



A90 SUPRA CHASSIS

GEN2 FORMULA LINE RACING STEERING WHEEL SYSTEM

INFORMATION PACKET

SYSTEM ARCHITECTURE / PROGRAMMING / FUNCTION LIBRARY / FITMENT

DOCUMENT SCOPE

This editable packet summarizes system capabilities and the supplied MadtraceLAB function library. Actual functionality depends on vehicle chassis, market, factory equipment, installed options, and software configuration.



FORMULA LINE WITH STANDARD OLED DID + REVLEDS

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WHERE THE FORMULA LINE FITS

PRODUCT LINE POSITIONING

Clubsport Line is the streamlined GEN2 entry point. It retains factory steering-wheel functions, plug-and-play installation, programmable buttons, RGB lighting, MadtraceLAB, and multi-profile storage, but it does not include RevLED, center-console commands, advanced race controls, dual paddles, or the profile quick switch.

PODIUM Line adds the deeper control layer while preserving the freedom to use compatible round racing wheels. RevLED, center-console functions, advanced race controls, quick profile switching, and optional dual paddles distinguish it from Clubsport.

Formula Line carries the same high-level electronic capability into a purpose-designed 290 mm GT3/GT4-style wheel. Its OLED DID, RevLED shift lights, and magnetic paddles are standard equipment.

GEN1 is the legacy fixed-layout platform. It retains factory functions and plug-and-play installation, but it does not include programmable layouts, RGB customization, MadtraceLAB, RevLED, multi-profile operation, or advanced vehicle controls.

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, quick profile switching, and optional dual paddles.
Formula	Dedicated GT wheel	Purpose-built 290 mm GT wheel; OLED DID, RevLEDs, and two programmable paddle inputs 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 GT 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
Single magnetic paddle shifter	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
Dual magnetic paddle shifters	Not equipped	Optional for AT	Not equipped	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
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 GT 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.

The control hub integrates CAN bus and LIN bus communication so supported factory functions and expanded vehicle controls can be operated directly 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.

12X front-facing buttons(including 1X profile switch button), 2X joystick-style rotary controls, and 2X rotary controls knobs can be assigned through MadtraceLAB to supported steering-wheel, car-control, and general vehicle commands.

Three complete profiles can be stored in the hub, each with an independent button map and lighting configuration, and recalled through the profile quick-switch function.

RevLED CAN bus shift lights, the OLED Driver Information Display, and 2 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

The A90 Formula product page describes access to more than 20 additional OEM CAN functions; the exact list is chassis dependent. Slides 15 through 18 preserve the functions shown in the supplied MadtraceLAB reference images.

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.

12 front-facing buttons, dual joystick knobs, dual rotary knobs, RevLED shift lights, the OLED DID, and 2 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 paddle inputs.

VEHICLE INTEGRATION: CAN + LIN

Modern vehicle controls are distributed across multiple electronic networks. On this applications, the FORMULA Line integrates CAN bus and LIN bus communication within the steering-wheel control system.

CAN communication provides access to supported factory data and commands, including shift-light RPM data, center-console functions, driver-assistance controls, and selected race-control functions.

LIN communication supports compatible factory steering-wheel electronics and helps preserve expected behavior within the original control environment.

A dedicated vehicle harness and CAN integration module connect the system without cutting or splicing factory wiring. Supported general controls may include high-beam flash, windshield functions, and turn signals; supported vehicle controls may include iDrive commands and selected VSC or drive-mode functions.

See pages 14–18 for the corresponding paddle and function-library 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.

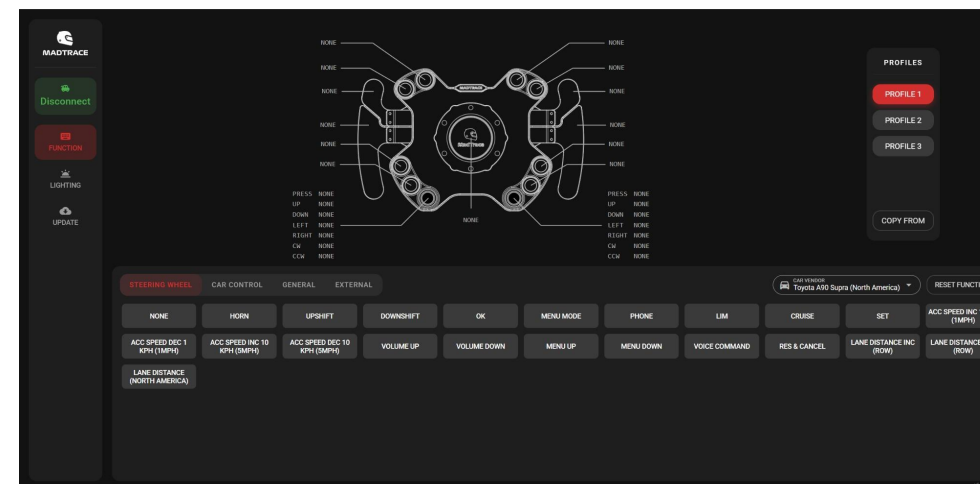
A user can select an input and assign a supported command from the Steering Wheel, Car Control, General, or available External category.

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



SCREENSHOT CONTEXT

The screenshot is a software reference. Always select the correct Chassis configuration before programming.

MULTI-PROFILE SETTINGS + QUICK SWITCH

Up to three complete profiles can be stored directly in the hub's internal memory.
Each profile can contain independent button assignments and illumination settings.
A RACE profile may prioritize shift, DSC, Sport Mode, and Chassis controls while a Clubsport profile emphasizes OEM functions.
A third profile can be reserved for endurance use, another driver, or a second compatible competition vehicle after verification.
A rear profile-switch button on the PODIUM hub lets the driver move among saved profiles without rebuilding the map in MadtraceLAB.
With the optional DID installed, profiles and button mapping can be managed directly from the wheel without reconnecting to a computer.

STORED PROFILE	SUGGESTED USE	WHAT IS RETAINED
Profile 1	Primary race layout	Driver-selected functions + lighting
Profile 2	Cлубsport / secondary driver	Independent functions + lighting
Profile 3	Endurance / secondary vehicle	Independent functions + lighting

CONTROL INPUT ARCHITECTURE

FRONT-FACING CONTROLS

11 front-facing push buttons provide direct access to frequently used mapped functions.

Two rotary-style rotary controls expand the input count without adding more button pods.

Two joystick-style rotary controls expand the input count without adding more button pods.

Each rotary can support Clockwise, and Counterclockwise assignments when enabled.

Each joystick can support Press, Up, Down, Left, Right, Clockwise, and Counterclockwise assignments when enabled.

Two magnetic paddle inputs are integrated and can be assigned to shifting, turn signals, or other supported commands.

The bottom-right front-facing button can instantly switch among the three saved profiles and their LED color maps.

INPUT GROUP	AVAILABLE ACTIONS	TYPICAL ASSIGNMENT
Front buttons	11 push inputs	Horn, menu, phone, cruise, flash
Left rotary	CW / CCW	Volume, engine map
Right rotary	CW / CCW	Volume, engine map
Left joystick	Press / U / D / L / R / CW / CCW	Volume, menu, driver assistance
Right joystick	Press / U / D / L / R / CW / CCW	iDrive, menu, driver assistance
Paddles	4 programmable inputs	Shift, signals, high beam flashes
Profile quick-switch button	Profile selection	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 a motorsport-grade magnetic paddle setup made from 6061-T6 billet aluminum.

Two single paddle inputs are integrated into the purpose-built wheel architecture and included as standard equipment.

All two paddles are fully programmable, allowing each input to control any supported function—not only shifting.

A common layout uses the pair for upshift and downshift for AT cars and for turn signals or other race controls for MT cars.

Manual-transmission vehicles can use the programmable paddles for non-shifting functions when supported.

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 + MEDIA

MADTRACELAB FUNCTION	COMMAND PURPOSE	CONFIGURATION NOTE
None	Leaves the selected input unassigned.	Useful for unused or reserved controls.
Horn	Activates the supported horn command.	Confirm horn-cap and vehicle configuration.
Upshift	Requests an upshift.	Transmission / paddle support required.
Downshift	Requests a downshift.	Transmission / paddle support required.
OK	Confirms the highlighted menu selection.	Supported cluster/menu navigation required.
Menu Mode	Opens or changes the supported menu mode.	Behavior varies by vehicle coding.
Phone	Accesses the supported phone command.	Factory phone integration required.
Voice Command	Calls the factory voice-command function.	Factory system must support the command.
Volume Up	Raises the factory audio volume.	Standard momentary input.
Volume Down	Lowers the factory audio volume.	Standard momentary input.
Menu Up	Moves upward through a supported menu.	Cluster/menu support required.
Menu Down	Moves downward through a supported menu.	Cluster/menu support required.

SOURCE + VERIFICATION

Function labels are reproduced from the supplied MadtraceLAB image. Test every assignment with the vehicle stationary before competition use.

STEERING WHEEL FUNCTIONS: CRUISE + ASSISTANCE

MADTRACELAB FUNCTION	COMMAND PURPOSE
LIM	Selects the supported speed-limiter command.
Cruise	Selects or activates the supported cruise-control function.
SET	Stores the supported target speed or setting.
RES & Cancel	Resumes or cancels the supported cruise-control state.
ACC Speed Inc 1 KPH (1 MPH)	Raises the adaptive-cruise setting by the small regional increment.
ACC Speed Dec 1 KPH (1 MPH)	Lowers the adaptive-cruise setting by the small regional increment.
ACC Speed Inc 10 KPH (5 MPH)	Raises the adaptive-cruise setting by the large regional increment.
ACC Speed Dec 10 KPH (5 MPH)	Lowers the adaptive-cruise setting by the large regional increment.
Lane Distance Inc	Increases the following-distance setting.
Lane Distance Dec	Decreases the following-distance setting.
Lane Distance	Cycles the supported following-distance setting.

REGIONAL + EQUIPMENT DEPENDENCY

RoW means Rest of World. These mappings require corresponding factory equipment and correct regional configuration.

CAR CONTROL FUNCTIONS

MADTRACELAB FUNCTION	COMMAND PURPOSE
Sport	Accesses the supported Sport vehicle command.
DSC	Accesses the supported stability-control command.
iDrive.Home	Returns to the supported iDrive home screen.
iDrive.Option	Opens the supported iDrive option menu.
iDrive.Up	Moves the iDrive selection upward.
iDrive.Down	Moves the iDrive selection downward.
iDrive.Left	Moves the iDrive selection left.
iDrive.Right	Moves the iDrive selection right.
iDrive.CW	Rotates the supported iDrive input clockwise.
iDrive.CCW	Rotates the supported iDrive input counterclockwise.
iDrive.OK	Confirms the highlighted iDrive selection.
iDrive.Back	Returns to the previous supported iDrive screen.

CONTROL PLACEMENT

Car-control commands change vehicle or infotainment state. Use deliberate control locations and verify the response on the configured vehicle.

GENERAL VEHICLE FUNCTIONS

MADTRACELAB FUNCTION	COMMAND PURPOSE
None	Leaves the selected input unassigned.
BC	Accesses the supported on-board-computer command.
Flash	Activates the supported high-beam flash command.
Left Turn Signal	Activates the supported left-turn-signal command.
Right Turn Signal	Activates the supported right-turn-signal command.
Single Wipe	Requests one supported windshield-wiper cycle.
Windshield Washer	Activates the supported windshield-washer command.

General functions are useful when factory steering-column controls are removed or difficult to reach in a competition cockpit. Turn-signal and windshield commands are chassis dependent and must be verified on the actual vehicle. Do not assume that the same input map behaves identically when the hub is moved between vehicles or markets.

VEHICLE FITMENT + INCLUDED EQUIPMENT

APPLICABLE A90/A91 SUPRA CHASSIS MODELS

MARKET	MODELS	APPLICATION NOTE
REST OF WORLD	A90/A91 SUPRA AT OR MT	FOR 
NORTH AMERICA	A90/A91 SUPRA AT OR MT	FOR 

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 USD 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 chassis, market/region, transmission, factory steering-wheel buttons, and installed driver-assistance equipment.
- 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 correct vehicle configuration and map only commands supported by the actual vehicle and required by the driver.
- 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, paddle, profile switch, RevLED sequence, and OLED DID command.
- 7 Repeat verification after any software update, vehicle change, engine calibration 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

The GEN2 FORMULA Line combines a purpose-designed 290 mm GT wheel, precision-machined hardware, vehicle-network integration, configurable controls, stored profiles, RevLEDs, OLED telemetry, and programmable paddles in one removable driver-control platform.