LRU

RealDash helper guide

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Contents

Introduction

RealDash is a vehicle companion app with which you can easily create custom human-machine interface (HMI) dashboards. This guide will get you started with a working setup that you can then alter and build on.

Recommended Steps

1. Download and install the RealDash app onto the device you want the dashboard to show.
2. Download and extract the **RealDash Helper zip file** from our Support web-page which contains two files, **VR.rd** and **VR.xml**.
3. Launch RealDash on your device and load the **VR.rd** dashboard file using the keyboard short cut "Ctrl+O" or clicking on (or touching) the top of the screen to reveal the RealDash menu, then selecting EDIT, FILE, and LOAD..
4. Connect an LSI (or similar device supported by RealDash) to your dashboard device and power your LRU system. The device should now be receiving live data. If not, you may need to configure the LSI and/or your LRU(s) through SetView first. See our **LSI User Guide** for this.
5. Follow the steps described in this manual under Setting up Parameter Reception. After this the dashboard should come alive with working gauges.
6. Edit the dashboard making small adjustments and checking the results. Note that this will alter the **VR.rd** file each time your save your dashboard. Editing will give you an understanding of what setting does what and what the overall capabilities are. To help with some pointers we highlight a few settings and concepts in Exploring RealDash Editing.

Setting up Parameter Reception

To setup RealDash for parameter reception it needs to know where on the device to get data from, what format the data will be in, and how to decode (extract) parameter information from the data.

Procedure

- ➔ Click on the top part of the screen to get the menu
- ➔ Select GARAGE
- ➔ Click on the door of the car. The door should open.
- ➔ Click on the dash in the cockpit of the car.
- ➔ Select ADD
- ➔ Select Adapters (CAN/LIN) and >
- ➔ Select CAN Analyzer and >
- ➔ Select SERIAL/USB and >
- ➔ Select “Silicon Labs CP210X USB to UART Bridge”
- ➔ Change BAUD RATE to 1000000 and click >
- ➔ Select CAN DESCRIPTION FILE
- ➔ Select CUSTOM CHANNEL DESCRIPTION FILE
- ➔ Select the **VR.xml** RealDash Helper file (you downloaded or created) and click OPEN
- ➔ Click on CAN FRAME until it shows STANDARD (not EXTENDED)
- ➔ Select DONE
- ➔ Hit ESC until at dashboard
- ➔ ** dashboard should show at this point **

Exploring RealDash Editing

RealDash automatically starts up in Run Mode. To start editing, click on (or touch) the top part of the screen and EDIT, or use the keyboard shortcut Shift+6. The screen shown below should appear.

In Edit Mode you can select a particular element of a gauge or annunciation light your want to edit. They can be moved, resized, and their properties altered. Above the V1 Gauge (Needle Gauge) is selected and below the V1 Gauge (Text Gauge). Both are driven from the same parameter defined through INPUT & VALUES.

In Edit Mode you can look at and change the settings and properties of any gauge, add new gauges or delete old ones. You can explore these by selecting different gauges and going through their settings.

The **.rd** dashboard file will only be updated after you exit Edit Mode (by selecting DONE above) and then selecting YES when prompted on whether you want this file saved or not.

Input & Values

For gauges that are driven by a parameter you can set up the latter by selecting INPUT & VALUES.

Select Data Source

This assigns the parameter you want to drive the particular gauge, if at all.

- Select ECU SPECIFIC from the next menu that appears, and >
- Scroll to and select the parameter you want. Use the search to help you. For example type in TM1, or N1, etc. Note that the exact name will be that which is defined in the CAN Description File. In the **RealDash Helper VR.xml** file the format is as follows: *LRU*-*PARAMETER* such as TM1-N1

Value Range

This assigns the minimum and maximum value that a received parameter will be limited to prior to use by RealDash (to display for example). Note that RealDash first applies the conversions to a received parameter that there may be (see Special Gauge Math) prior to limiting it to the Value Range values.

Warning Level

This assigns the border(s) between the NORMAL and WARNING ranges if needed for a received parameter (after conversions). NORMAL and WARNING are typically the respective green and yellow arcs in a gauge. Note that RealDash first applies the conversions to a received parameter that there may be (see Special Gauge Math) prior to determining in which range it falls.

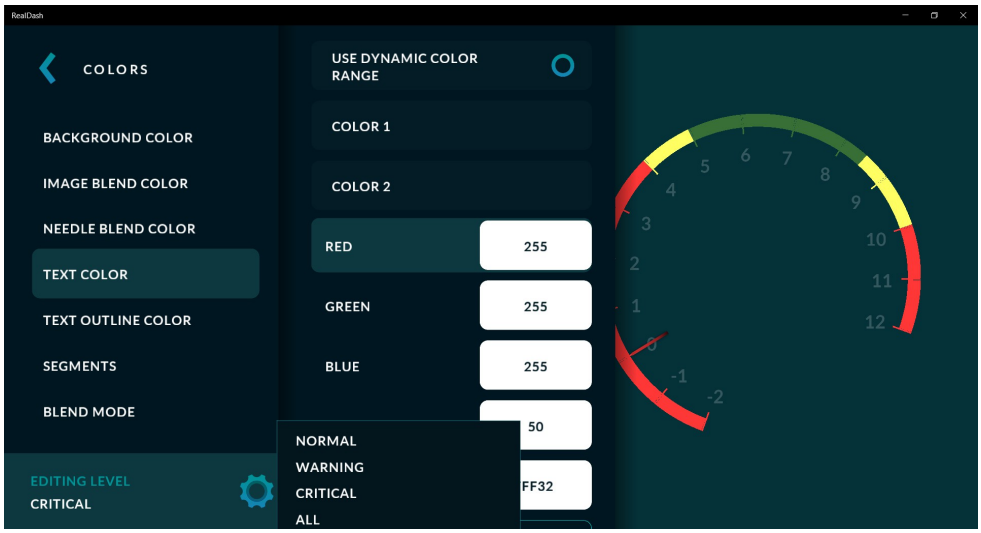
Critical Level

This assigns the border(s) between the WARNING and CRITICAL ranges for a received parameter. WARNING and CRITICAL are typically the respective yellow and red arcs in a gauge. Note that RealDash first applies the conversions to a received parameter that there may be (see Special Gauge Math) prior to determining in which range it falls.

Look'n Feel

To assign how gauges look and behave you can enter the LOOK'N FEEL menu for it.

Most settings within Look'n Feel have three sets for each setting. One for when its parameter value falls with the NORMAL range, one for WARNING range, and one for CRITICAL range. RealDash first applies GAUGE MATH to the parameter value it receives, then evaluates according to the Warning and Critical Level settings in Input & Values in which range it falls, and then applies the settings in Look'n Feel that correspond to that range. Typically they would be the same, but for example if you want the color of a Text Gauge to change to according to the range the value falls within, you do so by assigning different colors to each of the three. It is done by clicking on (or touching) the EDITING LEVEL gear as shown below.



Special Gauge Math

By selecting SPECIAL and GAUGE MATH you can enter a math equation to make conversions to a parameter first thing after it is received. Some examples of when this would be useful are:

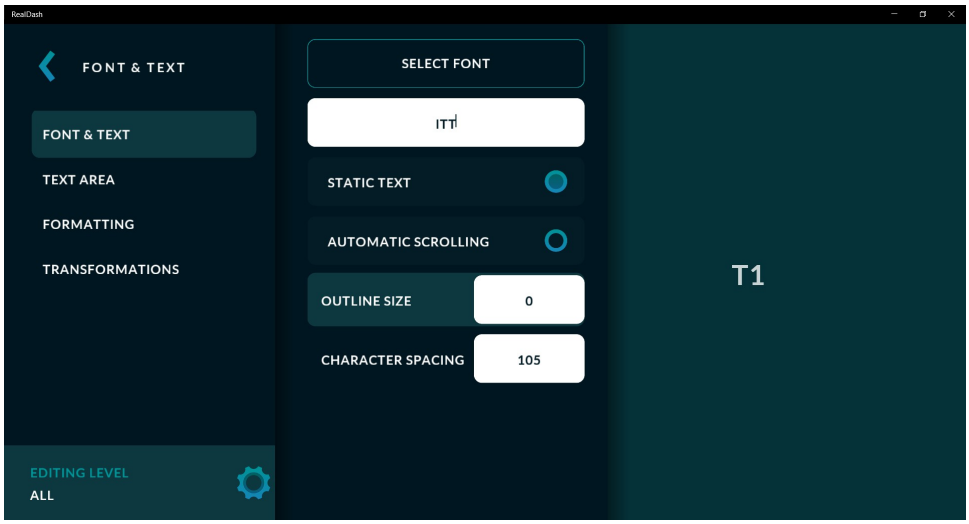
- To convert a temperature parameter from Celsius to Fahrenheit, just enter **(V*1.8)+32** here.
- To get a parameter such as N1 to indicate its one decimal point, simply enter **V/10** here.

Note that the math equation here impacts the values assigned for Value Range, Warning Level and Critical Level under Input & Values. RealDash first does the conversion and then checks the range it falls in.

Note that conversions can also be assigned for a parameter in the .xml file (see CAN Description File).

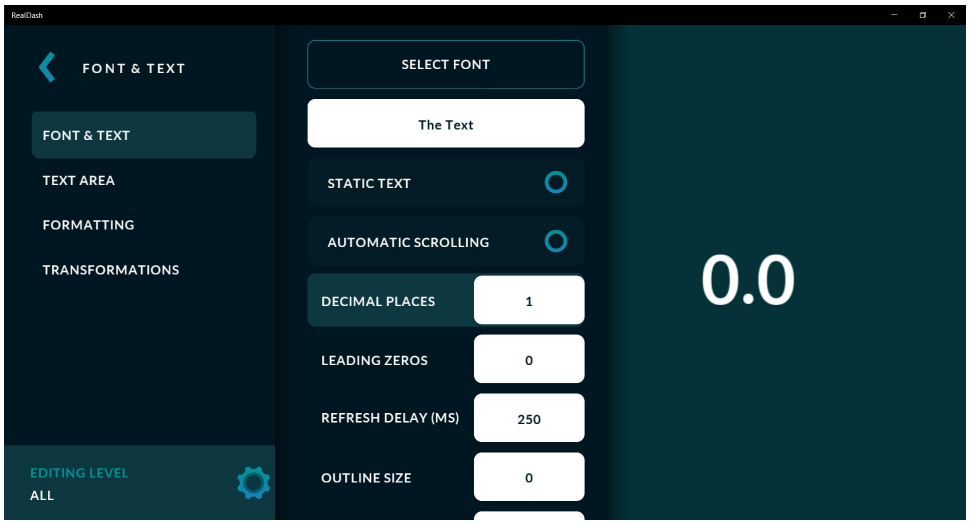
Font & Text

By selecting FONT & TEXT you can adjust the static text shown by a Text Gauge for example to change a label from T1 to ITT as shown below.



For Gauges driven by a parameter you may also need to adjust its DECIMAL PLACES. This would typically go hand in hand with Gauge Math as follows:

GAUGE MATH: V/10	DECIMAL PLASES: 1
GAUGE MATH: V/100	DECIMAL PLASES: 2



Special Autoscaling

By selecting SPECIAL and AUTOSCALING you can adjust a Needle Gauge's scaling, segments, and many other aspects that Text Gauges don't have.

The CAN Description File

The RealDash CAN Channel Description File describes how data in CAN frames are interpreted by RealDash.

It tells RealDash the CAN message Ids to look out for and the parameters contained by each one. Each parameter not only gets assigned a name to reference it by, but a position and size within the message. Optional extras are units of measurement and conversions (similar to Special Gauge Math).

CAN Description Files are in XML format. As part of the **RealDash Helper zip file** we provide the **VR.xml** file that has the frames for popular VR Avionics LRUs. You can view and edit it, or create your own using a text editor. For further guidance you may follow the link below.

https://github.com/janimm/RealDash-extras/tree/master/RealDash-CAN

Shortcut keys

Edit mode

Ctrl+Z	Undo
Ctrl+X	Cut
Ctrl+C	Copy
Ctrl+V	Paste
Ctrl+A	Select All
Shift+Ctrl+A	Select None
Ctrl+O	Load dashboard
Ctrl+S	Save dashboard
Ctrl+Q	Copy selected gauge area to clipboard
Ctrl+W	Toggle hide all menus
Ctrl+E	Toggle Edit Bar
Ctrl+R	Rename
Ctrl+F	Freeze selected Gauges
Shift+Ctrl+F	Unfreeze Gauges
Ctrl+H	Align Gauges Left
Ctrl+K	Align Gauges Right
Ctrl+U	Align Gauges Top
Ctrl+M	Align Gauges Bottom
Ctrl+J	Space Gauges Evenly
1	File
2	Add Gauge
3	Look'n Feel
4	Input & Values
5	Dash Info
6	Settings
7	Exit Edit Mode
Ctrl+1	Center selected Gauges
Ctrl+2	Center selected Gauges Horizontally
Ctrl+3	Center selected Gauges Vertically
Ctrl+4	Resize to match image size (Pixel Perfect)
Ctrl+5	Make Gauge size Full-screen
Ctrl+6	Match selected gauges size and position
Ctrl+7	Make selected gauges same size
Ctrl+8	Scale all gauges up
Ctrl+9	Scale all gauges down
Del	Delete selected gauges
Shift+Del	Delete current page
Arrow Keys	Move selected gauges

Shift+Arrow Keys	Size selected gauges
Shift+Ctrl+Arrow Keys	Size selected gauges around center
Space	Show/Hide top menu
Tab	Select next gauge
Shift+Tab	Select previous gauge
Numpad+	Move selected gauges one step front
Numpad-	Move selected gauges one step back
Menu	Open context menu

Run mode

1-9	Emulate steering wheel buttons 1-9
Shift+1	Gallery
Shift+2	Dyno
Shift+3	Log Viewer
Shift+4	Profiles
Shift+5	Settings
Shift+6	Enter Edit Mode
Arrow keys	Switch pages
Space	Show/Hide top menu