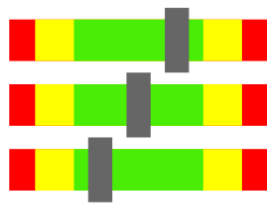


CUSTOMIZER

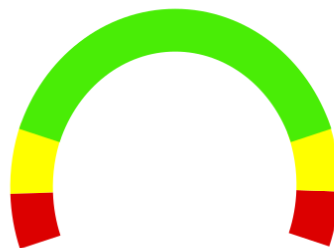
Installation and User Manual

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Revision 1.2

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See <http://www.kanardia.eu> for more details.

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Revision History

The following table shows the revision heistory of this document.

Rev.	Date	Description
1.0	March 2020	Initial release
1.1	April 2020	Third Party Software section added
1.2	May 2020	Minor fixes

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1 Introduction

First of all, we would like to thank you for choosing Kanardia.

Customizer offers a quick way to customize your Instruments' display. This manual describes the installation process, instructions for use and connection to your device.

Customizer is used in combination with BLU and KANJA. They are necessary for data transfer from the PC on which you are running Customizer to your **Kanardia** instrument.

1.1 General Description

Customizer is a desktop application for our instruments'¹ display customization. It lets the user choose what information you wish to display and how you wish to display it. It is simple and intuitive to use.

Customizer features more than 40 engine functions and a dozen different graphical elements for function values display. You can choose the units you prefer, customize value limits and set alarm warnings. And most importantly, your display layout is completely up to you.

1.2 Supported Instruments

The following table shows supported instruments.

Version	Date	Instruments
1.0	March 2020	Digi I, Indu Round Indicators

Table 1: Currently supported instruments

¹ Instruments available for customization can be found in Table 1.

2 Installation

Customizer is supported for Linux, macOS and Windows.

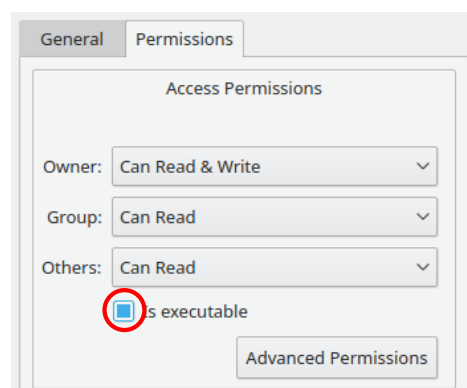
2.1 Download

Go to www.kanardia.eu/customizer and find your operating system. Click the link to download the application to your computer.

2.2 Installation

2.2.1 Linux

1. Unzip the archive
2. Move the `Customizer.AppImage` file to your Desktop or to another folder of your choice
3. Right-Click on the Customizer icon, select Properties
4. Open the Permissions tab
5. Make sure that 'Is executable' checkbox is checked



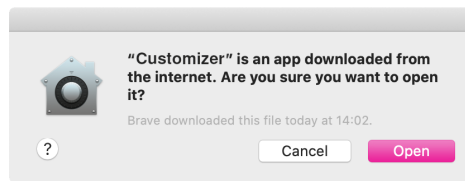
6. Select OK to close the window

No other installation steps are required. Double click (or single, depending on your OS settings) to run.

2.2.2 MacOS

1. Unzip the archive
2. Open the `Installer.dmg` file. You will find the Customizer app and a link to the Applications folder inside
3. Drag Customizer to Applications folder
4. Close the installer and eject it

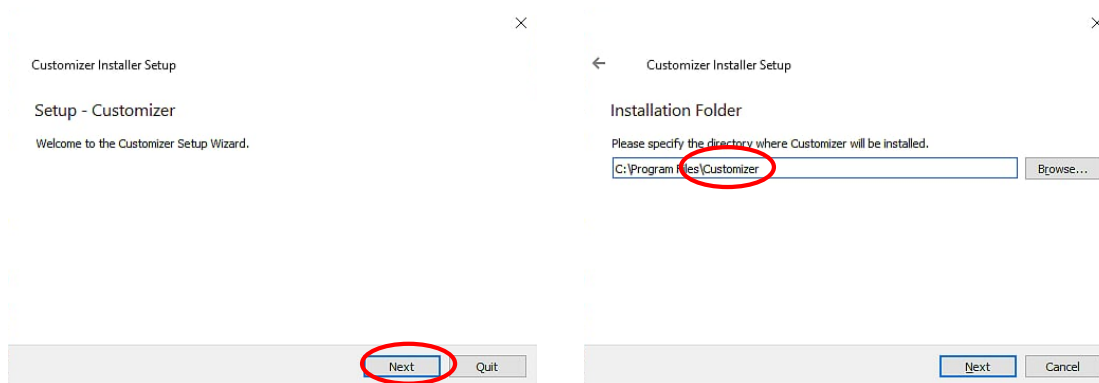
5. Open Launchpad, find Customizer and run it



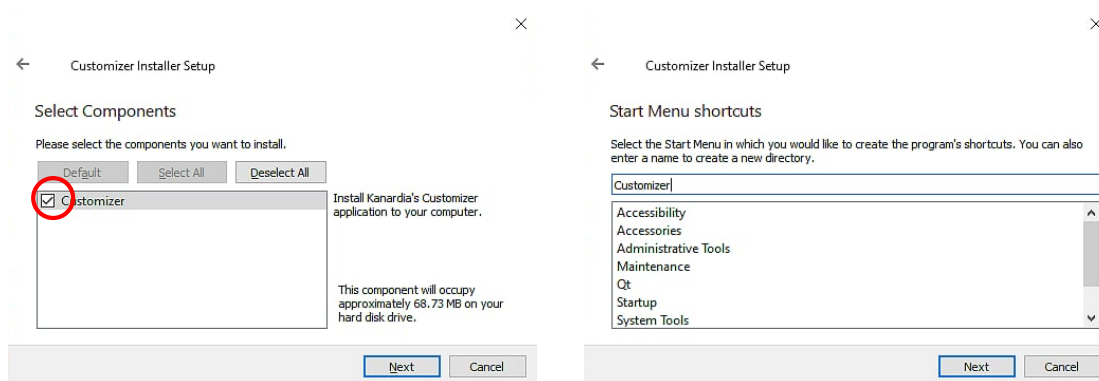
6. If a dialog pops-up, asking for permission to run, click **Open**

2.2.3 Windows

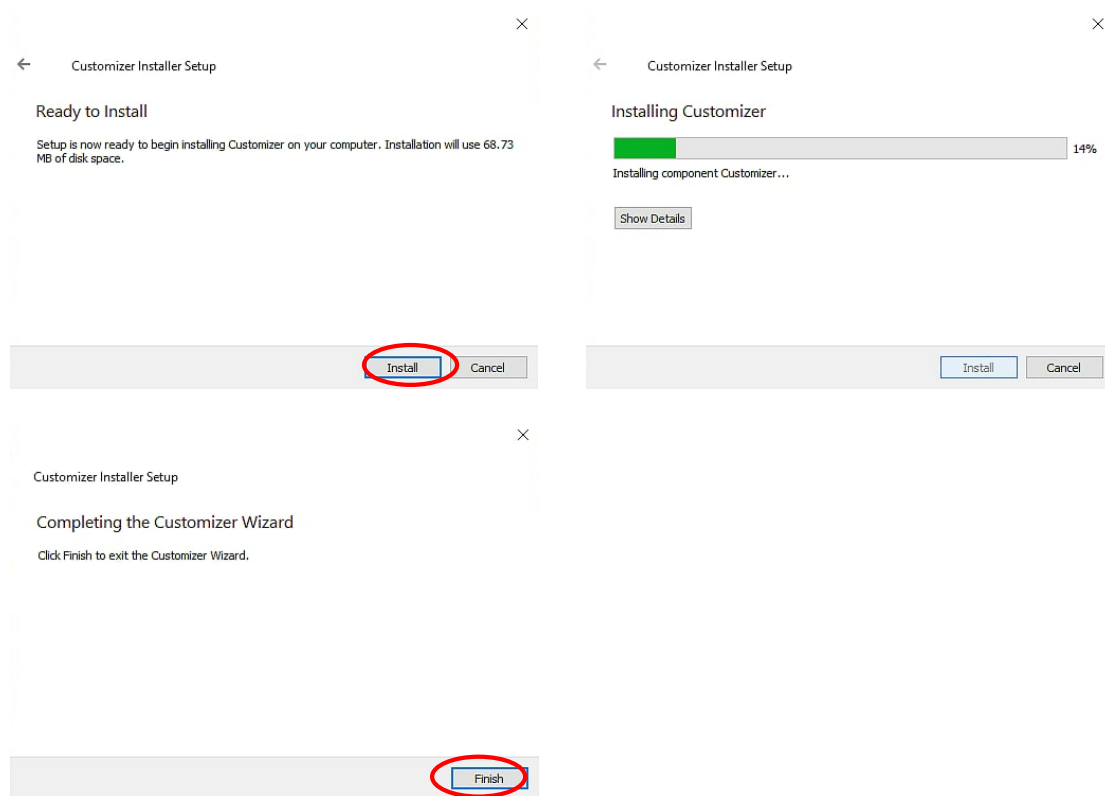
1. Unzip the archive
2. Run the `CustomizerInstaller.exe`
3. Select the location where you want the application's data to be installed



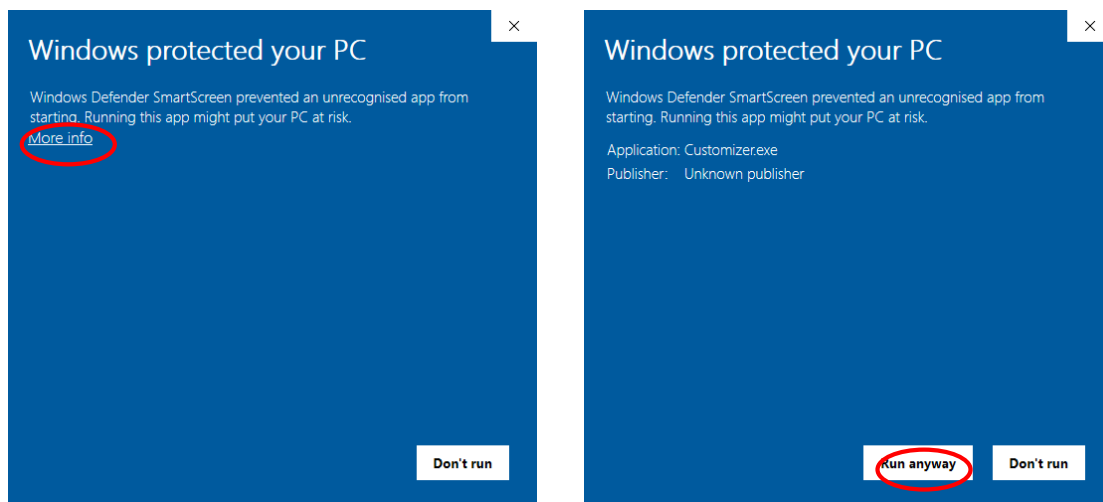
4. Select all components and a shortcut location



5. Click **Install** and wait for the installation to complete
6. Click **Finish**



After completing the installation, find Customizer in the Start menu or on your Desktop. In case that Windows Defender prevents you from running the application. Follow these simple steps:



2.3 Uninstall

2.3.1 Linux

Delete Customizer.AppImage:

1. **Left-click** on the application icon to select it
2. Press the **DEL** key on your keyboard

or

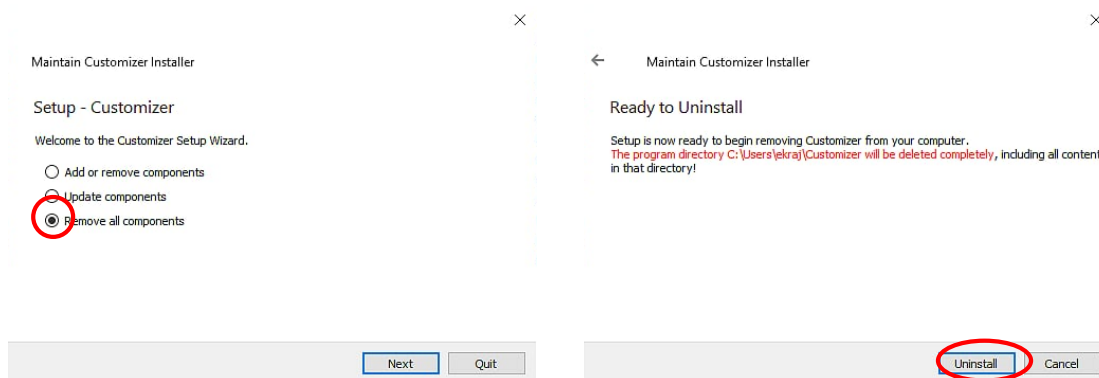
1. **Right-click** on the application icon
2. Select **Move to Trash** option

2.3.2 MacOS

1. Open **Finder**
2. Find the **Applications** subfolder
3. Select **Customizer**
4. Press the (**CMD +**) **Backspace** key on your keyboard

2.3.3 Windows

1. Open **Control Panel**
2. Under section **Programs** click **Uninstall a program**
3. Find **Customizer** on the list
4. Select it and click **Uninstall**
5. Select 'Remove all components'.



6. To confirm, click **Uninstall**

2.4 Support

For help, feedback or in case of application errors, please contact: support@kanardia.eu

3 Instructions

3.1 Toolbar

Figure 1 illustrates the application toolbar with available actions. Action explanations follow.



Figure 1: Customizer toolbar actions

3.1.1 New

This action creates a new project. In the dialog that opens, input the name of the project. Then, select the instrument you wish to customize and that instrument's model. Click **OK** to confirm your choices. A blank project is opened and ready for you to start customizing.

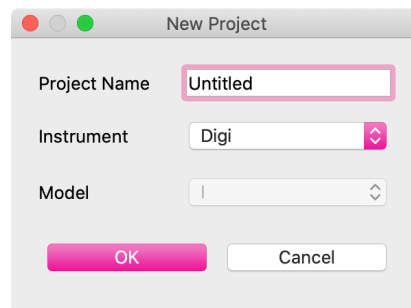


Figure 2: New Project dialog

3.1.2 Open

Opens a generic file dialog. Find a project you wish to import and click **OPEN**. All project files should have a `.iml` extension.

3.1.3 Save & Save As

Save your project information to an external file. When prompted by the dialog, input the file name and location. Click **Save**.

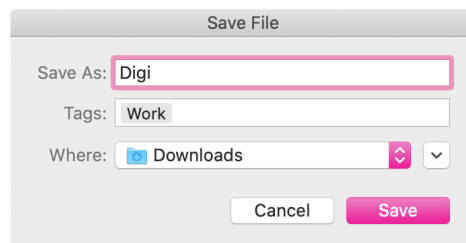


Figure 3: Save Project dialog

Program information is formatted and written into a `YourFileName.iml` file. This file can then be used to modify your instrument display or it can again be opened by Customizer.

3.1.4 Zoom Options

There are three options for scaling the screen. Zoom-In, Zoom-Out and Default-Zoom. These functionalities are for ease of use in the Customizer application and will not affect scaling on your actual device.

3.1.5 Unit Settings

Figure 4 illustrates a dialog with unit preferences.

- **SAVE** saves selected units to the current project. When you open an old project file, Customizer automatically loads the units you used with that project.
- **SAVE DEFAULTS** sets selected units for the whole app. Every time you create a new project, these units will be used as default.
- **LOAD DEFAULTS** overwrites the current options and loads the units you last saved as defaults.

Element property values are converted accordingly.

3.1.6 Screenshot

Takes a screenshot of your project screen. You can save a screenshot of the screen only, or the screen including the instrument mask. For the latter, 'Show mask' checkbox must be checked (see section 3.2.3).

A file dialog is opened. There you can choose the name of the screenshot and the file format. The default format is **.png**, but you can choose another image format.

3.1.7 Clear

Removes all the elements from the Design Area but does not close the project. This action is reversible with the Undo action.

3.1.8 Close

Closes current project.

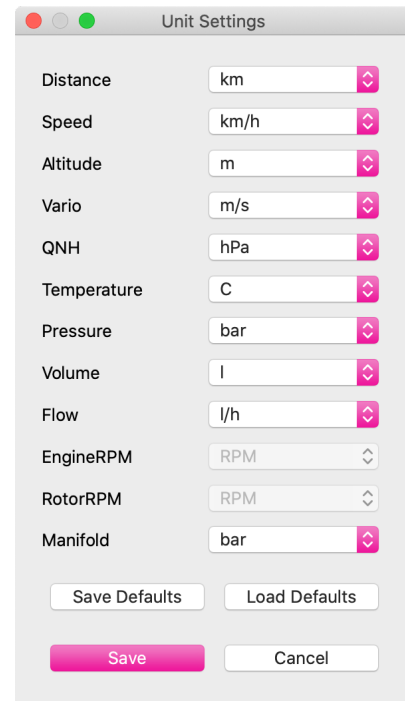


Figure 4: Unit Settings dialog

3.2 Layout

Figure 5 illustrates a general application layout.

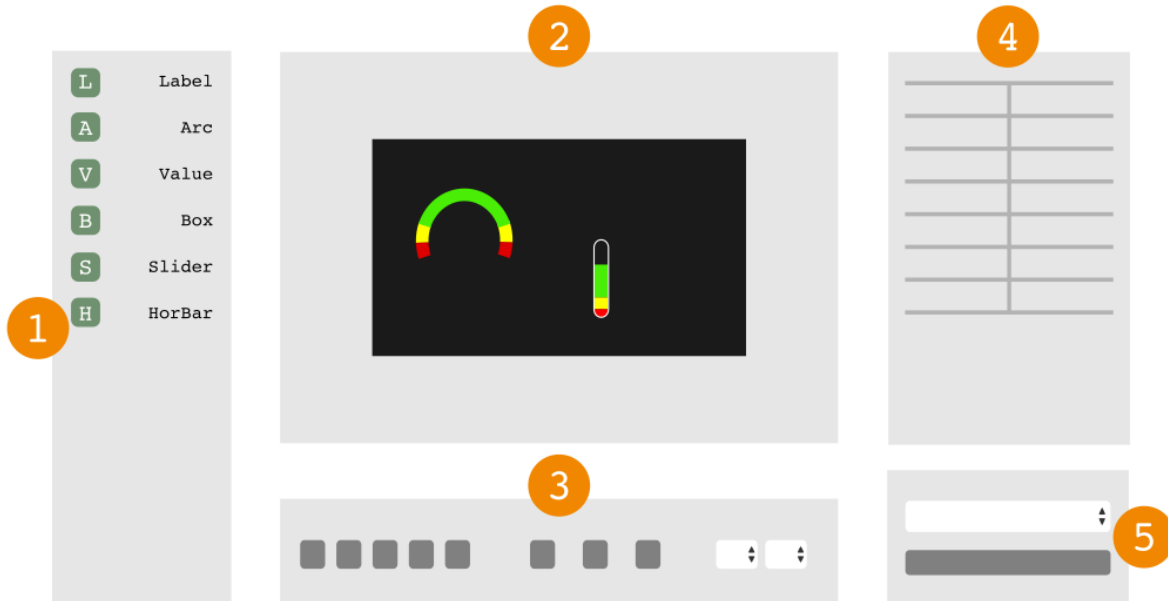


Figure 5: General layout of the application

- | | | |
|--------------------|---------------|-----------------------|
| ① List of Elements | ② Design Area | ④ Table of Properties |
| | ③ Tools | ⑤ Engine Defaults |

3.2.1 List of Elements

A list of all elements for your selected instrument and model.

To add a new element to your project, drag it from the list to the design area. Drop it wherever you want. Alternatively, double-click an element and it will be added to the center of the screen.

3.2.2 Design Area

A black screen is centered in the design area and is a representation of your device's display. Elements can be added to the screen from the list of elements.

Working with the elements in the design area:

- **Selection**

Left-Click an element in the design area to select it. Select multiple elements with a combination of **CTRL**² and **Left-Click** or with **mouse-drag** selection. Selected elements are identified with a dashed border.

² On macOS keyboards use the **CMD** key instead.

- **Boundaries**

Elements not fully positioned inside the screen are colored red. Out of bounds elements will not be displayed on your device, but can be saved as a part of your project.

- **Positioning**

Selected elements can be moved around in various ways:

- Mouse drag
- Keyboard arrows (1 px)
- CTRL²+ Keyboard arrows (10 px)
- from Table of properties (X and Y coordinates)
- from Tools (alignment)

- **Deletion**

To remove selected element(s) from the Design Area use DELETE or BACKSPACE keys on your keyboard. Alternatively, drag your selection out of the Design Area.

- **Duplication**

The keyboard combination CTRL²+ D duplicates selected elements, including their properties.

- **Undo & Redo**

To undo any element changes use CTRL²+ Z. Then use CTRL²+ SHIFT + Z to redo them. Alternatively, use the toolbar Undo & Redo buttons.

Zoom³ Zoom can be achieved with a combination of CTRL key & mouse wheel or touchpad pinch for MacOS users. Another option is to use zoom actions from the toolbar.

3.2.3 Tools

- **Alignment**

Align edges of selected elements. If only one element is selected, it is aligned to the edge of the screen.

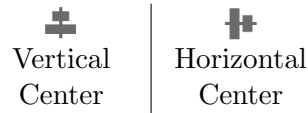


- **Centering**

Centering is split into two groups:

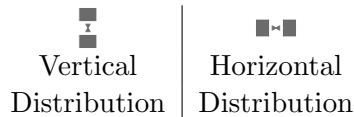
- Center selected elements relative to *each other*. Found under the 'Align' section.
- Center selected elements relative to *the screen*. Found under the 'Center to screen' section.

Checking the 'Treat selection as group' checkbox: Treats the whole selection as one and centers it without compromising the alignments between selected elements themselves.



- **Distribution**

Possible for three or more selected elements. Rearranges selection so that vertical or horizontal gaps between subsequent elements are all equal.



- **Grid³**

Grid is a visual helper for the user. Choose how many vertical and how many horizontal lines you wish to see. Maximum number of grid lines depends on the screen size of the instrument. Uncheck the checkbox to hide the grid.

- **Mask**

The 'Show mask' checkbox toggles between displaying and hiding the instrument mask. In some instruments, the screen is partially obscured by the instrument's casing. In that case, the Mask tool is useful for checking that all elements are visible.

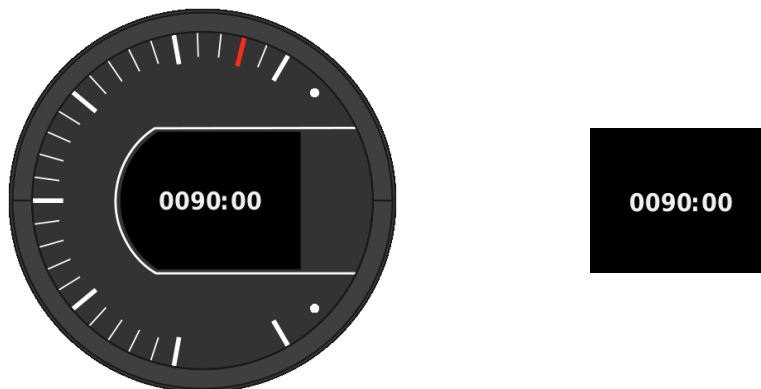


Figure 6: Indu 80 screenshot with and without mask

If 'Show mask' is checked when taking a screenshot, the mask will be included in the saved picture. Examples of screenshots are shown in Figure 6.

3.2.4 Table of Properties

A table of properties for the selected element.

When more than one element is selected, the table is shown only if all selected elements are of the same TYPE. (For example - 3 Horizontal Bars.)

³ For customizing purposes only, it has no effect on your instrument's actual display

Modifying a property value when multiple items are selected, updates this property for the whole selection. If a property value differs for any of the selected elements, ***VARIOUS*** keyword is shown as a placeholder.

Here is a list with some generic properties and an explanation of their functionalities.

- **FUNCTION** Gives the element its main function. For example: RPM, fuel pressure, oil temperature, CHT, ...
- **X, Y** Set element's coordinates. The point (X,Y) represents the top left corner of the element. (0,0) is the top left corner of the instrument's screen.
- **TEST VALUE** Numeric input for the selected function value.³ Uses units set in the Unit Settings dialog.
- **LABEL** Text input.
- **FONT SIZE** Changes size of the label or the value.

Other properties are element specific and will be explained in more detail in the next sections.

Property Validation

Some of the properties are additionally validated by the application. An orange banner is shown at the right bottom corner of the Customizer window.



Figure 7: Validation banner example

Messages in the banner list element's invalid properties and explanations of the problems. An example banner is illustrated in Figure 7.



To indicate elements with validation problems, a triangular exclamation icon is positioned over them.

To hide the banner and the icon, resolve the mentioned problems.

Validation messages are of informative nature and will be ignored when saving your project.

3.2.5 Engine Defaults

Engine defaults offer you a quick way to initialize selected elements' properties. The defaults are an unofficial collection of data for some of the more common engines.

The data you get depends on:

- element's **FUNCTION** (set from the table of properties) and
- selected engine type (see Figure 8).

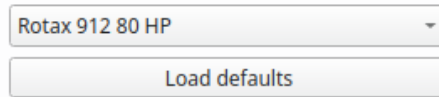


Figure 8: Engine type selection



Figure 9: Message banner example

Pressing the **Load defaults** button updates properties of all selected elements. Changes can be seen in the table of properties for each individual element.

Some of **FUNCTION** - **ENGINE TYPE** combinations may not have any predefined values. In which case, a message 'No data found.' is displayed.

Updated properties can be some or all of the following:

- YELLOW LOW
- YELLOW HIGH
- GREEN LOW
- GREEN HIGH
- TEST VALUE
- LOW END
- HIGH END

It is important to note that these values are unofficial and may contain irregularities. A careful revision is advised.

4 Digi I

Digi I is an engine information system. This section describes its elements and their Properties.

4.1 Elements

Table 5 illustrates Digi elements, each with a short description. Images are not in scale. A more detailed overview follows.

4.1.1 Label

Label is a short text with a 15 character limit. No special characters are allowed. **FONT SIZE** options vary from tiny to normal.

4.1.2 Value

Value is a simple way to display a function value. There are more than 40 **FUNCTIONS** to choose from. Units used are those set in the Unit Settings dialog. Five **FONT SIZE** options ranging from tiny to huge. **ALIGNMENT** property changes text alignment (more in section










Image	Name	Description
Label	Label	A short text.
110L	Value	Function value with a unit.
35:20	Time	Time values display.
	Box	Value and Label inside a box.
	Throttle Box	A Box displaying Throttle Position.
	Arc	An arc with a value indicator.
	Horizontal Bar	A bar with a value indicator.
	Carburetor Bar	Carburetor temperature value.
	Compact Bar	EGT or CHT values with multiple bars.
	Fuel Bar	Fuel level value.
	Horizontal Slider	Various position values in horizontal display.
	Vertical Slider	Various position values in vertical display.

Table 5: Digi elements

4.2.5). ALARM LOW gives you the option to choose the type of warning to be displayed when the function value enters the low range. ALARM HIGH sets the alarm type for the high range. Ranges are set with color limits: YELLOW LOW, YELLOW HIGH, GREEN LOW and GREEN HIGH. For more information on how to correctly set the color limits refer to section 4.2.

4.1.3 Time

Time element is used to display various time functions: engine total time, flight time, flight total time and power total time . You can modify element's FONT SIZE and text ALIGNMENT.

4.1.4 Box

Box combines properties of both Label and Value in a single element.

4.1.5 Throttle Box

Throttle Box is a special case Box displaying the throttle position value expressed in percent. It supports two different ENGINE TYPES - Rotax 915 iS and Rotax 912 iS.

4.1.6 Arc

Arc adds a graphic display of the function value to the more basic LABEL and numeric TEST VALUE. Properties LOW END and HIGH END set different combinations of color ranges. The former for the left half of the arc and the latter for the right half. Ranges are set with color limits: YELLOW LOW, YELLOW HIGH, GREEN LOW and GREEN HIGH. ALARM LOW and ALARM HIGH properties set the warning type for function values in low and high ranges respectively. The indicator's position is an interpolation of the TEST VALUE and the color limits for the chosen color options.⁴ For more information about colors, limits and alarms refer to section 4.2.

4.1.7 Horizontal Bar

Horizontal Bar has mostly the same properties as the Arc element. FUNCTION selection offers a few more options and the LOW END and HIGH END properties obviously refer to the left and right halves of the bar. The indicator's position is calculated the same way as Arc's. For more information about colors, limits and alarms refer to section 4.2.

4.1.8 Carburetor Bar

Carburetor Bar is a special case Horizontal Bar for displaying Carburetor Temperature. It features a Green-Yellow-Green colored bar. Color limits for Carburetor bar are distributed differently to the ones in the Horizontal Bar so please refer to section 4.2.2 for a more detailed color limit setting instruction. As opposed to Horizontal Bar, it does not have ALARM properties. When function output (TEST VALUE in Customizer) enters the yellow range, the displayed value turns yellow.

4.1.9 Compact Bar

Compact Bar is an element for displaying EGT and CHT values. Property COUNT sets the number of bars with options from 2 to 6. If COUNT is set to 4 or more, the element displays two values. The one on top shows the maximum of all bar values and the other one shows the minimum. The Customizer application displays TEST VALUE for both.³ The indicator's position is an interpolation of the TEST VALUE and the color limits for the chosen color options.⁴

4.1.10 Fuel Bar

Fuel Bar has two Fuel Level FUNCTIONS and a property for the maximum tank CAPACITY. The triangular indicator's position is an interpolation of the TEST VALUE relative to the given GREEN LOW, YELLOW LOW and CAPACITY values. ALARM LOW sets a warning type for the indicator in the red zone.

⁴ See table 6 for terminology explanation

4.1.11 Horizontal Slider

Horizontal Slider is an element for displaying Pitch Trim, Throttle, Flaps and Roll Trim positions expressed in ranges -1 to 1 or 0 to 1. See section 4.2.3 for more information about slider's functions and their values. For Digi display compatibility the Horizontal Slider has a 5px offset to the screen's left edge.

4.1.12 Vertical Slider

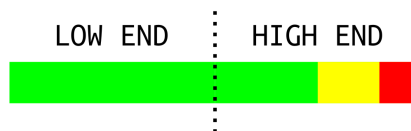
Vertical Slider has the exact same functionalities as the Horizontal Slider. For Digi display compatibility the Vertical Slider has a 5px offset to the screen's top edge.

4.2 Properties





4.2.1 Colors

[*Arc*, *Horizontal Bar*, *Carburetor Bar*, *Compact Bar*]

Elements from this section are graphically split into two parts – the low and the high end.



These are the color options from the LOW END dropdown menu:

-  Green
-  Red-Green
-  Yellow-Green
-  Red-Yellow-Green

HIGH END has the same options, just mirrored. Combining both color sections gives you 16 possible color combinations.

Carburetor Bar element is a special case with only one color combination:

-  Green-Yellow-Green

4.2.2 Limits

[*Value*, *Box*, *Arc*, *Horizontal Bar*, *Carburetor Bar*, *Compact Bar*, *Fuel Bar*]

Limits are values in function's units that tell us the boundaries of different color zones. They do not change the graphics of the bars (or arcs).⁵ Graphically, the color ratios are fixed.

⁵ Fuel Bar is an exception to this rule. See Figure 14 for more information.

Color Sections	Color Options	Color Limits
Low End	Green (G)	Yellow Low (YL)
High End	Red-Green (RG)	Yellow High (YH)
	Yellow-Green (YG)	Green Low (GL)
	Red-Yellow-Green (RYG)	Green High (GH)
	Green-Yellow-Red (GYR)	
	Green-Yellow (GY)	
	Green-Red (GR)	
	Green-Yellow-Green (GYG)	

Table 6: Terminology

Generally, there are four color limits for each element (see Table 6, 'Color Limits' header). Rules for setting these values can depend on LOW END & HIGH END selections and/or element's TYPE.

Value and Box elements do not have LOW END and HIGH END properties, and no visual color representations. They still have the option to set the limits as the latter influence alarm behaviour.

Color limits use units of the selected FUNCTION property. Unit changes can be made from the unit settings section in the toolbar.

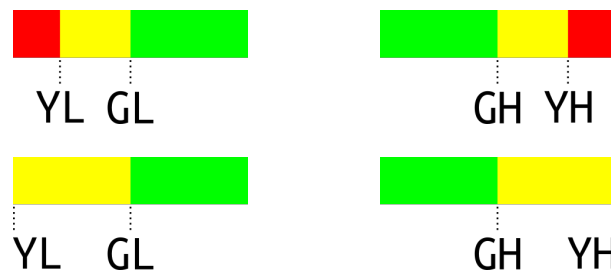


Figure 10: RYG, GYR, YG, GY

Please note that for the following image examples, the left column illustrates color options for the LOW END section and the right column for the HIGH END section. Every image is a separate entity and the mirrored images do not necessarily have to be used in pairs. See table 6 for the acronyms used in the following examples.



Figure 11: RG, GR

For examples from Figure 10, set yellow and green limits for both ends. The values should abide by these rules: $YL < GL$ and $GH < YH$.

For examples from Figure 11, there is no yellow area so set both yellow and green limits as the same value. $YL = GL$ and $YH = GH$.

For examples from Figure 12, the yellow limit values are ignored. Set green limits GL, GH.



Figure 12: G



Figure 13: GYG

Example from Figure 13 is Carburetor Bar's special case. Values should be set as follows: $GL < YL < YH < GH$.

As illustrated in Figure 14, set limit values as $YL \leq GL < CAPACITY$. Fuel Bar's color ratios change with limit changes.

For red and green combination only, set $YL = GL$.

Inputted limits are validated in relation to other properties. For more information on property validation, please refer to section 3.2.4

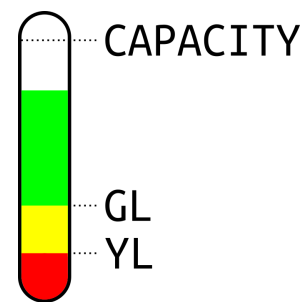


Figure 14: Fuel Bar limits

4.2.3 Test Value

[*All except Label*]

TEST VALUE is useful to see how the element is going to function on the Digi display for the given value.

TEST VALUE uses units of the selected FUNCTION property. Unit changes can be made from the unit settings section in the toolbar.

Elements such as Arc, Horizontal Bar, Compact Bar, Carburetor Bar and Fuel Bar graphically indicate the value's position as an interpolation of the value relative to the limit and color properties of the element.

Values can enter different color zones: Red, yellow or green. For elements that do not have LOW END and HIGH END properties, assume the basic RYG-GYR color distribution. For those that do, the chosen option will be used.

Zone	In general	Carburetor Bar
Red	$V < YL$ or $YH < V$	/
Yellow	$YL < V < GL$ or $GH < V < YH$	$YL < V < YH$
Green	$GL < V < GH$	$V < YL$ or $YH < V$

Table 7: Zone rules

See Table 7 for zone rules. Read 'V' as (Test) Value.

Depending on the ALARM properties of the element, the value entering a different zone may trigger a warning. More in section 4.2.4.

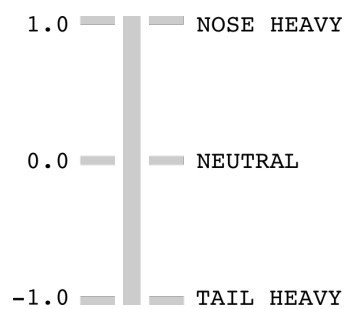


Figure 15: Pitch

Horizontal and Vertical Sliders do not have any color, limit or alarm properties. For Sliders, values are expressed in ratios as evident in Figures 15, 17 and 16.

Notice Roll and Pitch trim functions ratio distribution is different to the one of Throttle and Flaps. The former span from -1.0 to 1.0 and the latter from 0.0 to 1.0.

Pictured are recommended slider types for different functions and their value interpretations.

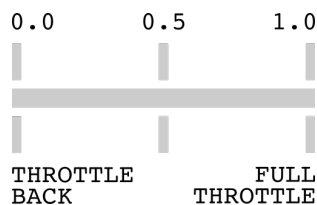


Figure 16: Throttle and Flaps

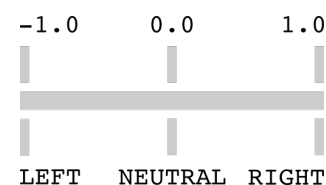
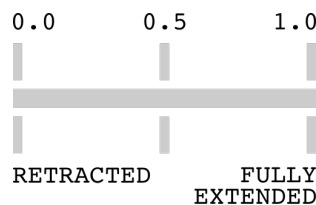


Figure 17: Roll trim

4.2.4 Alarms

[*Value, Box, Arc, Horizontal Bar, Carburetor Bar, Compact Bar, Fuel Bar*]

ALARM LOW sets the alarm type for the low end zone. ALARM HIGH sets the alarm type for the high end zone.

There are three alarm types:

- **None** Alarm is disabled
- **Warning** Alarm is enabled
- **Active Engine Warning** Alarm is enabled only when the engine is active

Warnings:

LOW ALARM LOW enabled with value in the low end red zone.⁶

HIGH ALARM HIGH enabled with value in the high end red zone.

Visual effects:

⁶ Fuel Bar displays LOW warning from both red and yellow zones.

90°C For values in yellow zones of the enabled alarms.

There are no visual effects for values in the green zones.

Alarm warnings are only displayed on Digi for the actual function values. Warnings are not shown in Customizer with TEST VALUES.

4.2.5 Text Alignment

[Value]

The width of the Value element depends on the width of its digits.

As the numeric value changes, the width of the element changes as well. If aligned incorrectly, a wider element can end up positioned partly off the screen. Using the TEXT ALIGNMENT property, you can avoid these kinds of out of bounds problems.

TEXT ALIGNMENT works like an anchor. You can also think of it as a boundary that will not be crossed when the value gets resized.

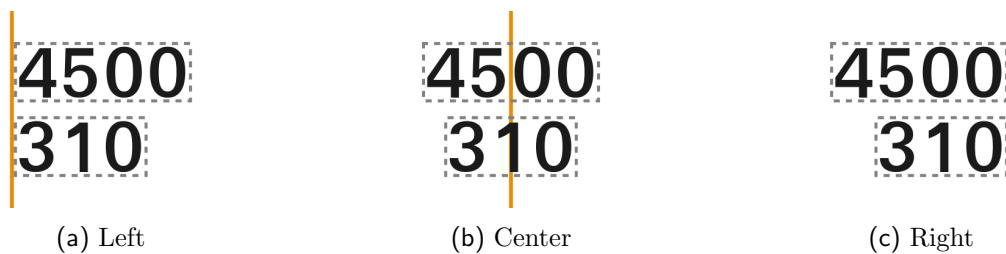


Figure 18: Value alignments

As illustrated in Figure 18⁷, there are three types of alignments:

- Left,
- Center and
- Right.

Observe the position changes of the Value element when resized from 4 digits to 3.

- a) For left alignment, the *left border* is the anchor. Widening or narrowing happens on the right end.
- b) For center alignment, the *horizontal center* of the element is the anchor. The resizing happens on both ends of the element.
- c) For right alignment, the *right border* is the anchor. Widening or narrowing happens on the left end.

Example

In the following example, I will show you how to use text alignment on a Standard Indu Round Indicator.

⁷ Orange line represents the alignment anchor.

Step 1: First, I added some elements to the screen. In this case, I decided to have the Value element positioned to the right edge. The current value is 90 km/h and the default text alignment is **Left**.

When the value changes, I do not want the element to either move off screen or to move away from the edge. To achieve that, I need to set the correct **TEXT ALIGNMENT** option.



Starting layout



Incorrect alignment after value change

Step 2: I changed the Test Value to 100 km/h, to see the behavior of the **Left** alignment.

The element got wider. Because the left border is the anchor, the right end widened. It is now hanging off of the screen. This is clearly not the way I want my display to look like.

I go back to beginning and set the value to 90 km/h. The display is the same as in the starting layout.



Correct alignment after value change

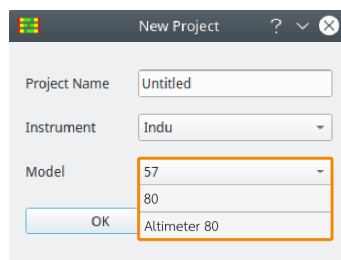
Step 3: Let's see the behaviour, if I change the alignment to **Right**, then set the value to 100 km/h again.

The position is correctly displayed. The element is still perfectly aligned to the right edge of the screen.

5 Indu

Our Indu Round Indicators come in two sizes: 57 mm and 80 mm. Because Indu 80 mm *Altimeter* has a unique mask shape, we have split model option into three categories:

1. **57** which contains every 57 mm Indu Round Indicator (including 57 mm Altimeter),
2. **Altimeter 80** which contains the 80 mm Altimeter and
3. **80** which contains all the other 80 mm Indu Round Indicators.



All of these categories have the same set of elements with the same set of properties. The List of elements is a subset of Digi I's list. For more information on element functionalities please refer to section 4.

5.1 Elements

Table 8 illustrates Indu elements, each with a short description. Images are not in scale. Element properties are described in more detail in section 4.1.

Image	Name	Description
Label	Label	A short text.
110L	Value	Function value with a unit.
35:20	Time	Time values display.

Table 8: Indu elements

6 Updating the Instrument

When you finish customizing your screen layout, it's time to update your instrument. This section describes how to do so.

What you'll need:

- *KANJA* Android application,
- *BLU*,
- Kanardia instrument¹,

- a USB cable (optional)

Figure 19 illustrates the three steps needed to update the instrument's screen. Detailed instructions follow bellow.

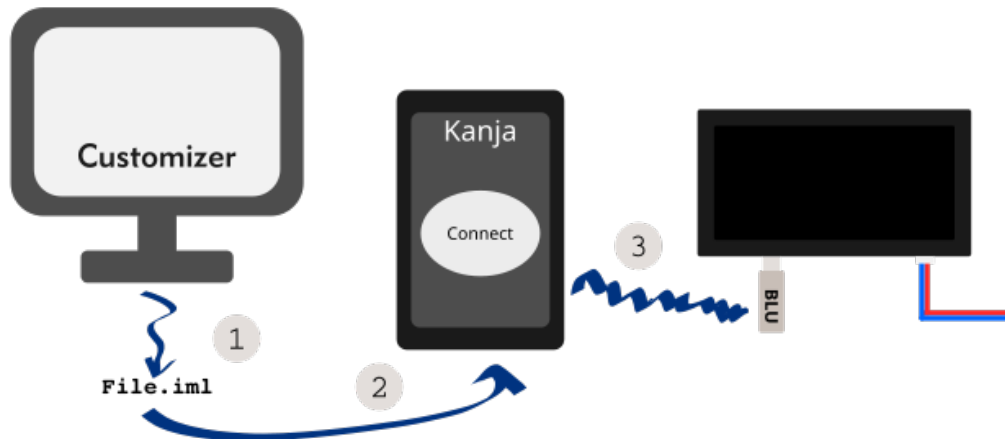


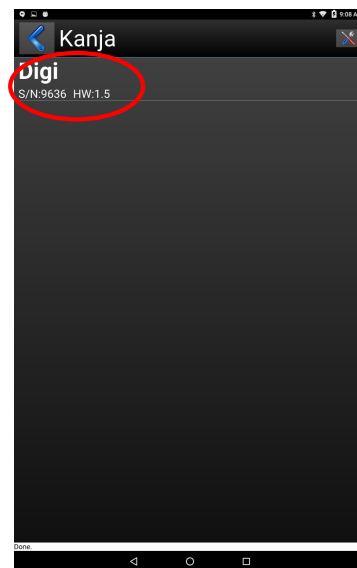
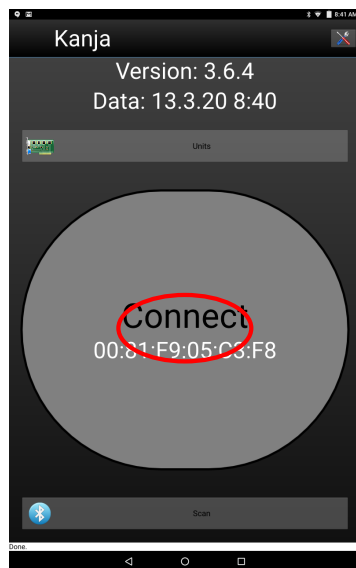
Figure 19: Data transfer steps

If this is your first time using Kanja, please refer to our Blu & Kanja User Manual for installation instructions and user guide. You can find the manual on our website www.kanardia.eu under Digi->Manuals or under Support->Manuals.

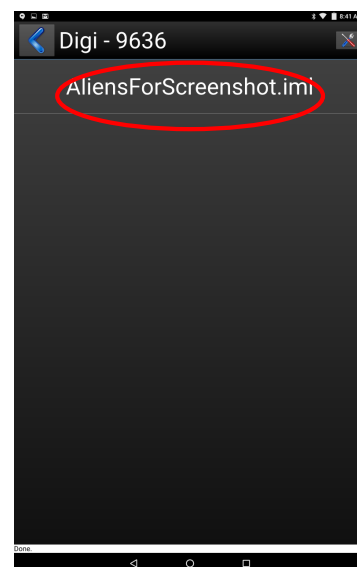
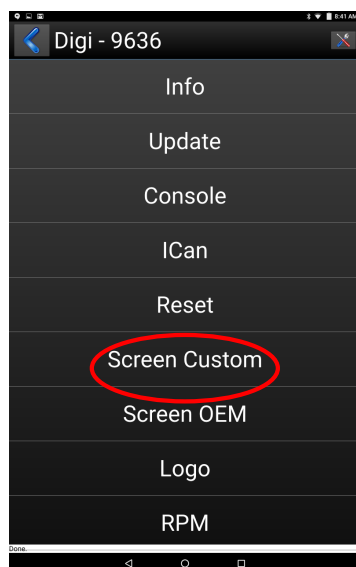
In the next steps we assume you have Kanja downloaded on your Android device and that it is updated to the latest version. Also, that your Kanardia instrument is powered on and has a BLU inserted into one of the ports.

1. Save your project. A *.iml file is created with all your data. We will be using `YourFileName.iml` as an example.
2. Transfer the `YourFileName.iml` file to your Android. A few options on how to do so:
 - **e-mail** On your computer, write a new email with `YourFileName.iml` as an attachment. Send it to the email you are using on the Android device (it can be the same one you are using on your computer) or just save the email as a draft to access it later. On the Android device open the email and download the `YourFileName.iml` attachment. In most cases the file will be saved in the Downloads folder on your device.
 - **cloud-sharing** Open your preferred cloud service (Google Drive, DropBox, iCloud, ...) with a browser or an application. Upload `YourFileName.iml` to it. Open that same cloud service on your Android device and download the file. In most cases the file will be saved in the Downloads folder on your device.
 - **USB cable** Connect your Android device to your computer with the USB cable for file transfer. When prompted, open the folder containing your Android device files. Copy `YourFileName.iml` from the a directory on your computer to a directory on your Android. The fastest option is to find the Downloads directory on your device and copy the file there.

3. (a) Open Kanja and connect it to your Kanardia instrument that supports Customizer files.¹ Refer to the Blu & Kanja User Manual for help.
- (b) Under **Units** select the instrument.



- (c) From the menu, open **Screen Custom**. Listed are the files saved in the Downloads folder on your device.
- (d) Select the file you wish to transfer to your instrument.



Finally, your instrument's screen should display the new layout you created using Customizer.

7 Third Party Software

This section has nothing to do with the usage of the Customizer. You can skip it completely if you are not interested in software development and licensing issues.

7.1 The Qt Library

The Customizer software was developed with the help of the *Qt Library*, which is a product of *The Qt Company*. The library offers several licenses. One of them is the LGPLv3 license, which we chose for the Customizer.

Choosing this license gives us some obligations. They are partly fulfilled by Customizer, partly by this manual and partly by our web server. The following subsections give insight into the details.

7.1.1 Modules and Linking

Customizer is using dynamic linking with the following libraries from the Qt library bundle: libQt5Core, libQt5Gui, libQt5Svg, libQt5Widgets and libQt5Xml.

7.1.2 Source Code

The source code of the Qt Library used with Customizer can be obtained from our website:

1. Use your browser and open <https://www.kanardia.eu>.
2. Select **SUPPORT|Software** from the menu on the top right side. A list of various software bundles will appear.
3. Select **QtSource_Customizer** to download the Qt Library source code.

7.1.3 Compiling the Library

Once the library was downloaded, use the following steps to build the library binaries on your computer.

- Compiling on Linux or macOS:
 1. Extract **QtSource_Customizer.zip**.
 2. Enter folder **qtbase/**.
 3. Configure Qt with

```
# ./configure -opensource -gui -widgets -no-xcb
```
 4. Compile it with:

```
# make
```
- Compiling on Windows:
 1. Extract **QtSource_Customizer.zip**.
 2. Enter folder **qtbase/**.
 3. Configure Qt with

```
# configure -opensource -gui -widgets -platform win32-g++
```
 4. Compile it with:

```
# mingw32-make
```

7.1.4 Installing the Modified Qt Library

The LGPLv3 license allows you to freely adapt and change the source code according to your needs.

1. Use your favorite source code editor to edit and modify the Qt Library source code.
2. Compile the changes (see section 7.1.3) and produce the binaries.
3. Copy binaries to the Customizer installation folder. This will overwrite existing libraries.
4. Close any running Customizer application.
5. Rerun Customizer. The new libraries will be used.

7.1.5 A Copy of the LGPL

A copy of the *GNU Lesser General Public License* is stored in Customizer. How to access it, is described next:

1. Select **About** from the Toolbar
2. In the dialog that appears, open the LGPL tab

8 Limited Conditions

Although a great care was taken during the design, production, storage and handling, it may happen that the Product will be defective in some way. Please read the following sections about the warranty and the limited operation to get more information about the subject.

8.1 Warranty

Kanardia d.o.o. warrants the Product manufactured by it against defects in material and workmanship for a period of twenty-four (24) months from retail purchase.

Warranty Coverage

Kanardia's warranty obligations are limited to the terms set forth below:

Kanardia d.o.o. warrants the Kanardia-branded hardware product will conform to the published specification when under normal use for a period of twenty-four months (24) from the date of retail purchase by the original end-user purchaser ("Warranty Period"). If a hardware defect arises and a valid claim is received within the Warranty Period, at its option and as the sole and exclusive remedy available to Purchaser, Kanardia will either (1) repair the hardware defect at no charge, using new or refurbished replacement parts, or (2) exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product, or, at its option, if (1) or (2) is not possible (as determined by Kanardia in its sole discretion), (3) refund the purchase price of the product. When a refund is given, the product for which the refund is provided must be returned to Kanardia and becomes Kanardia's property.

Exclusions and Limitations

This Limited Warranty applies only to hardware products manufactured by or for Kanardia that have the "Kanardia" trademark, trade name, or logo affixed to them at the time of manufacture by Kanardia. The Limited Warranty does not apply to any non-Kanardia hardware products or any software, even if packaged or sold with Kanardia hardware. Manufacturers, suppliers, or publishers, other than Kanardia, may provide their own warranties to the Purchaser, but Kanardia and its distributors provide their products *AS IS*, without warranty of any kind.

Software distributed by Kanardia (with or without the Kanardia's brand name including, but not limited to system software) is not covered under this Limited Warranty. Refer to the licensing agreement accompanying such software for details of your rights with respect to its use.

This warranty does not apply: (a) to damage caused by use with non-Kanardia products; (b) to damage caused by accident, abuse, misuse, flood, fire, earthquake or other external causes; (c) to damage caused by operating the product outside the permitted or intended uses described by Kanardia; (d) to damage caused by service (including upgrades and expansions) performed by anyone who is not a representative of Kanardia or an Kanarida Authorized Reseller; (e) to a product or part that has been modified to significantly alter functionality or capability without the written permission of Kanardia; (f) to consumable parts, such as batteries, unless damage has occurred due to a defect in materials or workmanship; or (g) if any Kanardia serial number has been removed, altered or defaced.

To the extent permitted by applicable law, this warranty and remedies set forth above are exclusive and in lieu of all other warranties, remedies and conditions, whether oral or written, statutory, express or implied, including, without limitation, warranties of merchantability, fitness for a particular purpose, non-infringement, and any warranties against hidden or latent defects. If Kanardia cannot lawfully disclaim statutory or implied warranties then to the extent permitted by law, all such warranties shall be limited in duration to the duration of this express warranty and to repair or replacement service as determined by Kanardia in its sole discretion. Kanardia does not warrant that the operation of the product will be uninterrupted or error-free. Kanardia is not responsible for damage arising from failure to follow instructions relating to the product's use. No Kanardia reseller, agent, or employee is authorized to make any modification, extension, or addition to this warranty, and if any of the foregoing are made, they are void with respect to Kanardia.

Limitation of Liability

To the extent permitted by applicable law, Kanardia is not responsible for indirect, special, incidental or consequential damages resulting from any breach of warranty or condition, or under any other legal theory, including but not limited to loss of use; loss of revenue; loss of actual or anticipated profits (including loss of profits on contracts); loss of the use of money; loss of anticipated savings; loss of business; loss of opportunity; loss of goodwill; loss of reputation; loss of, damage to or corruption of data; or any other loss or damage howsoever caused including the replacement of equipment and property, any costs of recovering, programming, or reproducing any program or data stored or used with Kanardia products and any failure to maintain the confidentiality of data stored on the product. Under no circumstances will Kanardia be liable for the provision of substitute goods or services. Kanardia disclaims any

representation that it will be able to repair any product under this warranty or make a product exchange without risk to or loss of the programs or data. Some jurisdictions do not allow for the limitation of liability for personal injury, or of incidental or consequential damages, so this limitation may not apply to you.

8.2 TSO Information — Limited Operation

This product is not TSO approved as a flight instrument. Therefore, the manufacturer will not be held responsible for any damage caused by its use. The Kanardia is not responsible for any possible damage or destruction of any part on the airplane caused by default operation of instrument.