

## V2R Controller Firmware Rev. 0.15

©2017 by Zappadoc - All Rights Reserved



For those who like to do the things by themselves and are not afraid to start a typical DIY project, we created some specific firmware (software for hardware) for the Teensy LC USB controller (from PJRC.com) to help you to create your own sim racing display.

This topic is dedicated to the first DIY project ( V2R Controller usb display) and will help you to create your own display compatible with the latest EKSIMRacing V2R firmware.

### IMPORTANT1:

We DO NOT sell hardware kit and we do not sell the fully mounted display. We are focused on software, don't you remember ;)

### IMPORTANT2:

Do not ask for a firmware compatible with your controller, we will NOT make it for you, the first DIY Project is exclusively for the Teensy LC which cost only \$12, so use this one if you are interested by the project. The firmware is fully tested with this controller.

### DISCLAIMER:

The information related to this project contained in this topic and website is for general information purposes only. The information is provided by EKSIMRacing and Zappadoc and while we endeavor to keep the information up-to-date and correct, we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the website or the information, products, services, or related graphics contained on the website for any purpose. Any reliance you place on such information is therefore strictly at your own risk. In no event will we be liable for any loss or damage including without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of data or profits arising out of or in connection with the use of this information.

In short **\*USE THIS AT YOUR OWN RISK\***

**Requirements:**

- You need to have a valid license of VDASH-EMU (\$5), this project is a cool and powerful add-on to your virtual racing display emulator (VDASH-EMU) with a real shiftlights, Marshal and external LED. Both can be combined to get a cool Shiftlights + display.
- SLIMax V2R Firmware is 100% free (installed automatically by the SLIMax Mgr Pro)
- They are (SLI-MAX Display + VDASH-EMU) powered by SLIMax Manager Pro which supports more than 60 games/simulations (you need the latest version)

**1 V2R Controller Firmware License:**

The firmware is provided for free and is Copyright 2017 by Zappadoc - All Rights Reserved. it is a part of SLIMax Manager Pro software, it can't be dissociated and it is under the same terms and conditions of use. Redistributing EKSIMRacing software shall not be allowed without our prior written consent (send an email with a short description of your company).

**V2R Controller Firmware Specs:**

- 15 RPM LED (5+5+5 layout, typical 5 Green, 5 Red, 5 Blue or 5 Green, 5 Yellow, 5 Red)
- 6 Marshal LED (Blue+Red+Yellow+Yellow+Red+Blue)
- 5 External LED (we recommend Green+Red+Red+Red+Yellow)

**Notes:**

V2R Controller Shift-lights works exclusively with SLIMax VDASH-EMU (you need a VDASH-EMU license) and includes in the firmware the EKSIMRacing V2R technology (Virtual To Real) which let you use your virtual buttons on your custom pages of VDASH-EMU and the integrated Virtual ButtonBox AS A REAL (PHYSICAL) ButtonBox.

This gives you 32 buttons per controller (up to 128 buttons) usable with more than 60 games and simulations.

**V2R Controller Parts (sample project):***Amount Part Type Properties*

1 Teensy LC from PJRC.com (or any other supplier) around \$12 + shipping

5 Green LED 5 mm\*

7 Red LED 5 mm\*

7 Blue LED 5 mm\*

2 Yellow LED 5 mm\*

26 220 Resistor tolerance  $\pm 5\%$ ; resistance 220 Ohm

1 2.54mm Breakable Pin Header 40pin Male Single Row Strip Gold-Plated

1 Generic shrouded header - 10 pins - connector for the 5 external LED (any suitable connector could be used)

*\*(5mm diameter is recommended but you can use tiny 3mm led if you want)*

## V2R Controller Pins Layout:

pin from 0 to 12 et 14,15 = 15 RPM 5+5+5 (do not use the pin 13)

pin from 16 to 21 = 6 Marshal in this order: B+R+Y+Y+R+B

pin from 22 to 26 = 5 External

We provide an example of PCB BUT THIS IS JUST AN EXAMPLE FOR YOUR CONVENIENCE we recommend to make your own pcb using free software like Fritzing, Eagle, etc. like this version with mounting surface resistors.

## How to upload the V2R Controller firmware on Teensy LC?

The new firmware rev. 0.15 is an improved version of the current Virtual To Real (V2R) firmware and should be installed the same way in your Teensy LC controller to take advantage of LED management in addition to the V2R (32 Buttons per controller).

Click To Get Help In English, Français, Italiano:

<http://www.eksimracing.com/eksimracing-firmware/>

