GTR MFD – A User's Manual

by plus

Preface & Disclaimers

The idea of a fully emulated MFD came from mehdi2344, a big GTR fanatic. Sadly, this idea would prove to be impossible until x4fab implemented .lua scriptable displays, which opened up endless possibilities regarding digital displays. With little to no documentation, a lot of initial reverse engineering had to be made (the results of this effort are seen in CMC's R32, where a fully working AC display was coded on). Since then, docs have been made public, which played a big part in the completion of this project, which has been ongoing ever since ASC's R34 has been released.

I (plus) would like to thank everyone involved in this project –

- **h ell**, for putting up with me and being my personal texture slave;
- **mehdi2344**, for bug testing, providing me with references and general knowledge about the system;
- **touge**, for the good base to write this script on.

Contact the car's author for bugs. Help/Support for the display will not be given. Updates will be made however, since there are minor innacuracies with the way the display behaves/looks.

I (plus) am the sole author of the code. Modifications to the system's functionalities are not allowed, but you are allowed to fix the code if you commit your changes to the repo. Contact the car's author for bugs, which will be promptly fixed. I also do not give permission for the code to be ported to other cars – It was made to work with asc_ cars only. Doing so will cause unexpected behaviour, and will trigger protection mechanisms. The code may be referenced and you may use it for educational purposes – you are free to look at the implementation, suggest improvements and use it to learn car display scripting by yourself.

IMPORTANT

Due to the MFD locally storing the settings, if any bug occurs and the settings get corrupted, you need to manually delete them in `C:\Users\...\Documents\Assetto Corsa\cfg\extension\state\lua\car_script\asc_nissan_r34_nur.ini`

REPORT BUGS IN THE MFD'S REPO:

https://github.com/plus-and-other-arithmetic-operations/R34-MFD

General Controls

*To exit the boot up sequence, the user needs to **accelerate the vehicle**.*

- **Shift light (1)**

The shift light is used to indicate the driver that the RPM threshold has been reached (default value is 8000 rpm).

- **Joystick (2)**

The joystick is used to navigate the menus, by pressing the up/down/left/right arrows. The user can make a selection by pressing the middle button. Holding the middle button will reset the recorded peak values.

- **Buttons (3)**
  - ***DISP* button**

    When the ***DISP*** button is pressed, a menu with general display options will open.
  - ***RETURN* button**

    When the ***RETURN*** button is pressed, the user will be presented with the previously opened menu.
  - ***MENU* button**

    When the ***MENU*** button is pressed, the user will be presented with a submenu that contains some display setup options.
  - ***MODE* button**

    When the ***MODE*** button is pressed, the user will be presented with a new gauge display. (The MFD contains 3 different modes.)

Buttons – DISP button

The display menu has 4 options. The navigation is done by interacting with the Joystick. ***Selections are confirmed by pressing the Joystick's middle button.***

- **Screen auto-dimming (1)**

Enabling this setting will enable an adaptive brightness for the MFD.

- **Screen disabling (2)**

Enabling this setting will turn off the display. The display may be turned on again by pressing the ***DISP*** button or by pressing the Joystick's middle button.

- **Gauge tail (3)**

Enabling this setting will turn on/off the trailing green bar on the gauge displays.

- **Screen manual brightness adjustment (4)**

Selecting this option will allow the user to manually adjust the screen's brightness (adjustment is done via joystick).

Buttons – *MENU* button

*The menu button has 3 possible selections **(1 being greyed out in the Bar Menu mode)**. They allow the user to further tweak the display to their preference.*

- **Select menu (1)**

Upon selecting this menu, the user will be presented with a menu where he can select the gauges being displayed.

- **Red Zone menu (2)**

Upon selecting this menu, the user will be presented with a menu where he can tweak the thresholds for each sensor. When a sensor reads over a set threshold, the MFD will automatically switch to the Bar Menu for a set amount of time.

- **Shift Up menu (3)**

Upon selecting this menu, the user will be presented with a menu where he can tweak the rpms at which the Rev Light will flash.

Menus – Red Zone/ Shift up

The user may tweak the threshold values for each sensor in this menu. Selections are confirmed by pressing the ***END*** button. The values are reset by pressing the ***RESET*** button. **These values are stored locally in the user's system, allowing for them to persist throughout sessions.**

The user may tweak the behavior of the Rev Light in this menu. Tweaking is done via Joystick interaction. Confirmation is done by pressing the middle Joystick button, or by pressing the ***RETURN*** button.

Modes – an overview

- **Bar Menu Mode**

In this menu the user is able to see all of the sensor readings. A bar will flash red once a threshold has been reached. ***PEAK*** values are recorded by the small white bar. Holding down the middle joystick in this mode will reset the ***PEAK*** values. **(SELECT Menu is unavailable in this mode)**.

- **Graph Menu Mode**

In this menu the user is able to see a sensor reading, and readings from the previous 30 seconds. ***PEAK*** values are recorded in the blue corner of the gauge and by the small white bar.

- ***TWIN* Menu Mode**

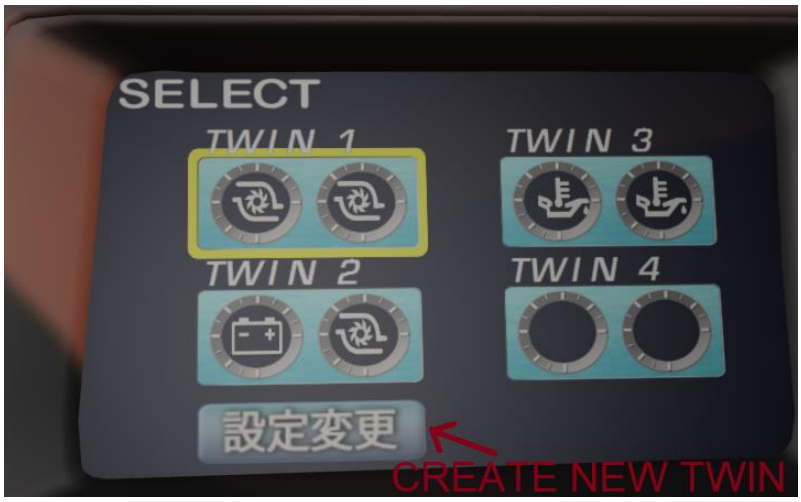
In this menu the user is able to see two sensor readings. ***PEAK*** values are recorded in the blue corner of the gauge and by the small white bar.

The user may choose from 3 different display modes.

SELECT Menu – Graph Gauge Mode

The user is able to select the above sensors to be displayed alongside a graph. Confirmation is done by pressing the middle Joystick button.

SELECT Menu – *TWIN* Gauge Mode



The user is able to select a pre-existing TWIN configuration, or create a new one. Confirmation is done by pressing the middle Joystick button.

- **New *TWIN* button**

When pressing this button, the user will be led to a menu where he can setup a new twin configuration.

TWIN Setup Menu

*In this menu the user may change the current configuration of **TWIN** gauges. Selecting **END** will confirm the configuration. Changes in **TWIN** configurations will mark said twin with a yellow color. The user needs to select both left and right gauges in order to progress (currently selected side will flash green). **Navigation/confirmation are made via Joystick.***