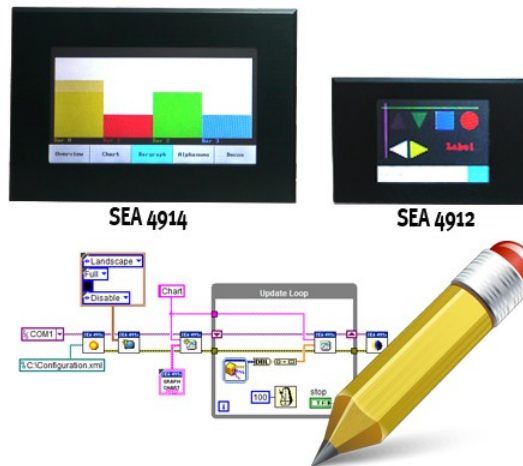


User Manual

Graphical Screen Editor

Add-On Toolkit for LabVIEW™ for SEA 4912 / SEA 4914

Graphical Screen Editor



COMPATIBLE WITH



NATIONAL INSTRUMENTS
LabVIEW™



SEA Science & Engineering
Applications Datentechnik
GmbH

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1 Change Notes

#	Version	Changes
1	1.1.0	Initial release: - Graphical Screen Editor (as separate add-on toolkit) introduced
2	1.1.1	Maintenance release: - Configuration-VI integrated in the Control Panel – User interaction improved - Quick Start tutorial improved - Adaptations according to Graphical Screen Editor release 1.1.1

2 About This Manual

2.1 Important Notes

Before starting to work with Graphical Screen Editor please read the complete hardware manual and the following document carefully.

This manual is delivered as a PDF document with the possibility of full-text search. It is recommended to use the latest version of the Adobe® Acrobat® Reader® which you can get here: <http://www.adobe.com/>.







The notation SEA 491x is a short cut for a family of modules. If you read SEA 491x you can substitute it with the name of your particular type (SEA 4912 / SEA 4914). If any information contained in this manual refers exclusively to a particular module type, then this particular module name is used instead of SEA 491x.



Before operating the SEA 491x module and the provided software you have to agree to the terms and conditions (EULA). This agreement is part of the software installation procedure. In addition, the terms and conditions are available through the LabVIEW menu after installation (Tools > SEA > product name > Legal Information). If you do NOT agree you can send back the hardware and software package within a period of two weeks after delivery. In this case S.E.A. will refund the product price and shipping costs.

2.2 Symbols

To improve clarity specific structuring elements (or symbols) are used which have the following meaning:

Symbol	Meaning
<i>Names</i>	Specific names are printed using an <i>italic font</i>
[Text]	Place holders are marked by squared brackets
	Locations (paths, menus, URLs...) are printed using a <code>courier font</code>
	The yellow sign highlights important notes and warnings
	The blue mark highlights tips
	Reference to other documents

Tab. 1: Symbols

We believe that all information in this manual is accurate.

The document has been carefully reviewed for technical accuracy. In the event of technical or typographical errors, we reserve the right to make changes to subsequent editions of this document without prior notice to holders of this edition. The reader should consult the vendor if errors are suspected.

3 Installation

The Graphical Screen Editor can be downloaded either from the NI Tools Network or from our download site.



The latest version of the tool can be downloaded from the support area at:

<http://www.sea-gmbh.com>

Click *Download Area* button and select your module type from the *Software Products* category.

The Graphical Screen Editor is to be installed on a PC (refer to the hardware requirement section below). In order to install the software package double-click or open the .vip file inside the VI Package Manager and follow the instructions on the screen. This procedure installs the editor including all related manuals. Further resources (if available) like application notes, drawings etc. can be downloaded separately from the location as stated above.

3.1 Hardware Requirements

The Graphical Screen Editor only requires a PC to create the screen layout and create a configuration file, which can be used in a SEA 491x based application.

3.2 Software Requirements

In order to install and operate the Graphical Screen Editor software components as follows are required:

- JKI VI Package Manager 2014 or higher
- NI LabVIEW Development environment 2011 or higher
- SEA 491x driver software

4 Quick Start

This section describes how easy a display screen can be created using the Graphical Screen Editor.

Please follow the steps below to create a simple screen layout using the Graphical Screen Editor (for this tutorial SEA 4914 has been used exemplary) and utilize it within a template application:

1. Make sure the Graphical Screen Editor software package is installed on the PC: verify if the menu item `Tools -> SEA -> Graphical Screen Editor` is present in the LabVIEW menu. Install the software package if not.
2. Start the editor: `Tools -> SEA -> Graphical Screen Editor -> Editor....` The *Editor* window appears on the monitor screen, refer to Fig. 1. Observe that some functions (buttons or menu items) are disabled and others not. As the initially disabled functions are applicable on a loaded Configuration-VI they become enabled, so soon as a Configuration-VI is created or opened inside the editor.

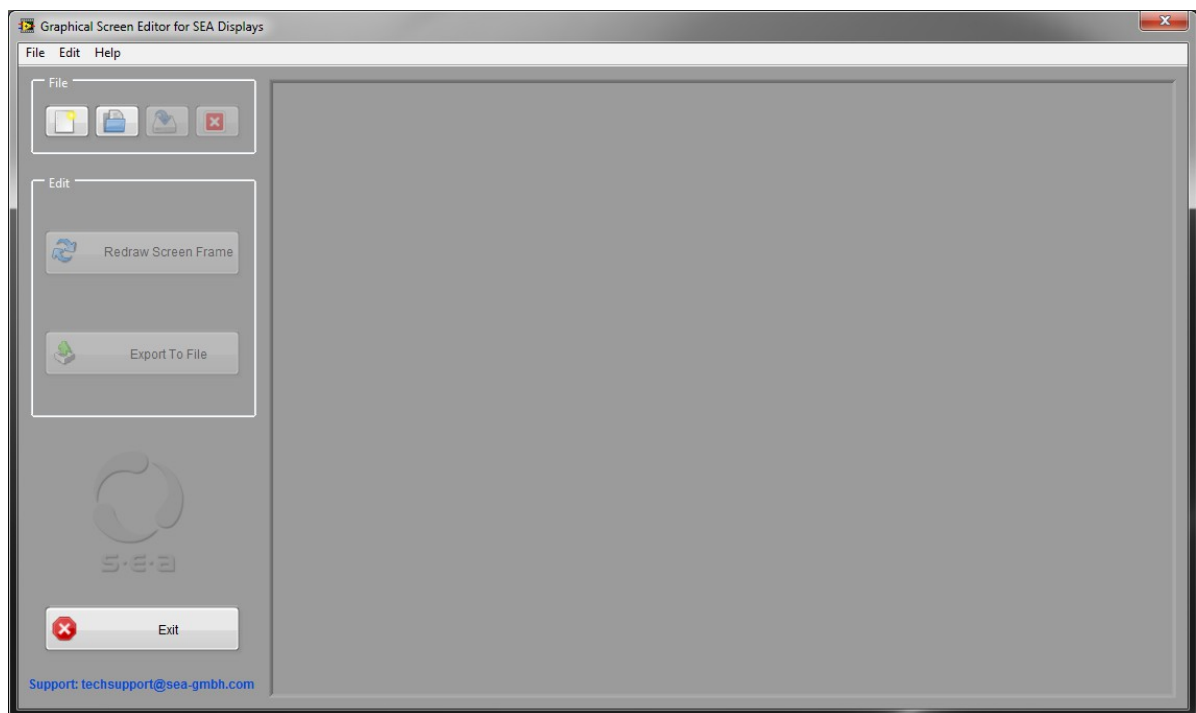


Fig. 1: Empty Editor

3. Create a new *Configuration-VI* pressing the *New* button or selecting the *New* menu item. A new *Configuration-VI* appears inside the editor like shown in Fig. 2. Note that the initially disabled functions had become enabled and can be applied on the fresh created *Configuration-VI*.

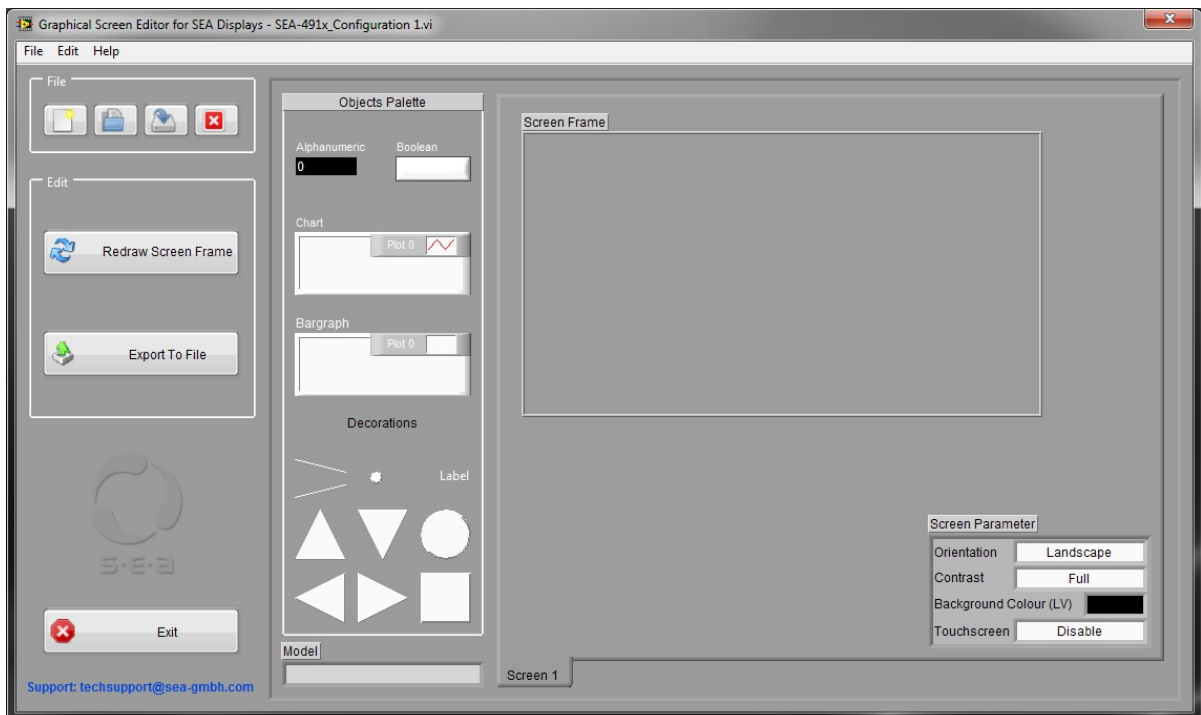


Fig. 2: Editor with Empty Configuration-VI

- Define the desired orientation in the *Screen Parameter* cluster in the *Configuration-VI*. Optionally define further parameter if desired, refer to the screen shot below. Save the *Configuration-VI* pressing the *Save* button or selecting the appropriate menu item.

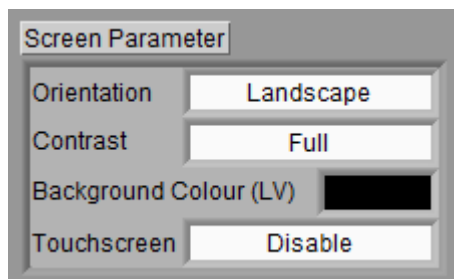


Fig. 3: Screen Parameter

- Select the *Redraw Screen Frame* button (Control Panel) and select the desired module type (for this demonstration select SEA 4914) in the subsequent dialog box. Confirm with *OK*. Observe that the *Screen Frame* on the *Configuration-VI* has changed in terms of size and orientation.



Fig. 4: Screen Frame - Empty



Note: the *Redraw Screen Frame* button has to be pressed every time the *Screen Parameter* cluster is modified, in order to persistently apply the changes.

- Place a chart, booleans and alphanumeric objects from the *Objects Palette* inside the the *Screen Frame*: copy the objects by dragging and dropping while the <CTRL-key> is pressed down. The final screen tab should look like shown in Fig. 5.

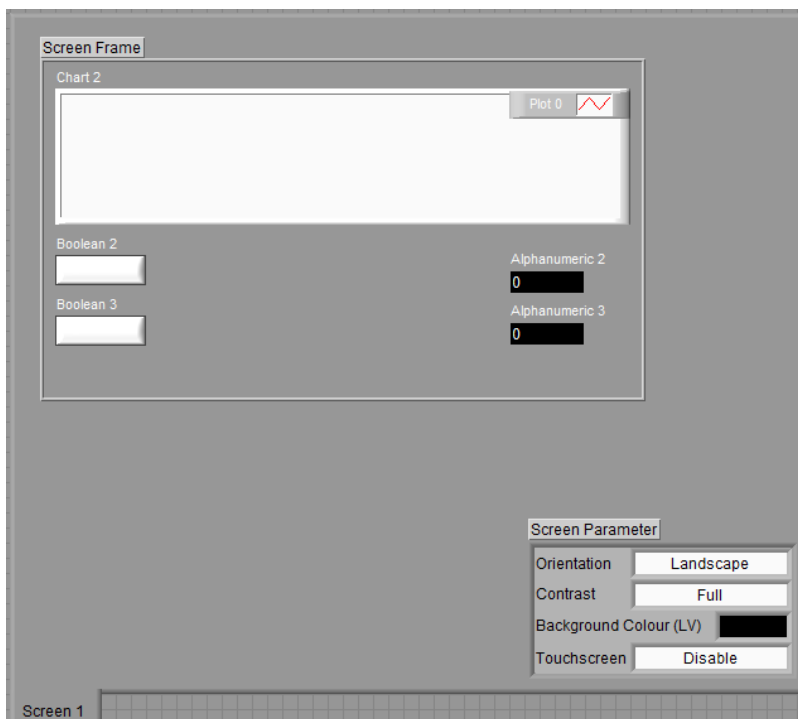


Fig. 5: Configuration-VI – Demo screen layout

- When finished, save the *Configuration-VI* to your source code for later changes.
- Finally, export the configuration to a file: press the *Export To File* button. A new file (same name as the *Configuration-VI* but with the file extension *.xml*) is created next to the *Configuration-VI*. If a configuration file already exists it will be overwritten without confirmation.
- Close the *Configuration-VI* pressing the *Close* button.
- Exit the Graphical Screen Editor via the *Exit* button.

Now the configuration file is created and the Graphical Screen Editor's job is done. In order to utilize the just created configuration file (XML) in an application continue with this tutorial to complete the tool chain(Graphical Screen Editor is not required for further steps):

11. Ensure that you have installed the software driver for SEA 491x modules: open LabVIEW and look for SEA 491x in the functions palette. If not found install the SEA 491x software driver before continue. Refer to the SEA 491x software manual for details.
12. Follow the instructions given in the *New Template Application* sub section in the SEA 491x software manual.

5 Description of Functionality

5.1 Overview

The Graphical Screen Editor is an add-on toolkit to create complete screen directly in LabVIEW. The screen layouts (one or more) are created placing predefined LabVIEW primitives inside a screen frame. The screen layouts are subsequently exported to a file (XML) and can be used in a LabVIEW application built with the SEA 491x software driver.

The Graphical Screen Editor consists of three functional areas: the menu bar, the control area (buttons on the left side) and the *Configuration-VI* display area, refer to Fig. 1.







The basic workflow when working with the Graphical Screen Editor is as follows:

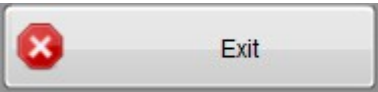
- load a *Configuration-VI*
- configure the *Configuration-VI* (module type and screen parameter)
- create the screen layout(s) by dragging and dropping the object for the *Objects Palette*.
- Export the screen layout incl. settings to a text based configuration file (XML)

The subsequent chapters describe the scope of functionality of the *Control Panel*.

5.2 Functions

The functions are either accessible through buttons on the front end or through the menu. All buttons provide a tip text which is showed when the cursor is moved over the button. All available functions and their access is documented in the following table:

Button / Menu Item	Description
 / File -> New	Creates a new <i>Configuration-VI</i> from template.
 / File -> Open	Opens an existing <i>Configuration-VI</i> from disc.
 / File -> Save	Saves current <i>Configuration-VI</i> to disc.
 / File -> Close	Closes current <i>Configuration-VI</i> . If VI has unsaved changes a save dialog is showed before closing.
 Redraw Screen Frame / Edit -> Redraw Screen Frame	Changes the <i>Screen Frames</i> on all screen tabs according the the module type selected in the appearing dialog box and the <i>Screen Parameter</i> cluster. Persistently holds the new values, by making current values default. Perform this function every time the <i>Screen Parameter</i> change.
 Export To File / Edit -> Export To File	Exports the <i>Configuration-VI</i> to a file. The file is exported next to the <i>Configuration-VI</i> (VI has to be saved on disc before executing this function) and has the same name as the <i>Configuration-VI</i> , but different file name extension (.xml). If an export file already exists, it will be overwritten with no confirmation.

 / File -> Exit The image shows a rectangular button with a light gray gradient. On the left side, there is a red circle containing a white 'X' symbol. To the right of the symbol, the word 'Exit' is written in a black sans-serif font.	Exits the editor. If a <i>Configuration-VI</i> is open and has unsaved changes a save dialog is showed before exiting.
no Button / Help -> User Manual	Opens the user manual document (PDF)
no button / Help -> About	Shows the About window with informations about the product.

Tab. 2: Editor – Functions

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