



# PORSCHE 991 / 981 / 982 CHASSIS

## GEN2 FORMULA LINE RACING STEERING WHEEL SYSTEM

### INFORMATION PACKET

SYSTEM ARCHITECTURE / PROGRAMMING / FUNCTION LIBRARY / FITMENT

#### DOCUMENT SCOPE

This packet documents the Porsche 991 / 981 / 982 Chassis Formula Line platform, vehicle integration, MadtraceLAB profile structure, and 37-command function library. Actual behavior depends on chassis, model year, market, transmission, factory steering-wheel and infotainment equipment, Sport Chrono and GT controls, PASM, PSE, axle lift, coding, installed options, and software configuration.



FORMULA LINE WITH STANDARD OLED DID + REVLEDS

# OVERVIEW

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# WHERE THE FORMULA LINE FITS

## PRODUCT LINE POSITIONING

- Clubsport Line is the streamlined GEN2 entry platform, retaining programmable factory steering-wheel functions, RGB lighting, MadtraceLAB, and multi-profile storage.
- PODIUM Line adds RevLED, center-console commands, advanced race controls, rear profile quick switching, and optional multi-paddle configurations while preserving round-wheel adapter flexibility.
- Formula Line combines the high-level GEN2 electronics with a purpose-designed 290 mm Formula wheel. RevLED, the OLED Driver Information Display, and two programmable magnetic paddles are integrated as standard equipment.
- GEN1 is the legacy fixed-layout platform and does not include MadtraceLAB programming, RGB customization, RevLED, or multi-profile operation.

| LINE      | PRIMARY POSITION               | KEY DIFFERENCE                                                                              |
|-----------|--------------------------------|---------------------------------------------------------------------------------------------|
| Clubsport | GEN2 entry platform            | Core factory functions and programmable controls; no RevLED or advanced race controls.      |
| PODIUM    | Expanded GEN2 platform         | RevLED, center-console and race controls, profile switching, and optional paddle expansion. |
| FORMULA   | Dedicated 290 mm Formula wheel | RevLED, OLED DID, and two programmable magnetic paddles are standard.                       |
| GEN1      | Legacy platform                | Fixed layout; no MadtraceLAB, RGB customization, multi-profile operation, or RevLED.        |

### FORMULA LINE TAKEAWAY

FORMULA combines Podium-level electronic control with a dedicated 290 mm Formula wheel, standard OLED DID, RevLEDs, and integrated magnetic paddles.

# PRODUCT LINE COMPARISON: CORE PLATFORM

| FEATURE                               | CLUBSPORT       | PODIUM          | FORMULA  | GEN1            |
|---------------------------------------|-----------------|-----------------|----------|-----------------|
| Factory steering-wheel functions      | Standard        | Standard        | Standard | Standard        |
| Completely plug and play              | Standard        | Standard        | Standard | Standard        |
| Programmable button layout            | Standard        | Standard        | Standard | Fixed layout    |
| RGB customizable button colors        | Standard        | Standard        | Standard | Not equipped    |
| MadtraceLAB                           | Standard        | Standard        | Standard | Not equipped    |
| OLED Driver Information Display (DID) | Optional        | Optional        | Standard | Not equipped    |
| Two programmable magnetic paddles     | Optional for AT | Optional for AT | Standard | Optional for AT |

## HOW TO READ THE TABLE

Standard = included in the line architecture. Optional items depend on vehicle, transmission, and ordered configuration. AT = automatic transmission.

# PRODUCT LINE COMPARISON: RACE CONTROLS + ADAPTERS

| FEATURE                                   | CLUBSPORT    | PODIUM   | FORMULA      | GEN1         |
|-------------------------------------------|--------------|----------|--------------|--------------|
| Two programmable magnetic paddles         | Not equipped | Optional | Standard     | Not equipped |
| RevLED CAN bus shift lights               | Not equipped | Standard | Standard     | Not equipped |
| Center-console functions                  | Not equipped | Standard | Standard     | Not equipped |
| Advanced race controls                    | Not equipped | Standard | Standard     | Not equipped |
| Multi-profile settings                    | Standard     | Standard | Standard     | Not equipped |
| Rear button profile quick switch          | Not equipped | Standard | Standard     | Not equipped |
| 6×70 mm MOMO original horn-cap adapter    | Optional     | Optional | Not equipped | Optional     |
| 6×74 mm NARDI-type steering-wheel adapter | Optional     | Optional | Not equipped | Optional     |

## WHY FORMULA STANDS APART

FORMULA matches PODIUM's advanced control capability in a purpose-built Formula wheel, with the OLED DID, RevLEDs, and magnetic paddles included as standard equipment.

## EXECUTIVE SUMMARY

- The JQ Werks Madtrace GEN2 FORMULA Line is a purpose-designed 290 mm racing steering wheel system inspired by GT3 and GT4 endurance-racing ergonomics.
- For supported Porsche 991, 981, and 982 applications, the control hub integrates CAN bus and LIN bus communication so factory steering-wheel functions and expanded vehicle controls can be operated from the wheel.
- A dedicated harness, CAN integration module, adapter hub, and quick-release base with integrated chassis PCB create a plug-and-play, vehicle-specific installation without wire splicing.
- Front-facing buttons, joystick-style rotary controls, dedicated rotary controls, and two programmable magnetic paddles can be assigned through MadtraceLAB across a 37-command Porsche library: 17 Steering Wheel, 14 Car Control, and 6 General functions.
- Three complete profiles can be stored in the hub, each with an independent button map and lighting configuration, and recalled through an assigned profile quick-switch input.
- RevLED CAN bus shift lights, the OLED Driver Information Display, and two programmable magnetic paddle inputs are integrated as standard Formula Line equipment.
- The system removes the factory steering wheel and airbag and is intended exclusively for off-road, track, racing, and competition use.

### FUNCTION AVAILABILITY

Slides 15–18 document the complete 37-command Porsche 991 / 981 / 982 function library. Availability depends on chassis, model year, market, transmission, factory equipment, coding, software configuration, and the selected Porsche profile.

# MECHANICAL CONSTRUCTION

## FORMULA LINE HARDWARE

- The purpose-designed 290 mm Formula wheel housing is precision machined from 6061-T6 billet aluminum for accurate geometry, consistent alignment, and a premium finished surface.
- Smooth, high-grip rubber is applied to the handgrip areas to support secure control and endurance-racing ergonomics.
- Black and red anodized finishes define the Formula Line visual treatment and coordinate with the matching adapter hub and quick-release assembly.
- The quick release is manufactured from 7075-T6 billet aluminum for strength, durability, and a precise mechanical fit.
- Front-facing buttons, joystick-style and dedicated rotary controls, RevLED shift lights, the OLED DID, and two programmable paddle inputs keep critical functions within reach.
- The integrated design eliminates the need for a separate round steering-wheel rim, horn-cap adapter, or NARDI/MOMO steering-wheel adapter.



### CONFIGURATION SHOWN

Official Formula configuration shown with the integrated OLED DID, RevLED shift lights, and two programmable magnetic paddle inputs.

## VEHICLE INTEGRATION: CAN + LIN

- Porsche 991 / 981 / 982 steering-wheel, call, media, Sport Chrono, chassis-control, lighting, and wiper commands are distributed across the vehicle's electronic networks. The FORMULA Line interfaces with supported data through vehicle-specific CAN + LIN integration hardware.
- CAN communication supports compatible factory data and commands, including RevLED RPM input, steering-wheel controls, PDK Sport, PASM Sport, ESP, PSE, axle lift, auto start/stop, spoiler, GT menu, Sport, Sport Plus, and the vehicle functions exposed by the selected Porsche profile.
- LIN communication supports compatible factory steering-wheel electronics where required by the configured application.
- A dedicated Porsche 991 / 981 / 982 harness and CAN integration module connect the system without cutting or splicing factory wiring.
- The supplied library includes 37 commands. PDK Sport, PASM Sport, PSE, axle lift, spoiler, GT menu, Sport, Sport Plus, call, media, and related controls require the corresponding vehicle equipment, chassis support, coding, and software configuration.
- See pages 14–18 for the Formula paddle architecture and complete Porsche function tables.

# MADTRACELAB 2.0

MadtraceLAB is the configuration and update platform for the GEN2 Formula control hub.

The Function workspace displays the steering wheel graphic, available input locations, selected vehicle vendor, function categories, and active profile.

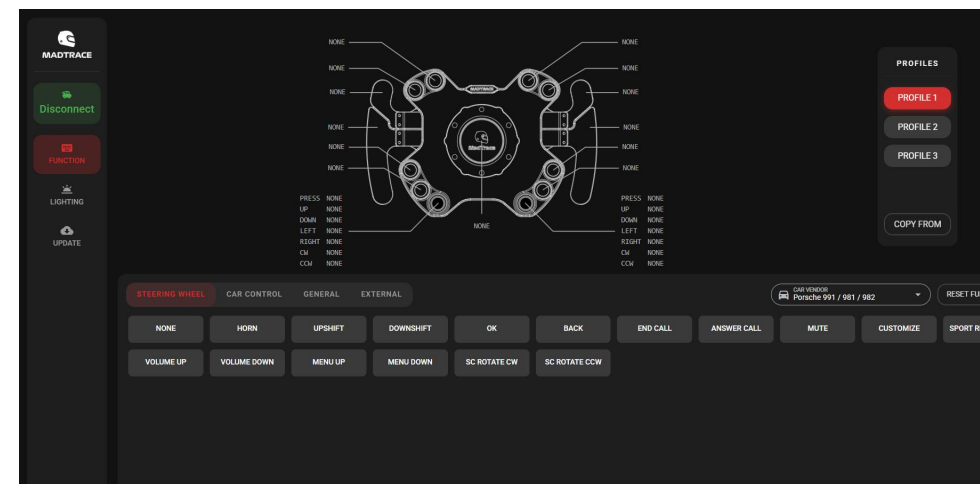
A user can select an input and assign a supported command from the Steering Wheel, Car Control, General, or available External category.

Lighting settings control button illumination and RevLED behavior for visibility, recognition, and driver preference.

The Update section manages compatible software and feature updates through the hub's discreet USB-C service connection.

“Copy From” can transfer an existing layout into another profile before profile-specific changes are made.

## MADTRACELAB FUNCTION WORKSPACE



## PROFILE SETUP

For the Porsche 991 / 981 / 982 vendor profile, confirm the exact chassis, model year, market, transmission, steering-wheel and infotainment equipment, Sport Chrono and GT controls, PASM, PSE, axle lift, coding, installed options, and software profile before mapping or copying a layout.

## MULTI-PROFILE SETTINGS + QUICK SWITCH

- Up to three complete profiles can be stored directly in the Formula hub's internal memory.
- Each profile can contain independent button assignments, paddle assignments, and illumination settings.
- A race profile can prioritize shifting, PDK Sport, PASM Sport, PSE, ESP, signals, and windshield commands.
- A road or media profile can group calls, volume, mute, menu navigation, and steering-column functions.
- A third profile can support GT-menu controls, 981 Sport / Sport Plus, endurance use, a second driver, or another compatible Porsche application after full verification.
- Assign a profile quick-switch input for rapid access, and use the standard OLED DID or MadtraceLAB to review and manage the active mapping.

| STORED PROFILE | SUGGESTED USE               | WHAT IS RETAINED                       |
|----------------|-----------------------------|----------------------------------------|
| Profile 1      | Race baseline               | Verified essential commands + lighting |
| Profile 2      | Road / media / calls        | Independent functions + lighting       |
| Profile 3      | GT / 981 / secondary driver | Independent functions + lighting       |

# CONTROL INPUT ARCHITECTURE

## FRONT-FACING CONTROLS

- Front-facing push buttons provide direct access to frequently used mapped functions.
- Two joystick-style rotary controls expand the input count with Press, Up, Down, Left, Right, Clockwise, and Counterclockwise actions when enabled.
- Dedicated rotary controls can support Clockwise and Counterclockwise assignments where enabled.
- Two magnetic paddle inputs are integrated and can be assigned to shifting, signals, flash, wiper, or other supported commands.
- A profile-selection input can switch among the three saved maps and their independent lighting configurations.
- PDK Sport, PASM Sport, PSE, axle lift, spoiler, GT-menu, 981 Sport / Sport Plus, call, and media assignments must match the actual Porsche chassis, factory equipment, coding, software configuration, and selected profile.

| INPUT GROUP               | AVAILABLE ACTIONS                | TYPICAL PORSCHE ASSIGNMENT             |
|---------------------------|----------------------------------|----------------------------------------|
| Front buttons             | Push inputs                      | Horn, OK, back, calls, mute, customize |
| Left joystick             | Press / U / D / L / R / CW / CCW | Volume, menu, or Sport Response        |
| Right joystick            | Press / U / D / L / R / CW / CCW | GT menu or steering-column navigation  |
| Dedicated rotary controls | CW / CCW                         | SC rotate or driver preference         |
| Magnetic paddles          | 2 programmable inputs            | Shift, signals, flash, or wiper        |
| Profile selection         | Assigned quick-switch input      | Profile 1 / 2 / 3                      |

### HUMAN-FACTORS NOTE

Place functions where they can be identified and operated without the driver looking away from the track. Keep critical commands consistent across profiles.

# REVLED SHIFT LIGHT + ILLUMINATION

RevLED CAN bus shift lights are standard equipment on the FORMULA Line control hub.

In MadtraceLAB 2.0, the user can set the RPM threshold at which the shift-light sequence begins and the redline alert flashes.

Engine-speed data is received through the vehicle communication system so the sequence can respond to the supported RPM signal.

The LEDs progress through the configured sequence, and all lights flash at the programmed redline condition.

Button illumination colors can be customized so groups of controls are easier to recognize during a driving session.

Different profiles may use different lighting schemes, providing visual confirmation of the active button map.

The standard OLED DID provides direct adjustment of display brightness, RGB button colors and mapping functions of the hub, while complete programming remains available through MadtraceLAB.

Review redline and illumination settings whenever the hub is moved to another compatible vehicle or the engine calibration changes.

## CONFIGURATION RESPONSIBILITY

Shift lights are a driver aid, not a substitute for the vehicle's engine-protection strategy. Match the visual redline to the verified engine setup.

# OLED DRIVER INFORMATION DISPLAY

Every FORMULA Line racing steering wheel includes an OLED Driver Information Display positioned directly beneath the RevLED shift lights.

Through the integrated CAN bus connection, the DID can display supported real-time telemetry such as vehicle speed.

The display provides direct access to button-layout mapping and profile selection without reconnecting the hub to a computer.

Display brightness and RGB button illumination can be adjusted from the DID interface.

Available telemetry channels depend on the selected vehicle and software configuration.

Test the vehicle after any on-wheel mapping change, even when the DID confirms that the assignment was saved.

## DID CAPABILITIES

| CAPABILITY          | STATUS                       |
|---------------------|------------------------------|
| Real-time speed     | Supported telemetry          |
| Button mapping      | Direct control               |
| Profile switching   | Direct control               |
| Display brightness  | Adjustable                   |
| RGB button colors   | Adjustable                   |
| Computer connection | Not required for DID changes |

## STANDARD EQUIPMENT

The OLED DID is integrated into every Formula Line wheel and is included as standard equipment.

## MAGNETIC PADDLE SHIFTERS

- The FORMULA Line includes two motorsport-grade magnetic paddles made from 6061-T6 billet aluminum.
- Both paddle inputs are integrated into the purpose-built wheel architecture and included as standard equipment.
- Each paddle is programmable, allowing either input to control any supported function—not only shifting.
- A common PDK layout uses the pair for upshift and downshift. Alternative layouts can assign the paddles to signals, flash, wiper, or other verified commands.
- Manual-transmission Porsche applications can use the paddles for non-shifting functions when supported by the selected vehicle profile.
- Paddle assignments can be stored independently in each of the three profiles.
- Verify every assignment with the vehicle stationary before track use.

### MAPPING SAFETY

Program only functions that can be safely operated from a paddle. Avoid assignments that could cause an unintended vehicle-state change during steering input.

# STEERING WHEEL FUNCTIONS: CORE + CALLS

| MADTRACELAB FUNCTION | COMMAND PURPOSE                                   | CONFIGURATION NOTE                  |
|----------------------|---------------------------------------------------|-------------------------------------|
| NONE                 | Leaves the selected input unassigned.             | Use for unused or reserve inputs.   |
| HORN                 | Activates the supported horn command.             | Verify stationary before use.       |
| UPSHIFT              | Requests an upshift on supported configurations.  | Transmission dependent.             |
| DOWNSHIFT            | Requests a downshift on supported configurations. | Transmission dependent.             |
| OK                   | Confirms the highlighted supported menu item.     | Factory display dependent.          |
| BACK                 | Returns to the previous supported menu level.     | Factory display dependent.          |
| END CALL             | Ends a supported connected call.                  | PCM / phone integration dependent.  |
| ANSWER CALL          | Answers a supported incoming call.                | PCM / phone integration dependent.  |
| MUTE                 | Activates the supported audio mute command.       | Factory audio dependent.            |
| CUSTOMIZE            | Activates the supported customizable command.     | Equipment and coding dependent.     |
| SPORT RESPONSE       | Activates the supported Sport Response command.   | Sport Chrono and chassis dependent. |

VERIFICATION

Test every assignment with the vehicle stationary and the correct Porsche 991 / 981 / 982 profile selected.

# STEERING WHEEL FUNCTIONS: MEDIA + NAVIGATION

| MADTRACELAB FUNCTION | COMMAND PURPOSE                                                 |
|----------------------|-----------------------------------------------------------------|
| VOLUME UP            | Raises supported factory audio volume.                          |
| VOLUME DOWN          | Lowers supported factory audio volume.                          |
| MENU UP              | Moves upward in a supported menu.                               |
| MENU DOWN            | Moves downward in a supported menu.                             |
| SC ROTATE CW         | Rotates the supported steering-column control clockwise.        |
| SC ROTATE CCW        | Rotates the supported steering-column control counterclockwise. |

**REGIONAL + EQUIPMENT DEPENDENCY**

Media, menu, call, and steering-column commands require the corresponding Porsche factory equipment, PCM configuration, coding, software configuration, and selected profile.

# CAR CONTROL FUNCTIONS

| MADTRACELAB FUNCTION | COMMAND PURPOSE                                                     |
|----------------------|---------------------------------------------------------------------|
| PDK SPORT            | Activates the supported PDK Sport command.                          |
| PASM SPORT           | Activates the supported PASM Sport command.                         |
| ESP                  | Activates the supported stability-control command.                  |
| ESP & TC OFF         | Activates the supported stability and traction-control off command. |
| PSE                  | Activates the supported Porsche Sport Exhaust command.              |
| AXLE LIFT            | Activates the supported front-axle lift command.                    |
| AUTO START/STOP      | Activates the supported auto start/stop command.                    |
| SPOILER              | Activates the supported rear-spoiler command.                       |
| MENU UP(GT)          | Moves upward in the supported GT menu.                              |
| MENU DOWN(GT)        | Moves downward in the supported GT menu.                            |
| OK(GT)               | Confirms the highlighted supported GT-menu item.                    |
| BACK(GT)             | Returns to the previous supported GT-menu level.                    |
| SPORT(981)           | Activates the supported 981 Sport command.                          |
| SPORT PLUS(981)      | Activates the supported 981 Sport Plus command.                     |

## CONTROL PLACEMENT

Porsche car-control commands require the corresponding chassis, transmission, factory equipment, Sport Chrono / GT configuration, coding, software configuration, and selected profile.

# GENERAL VEHICLE FUNCTIONS

| MADTRACELAB FUNCTION | COMMAND PURPOSE                                    |
|----------------------|----------------------------------------------------|
| NONE                 | Leaves the selected input unassigned.              |
| FLASH                | Activates the supported high-beam flash command.   |
| LEFT TURN SIGNAL     | Activates the supported left turn signal.          |
| RIGHT TURN SIGNAL    | Activates the supported right turn signal.         |
| WIPER SINGLE         | Requests one supported windshield-wiper cycle.     |
| SPRAY WATER          | Activates the supported windshield-washer command. |

- Turn-signal, high-beam, and windshield commands are configuration dependent and must be verified on the actual car.
- Do not assume the same input map behaves identically across chassis codes, markets, transmissions, equipment packages, coding, or software revisions.

# VEHICLE FITMENT + INCLUDED EQUIPMENT

APPLICABLE PORSCHE MODELS

| CHASSIS VERSION | MODELS                                                 | MODEL YEARS  |
|-----------------|--------------------------------------------------------|--------------|
| 991 CHASSIS     | PORSCHE 911 (GT3/GT3RS/GT2RS and None GT)              | 2012–2019    |
| 981 CHASSIS     | PORSCHE BOXSTER / CAYMAN (GT4)                         | 2012–2016    |
| 982 CHASSIS     | PORSCHE 718 BOXSTER / 718 CAYMAN (GT4/4RS and None GT) | 2017–PRESENT |

EACH FORMULA LINE HUB KIT INCLUDES

- 1x FORMULA Line control hub unit

1x Quick-release base with integrated chassis PCB

1x CAN bus integration module

1x Vehicle harness kit

1x Resistor

1x Adapter hub (Boss Kit)
- 1x Adapter hub locking wrench

1x Trim-removal tool

1x Hardware kit

1x Allen key

1x Button-sticker set

1x JQ Werks / Madtrace sticker set

1x USB cable

FORMULA STANDARD EQUIPMENT

The OLED DID, RevLED shift lights, 290 mm Formula wheel, and two programmable magnetic paddle inputs are integrated; MOMO and NARDI adapters are not offered.

# CONFIGURATION WORKFLOW

- 1 Confirm the exact Porsche 991 / 981 / 982 chassis, model year, market, transmission, steering-wheel and infotainment equipment, Sport Chrono and GT controls, PASM, PSE, axle lift, coding, installed options, and software configuration.
- 2 Install the vehicle-specific adapter hub, harness, CAN integration module, and quick-release base according to the applicable guide. Do not splice factory wiring.
- 3 Connect the control hub through USB-C and confirm compatible MadtraceLAB software and system updates.
- 4 Select the Porsche 991 / 981 / 982 profile and map only commands supported by the actual chassis, transmission, factory equipment, market, coding, and software configuration.
- 5 Create Profile 1 as the verified baseline. Copy that layout to Profiles 2 and 3 before condition- or driver-specific changes.
- 6 With the vehicle stationary, test every button, joystick direction, rotary action, both paddles, profile selection, RevLED sequence, OLED DID command, and mapped call, media, PDK Sport, PASM Sport, ESP, PSE, axle lift, spoiler, GT-menu, lighting, or wiper function.
- 7 Repeat verification after any software update, vehicle change, transmission change, coding change, equipment change, calibration update, hardware change, or profile revision, then record the final map.

## IMPORTANT

This is a high-level configuration workflow, not an installation manual. Follow application-specific instructions and use a qualified professional where required.

# SAFETY, USE RESTRICTIONS + SUMMARY

## IMPORTANT SAFETY INFORMATION

The JQ Werks Madtrace Racing Steering Wheel System is designed only for off-road, track, racing, and competition purposes. It is not intended for street use.

Installation removes the factory steering wheel and airbag. A solid racing steering wheel can increase the risk of bodily injury in a collision.

Do not use the system with the factory three-point seat belt. JQ Werks requires a six-point racing harness with a racing roll bar for off-road use.

Do not install the system on a vehicle subject to state safety inspection.

Laws and required safety equipment vary by country, state, and region. Consult qualified legal and motorsport-safety professionals.

Professional installation, complete stationary function testing, and driver familiarization are recommended before track use.

**CONTROL WITH PURPOSE.**

JQ WERKS x MADTRACE

## SUMMARY

For supported Porsche 991 / 981 / 982 applications, the GEN2 FORMULA Line combines a purpose-designed 290 mm Formula wheel, CAN + LIN vehicle integration, 37 configurable commands, three stored profiles, RevLEDs, OLED telemetry, and two programmable magnetic paddles in one removable driver-control platform.