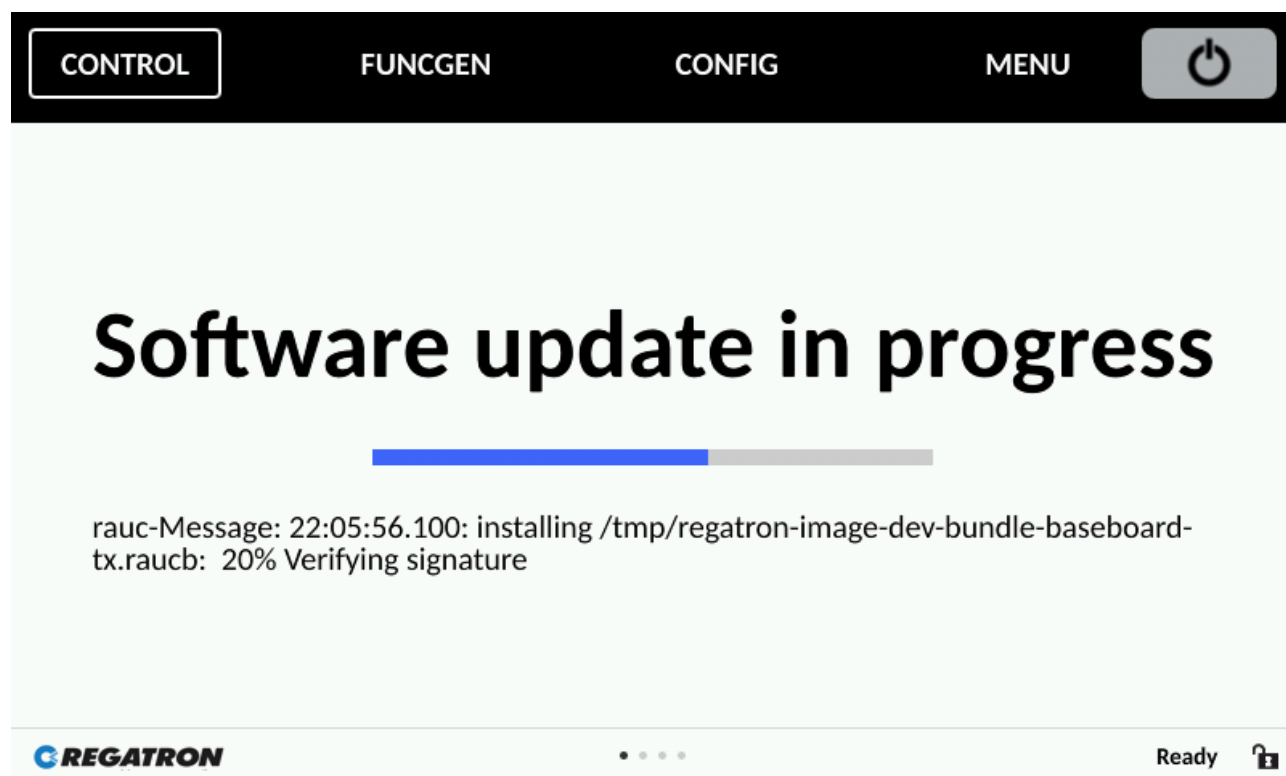


G5 series

G5.HMI Software Update

Version 03.01



Purpose of this document

This step by step manual provides information on the handling of a modification, inspection or repair as stated in the title. It serves as a guide and reference work. This document shall only be used for the described work as stated in the title. Only use this document if provided by Regatron AG or an official reseller / representative. The operating instructions must be available at all times to the personnel who are performing the inspection, repair or modification.



WARNING

Mortal danger due to electric shock!

- Due to the high operating voltage of the device and possible arcing in related applications, there is a risk of injury!
- The unit supplies dangerous voltage and current.

Avoidance:

- ⇒ Read the device operating manual (in particular the section safety) before you put the power supply in operation, connect or disconnect a load.
- ⇒ Read this step by step manual carefully, in particular the chapter 1.
- ⇒ Ensure that nothing and nobody will be endangered by this voltage before operating the power supply.

Conventions used




| Hazard and warning information | |
|--|--|
| Pictogram | Meaning |
|  DANGER | For an immediate hazard that will result in serious injuries or fatality. |
|  WARNING | For an immediate hazard that can result in serious injuries or fatality. |
|  CAUTION | For a possibly hazardous situation that can result in serious injuries or fatality. |
| CAUTION | For a possibly hazardous situation that could result in damage to the product or another item in its surroundings. |

Table 1: Hazard and warning information






| Further warning and hazard information | |
|---|--|
| Pictogram | Meaning |
|  | DANGER, WARNING or CAUTION due to electrical power |
|  | DANGER, WARNING or CAUTION related to suspended load |
|  | HEALTH HAZARD caused by substances (or mixture of substances). (H302) |
|  | GHS08 CAUTION possible health hazard caused by substances (or mixture of substances). (H361, H373) |
|  | WARNING Electrostatic-sensitive device |

Table 2: Further warning and hazard information


| Instructions | |
|---|-----------------------|
| Pictogram | Meaning |
|  | Important information |

Table 3: Instructions


| General notes | |
|---|--|
| Pictogram | Meaning |
|  | Tip, for working efficiently with the device |

Table 4: General notes

Open questions

If you have any questions, your sales partner will be pleased to be of assistance.
However, you can also reach Regatron customer support at the following address:

| Customer support | |
|---------------------|--|
| Regatron AG | Tel. +41 71 846 67 44 |
| Feldmühlestrasse 50 | www.regatron.com |
| 9400 Rorschach | support@regatron.com |
| SWITZERLAND | |

Table 5: Customer support

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1. General instructions

1.1 Authorized Personnel

The safety instructions are for electrical experts and people with an appropriate electrical education, who are authorized by the customer, are familiar with electrical hazards and who can minimize this risk. Only such authorized personnel as designated by the customer should be allowed to operate the power supply.

1.2 Opening the power supply

The power supply must only be opened by authorized personnel. Before opening the power supply, authorized personnel have to make sure, that the power supply is disconnected from the AC mains. There may be a warranty seal on the power supply.

If so, be sure you contact Regatron AG first before opening the power supply in order to avoid the loss of warranty.

1.3 Dangerous voltages

The power supply contains capacitors which discharge very slowly (typical discharge time is 10 minutes) or in the worst case, don't discharge at all (if the power supply is faulty). Therefore, use only insulated tools when working inside the power supply. Maintenance and repair of this unit should only be carried out by the manufacturer or trained service personnel who are aware of the inherent dangers of such equipment.

1.4 ESD

When opening the unit, make sure you comply with the electrostatic discharge precautions (ESD). Hence use appropriate tools and ESD compliant equipment.

2. Introduction

2.1 Abstract

This step by step manual shows how to update the software on a G5.HMI unit. To allow a software update the switch "Enable WebAPI Node" in the menu "WebAPI" has to be enabled. Depending on whether a DHCP server is present in the network or not, the switch in the menu "Ethernet" must be set accordingly. After the software update the G5.HMI will automatically restart itself.

2.2 Prerequisites

Before the software update can be done the following requirements must be met:

- The G5 unit is powered on.
- Start-up process of the G5.HMI must be completed.
- PC and G5.HMI are connected to the same network via Ethernet
- **A connection via USB does not work to update the G5.HMI (both variants).**
- Make sure that the G5 unit is either in the mode "Ready" or "Not Ready" before performing the software update. The mode is shown on the G5.HMI on the bottom right. Both possibilities are shown below.

"Ready" mode:



"Not Ready" mode:



CAUTION: Do not restart the device until instructed to do so by this Step by Step Manual.

3. Checks and setups before the G5.HMI update

3.1 Checks and setups before the G5.HMI update, while connected via DHCP

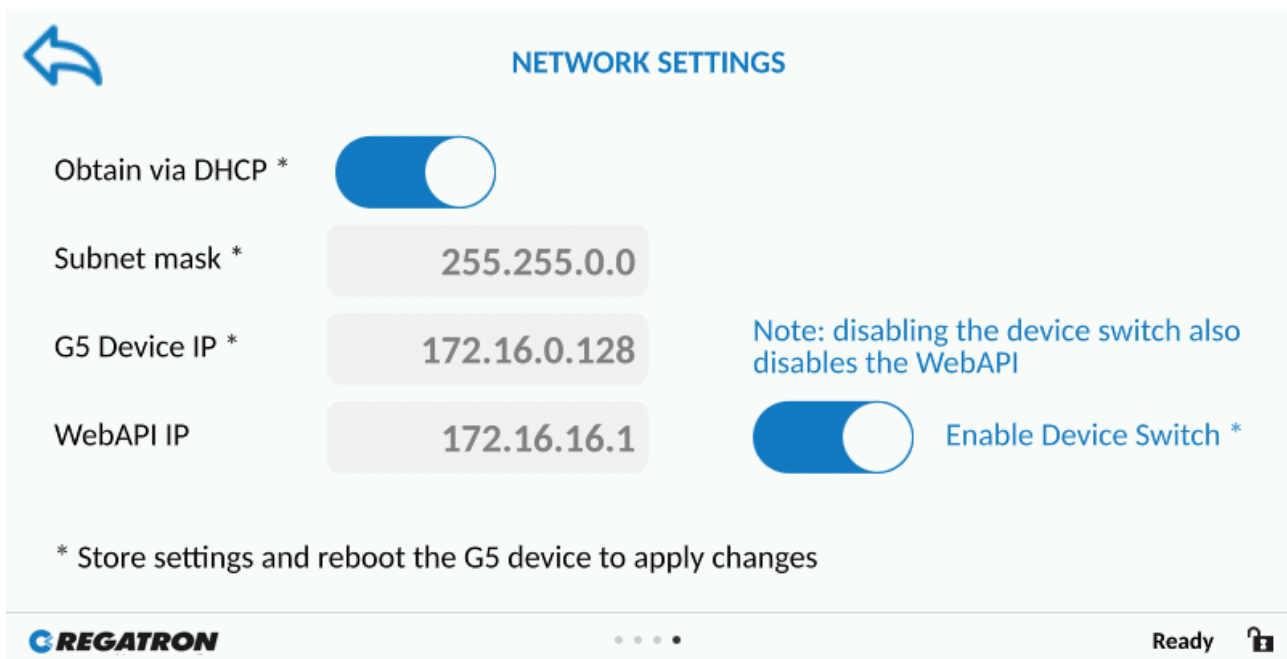
1. Click on "MENU" on the G5.HMI:




2. Click on "Network Settings":



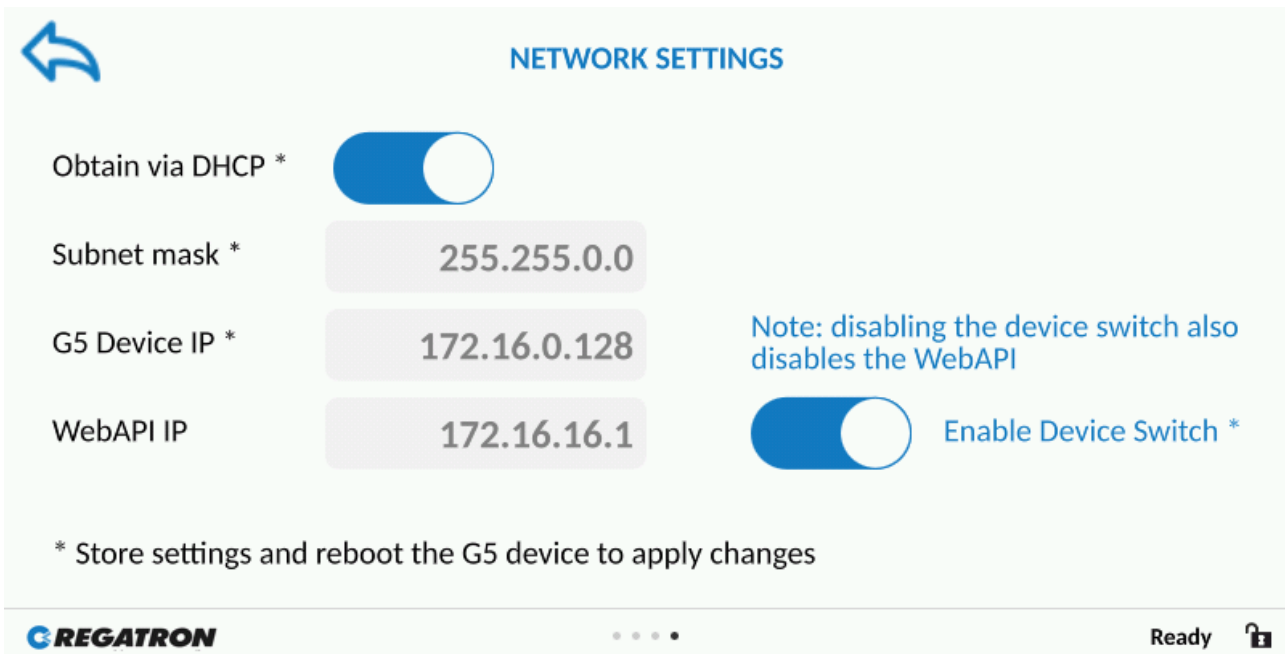
3. If the IP is given automatically by a DHCP server in the network "Obtain via DHCP" has to be selected. The other possibility would be to unselect "Obtain via DHCP" and continue with chapter 3.2 Checks and setups before the G5.HMI update, while connected directly to G5 (island network).
4. Select "Enable Device Switch", if it is not already selected.



5. Click on the icon  to go back.
6. Click on "Store G5 Device Settings" in the "MENU".



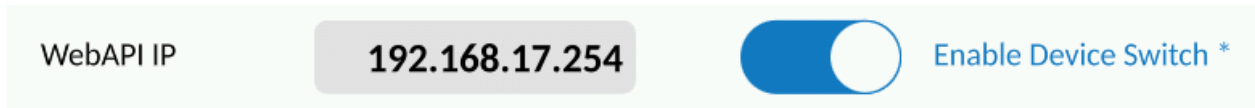
7. Turn off the G5 device and wait till the G5.HMI is completely dark.
8. Turn the G5 device on again and wait till the start-up process of the G5.HMI is completed.
9. Check both switches in the menu "Network Settings".
"Obtain via DHCP" (switch is ON) and "Enable Device Switch" (switch is ON).
10. Note the IP address in the menu "WebAPI IP". The example below shows 172.16.16.1



11. Continue with chapter 4 Firmware update via G5.Control software.

3.2 Checks and setups before the G5.HMI update, while connected directly to G5 (island network)

1. Make sure the PC is not connected to any network nor by cable and neither by WIFI.
2. Connect the PC to the X703 interface of the G5 unit with its G5.HMI via an Ethernet cable.
3. Navigate to "Network Settings" in the „MENU“.
4. Select "Enable Device Switch", if it is not already selected.



5. Click on the icon  to go back.
6. Click on "Store G5 Device Settings" in the "MENU".



7. Turn off the G5 device and wait till the G5.HMI is completely dark.
8. Turn the G5 device on again and wait till the start-up process of the G5.HMI is completed.

9. Check both switches in the menu “Network Settings”.
“Obtain via DHCP” (switch is OFF) and “Enable Device Switch” (switch is ON).
10. Note the IP address in the menu “WebAPI IP”. The example below shows 192.168.17.254

| | | |
|-------------------|---|--|
| Obtain via DHCP * | <input type="checkbox"/> | |
| Subnet mask * | <input type="text" value="255.255.255.0"/> | |
| G5 Device IP * | <input type="text" value="192.168.17.3"/> | Note: disabling the device switch also disables the WebAPI |
| WebAPI IP | <input type="text" value="192.168.17.254"/> | |
| | <input checked="" type="checkbox"/> | Enable Device Switch * |

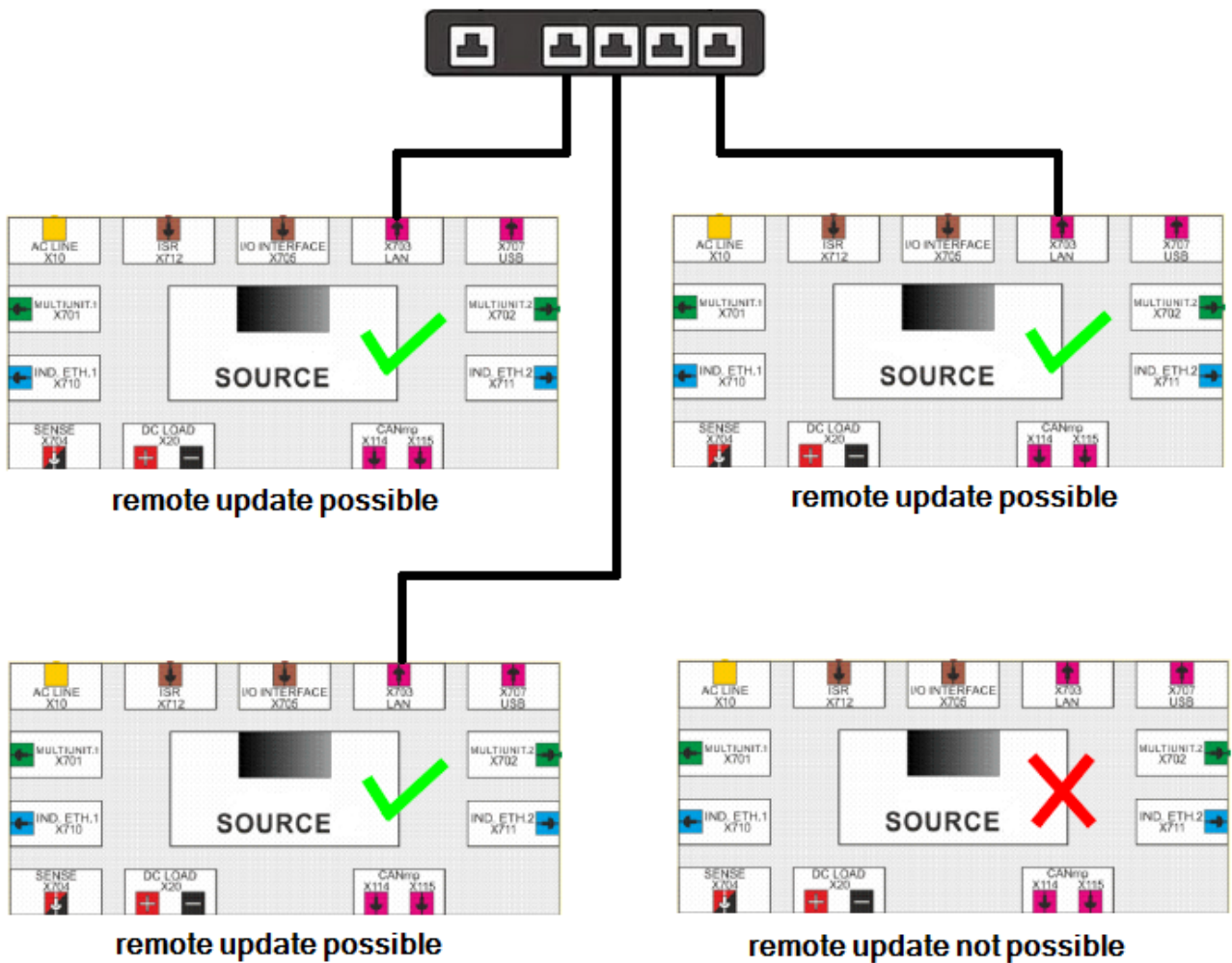
* Store settings and reboot the G5 device to apply changes

11. Continue with chapter 4 Firmware update via G5.Control software

4. Firmware update via G5.Control software

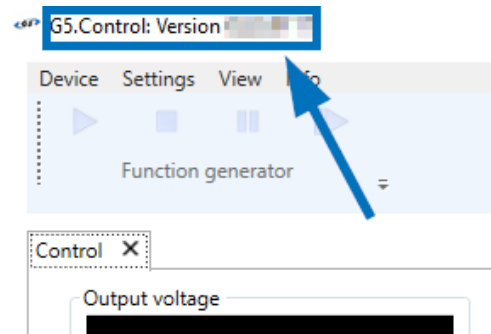
4.1 Prerequisites

- Jump to chapter “5 Firmware update via G5 Web API” if one of the following prerequisites is not fulfilled.
- Make sure that the G5 is connected to the G5.Control software via **Ethernet**.
- If you want update a multi device system, all G5 devices containing an G5.HMI must be connected to the same ethernet network (LAN interface X703).

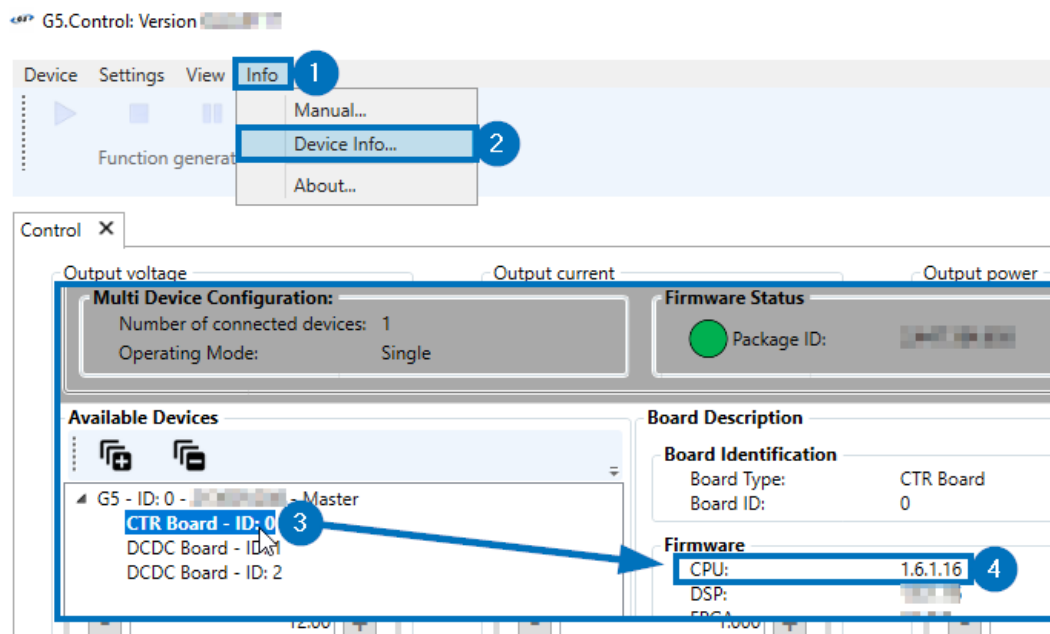


- The firmware update via the G5.Control software is only available, if the software and firmware is newer than the following versions.

G5.Control software: V0.7.0.8018



CTR.TC5 CPU Firmware: V1.6.1.16

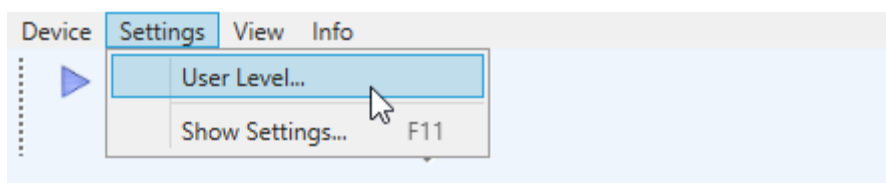


G5.HMI software: V1.5.0.1741

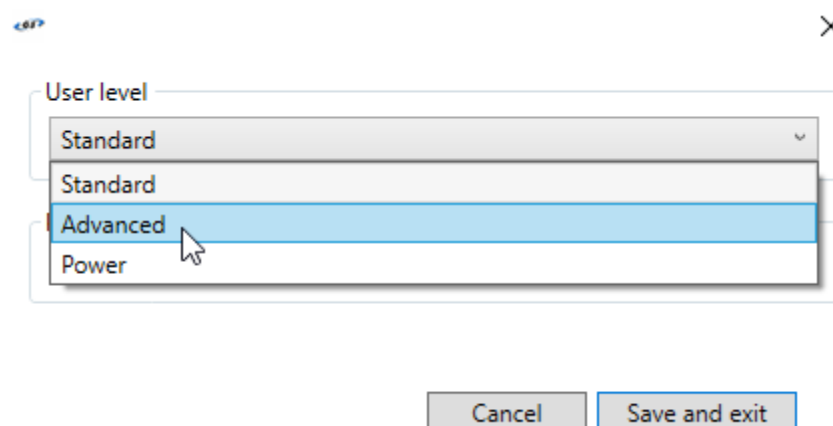
To see how you can check the version jump to the chapter **5.3 Check the G5.HMI software version.**

4.2 Changing the user level from Standard to Advanced

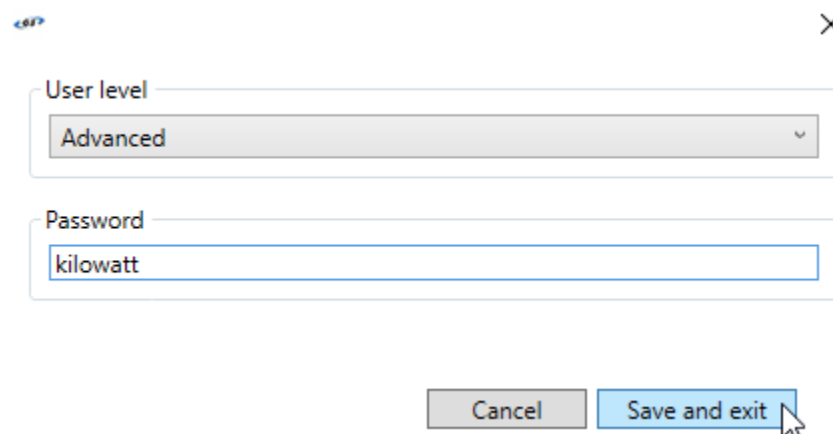
1. Click on "Settings" and "User Level" in the menu bar of the G5.Control software:



2. Click on "Standard" in the box "User level". A drop-down menu opens. Now click on "Advanced":



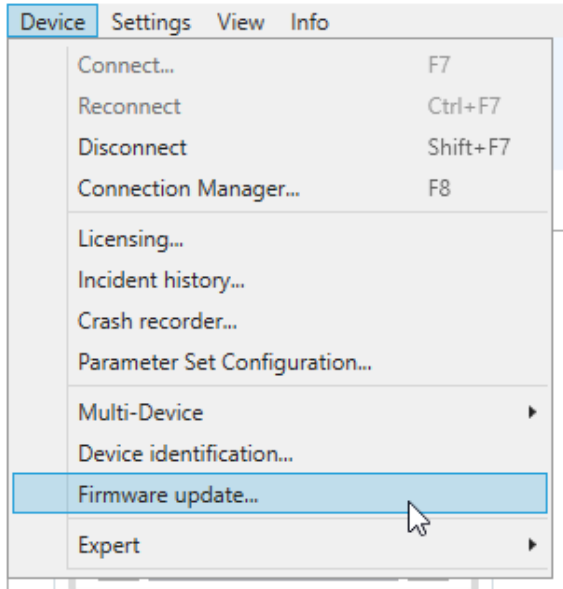
3. Enter the password **kilowatt** and click on "Save and exit":



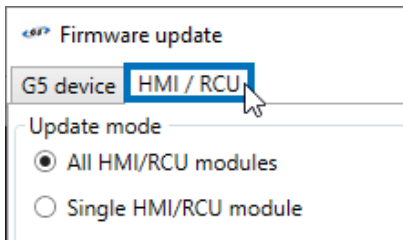
4.3 Updating the firmware.

1. Click on "Device" and "Firmware update" in the menu bar:

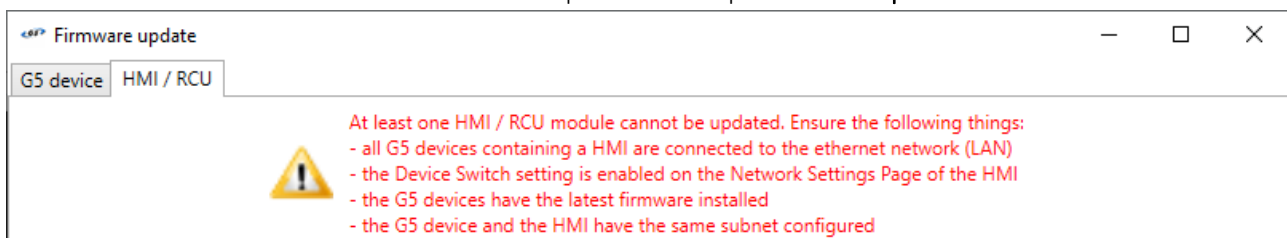
G5.Control: Version



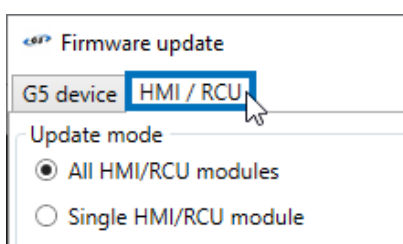
2. Select the G5.HMI / RCU tab.



Note: If the following message is displayed, make sure that the WebAPI is enabled and the G5 and G5.HMI firmware versions are at least as specified in chapter 4.1 Prerequisites





3. Select whether you want to update all G5.HMIs in the network or G5.HMIs from specific G5 power supplies.




4. Click on the icon  to select the provided firmware file, with the file format “raucb”:

Select file



☐ Force Update
 

5. Click on the icon  to update the firmware. This takes a few minutes and is visualized by a progress bar.

6. Once the box “Update status” says “finished” in the progress bar the window can be closed:

Firmware update

G5 device | HMI / RCU

Update mode


☒ All HMI/RCU modules

☐ Single HMI/RCU module

Select module

Select file

raucb

☐ Force Update 

Update status

Status: Update finished.

| Module | Installed Version | IPv4 address | Progress |
|------------------|-------------------|--------------|----------|
| G5 - ID 0: HMI 1 | | | finished |
| G5 - ID 1: HMI 1 | | | finished |

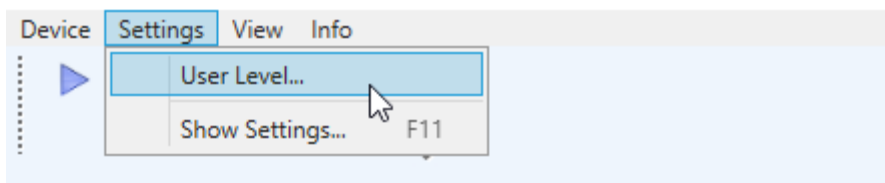
Note: The G5.HMI will automatically reboot after the update and reconnect to the G5 power supply.

7. Check the G5.HMI version to see if the update was successful.

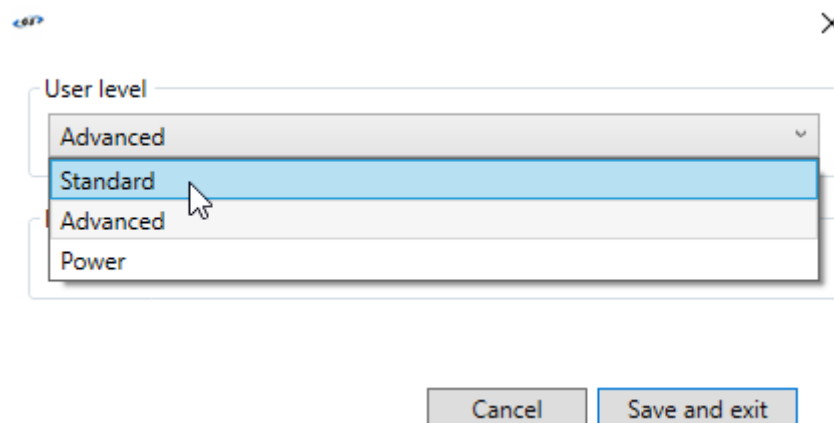
To see how you can check the version jump to the chapter **5.3 Check the G5.HMI software version**.

4.4 Changing the user level from Advanced back to Standard

1. Click on "Settings" and "User Level" on the menu bar:



2. Click on "Advanced" in the box "User level". A drop-down menu opens. Now click on "Standard":



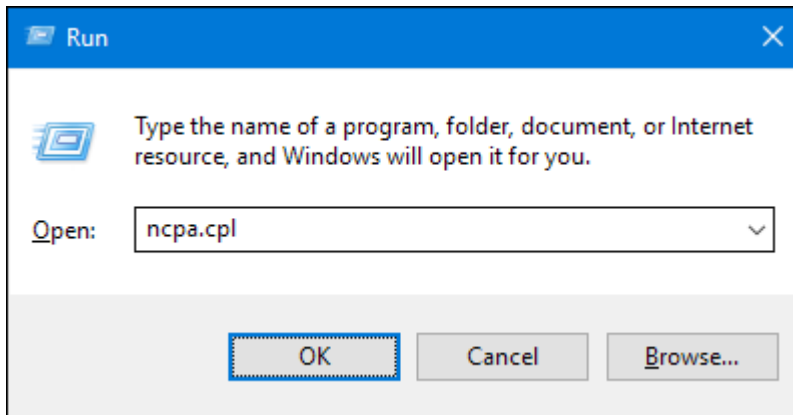
3. Confirm the "Standard" user level by clicking on "Save and exit".

5. Firmware update via G5 Web API

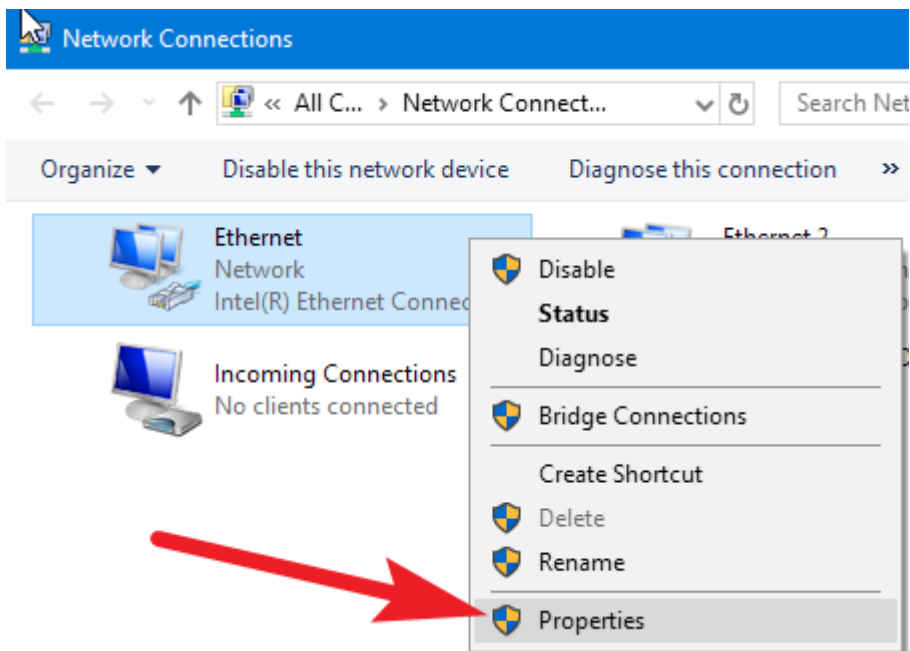
5.1 Change the IP address of the PC to connect to the G5.HMI

Note: Admin rights are probably required on the PC for making these changes.

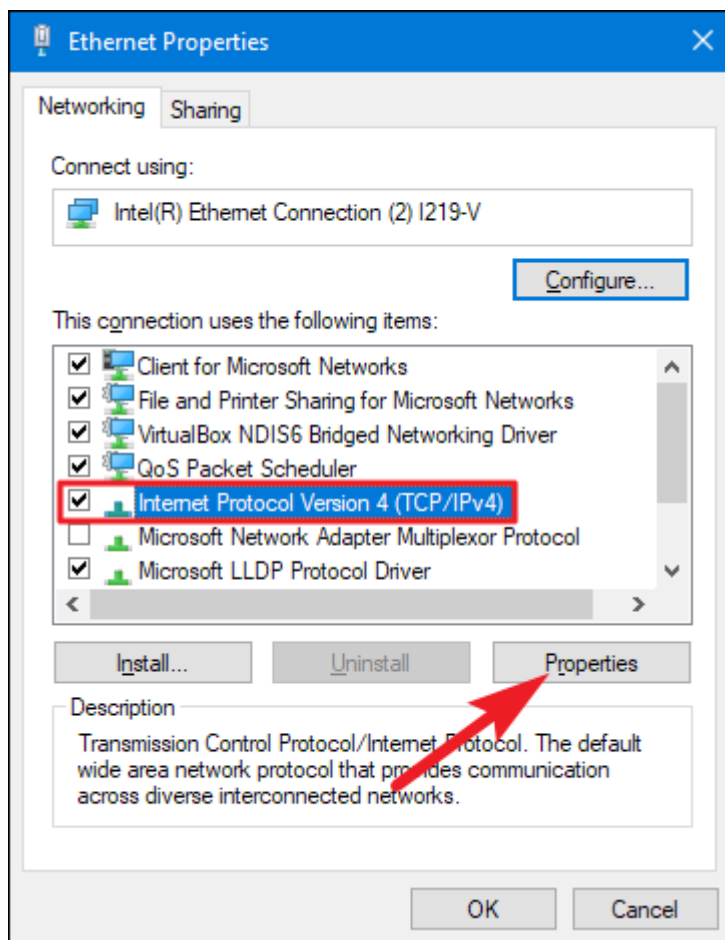
1. Press 'Windows + R' on the keyboard to open the window shown below.



2. Type 'ncpa.cpl' and click on 'OK' to open the window 'Network Connections'.
3. Right-click on the adapter for which you want to set a static IP address and choose 'Properties'.

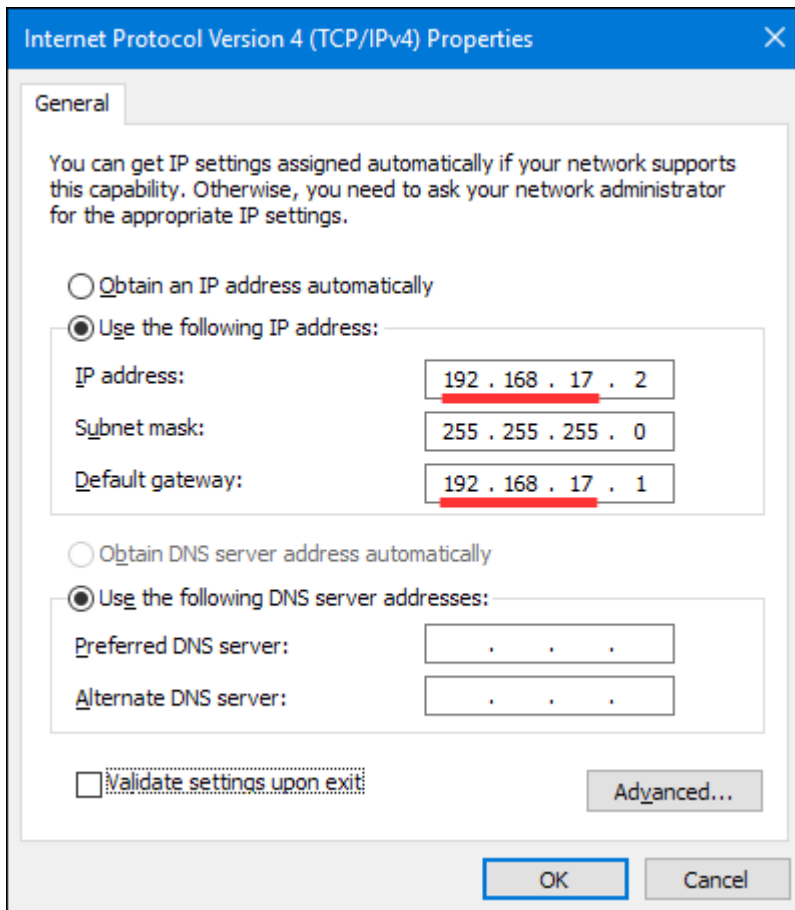


4. Choose 'Internet Protocol Version 4 (TCP/IPv4)' and click on 'Properties'.



- Select 'Use the following IP address' (**Remark**) and type an IP address, a subnet mask and a default gateway which corresponds to the IP noted from the G5.HMI in the MENU WebAPI. Check that the used IP fits the subnet mask but is not identical to the IP noted from the G5.HMI (check the example below).

Remark: If 'Use the following IP address' is already selected note IP address, subnet mask and default gateway for chapter 5.4 Change the IP address of the PC back (only if worked through chapter 5.1).

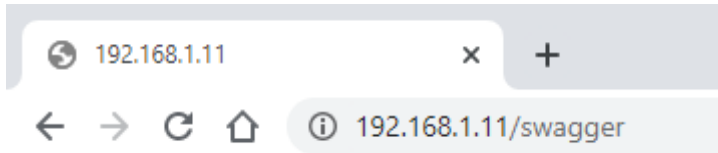


| | | |
|--------------------|----------------|--|
| Example: | | comments or conditions: |
| G5.HMI IP address: | 192.168.17.254 | noted from the MENU WebAPI |
| IP address: | 192.168.17.2 | not identical to the G5.HMI IP Address and default gateway |
| Subnet mask: | 255.255.255.0 | with this subnet mask 192.168.17.x have to be identical |
| Default gateway: | 192.168.17.1 | not identical to the G5.HMI IP Address |

- Click on 'OK'

5.2 Updating the G5.HMI software

1. Open a web browser, enter the noted IP address from “WebAPI” and add “/swagger” at the end:



2. Click on “Maintenance”:

A screenshot of the Swagger UI for the G5 Web API. The top bar is black with the Swagger logo on the left, "Select a definition" in the center, and a dropdown menu showing "v1" on the right. The main content area has a light gray background. It features the title "G5 Web API" in large bold letters, followed by "V1.0.0.1229" and "OAS3" in smaller text. Below the title, there is a link to "/swagger/v1/swagger.json" and a description: "Web API for the G5 device." There are also links to "Regatron Support - Website" and "Send email to Regatron Support", and a copyright notice "© 2021 Regatron AG". At the bottom, there is a "Servers" section with a dropdown menu showing "http://172.16.0.141:80". Below this, there is a list of API endpoints with their names and a right-pointing arrow: "ConfigLoadProtectErrors", "ConfigLoadProtectWarnings", "ConfigReferenceValueSettings", "ConfigSensing", "Control", "DeviceInfo", "FuncGen", and "Maintenance". The "Maintenance" endpoint is highlighted with a mouse cursor pointing at it.

- Click on "POST":

Maintenance

GET /api/Maintenance/DataExchange/UInt16Value Returns a UInt16 value specified by it's parameters.

PUT /api/Maintenance/DataExchange/UInt16Value Set a UInt16 value to a dedicated address.

GET /api/Maintenance/DataExchange/Int16Value Returns a UInt16 value specified by it's parameters.

PUT /api/Maintenance/DataExchange/Int16Value Set a int16 value to a dedicated address.

GET /api/Maintenance/DataExchange/UInt32Value Returns a UInt32 value specified by it's parameters.

PUT /api/Maintenance/DataExchange/UInt32Value Set a UInt32 value to a dedicated address.

GET /api/Maintenance/DataExchange/Int32Value Returns a UInt32 value specified by it's parameters.

PUT /api/Maintenance/DataExchange/Int32Value Set a int32 value to a dedicated address.

GET /api/Maintenance/DataExchange/SingleValue Returns a float value specified by it's parameters.

PUT /api/Maintenance/DataExchange/SingleValue Set a float value to a dedicated address.

POST /api/Maintenance/UpdateFirmware Upload the new Firmware file and perform the update. After the Update a reboot is done automatically.

- Click on "Try it out":

POST /api/Maintenance/UpdateFirmware Upload the new Firmware file and perform the update. After the Update a reboot is done automatically.

Parameters

Try it out

- Click on "Choose File" and select the provided file with the file format "raucb":

POST /api/Maintenance/UpdateFirmware Upload the new Firmware file and perform the update. After the Update a reboot is done automatically.

Parameters

No parameters

Request body

file

string(\$binary)

Choose File

regatron-i...d-bx.raucb

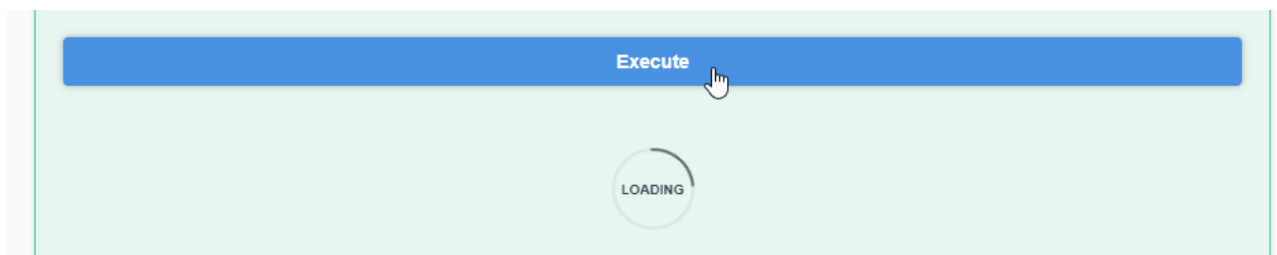
Send empty value

Cancel

multipart/form-data

Execute

6. Click on "Execute":



7. A screen similar to the one below is shown on the G5.HMI:

CAUTION: Do not turn of the power to the device during the update process.

Software update in progress



rauc-Message: 22:05:56.100: installing /tmp/regatron-image-dev-bundle-baseboard-
tx.raucb: 20% Verifying signature

8. When the progress bar is full the G5.HMI restarts. This will take a few minutes.

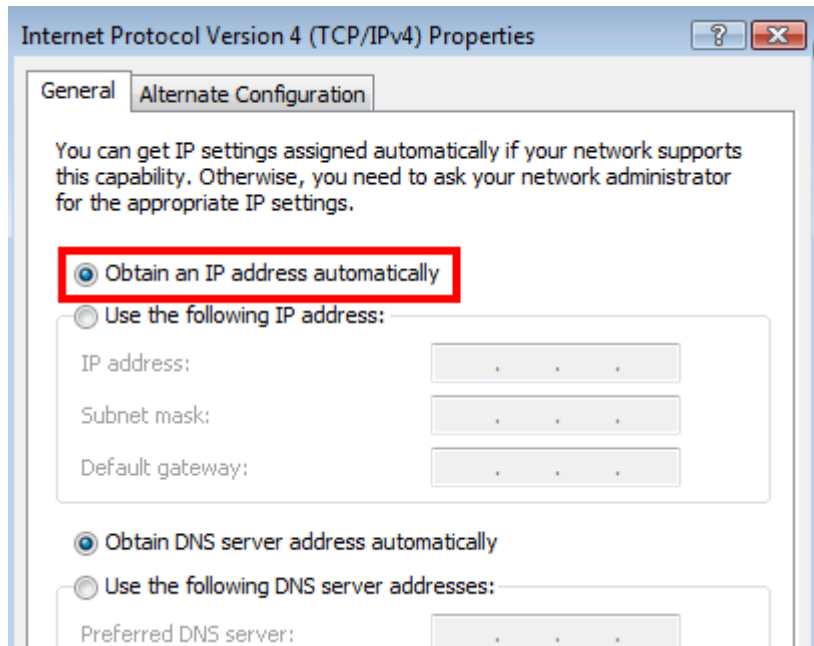
5.3 Check the G5.HMI software version

1. Click on "MENU" and on "Device Info".
2. Scroll to the bottom of the screen and check the version of the "WebAPI" with the version given on the G5.HMI update folder.



5.4 Change the IP address of the PC back (only if worked through chapter 5.1)

1. Work through chapter 5.1 Change the IP address of the PC to connect to the G5.HMI from point 1 till point 4.
2. Select 'Obtain an IP address automatically' if this was the setting before or enter the noted IP address, subnet mask and default gateway from chapter 5.1 point 5.



3. Click on 'OK'

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support@regatron.com
www.regatron.com
Filename: SM_SBS-G5-HMI-Software-Update_EN_240905