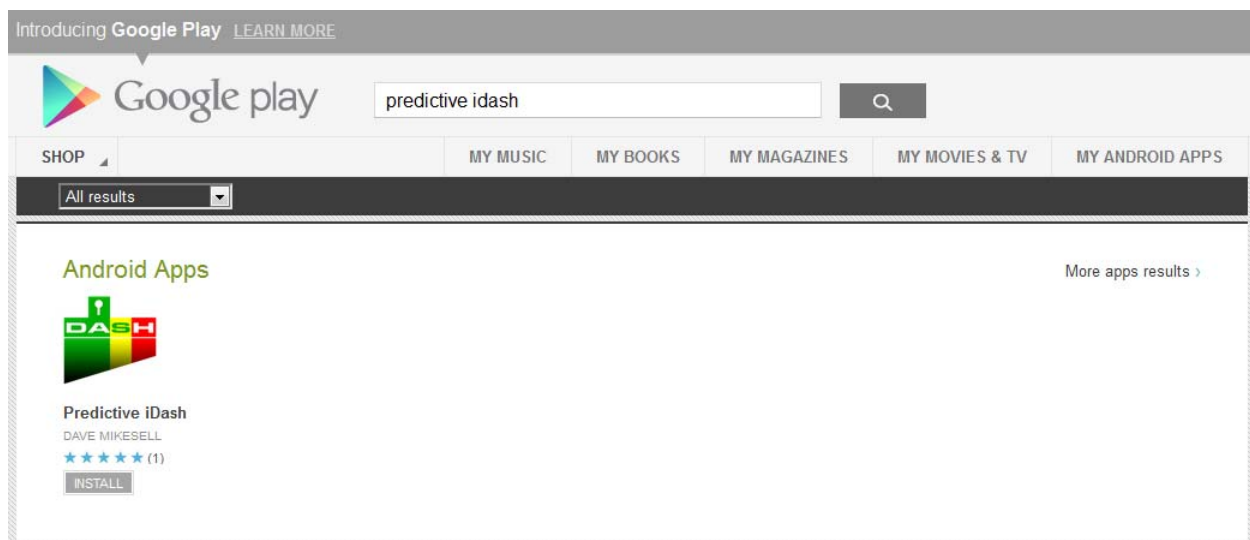
Apple iTunes

- Open Apple iTunes on your Apple computer or via your Apple iPhone or Apple iPod Touch
- Search for Predictive iDash, click “Buy App,” and download to your device



Google Play Store

- Open Google Play Store via your Droid smartphone or tablet or www.play.google.com
- Search for Predictive iDash then Click “Buy App” and download to your device





Configure Your Display Device

This section assumes that you are using your own Apple or Droid display device with Predictive iDash. If you are using Unbreakable WiFi + Race-Keeper 7" High-res Color Display, which are shipped pre-configured to instantly connect to Race-Keeper, please disregard this section.

Configure Your Apple Device

With your Race-Keeper system on and transmitting data to your Apple iTouch, iPhone, or iPad, you can configure your device to use Race-Keeper data.

- In Settings, select General, then Auto-Lock and set to "Never."
 - Auto-lock can cause connection problems even AFTER the device has been unlocked again.
- In Settings, select Wi-Fi and confirm that Wi-Fi is switched ON
 - If you are using an iPhone, select Airplane mode, and then select WiFi to ON
- From Wi-Fi Networks, select Race-Keeper (displays with the serial number of your Race-Keeper system) to connect to your Race-Keeper system.
 - Turn off the Automatically Sign In option (This option is not required for direct streaming to Race-Keeper)
 - Set "Ask to Join Networks" to OFF



- Connect to WiFi network
 - Select the Race-Keeper WiFi network whose last 3 digits match the serial number on the unbreakable WiFi device, and connect to that network.
- Exit Settings and then launch iDash



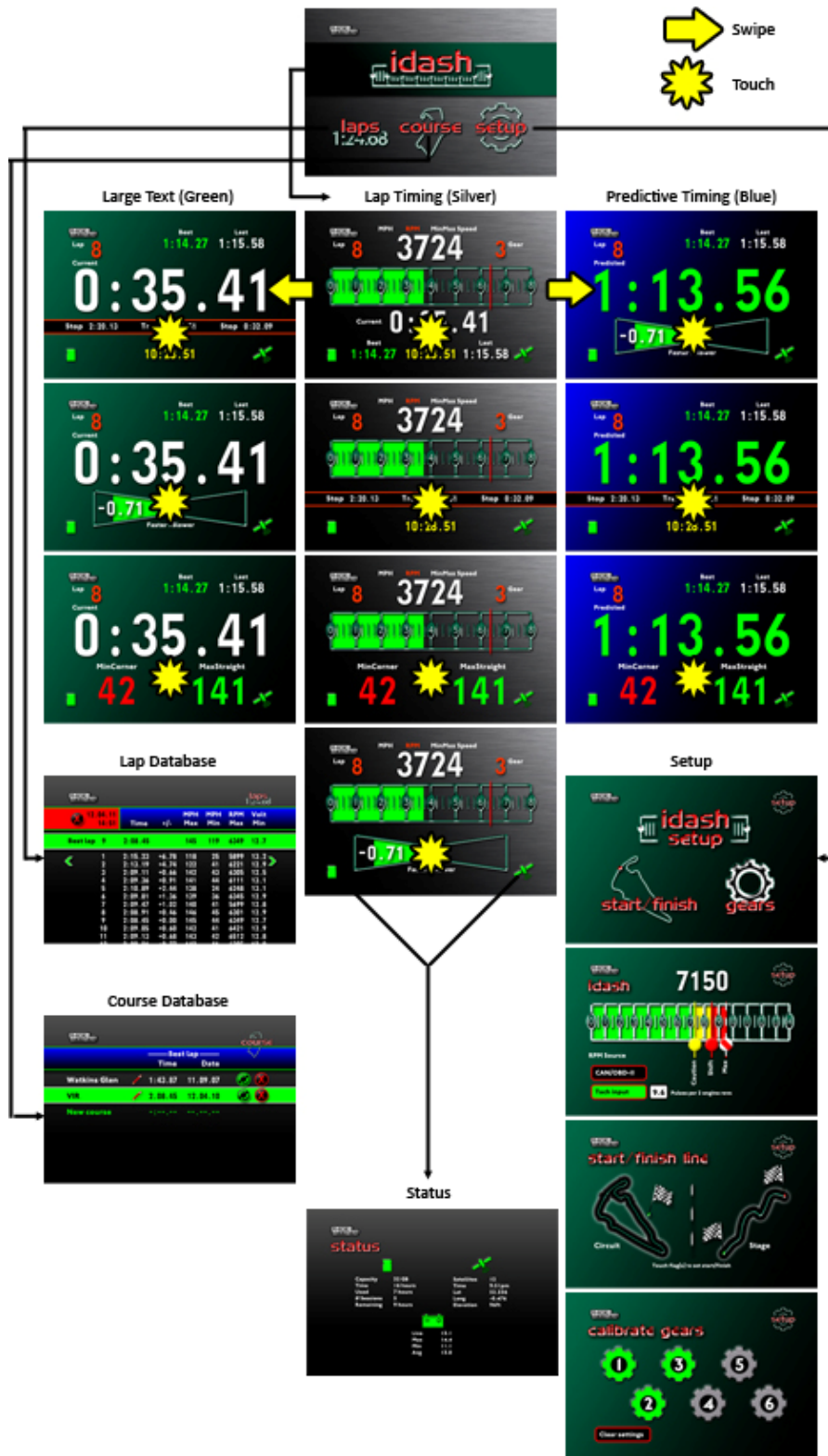
Configure Your Droid Device

With your Race-Keeper system on and transmitting data to your Droid device, you can configure your device to use Race-Keeper data.

- In Settings, select Display, then Screen timeout, set to "Never"
 - Screen timeout can cause connection problems even AFTER the device has been unlocked again
- In Settings, select Wireless Networks and confirm that Wi-Fi is switched ON
 - If you are using a device with Airplane mode, select Airplane mode, then select WiFi to ON
- From Wi-Fi Settings, select the network "Race-Keeper CPnnn" (this number is the last 3 digit of the serial number of you unbreakable WiFi device, it is printed on a label on the WiFi device) to connect to your Race-Keeper system
- Exit Settings and then launch iDash

Note: Race-Keeper iDash 1.0 does not support Droid devices; please use Unbreakable WiFi to connect to Droid.

Predictive iDash Navigation





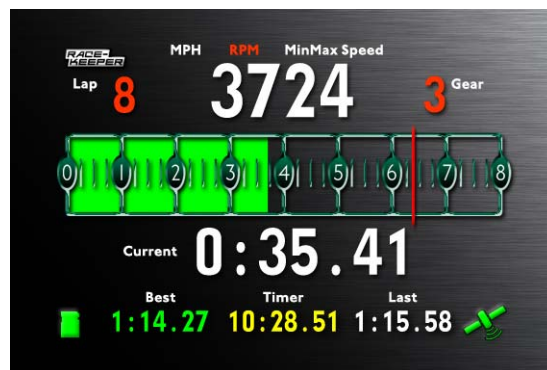
Predictive iDash Pages



[Home](#)



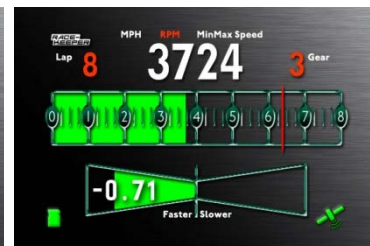
- iDash drives you to lap timing displays
- laps drives you to your lap timing database, archived by track session
- course drives you to your course database, archived by geo-coordinates
- setup drives you to the main setup page (flash bar, RPM input, start-finish line(s), gears)

[Lap Timing Display](#)



- Touch and hold lap number for three seconds to reset to zero and end the current lap session.
- Touch MPH/KPH to toggle speed unit.
- Touch lap time to toggle alternative displays: session timer, min corner/max straight speeds, predictive.
- Swipe left for predicted lap times (blue).
- Swipe right for large lap times (green).
- Touch  for media status,  for GPS status (+ voltage).
- Touch Race-Keeper logo to return to the Home Page.

[Lap Timing Alternative Displays](#)



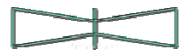
Large Text Lap Timing Displays (Green)



- Touch bottom half to toggle alternative displays: session timer, min corner/max straight speeds, predictive.
- Swipe left for standard lap time displays (silver).
- Touch for media status, for GPS status (+ voltage).
- Touch Race-Keeper logo to return to the Home Page.

Predictive Lap Timing Displays (Blue)

Predicted lap times are based on driving to this point on the lap compared to the best lap for this course.



shows time ahead (green) or behind (red) best lap.



- Touch bottom half to toggle alternative displays: session timer, min corner/max straight speeds, predictive.
- Swipe right for standard lap time displays (silver).
- Touch for media status, for GPS status (+ voltage).
- Touch Race-Keeper logo to return to the Home Page.



Laps Database

	Time	+/-	MPH Max	MPH Min	RPM Max	Volt Min
Best lap	2:08.45		145	119	6349	12.7
1	2:15.23	+6.78	118	45	5899	13.2
2	2:13.19	+4.74	122	89	6221	12.9
3	2:09.11	+0.66	142	110	6305	12.5
4	2:09.36	+0.91	141	105	6111	13.1
5	2:10.89	+2.44	138	107	6248	13.1
6	2:09.81	+1.36	139	110	6345	12.9
7	2:09.47	+1.02	140	116	5699	12.8
8	2:08.91	+0.46	146	121	6301	12.9
9	2:08.45	+0.00	145	119	6349	12.7
10	2:09.05	+0.60	142	118	6421	12.9
11	2:09.13	+0.68	143	119	6512	12.8

- Touch to delete the displayed track session.
- Touch (left) or (right) for other available track sessions.
- Swipe up to view all laps.
- Press end session now to end and save a track session.

Note: a session will automatically end after five minutes if vehicle is stationary.

If RPM is not displayed, consider adding an RPM data source (e.g. OBDII, tach input, CAN).

Course Database

Course Name	Best lap Time	Date
Watkins Glen	1:43.87	11.09.07
VIR	2:08.45	12.04.10
New course	--:--:--	--. --. --

- Touch “New course” to add a course.
- Touch to edit course name.
- Touch to delete best lap time.
- Touch to delete a course (and all related track sessions).
- Swipe up to view all courses.

When You’re at a New Course

At a new course, turn on Race-Keeper and launch Predictive iDash; when Predictive iDash launches and acquires GPS data, the application will alert you if you are at a new location and will automatically generate a new course. Click OK and you will be taken to the Course Database page, where you can rename your new course; click on the to rename.

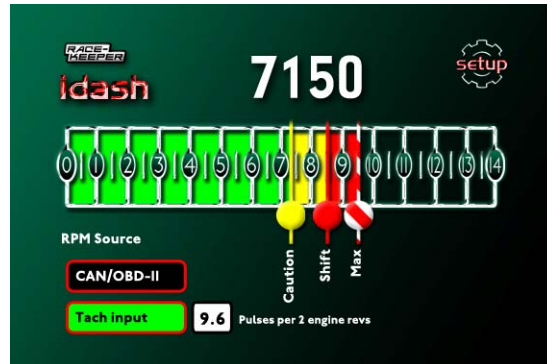
When you’re initially on track, when you cross the start/finish line, click the flag on the Start/Finish Setup page; the start line is saved in the track data base for the course. Note: If you set the Lap Timing Display as your default page (hold the Race-Keeper logo down for 6 seconds on the page you want as the default page) after setting the start line, Predictive iDash will automatically navigate back to the Lap Timing Display.

Setup



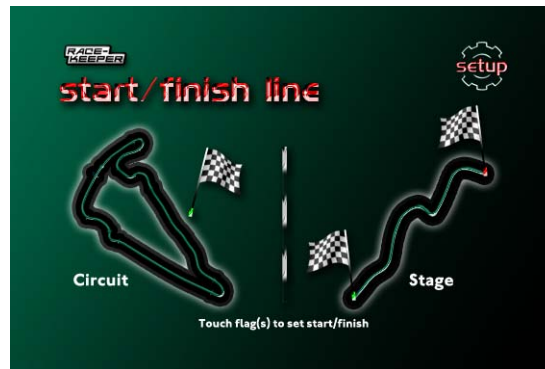
- Touch iDash Setup to configure your iDash (caution, shift, and max RPM limits, RPM source).
- Touch start/finish to select track type and start/finish (circuit or stage and set start/finish line(s)).
- Touch gears to calibrate your gears.

RPM Display Setup





- Grab and drag markers to set Caution, Shift, and Max RPMs.
- Drag max marker to right to increase the RPM scale.
- Touch CAN/OBD-II or Tach input buttons to select RPM source.
- Touch pulse box to set pulses per 2 engine revs.

Start/Finish Line Setup



This page requires configuration while the vehicle is in operation and, therefore, requires an assistant. The vehicle must be in operation (i.e., driving on the track at the proper start (and finish) point(s) to properly register vehicle heading. Race-Keeper expressly discourages configuration without an assistant.



- Drive your vehicle over the start line.
- Touch  to set start/finish line for circuits.
- If you're driving a circuit, you're finished.
- For stage, drive to finish line.
- Touch  to set finish line for stages.
- Start line will be saved in iDash for this circuit or stage.

Gear Setup



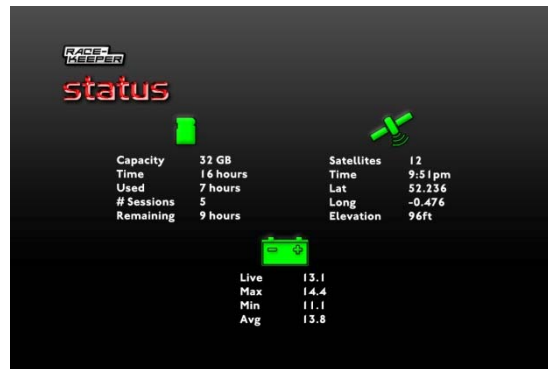
This page requires configuration while the vehicle is in operation and, therefore, requires an assistant. The vehicle must be in operation (i.e., driving on a quiet safe road where each gear can be selected and held for a few seconds).

Note: RPM data is required (gears calculated from MPH/RPM ratio).

- Drive vehicle and touch gear icon(s) for corresponding gears.
- Calibrated gears are green , uncalibrated gears are gray .
- Any gear can be configured in any sequence.
- Touch "Clear settings" to delete calibrations.



Status



shows media status:

- Total capacity of inserted media
- Total recording time
- Number of sessions recorded to the inserted media device
- Estimated time remaining.



shows GPS satellite status:

- Number of satellites acquired
- Current latitude
- Longitude
- Elevation
- GPS time



section shows battery voltage status:

- Current battery voltage
- Maximum on this outing
- Minimum on this outing
- Average during this outing

Troubleshooting Guide

Make sure that...

- Your Race-Keeper system is fully booted and the WiFi LED on the attached WiFi device is solid green; the Wi-Fi network broadcasted by the Race-Keeper should be visible on any Wi-Fi-enabled device, including laptop computers.
- Auto-Lock or screen timeout is disabled on your mobile device.
- Auto-Join is enabled on the Race-Keeper Wi-Fi setting.
- If you have any questions contact us at operations@race-keeper.com or (571) 203-1420.