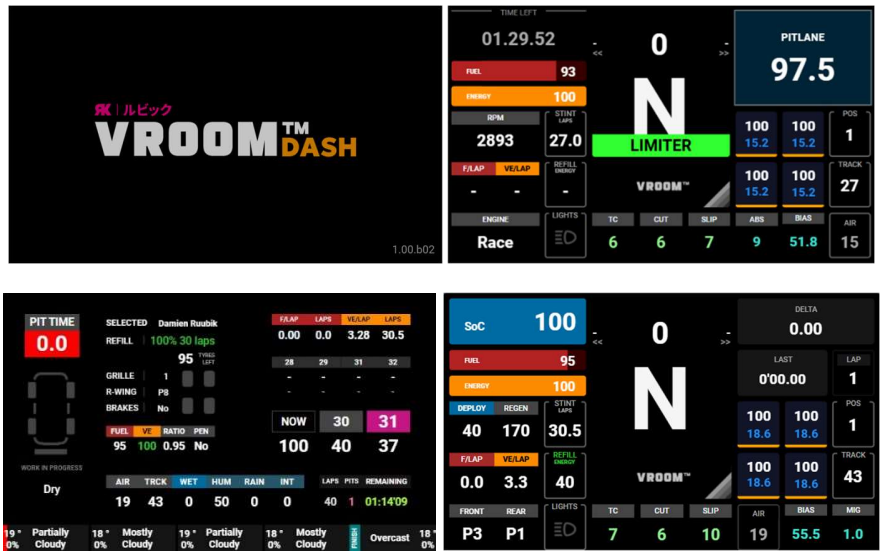
User Manual v1.00

vroomdash.net

Disclaimer :

TC, **ABS**, **ARB**, **Brake Migration**, **Deploy**, **Regen**, **Engine Map** and **Steering Rotation** data are subject to LMU telemetry limitations and may not reflect in-game values accurately. **This will be resolved when S397 grants full access through SimHub**.



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1. Installation

1.1 First-Time Installation

1	Run VroomDash_Setup.exe. The installer automatically detects your SimHub installation path from the Windows registry and deploys the core plugin.
2	Launch SimHub. A pop-up will ask you to activate the newly detected plugin. Enable Vroom Dash and tick "Show In Left Main Menu".
3	Open SimHub left menu → Vroom Dash Manager. Use the individual INSTALL buttons to install the components you want (extra dashboards, companion plugins).
4	Restart SimHub to apply staged plugin updates.
5	Return to Vroom Dash Manager to configure display options, colour palettes, night mode, and to map your controller inputs from the Controls tab.

i	Disable the Redadag and Georace SimHub plugins if installed. They may cause data conflicts with Vroom Dash.

1.2 Using Vroom Dash as an Overlay

If you are running Vroom Dash as a SimHub overlay on your main monitor rather than on a dedicated screen, you need to set up a layout first:

1	In SimHub, go to Dash Studio → Overlays → New Layout (or open an existing one).
2	Add the Vroom Dash elements to your layout by selecting the desired dashboard components.
3	Position and resize each element to fit your screen.
4	Save the layout and activate it before launching a session.

1.3 Updating

A notification banner appears on the dashboard for 2 seconds at startup when an update is available. All updates are managed directly from Vroom Dash Manager.

1	SimHub left menu → Vroom Dash Manager → Updates tab.
2	The component list shows your local version vs the latest available on the server. A green UPDATE button appears for each component that can be updated.
3	Click UPDATE per component, or use the bulk buttons to update all dashboards or all plugins in one click.
4	Dashboard updates are applied immediately.
5	Plugin updates (DLL files) are staged and applied automatically on the next SimHub restart.
6	Restart SimHub when prompted.

i	Plugin DLLs cannot be replaced while SimHub is running. They are staged automatically and applied on the next launch.

1.4 Switching Dashboard Screens

Screen switching is configured directly in Vroom Dash Manager. No navigation to SimHub's global Controls menu is required.

1	Open Vroom Dash Manager → Controls tab.
2	Find the "Next Screen" or "Previous Screen" action and assign a controller button or keyboard key.
3	The switch is immediate during a session.

i	If screen switching feels slow, disable FreeSync or G-Sync on the display running the dashboard.

2. Vroom Dash Manager

The Vroom Dash Manager is the central control panel for the entire dashboard. Every setting, every input mapping, and every update is handled from here.

Access: SimHub left menu → Vroom Dash Manager

All changes are saved immediately.

2.1 Display Tab

2.1.1 Screen Options

Setting	Effect
Idle Screen	Show the Vroom Dash logo when no game session is active. Disable for a blank screen when SimHub is idle.
Predicted Laptime instead of Delta	When enabled, displays the Predicted Laptime instead of the Delta to Best Lap.

2.1.2 Rev Lights

Setting	Effect
Rev Lights Style	Select the visual style for the RPM indicator bar. Click Apply to confirm.
RPM Display	Show or hide the entire Rev Lights / RPM zone.
Car Official - Dimmed	Reduces LED brightness in Car Official style. Suitable for dark or night conditions.
Car Official - Traditional	Non-progressive fill in Car Official style: all lit LEDs show at full intensity rather than filling from left to right.

Vroom (Style 1): A custom-built RPM LED bar displayed as a progressive strip. Designed to work with every car across all categories, regardless of whether an official LED profile exists.

Car Official (Style 2): Reproduces the exact LED layout and colour scheme of the current car, including the number of LEDs and their individual colours. Automatically adapts when you switch cars.

2.2 Night Mode Tab

Night Mode replaces the entire dashboard colour palette to reduce eye strain during night racing or in darkened environments.

2.2.1 Master Switch

Setting	Effect
Night Mode (master switch)	Must be ON for any night palette to activate. Turning it off always reverts to the Day palette immediately.

2.2.2 Palette Selection

Warm, Cold, and Custom are mutually exclusive. Selecting one automatically deselects the others.

Setting	Effect
Warm palette	Amber / orange tones. Recommended for warm cockpit lighting environments.
Cold palette	Blue / cyan tones. Recommended for dark tracks or cold-lighting conditions.
Custom colours	Uses the 32-variable palette defined in the Colours tab. Deactivating reverts to the built-in warm or cold palette.

2.2.3 Automatic Mode

Setting	Effect
Automatic mode	Night mode activates automatically when in-game ambient light drops below the threshold. Requires the LMU Weather plugin.
Light threshold	Ambient light % (0 to 100) below which automatic mode triggers. Default: 35%. Lower values require darker conditions to activate.

i	Automatic mode requires the master switch ON, a palette selected, and Automatic mode ON.

2.2.4 Manual Toggle

Setting	Effect
Manual toggle (enable)	Allows night mode to be toggled via a controller button during a session. The button is assigned in the Controls tab. Manual and Automatic can both be active simultaneously. Either can trigger night mode independently.

2.3 Colours Tab

Two complete sets of 32 colour variables: one for the Day palette and one for the Night Custom palette. Each variable has a hex input field and a PICK button that opens a standard colour picker dialog.

Setting	Effect
Custom Day Colours	Enable to replace the built-in Day palette with your own hex values. When disabled, built-in constants are used.
Night Custom Colours	Selected in Night Mode tab → Custom colours. The fields are always editable regardless of whether the custom palette is currently active.

> i Colour inputs accept standard hex values: #RGB, #RRGGBB, or named colours (e.g. Firebrick). Invalid values are automatically reset to the last saved value.

2.4 Controls Tab

All dashboard control actions are mapped directly from this tab.

Action	Description
Next Screen	Moves to the next dashboard screen. Assign to a controller button or keyboard key.
Previous Screen	Moves to the previous dashboard screen. Assign to a controller button or keyboard key.
Toggle Night Mode	Activates or deactivates night mode instantly during a session. Requires Night Mode master ON and Manual Toggle enabled in the Night Mode tab.

> ✓ Toggle Night Mode is the recommended way to switch colour palettes during an endurance race without pausing or alt-tabbing.

3. Main Screen

The main screen is active during all racing sessions. Its layout automatically adapts to the current car category (Hypercar, GT3, LMP2, etc.) while keeping a consistent structure. The screen is divided into three vertical columns.

Left Column — Energy Management

Element	Description
SoC / Session Timer	Battery state of charge for hybrid cars. Replaced by the Session Timer on non-hybrid cars.
FUEL	Current fuel load in liters.
ENERGY	Virtual Energy level as a percentage.
DEPLOY / REGEN	Current Deploy and Regeneration levels (hybrid cars only).
STINT LAPS	Remaining laps in the current stint based on current consumption rate.
F/LAP	Fuel consumed on the last lap.
VE/LAP	Virtual Energy consumed on the last lap.
REFILL ENERGY	Required VE/fuel to select in the pit menu to finish the race. Green when you have enough to cover the Timer End lap plus one extra lap. Orange when you have enough for the Timer End lap only.
FRONT / REAR	Front and rear suspension positions (ride height indicators).
LIGHTS	Current headlight state.

Center Column — Core Telemetry

Element	Description
Rev Lights	Per-car, per-gear configurable LED bar. 226 LMU car profiles loaded automatically. Up to 16 LEDs. Style selectable in Vroom Dash Manager → Display.
Speed	Current speed in km/h.
Gear	Current gear (R / N / 1 to 8). This zone hosts most pop-ups.
TC / CUT / SLIP	TC level, TC cut, and oversteer slip values.
LIMITER	Full-width banner when the pit speed limiter is active.
Flags	All in-game flags supported. Yellow highlights the affected sector. Your own sector is shown in red.

Right Column — Race Data

Element	Description
DELTA / INVALID	Gap to reference lap and lap validity status.
LAST / LAP	Last completed lap time and current lap number.
Tyre widgets x4	See “Section 6. Tyre Data” for a full description of all tyre indicators.
POS	Current race position (category).
TRACK	Track surface temperature (°C).
AIR / RF	Air temperature when conditions are dry. Water level on the track surface when conditions are wet.
BIAS / MIG	Brake bias and brake migration values.

4. Pop-ups

Pop-ups appear automatically based on game events. They are positioned to never obscure critical driving information (RPM, gear, speed, flags).

Pop-up	Description
Ignition / Starter	Engine ignition state indicator.
Engine Overheat	Flashes when coolant temperature is critical.
Brake Temperature	Four-corner display around the gear zone. Orange above 800°C, red above 900°C.
SOC Warning	Battery below 15% or above 85%. Hypercars only.
Pit Limiter	Full banner while the speed limiter is active.
Pit Requested	Team has flagged a pit stop.
End Stint	Less than 2 laps of fuel/VE remaining.
Pit Time	Timer starts on pit entry. Displayed for 8 seconds after exit.
Grip Change	Track grip has changed. Displayed for 8 seconds.
Sector Time	Qualifying only. Sector split time, 8 seconds.
Last Lap Time	Displayed for 8 seconds after each lap crossing.
Electronics Change	2 seconds after changing TC 1/2/3, ABS, ARB Front/Rear, Regen, Deploy, Brake Bias, or Brake Migration.
ABS	ABS activation indicator over the gear zone.
Pit Lap	LAP counter turns purple on your final stint lap.
Update Available	2-second banner at startup when a Vroom Dash update is ready to install.

5. Strategy Screen

Switch to the Strategy screen using the input mapped in Vroom Dash Manager → Controls → Next Screen.

5.1 Damage Display

More detailed than the LMU HUD. Front and rear faces are split into three zones: left, center, right. Suspension damage display is planned for a future update.

5.2 Pit Stop Summary

Element	Description
PIT TIME	Estimated time of the next pit stop.
SELECTED	Currently selected driver (driver swap, when available in LMU).
REFILL	VE/fuel amount selected in the pit menu and the resulting laps.
GRILLE / R-WING / BRAKES	Current aerodynamic and brake settings.
USED indicators	Orange tag on any tyre or component already used this stint.
FUEL / VE / RATIO / PEN	Fuel load, VE level, fuel-to-VE ratio, and any active penalty.

5.3 Fuel Strategy Calculator

Computes precise pit stop requirements from your actual pace and consumption.

- Rolling average of the last 5 valid laps. Cross-session on the same track if needed.
- Accounts for pit stop duration and the circuit drive-through time.
- Refill values are ceiling-rounded to avoid running short.

Add your own safety margin on top of the computed value. 1% is generally sufficient for endurance racing.

5.4 Strategy Indicators

Indicator	Description
Purple box	Final stint lap at current consumption. Value below: exact refill to finish.
Grey box	1-lap undercut: required refill if pitting one lap earlier than planned.
Black box	Immediate refill: fuel/VE needed if pitting at the end of the current lap.
F/LAP	5-lap average / Estimated laps remaining on current fuel load.
VE/LAP	Same table for Virtual Energy.
Strategies	Alternative consumption strategies.
NOW / target	Current recommended refill vs the session target.

> i All shown lap numbers must be fully completed before pitting. Pit at the end of the indicated lap.

5.5 Weather and Race Progression

Element	Description
AIR	Air temperature (°C).
TRCK	Track surface temperature (°C).
WET	Water level on the track surface.
HUM	Humidity level in the air.
RAIN	Current rain level.
INT	Rain intensity.
LAPS	Estimated number of laps remaining in the session.
PITS	Estimated number of pit stops remaining.
REMAINING	Session time remaining (HH:MM:SS).
Weather strip	Race timeline divided into segments with expected weather per segment.

6. Tyre Data

Each of the four tyre widgets provides four independent real-time indicators.

Indicator	Description
Top number (white)	Tyre wear % (identical to the in-game scrolling menu value).
Bottom number	Tyre temperature.
Bottom number colour	Indicates the surface temperature of the tyre, using the same logic and colour codes as the LMU HUD graphic.
Bottom border colour	Tyre compound, color-coded per compound, identical to in-game. Fully supports mixed sets.

6.1 Surface Temperature Colour Guide

Colour	Meaning
Blue	Too cold, more than 30°C below compound optimum.
Green	Optimal, within ±10°C of compound optimum.
Red	Too hot, more than 30°C above compound optimum.

> i Optimal temperature thresholds are compound-specific and loaded automatically from the NeoRed LMU plugin data.

7. Input Display

The Vroom Inputs dashboard is a separate lightweight overlay for driver input visualisation. Install it from Vroom Dash Manager → Updates.

Element	Description
Throttle	Green line and gauge (input percentage).
Brake	Red line and gauge (input percentage).
Wheel lock	White line when a wheel speed drops below the traction threshold.
TC activation	Throttle gauge changes colour when TC intervenes.
ABS activation	Brake gauge changes colour when ABS activates.

8. Tips and Troubleshooting

8.1 Performance Tips

- Use Dashboard mode on secondary screens. It is lighter than Overlay mode.
- Keep SimHub updated. Performance improvements ship frequently in point releases.
- If screen switching is slow: disable FreeSync or G-Sync on the dashboard display.

8.2 Common Issues

Issue	Solution
No data showing	Ensure all plugins are activated in SimHub (activation pop-up on first launch). Restart SimHub after activating.
LMU not detected	Confirm LMU is listed as an active game on the SimHub home page. Use Fix It if an error appears.
Rev Lights not matching	The car may not yet have a profile. LEDs are hidden for unknown cars. Submit car data for a future update.
Update fails to download	Check your connection. vroomdash.net must be reachable. Check firewall or proxy settings.
Night mode not activating	Check: master switch ON, a palette selected, at least one trigger active (manual or automatic).
Strategy values incorrect	The calculator needs 5 valid laps for its rolling average. Complete more consistent laps after a safety car or long pit stop.

8.3 Fuel Calculator Notes

- Uses a 5-lap rolling average. The more consistent your pace, the more accurate the output.
- Drive-through times are pre-loaded for all supported circuits. A 35-second default applies to unlisted tracks.
- Refill values are always ceiling-rounded to prevent running out.
- Add 1% to the computed safe value for extra security in long endurance stints.

9. Acknowledgements

Contributor	Contribution
Haagel	NeoRed LMU Data Plugin, and invaluable advices.
Raiden27	Invaluable JavaScript / C# guidance throughout development.
Shaun86	LMU_WeatherPlugin.dll.
Timur	LMU_SharedMemoryMapPlugin64.dll.
geims12	LMU_SessionDataPlugin.dll.
Andronikx	Original Assetto Corsa Competizione dashboard inspiration.
Beta testers	Beta tests, early reviews, feedbacks and features improvement.

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