



SIEMENS KNX Firmware Download Tool

User Guide

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Supplementary information

Purpose of the user guide

The user guide provides comprehensive explanations of the functions of the program

Target audience of the user guide

The user guide is designed for people who have attended an ETS course and want to update the firmware of various KNX devices with the SIEMENS KNX Firmware Download Tool program.

Product documentation and support

The installation program for the SIEMENS KNX Firmware Download Tool as well as a list of successfully tested interfaces and further information on the program can be found at the following web address:

https://knx-td.sihub.siemens.com/sw_tools/main_fdt_v7.htm

Product documentation

Documents related to the product, for example the operating/assembly manual, technical product information, application program description, product database, additional software and CE declarations, can be downloaded from the following website:

<https://knx-td.sihub.siemens.com>



Frequently asked questions

For frequently asked questions regarding the product and their solutions, see:

[Link](#)



Support

Contact details for additional questions relating to the product:

Tel.: +49 89 9221-8000

<http://www.siemens.com/supportrequest>



1 Functional description

The SIEMENS KNX Firmware Download Tool (FDT) updated by Siemens can be used to update the firmware of KNX and KNX IP system devices. For KNX devices without an Ethernet connection, the new firmware is downloaded to the device via the KNX network and the interface installed there (IP or USB interface), and for devices with an Ethernet connection, it is downloaded directly from the computer to the device.

The Support tab contains the "Load program updates" button, which is used to start the search for a current software version of the SIEMENS KNX Firmware Download Tool.

2 Description of the user interface

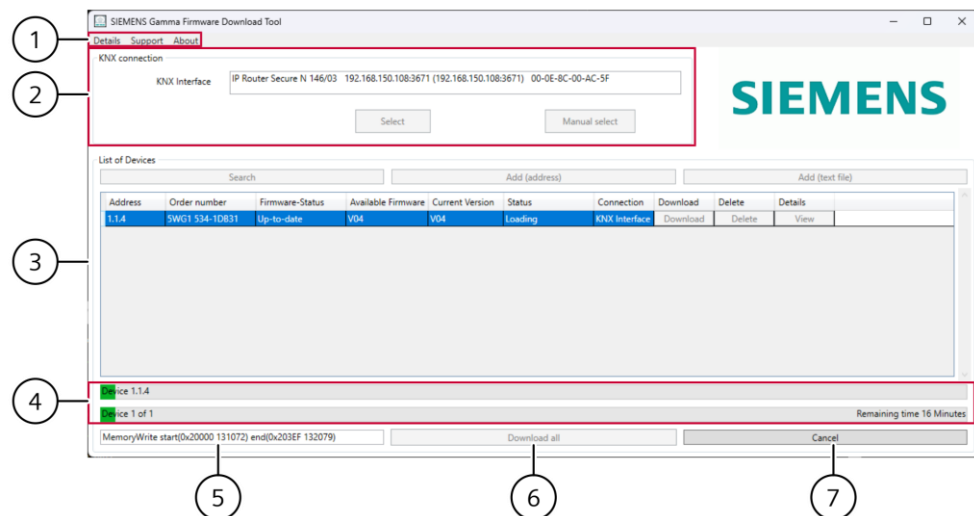


Fig. 1: Overview of the user interface

Item	Function
1	Menu bar
2	Selection and display of the currently used KNX interface
3	List of devices to be updated
4	Progress bar of the update operation - The upper bar indicates the update progress of the device that is currently being updated. - If several devices are being updated, the lower bar indicates the overall progress.
5	Shows the status of the current update step
6	All devices found with the firmware status "Update available" are updated one after the other.
7	All current operations are canceled.

Menu bar

The menu bar shows the following menu items:

Details	Support	Info
Available firmware updates - Display the list of available firmware updates (View available firmware updates [→ 15]) Device properties - Call up device properties (Calling up device properties [→ 14])	Support Info - Retrieve information for Support (Retrieving information for Support [→ 18]) Open image directory - Import firmware files received from Support (Importing firmware files received from Support [→ 18]) Load external images - Load new images from the server Load program updates - Search for the latest software version of the SIEMENS KNX Firmware Download Tool Compatibility mode (short telegrams only) - Switch on compatibility mode (Switch on compatibility mode [→ 18])	Information on the version, documentation and license of the SIEMENS KNX Firmware Download Tool.

Device list

The device list shows the following columns:

Columns	Description
Address	Physical address of the device (e.g. 1.1.2)
Order number	Order number of the device
Firmware status	Firmware status. The following statuses are possible: - Update available: - Device can be updated - Up-to-date: - The device firmware is up-to-date. If necessary, it can be downloaded to the device once again. - Faulty update - Update faulty/error during download, repeat the process. - No update available: - No update is available for this device.
Available firmware	Firmware version of the available firmware (e.g. V03)

Columns	Description
Current version	Version number of the currently installed firmware (e.g. V02)
Status	Status of the firmware download, no display or empty field after the device list is filled out The following statuses are possible: • Waiting: – The device is queued for download. • Download: – The firmware is being loaded to the device. • Completed: – The firmware has been loaded to the device. • Canceled by User: – The user has canceled the firmware download to the device. • Error: – An error occurred during the firmware download to the device.
Connection	Connection type to this device. The following connection types are possible: • KNX interface: – The device can be connected to the computer only via a KNX interface and the KNX network. • direct IP: – Alternatively, the device can be connected to the computer directly via the Ethernet interface on the device. This makes it quicker to load the firmware to the device.
Download	Button for starting the firmware download to the selected device. The "Download (all)" button below the table starts the download for all devices one after the other.
Delete	Button for deleting the selected device from the device list. (This is useful, for example, if the firmware is to be updated on all devices except for one device.)
Details	Button for displaying the device properties of this device.

3 Installation

System requirements

- Windows 10 or newer
- NET Framework 4.6.1

Installation

1. Start the installation file
 - Double-click the installation file to execute it.
2. Follow the installation instructions
 - Accept the license agreement.
 - Read and grant permission to make changes to the device.
3. Install the SIEMENS KNX Firmware Download Tool
4. Complete the installation
 - After successful installation, the display shows the following:
 - SIEMENS KNX Firmware Download Tool
 - Instructions for use of the SIEMENS KNX Firmware Download Tool

4 Operation

4.1 Selecting a KNX interface

Use of IP secure interfaces

The SIEMENS KNX Firmware Download Tool can only be used with an IP secure interface if it has been commissioned without KNX IP secure activated.

- **If KNX IP secure is enabled:** In the ETS, deactivate the "Safe commissioning" option for the relevant interface.
- **Alternative:** Reset the IP secure interface to the factory settings and then put it back into operation again without the "Safe commissioning" option activated.

Usable interfaces

The interfaces that can be used to update the device firmware are listed under the following link:

https://knx-tel.sihub.siemens.com/sw_tools/main_fdt_v7.htm

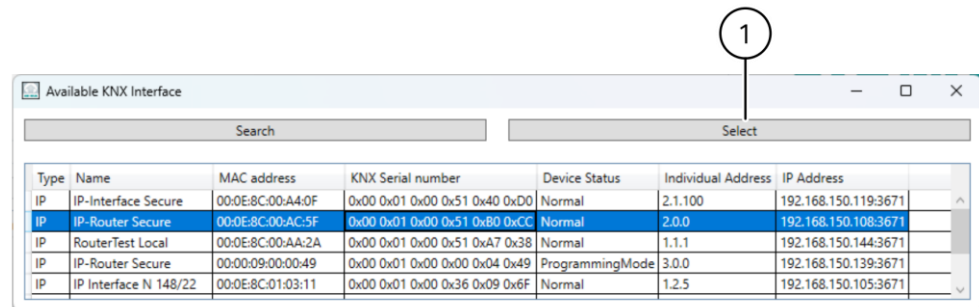


Fig. 2: Selecting a KNX interface

Requirements

- The SIEMENS KNX Firmware Download Tool program is open.
- A KNX interface is connected to the computer.

Selecting an interface

- Double-click the required interface or select it and click "Select" [1].
- The interface is now selected.

Selecting a KNX interface manually

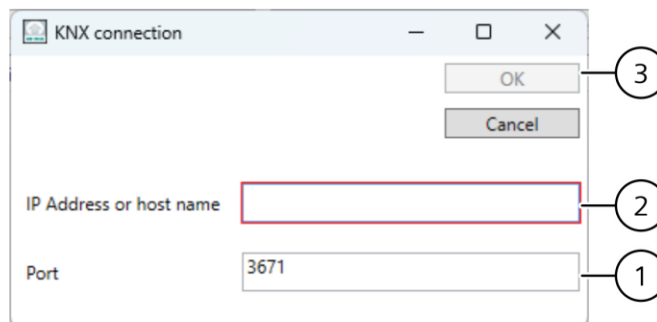


Fig. 3: Selecting a KNX interface manually

1. Click on the "Select manually" button.
 - The "KNX connection" window opens.
2. Enter the IP address or host name [2].



If the KNX interface is not connected directly to the laptop, but is connected via network and DSL router, the host name must be specified.

3. Enter the port [1]
 - For KNX and KNX IP system devices, the default port is 3671.
4. Confirm entries
 - Click the "OK" button [3].
 - The interface is found and selected.
 - The "KNX connection" window is closed.

4.2 Adding devices to the device list and removing them

Showing devices with programming mode enabled

Requirement:

- Safe commissioning has been deactivated.
- A KNX interface has been selected (see Selecting a KNX interface [→ 10]).

Procedure:

1. Click the "Search" button in the "Device list" section.
 - The search is started.

Result:

- All devices in the KNX network of the connected interface that have programming mode enabled are displayed in the device list.

Adding a device to the device list by entering the physical address

Requirement:

- A KNX interface has been selected (see Selecting a KNX interface [→ 10]).

Procedure:

1. Click the "Add (address)" button.
 - The "Add device" window opens.
2. Enter the physical address.
 - Enter the physical address of the device and confirm with "OK".

Result:

- The device with the entered physical address is displayed in the device list if it has been found on the bus with this address.

Adding devices to the device list by importing a text file with physical addresses

Requirement:

- A KNX interface has been selected (see Selecting a KNX interface [→ 10]).

Procedure:

1. Create a text file
 - Write the physical addresses of the devices in separate lines.
 - Save the file in the .txt format.
 - Example: 1.1.32 or 1.1.44
2. Click "Add (text file)" button
 - The file explorer is opened.
3. Choose the text file
 - Select the created file and confirm with "Open".

Result:

- All devices with the physical addresses listed in the text file are displayed in the device list, provided that the respective devices have been found on the bus.

Removing devices from the device list



This function is useful, for example, when updating the firmware for almost all listed devices.

Requirement:

- A KNX interface has been selected (see Selecting a KNX interface [→ 10]).
- Devices have been added to the device list (see Selecting a KNX interface [→ 10]).

Procedure:

1. Select the device to be deleted
 - Select the device from the device list.
2. Click on the "Delete" button
 - Press the "Delete" button in the line of the selected device.

Result:

- The device is removed from the device list.

4.3 Updating firmware

Requirements

- The functions of the device are currently not required.
- An interface has been selected (Selecting a KNX interface [→ 10]).
- Devices have been added to the device list (Adding devices to the device list and removing them [→ 11]).

Performing a firmware update

1. Ensure that the device remains connected to the computer in non-secure mode throughout the firmware update.
2. Select the device whose firmware is to be updated.
3. Press the “Download” button in the line of the selected device.
 - The firmware of the individual device is updated.
 - The remaining time is displayed.
4. Alternative: To update the firmware of all displayed devices, press the “Download (all)” button.
 - The firmware of all displayed devices is updated one by one.
 - The remaining time is displayed.
5. After completion, load the device configuration back into the device via ETS
 - The device is functional again and safe commissioning can be enabled again if necessary.

NOTICE	
!	Before the process is performed, all secure devices must be placed in unsecure mode.

NOTICE	
!	Activate safe commissioning again after updating secure devices.

NOTICE	
!	Property damage due to device failure During the firmware update the affected device is not functional. • Before updating, ensure that the functions of the device are not required during the update and set-up period.

NOTICE	
!	Property damage due to data loss During the firmware update the data stored in the device is deleted. This means the application program must be loaded to the device again after the update. • Only update the firmware of the device if the configuration of the device has been secured and the current ETS project is available. • Only update the firmware of the device if the ETS software is available to reload the application program to the device.



The physical address of the device is retained.

NOTICE**High bus load due to programming with ETS during firmware update**

A high bus load in the KNX network slows down the updating of the firmware.

- Do not configure or connect this device to the ETS while updating the firmware.



The duration of a firmware update depends on the transmission type and the components involved:

Via a KNX network: Depending on the bus load, interface and device, the update time is about 3 to 25 minutes. The KNX DALI Gateway can take up to 60 minutes to update.

Direct connection (computer → Ethernet port): With a direct connection, updating via TP takes significantly less time, e.g. about 1 minute for the IP router and 14 minutes for the KNX DALI Gateway.

Updating firmware on multiple devices at the same time

Open the SIEMENS KNX Firmware Download Tool several times.

- Each program window can be operated separately and independently of the other open windows.

NOTICE**High bus load due to simultaneous updating of devices on a topographical line**

A high bus load in the KNX network slows down the updating of the firmware.

- Do not update the firmware of devices on a topographical line at the same time.
- Select a different interface in each program window (Selecting a KNX interface [→ 10])
- For each interface, select only devices for updating that are topographically located directly in the line of the interface (without line coupler).

4.4 Calling up device properties

Name	Value
DeviceDescriptor	780
ManufacturerId	1
HardwareId	00 02 00 00 00 0A
OrderId	5WG1 534-1D831
SerialNumber	00 01 00 55 EC E8
FirmwareVersionEx	00 04 00 04
ApplicationId	00 01 9A 01 03

Fig. 4: Device properties

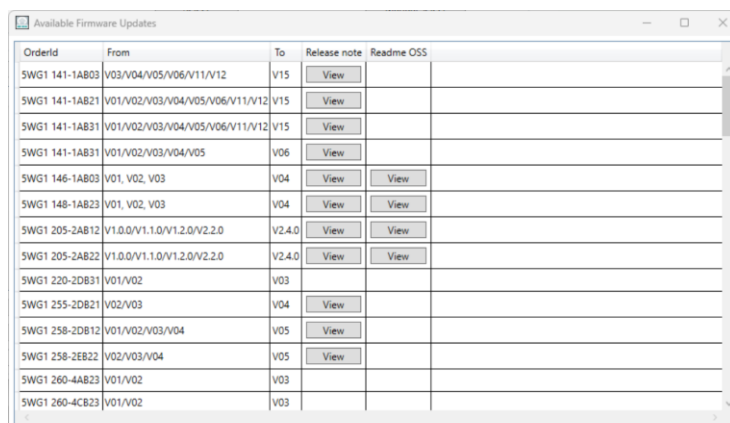
Requirements

- The SIEMENS KNX Firmware Download Tool program is open
- An interface has been selected (Selecting a KNX interface [→ 10]).
- Devices have been added to the device list (Adding devices to the device list and removing them [→ 11]).

Procedure

1. Select the required device in the Device list section.
2. Open the Details menu item and select Device properties.
 - The device properties of the selected device are displayed.
3. Alternative: Click the Read button in the line of the device.
 - The device properties of the selected device are displayed.

4.5 View available firmware updates



OrderId	From	To	Release note	Readme OSS
5WG1 141-1AB03	V03/V04/V05/V06/V11/V12	V15	View	
5WG1 141-1AB21	V01/V02/V03/V04/V05/V06/V11/V12	V15	View	
5WG1 141-1AB31	V01/V02/V03/V04/V05/V06/V11/V12	V15	View	
5WG1 141-1AB31	V01/V02/V03/V04/V05	V06	View	
5WG1 146-1AB03	V01, V02, V03	V04	View	View
5WG1 148-1AB23	V01, V02, V03	V04	View	View
5WG1 205-2AB12	V1.0.0/V1.1.0/V1.2.0/V2.2.0	V2.4.0	View	View
5WG1 205-2AB22	V1.0.0/V1.1.0/V1.2.0/V2.2.0	V2.4.0	View	View
5WG1 220-2DB31	V01/V02	V03		
5WG1 255-2DB21	V02/V03	V04	View	
5WG1 258-2DB12	V01/V02/V03/V04	V05	View	
5WG1 258-2EB22	V02/V03/V04	V05	View	
5WG1 260-4AB23	V01/V02	V03		
5WG1 260-4CB23	V01/V02	V03		

Fig. 5: Available firmware updates

The list of available firmware updates includes all Siemens KNX devices for which a firmware update is available.

Procedure

1. Open the Details menu item and select Available firmware updates.
2. A list appears with:
 - Order number, device names and their current firmware version
 - Firmware version to which an update can be carried out
3. In addition, buttons are displayed (if available):
 - ReadmeOSS (display of OSS information on the OSS components located in the device software)
 - Version info

4.6 Displaying and loading external images

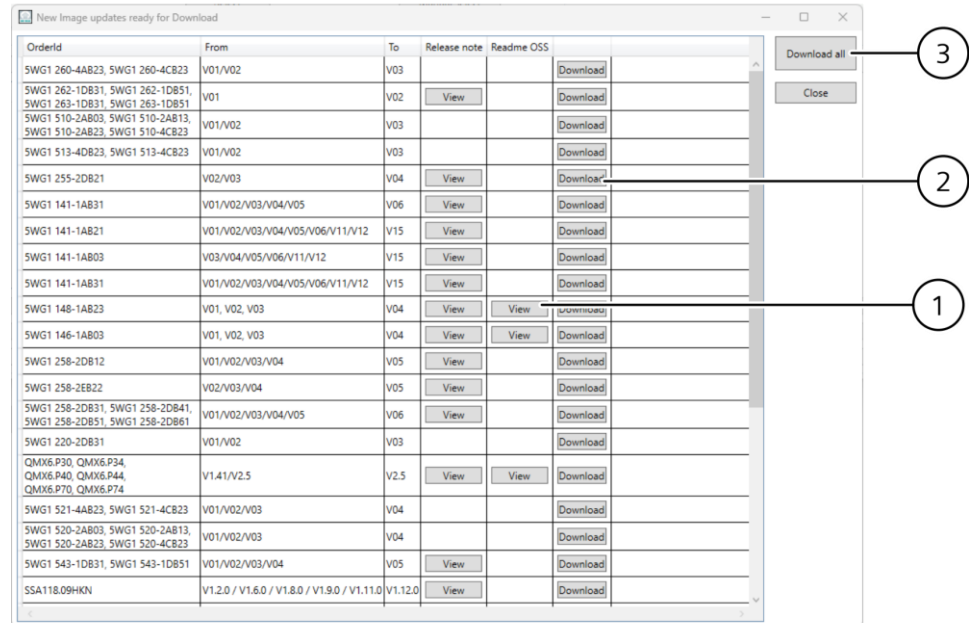


Fig. 6: Load external images

Procedure

1. Open the SIEMENS KNX Firmware Download Tool
2. Open the "Support" menu item and select "Load external images"
3. A list appears with:
 - Order number, device names and their current firmware version
 - Firmware version to which an update can be carried out
3. In addition, buttons are displayed (if available):
 - Readme OSS
 - Version info
 - Download
4. Press the "Read" button [1] to display the version info or Readme OSS
5. Press the "Download" button [2] to perform the download for the selected device individually
6. Press the "Download (all)" button [3] to execute all downloads for the listed devices

4.7 Viewing and loading software updates

Procedure

1. Open the SIEMENS KNX Firmware Download Tool
2. Open the "Support" menu item and select "Load program updates"
 - Information about the new software version and the currently installed software is displayed.
3. To install the new software version, press the "Load and install" button.
 - The new software version is downloaded and installed.

5 Help in case of errors and problems

5.1 Frequently asked questions

Frequently asked questions

For frequently asked questions regarding the product and their solutions, see:

[Link](#)



5.2 Possible errors

Error	Troubleshooting
An error occurs during download of the firmware to the device.	Try downloading the firmware to the device again. • If the error still occurs: Switch on compatibility mode (Switch on compatibility mode [→ 18]) Try downloading the firmware to the device again. • If the error still occurs: Contact Support (Product documentation and support [→ 3]).
The download of the firmware is aborted.	Check whether devices are used that cannot process LONG Frames. • If devices are used that cannot handle LONG Frames: – Switch on compatibility mode (Switch on compatibility mode [→ 18]) • If the error still occurs: Contact Support (Product documentation and support [→ 3]).
Devices do not appear in the device list / device properties cannot be called up. Possible cause: Multiple devices have the same physical address.	Ensure that each device has a unique physical address.
Interface is not found. Possible cause: The interface used is not compatible.	Ensure that an interface is used that can be used to update the device firmware (Selecting a KNX interface [→ 10]).
Interface or device is in secure mode	Ensure that safe commissioning has been deactivated.

5.3 Switch on compatibility mode

If there are problems retrieving information from a device or downloading firmware to a device, compatibility mode can be switched on.

In compatibility mode, telegrams are limited to standard length (no LONG FRAMES). This can help with download problems in the KNX network, but the download time is roughly doubled.

Activating compatibility mode

1. Open the Support menu item and select "Compatibility mode (short telegrams only)".
2. After activation, the following changes apply:
 - A check mark is displayed before the menu item "Compatibility mode (only short telegrams)".
 - Compatibility mode is switched on.
 - The download time doubles.

5.4 Retrieving information for Support

If you have problems with the program or downloading firmware to devices, Support requires additional information.

Retrieving general information

1. Open the Support menu item and select "Support Info"
 - The system ID, software version, directory of the info files and directory of the log files are displayed.

Exporting information to the device

Requirement

- An interface has been selected (Selecting a KNX interface [→ 10]).
- Devices have been added to the device list (Adding devices to the device list and removing them [→ 11]).

Procedure

1. Select the device in the device list
2. Open the Support menu item and select "Read devices"
 - The properties of the device are exported. The export data is stored in the directory "...\\MyDocuments\\Siemens\\FirmwareDownloadTool" in the file "yyyy-mm-dd--hh-mm-ss PropertyExport.xml".

5.5 Importing firmware files received from Support

In the event of errors and problems, Support may provide a firmware file by other means. This can also be imported.

Procedure

1. Ensure that you have received the firmware file from Support.
2. In the Firmware Download Tool, open the Support menu item and select Open image directory.
 - The ...\\Documents\\Siemens\\FirmwareDownloadTool\\Images folder is opened.
3. Copy the received firmware file to this folder.
4. Close the window of the Firmware Download Tool.
5. Restart the SIEMENS KNX Firmware Download Tool.
6. Perform the firmware update (Updating firmware [→ 12])
 - The firmware for the affected device is detected from the above folder and loaded to the device.



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