

Web Panel App



VK-CMG2LC HMI Carrier Board



Web Panel App user manual

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1. HW

WEB PANEL is [VK-CMG2LC](#) Human Machine Interface board, based on [VK-CM-RZ/G2LC](#) System on Module. This hw runs a web browser, which loads the Web Panel **App**. This app is a web based application, which configures various HMI's settings. More info about the HMI you can get [here](#).

2. SW

HMI runs a Debian Operating System (v12.x bookworm), which relies on the system browser to display the Web Panel's **App**. On OS startup a number of things happens:

- system service (`/usr/lib/systemd/system/splash.service`) loads a image in the frame buffer (`/dev/fb0`) during the OS boots.
- system service (`/usr/lib/systemd/system/http.service`) launches a local HTTP server, hosting the Web Pannel's App page.
- OS GUI (**weston**) starts a shell script (`$HOME/.config/scripts/kiosk.sh`) which launches a browser (**chromium**) in kiosk mode, which displays the Web Panel's page.

When OS is fully loaded, the user is welcome with Web Panel's **Default URL** page & HMI is ready to take orders from the user.

3. Install

VK-CMG2LC HMI is shipped with **LXDE** debian image.

- To get the Web Panel App follow the steps:
 - On the target board, get the script for installation:
`wget https://vekatech.com/os/debian/get_webpanel.sh.`
 - On the target board, make it executable:
`chmod +x get_webpanel.sh.`
 - On the target board, Install **Web Panel**:
`./get_webpanel.sh.`



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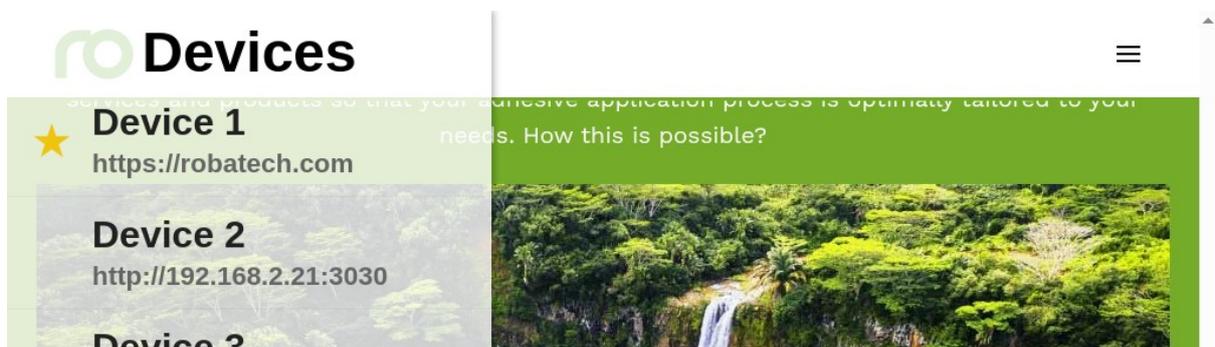
4. App

The **App** is a simple web page that loads a certain page (a **Default URL**) when started (visited). The user can also visit a number of other URLs, beside the default one. This list of all other URLs is actually a **Bookmark** list. When there is no Default URL selected, the App displays a simple welcome screen. To show the Bookmark list, just swipe the left edge of the screen to the right



App's welcome screen & Bookmark list

When you set a Default URL to a particular URL address, it is marked with a gold **star**, to show you which one among the others is the **Default** one.



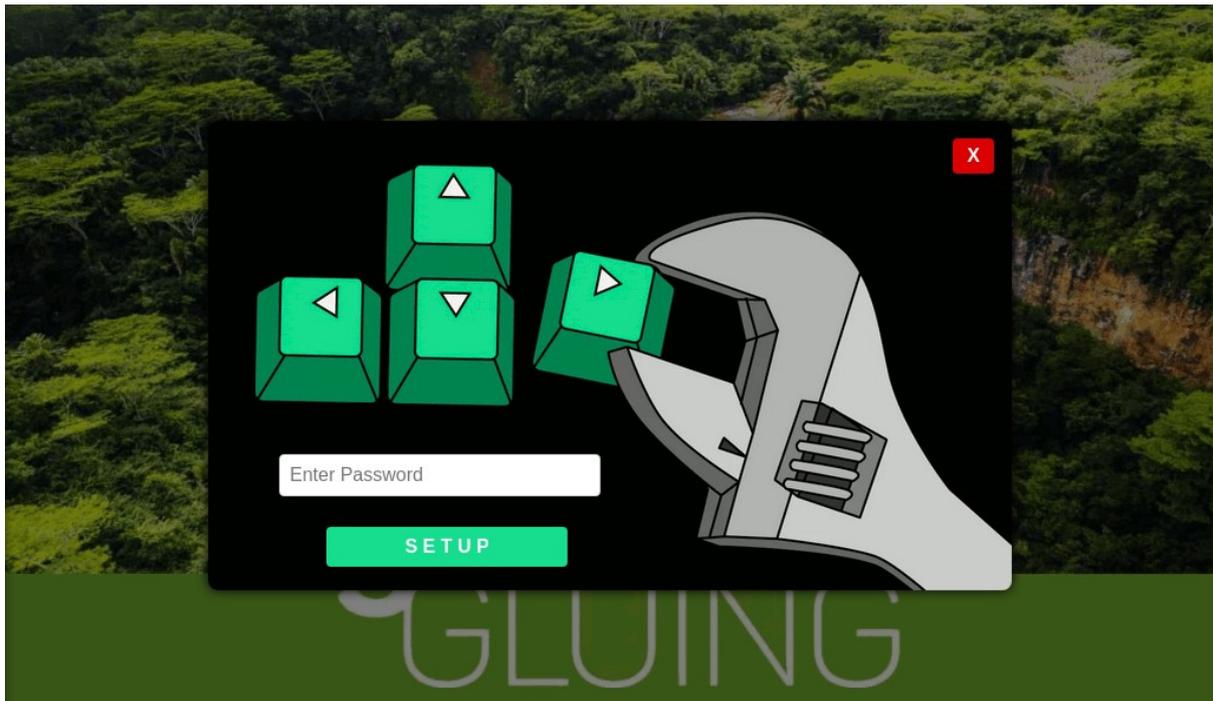
Default URL mark



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4.1 Setup

There is a special Bookmark, called **Setup** Bookmark, used to set a various different settings for the App. To enter the Setup page, just tab **Devices** from the Bookmark list. If **Ask for Pass** is ON, you will be asked for password, before allowed to Setup the App settings.



Entering Setup when **Ask for Pass (ON)**

The default password is the same as **vkz** user's default one: i.e. `vkz21c`. If you ever want to change it, you will need to replace the `$HOME/.config/apps/ro_hmi/users` file with a new one, where the new password is properly encrypted with **passlib**. When a correct password is entered, you are allowed to change the App's settings.

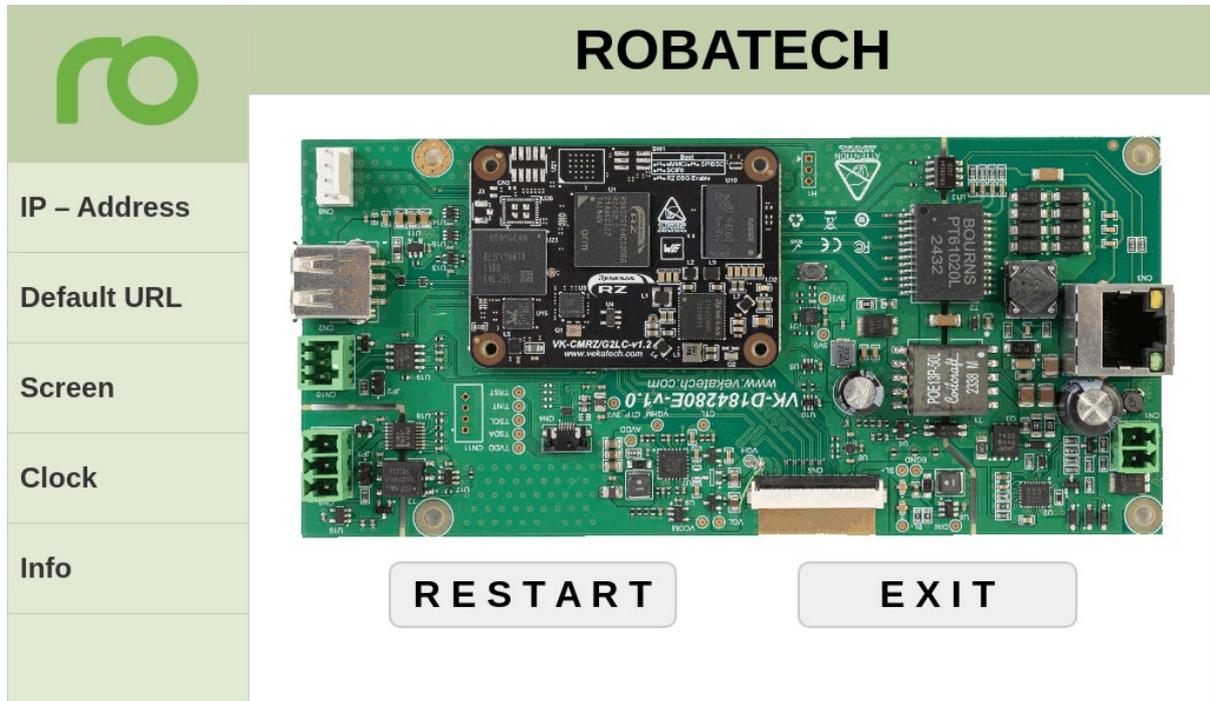
4.2 Settings

- **IP - address** allows you to set up static/dynamic IP assignment for this device.
- **Default URL** allows you to add/edit/remove URLs & names to the Bookmark list and to point which one of them is the **Default**.
- **Screen** allows you to rotate the display to 0/90/180/270 ° and to ON/OFF the screen saver & its Idle time.
- **Clock** allows you to set the time zone for this device, the **Daylight Saving Time** applicability to that particular zone and the Hour clock cycle 12/24. You can also sync the device's clock with the Debian's default **Network Time Protocol** server.



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- **Info** allows you to ON/OFF the restriction to access the Setup page. As was mentioned, entrance to the App's Settings is controlled by the **Ask for Pass** option, located in this section.



Setup page or so called **Settings**.

There are two buttons helping you with navigation:

- **EXIT** allows you to return from the Setup page and directs you to either the welcome screen or the Default URL.
- **RESTART** allows you to reboot the device. All settings from the Setup page are kept in `$HOME/.config/apps/ro_hmi/conf/conf.json` file. The currently applied settings are kept in another file `$HOME/.config/apps/ro_hmi/cfg.json`. On system start, before the App is displayed, (when local HTTP server is launched) the `cfg.json` is updated with the current settings of the device. If there is difference between these 2 files, every time you enter the Setup page, the color of this button is painted in red. Pressing the button, applies the setting from `conf.json` & reboots the device, so on startup, both should be equal. If this button is red, that usually means the settings are tampered outside the App, and pressing it, will sync them with the last setup-ed ones.



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4.3 Sections

Every section has a **SAVE** button, which **stores & applies** only settings from the **section**.

IP - Address

DHCP 0 1 2 3 4 5 6 7 8 9

IP Address 192 . 168 . 3 . 10

Subnet Mask 255 . 255 . 255 . 0

Gateway 192 . 168 . 3 . 1

DNS Server 192 . 168 . 3 . 1

SAVE

Section **IP-Address**.

Default URL

https://robatech.com

Bookmarks

Device 1 https://robatech. -

Device 2 http://192.168.2. -

+ DEV ↑ URL ↓

SAVE

Section **Default URL**.



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When there are **unsaved** changes, the **SAVE** button is colored in **red**.

On success, **SAVE** button also directs you to either the welcome screen or the Default URL.

In **Default URL** section, if the URLs are more than 3, the area below the **Bookmarks**, becomes scrollable. If you are adding an address, you need to **scroll** down to the last in the list and fill in the **DEV & URL** fields.

Tapping on a **field**, opens a keyboard.

The screenshot shows the 'Default URL' section of the app. It features a sidebar on the left with a green header containing the 'ro' logo. The sidebar menu includes 'IP - Address', 'Default URL' (which is highlighted), 'Screen', 'Clock', and 'Info'. The main content area has a green header with the title 'Default URL'. Below the header is a text input field with the placeholder text 'Add URL (http://<ip>[:port][[/path]])'. Underneath the input field is a section titled 'Bookmarks' which contains a scrollable list of keyboard keys. At the bottom of the main content area is a 'SAVE' button.

Editing **URL**.

+ button adds new address to the Bookmark list. Adding fails if **DEV** or **URL** are empty!

- button removes address from the Bookmark list. Removing warns you if the **URL** is default.

Radio button controls 2 things:

- Which URL is the Default one.
- Which URL can change its position with the **Up** and **Down** buttons.

Up moves **default** URL a position up in the Bookmark list.

Down moves **default** URL a position down in the Bookmark list.



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Screen

Rotation: 0° 90° 180° 270°

Screen Saver: OFF Min.

SAVE

Section **Screen**.

In **Screen** section, if **SAVE** succeeds, the GUI is **restarted** to apply the new settings.

In **Clock** section, if **SAVE** succeeds, the browser is **restarted** to apply the new settings.



Clock

Wed, 11/06/2025, 11:24:25

Time Zone:

Format: 12h 24h DST

Force NTP Sync

SAVE

Section **Clock**.



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	Info
IP – Address	SW: Chromium 135.0.7049.95 built on Debian GNU/Linux 12 (bookworm)
Default URL	HW: Vekatech VK-D184280E based on r9a07g044c2
Screen	Ask for Pass: NO <input type="checkbox"/>
Clock	
Info	<input type="button" value="SAVE"/>

Section **Info**.

4.4 USB scanner

The local HTTP server performs another auxiliary task besides serving App's pages: It monitors the USB bus for **Mass Storage Devices**. When such device is attached to the device's USB port, the scanner task mounts MSD's file system to `/mnt/USB-sda1` & copies a folder to MSD's root directory `'Robatech Backups'`. The folder that is copied is browser's default download directory `$HOME/Downloads`. When copied, it is renamed to `Backup_Download_YYYYMMDD_HHMMSS`, so the data in `/mnt/USB-sda1/'Robatech Backups'/Backup_Download_YYYYMMDD_HHMMSS` is a snapshot of the data in `$HOME/Downloads` at the time of the USB thumb drive attachment.

- **YYYY** is the **Year** when the attachment happened.
- **MM** is the **Month** when the attachment happened.
- **DD** is the **Day** when the attachment happened.
- **HH** is the **Hour** when the attachment happened.
- **MM** is the **Minute** when the attachment happened.
- **SS** is the **Second** when the attachment happened.

Each browser's download operation, produces a file, placed in browser's default download directory.



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Each time a flash drive is attached, a backup of all downloaded files is made, and user can see it on the screen when that happens.



Auto – Sync function in **action**.



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Revision overview list

Revision number	Description changes
0.1	Initial

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