

SIMATIC Drive Controller – SINAMICS Integrated Firmware Update

SIMATIC Drive Controller / TIA V17

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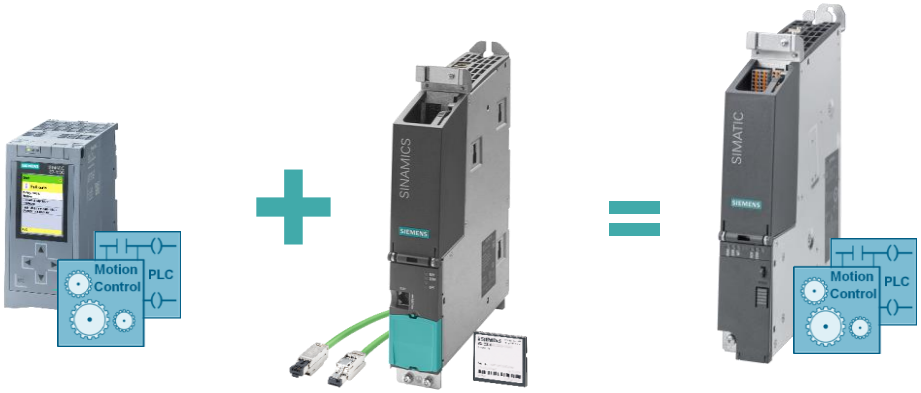
1 Introduction

1.1 SIMATIC Drive Controller

1.1.1 Structure

The SIMATIC Drive Controller is a drive-based SIMATIC S7-1500 and combines a fail-safe SIMATIC Controller and a SINAMICS S120 drive controller in a SINAMICS S120 Booksize Compact housing.

Figure 1-1 SIMATIC Drive Controller



SIMATIC S7-1500 TF | **SINAMICS S120 CU320-2** | **SIMATIC Drive Controller**

The SIMATIC Drive Controller contains the following components, all in one housing:

- Fail-safe SIMATIC S7-1500 TF technology controller.
- SINAMICS S120 drive controller based on Control Unit CU320-2.
- Technology I/Os as peripherals of the SIMATIC Controller.
- Drive I/Os of the integrated SINAMICS S120 drive controller.

1.1.2 Integration into a TIA Portal Project

If a SIMATIC Drive Controller is inserted into a new TIA Portal project (1), the folder "Drive_Controller_1" is created in the project directory (2), under which the two components of the SIMATIC Drive Controller can be found:

- "PLC_1"
  In the figure, this is a SIMATIC S7-1507D TF (3).
- "Integrated_1"
  In the figure, this is an integrated SINAMICS S120 drive controller (4).

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Figure 1-2 Adding a SIMATIC Drive Controller to a TIA Portal project

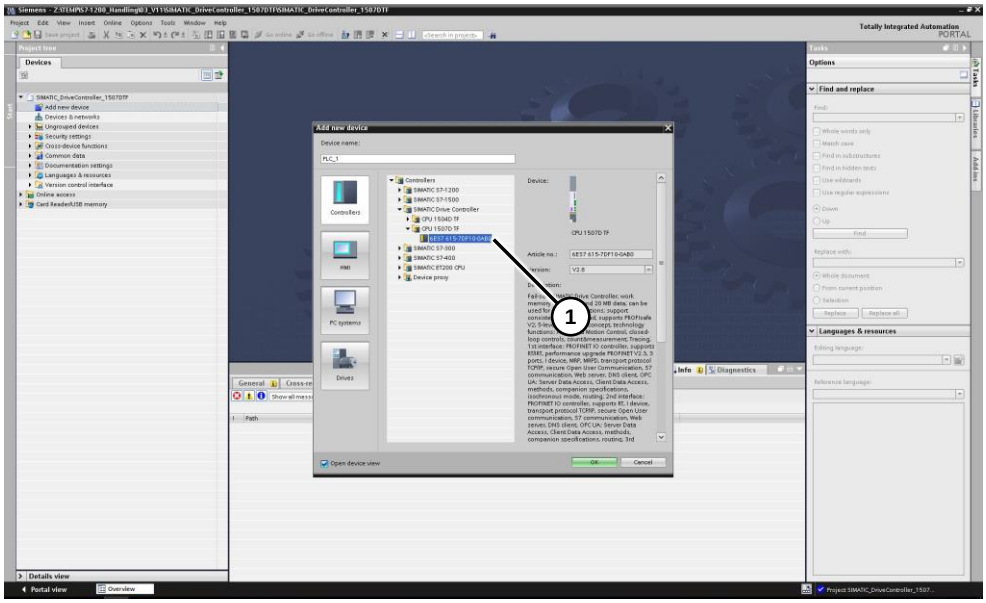
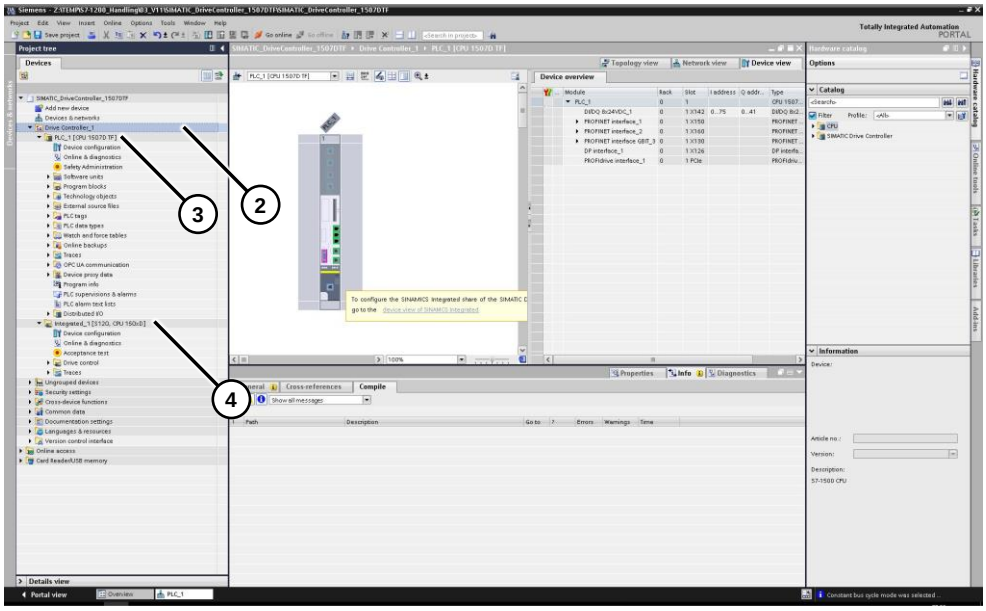


Figure 1-3 SIMATIC Drive Controller in the project directory of the TIA Portal project



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1.1.3 Module Firmware Update

A separate firmware update is performed for each of the components contained in the SIMATIC Drive Controller housing. For the SIMATIC Drive Controller, two firmware files are available for a firmware update:

- Firmware of the SIMATIC CPU (PLC) of the SIMATIC Drive Controller.
- Firmware of the SINAMICS Integrated of the SIMATIC Drive Controller.

Download

The two firmware files can be downloaded free of charge from Siemens Industry Online Support (\6\).

Note For the SIMATIC CPU and the SINAMICS Integrated of the SIMATIC Drive Controller, separate update files are available which can be downloaded from the Siemens Industry Online Support via the same entry (\6\).

Procedure

A firmware update of the SIMATIC Drive Controller can be performed in the following ways, with a distinction being made between the two updates of the individual components.

Update of the SIMATIC CPU (PLC) of the SIMATIC Drive Controller:

- Online in STEP 7 via Online & Diagnostics
- Online in STEP 7 via accessible devices (PROFINET)
- Via a SIMATIC Memory Card
- Via the integrated web server
- Online via the SIMATIC Automation Tool

Update of the SINAMICS Integrated of the SIMATIC Drive Controller:

- Via a SIMATIC Memory Card

Table 1-1 Overview of firmware update options

	Drive Controller SIMATIC CPU (PLC)	Drive Controller SINAMICS Integrated
STEP 7, Online & Diagnosis	Yes	No
STEP 7, accessible devices	Yes	No
SIMATIC Memory Card	Yes	Yes
Web server of the CPU	Yes	No
SIMATIC Automation Tool	Yes	No

Note The firmware update for the SINAMICS Integrated of the SIMATIC Drive Controller can only be installed via the SIMATIC Memory Card.

Keep a sufficiently-sized SIMATIC Memory Card with at least 256 MB that can hold all the data required for the firmware update ready for this purpose.

The procedure for updating the firmware of the SIMATIC CPU (PLC) of the SIMATIC Drive Controller can be found in the System Manual for the SIMATIC Drive Controller (\5\) or in Section 3.4.

The procedure for updating the firmware of the SINAMICS Integrated in the SIMATIC drive controller is described in Section 2 of this document.

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Special feature of the firmware update procedure described here

The procedure described in this document for updating the SINAMICS Integrated firmware of a SIMATIC Drive Controller is based on the principle that the previous configuration of the SINAMICS Integrated on the SIMATIC Memory Card with the previous firmware version is also used for the startup of the module after the firmware update.
The SINAMICS Integrated with the new firmware automatically converts the data structure of the previous configuration into the data structure of the new firmware version during startup. For this reason, the procedure described here can only be used for upgrading the SIMATIC Drive Controller or SINAMICS Integrated to a newer firmware version. Upgrading the SINAMICS Integrated to an older firmware version is not possible with this procedure and is not recommended.

Note The procedure described here for a firmware update of the SINAMICS Integrated of a SIMATIC Drive Controller can only be used for a firmware update to a newer firmware version.

Note It is not recommended to upgrade a SINAMICS Integrated with an older firmware version.

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1.2 Adjusting the Firmware Version in the TIA Portal Project

If a SIMATIC Drive Controller is used for a project that is already equipped with a new firmware version (e.g., for hardware delivered after the release of a new firmware version or in the case of spare parts), it may be necessary to also adapt the firmware versions in the TIA Portal project to match the hardware.

Note To access the SIMATIC Drive Controller, the corresponding TIA Portal project must always be available, since a project upload for the SINAMICS Integrated of the SIMATIC Drive Controller is not supported.

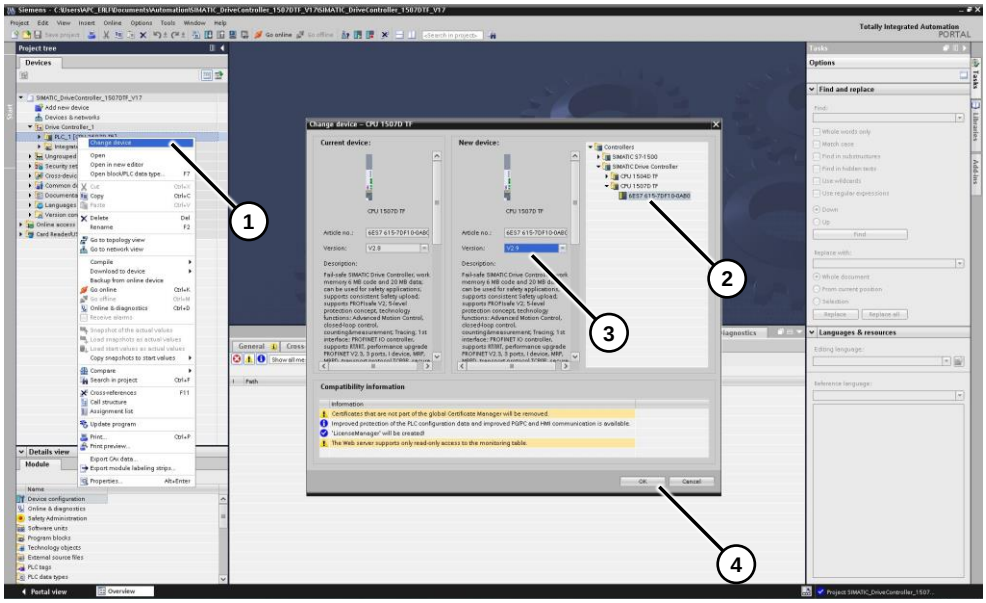
For more detailed information, refer to the System Manual for the SIMATIC Drive Controller (\5\) in the Section "Configuration Notes".

1.2.1 Adjusting the Firmware Version of the SIMATIC CPU (PLC)

The firmware version of the SIMATIC CPU (PLC) can be easily adapted in the TIA Portal project by changing the PLC device.

Open the folder structure of the SIMATIC Drive Controller in the project directory and select "Change device" (1) via the context menu. Then select your hardware (2) in the next window. This is usually the SIMATIC Drive Controller already in the TIA Portal project. Then, set the desired firmware version for the SIMATIC CPU (PLC) (3) and complete the device change via the OK button (4).

Figure 1-4 Adjusting the firmware version of the SIMATIC CPU (PLC)



1.2.2 Adjusting the Firmware Version of the SINAMICS Integrated

It is not possible to adjust the SINAMICS Integrated firmware version of the SIMATIC Drive Controller via the Change device function, since the SINAMICS Integrated of the SIMATIC Drive Controller does not support this functionality.

To adjust the firmware version of the SINAMICS Integrated of the SIMATIC Drive Controller in the TIA Portal project, the SINAMICS Integrated must be deleted from the project and created again.

The exact procedure for adjusting the firmware version is described in detail in Section 2 of this document. There you will get a step-by-step explanation regarding…

- …which data must be saved in the TIA project
- …how to upgrade the firmware of the SINAMICS Integrated.
- …which changes must be made in the TIA Portal project.
- …how the saved data must be re-integrated into the project in order to ensure that the project is free of errors.

1.2.3 SIMATIC Drive Controller Partial Firmware Updates

Since a firmware update of the components contained in the housing of the SIMATIC Drive Controller can be performed separately, it is possible to operate the SIMATIC Drive Controller with different firmware combinations.

Compatibility matrix

For the use of the different SIMATIC Drive Controller firmware combinations, the following compatibility matrix can be used, which is found in Siemens Industry Online Support (SIOS) in the download entry for the SIMATIC Drive Controller firmware (\6\) in its updated form.

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Table 1-2 Compatibility matrix example

Compatibility		SINAMICS Integrated	
		V5.2.0.4	V5.2.3.5
SIMATIC Drive Controller (PLC)	V2.8.1	Yes (FV ≤ 8)	No
	V2.8.2	Yes (FV ≤ 8)	No
	V2.8.3	Yes (FV ≤ 8)	No
	V2.9.2	Yes	Yes

Note

To be able to recognize the data structure of the SIMATIC Drive Controller SINAMICS firmware, the SIMATIC CPU (PLC) must at least be equipped with the firmware version for which the SINAMICS firmware is approved. In the table above, this is firmware version V2.9.2 of the SIMATIC CPU.

The update of the SIMATIC CPU (PLC) firmware must be done before the update of the SINAMICS firmware so that the new SINAMICS firmware is recognized and the update can be executed properly.

Note

The firmware version V2.8.x for the SIMATIC CPU (PLC) may only be used for functional version ≤ 8 (FV ≤ 8) of the SIMATIC Drive Controller. The functional version can be found on the name plate of the module.

ATTENTION

SIMATIC Drive Controllers with a higher functional version must never be equipped with an earlier firmware version than the module contained when it was delivered.

For example, SIMATIC Drive Controllers with functional version ≥ 9 (FV ≥ 9) that are delivered with a firmware version ≥ V2.9 of the SIMATIC CPU (PLC) must not be equipped with firmware version V2.8.x of the SIMATIC CPU (PLC). In this case, the SIMATIC Drive Controller would no longer be operational and would have to be sent in for repair.

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1.2.4 Operation with Different Firmware Versions

There are situations in which the firmware versions configured in the TIA Portal project and on the memory card differ from the firmware versions actually present on the module. This can occur, for example, in the case of spare parts, when the memory card is removed from a defective piece of hardware and inserted into a new hardware with different firmware versions.

Different firmware versions of the SIMATIC CPU (PLC)

Projects with firmware versions lower than the firmware version currently present on the module can be operated and are executable. Online access to the SIMATIC CPU (PLC) from the TIA Portal is possible.

Different firmware versions of the SINAMICS Integrated

Projects with firmware versions lower than the firmware version currently present on the module can be operated and are executable. However, during startup, the project is converted to the data structure of the higher firmware version present on

the module. As long as the function "Save RAM data retentively" ("RAM to ROM") is not executed on the module, the configuration on the memory card is not changed.

However, online access to the SINAMICS Integrated from TIA Portal is not possible in this case, since a SINAMICS Integrated can only be accessed online with the firmware version correctly set in the TIA Portal. The firmware version actually active on the module, not the configured firmware version on the memory card, is decisive for the online access.

Note

As with all SINAMICS S120 Control Units (CUs), online access to the SINAMICS Integrated of the SIMATIC Drive Controller is only possible if the same firmware version has been configured or is available in the TIA Portal and on the module.

Firmware is differentiated on the basis of full versions and service pack versions.

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2 Carrying Out the Firmware Update

2.1 Basic Procedure

To change the firmware version of the SINAMICS Integrated of the SIMATIC Drive Controller or to adapt it to the version configured in the TIA Portal project, proceed as follows:

- Create project copy or perform data backup:
  - Note relevant data for later editing
  - Perform data backup in the project
  - Save data of the SINAMICS Integrated to the memory card
- Run firmware update:
  - Perform a firmware update on the hardware of the SIMATIC Drive Controller on the SINAMICS Integrated.
  - Create a new SINAMICS Integrated with the desired firmware version in the TIA Portal project.
  - Load the TIA Portal project with new firmware version on the SINAMICS Integrated or convert existing configuration on the SINAMICS Integrated to the new firmware version.
- Perform final steps

The execution of the individual steps is described in detail in the following sections of this document.

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CAUTION

Before installing the firmware update, ensure that the SIMATIC Drive Controller including the connected drives is not in use.

Note

The firmware update for the SINAMICS Integrated of the SIMATIC Drive Controller can only be installed via the SIMATIC Memory Card.

Keep a sufficiently-sized SIMATIC Memory Card with at least 256 MB that can hold all the data required for the firmware update ready for this purpose.

Note

To perform the firmware update, the TIA Portal project of the current configuration of the SIMATIC Drive Controller must be available. The TIA Portal project is necessary for establishing the online connection to the SIMATIC Drive Controller and especially to the SINAMICS Integrated for routing.

If no TIA Portal project is available, a new project can also be created with the current firmware version of the SIMATIC Drive Controller and the PROFINET subnet required for routing, so that online access to the SIMATIC Drive Controller is possible.

2.2 Backing up Data

2.2.1 Checking the Online Connection

If a firmware update is to be performed on the SIMATIC Drive Controller, the version of the TIA Portal used has usually also been changed, and the TIA Portal project available for the SIMATIC Drive Controller must be converted automatically when it is opened in the TIA Portal.

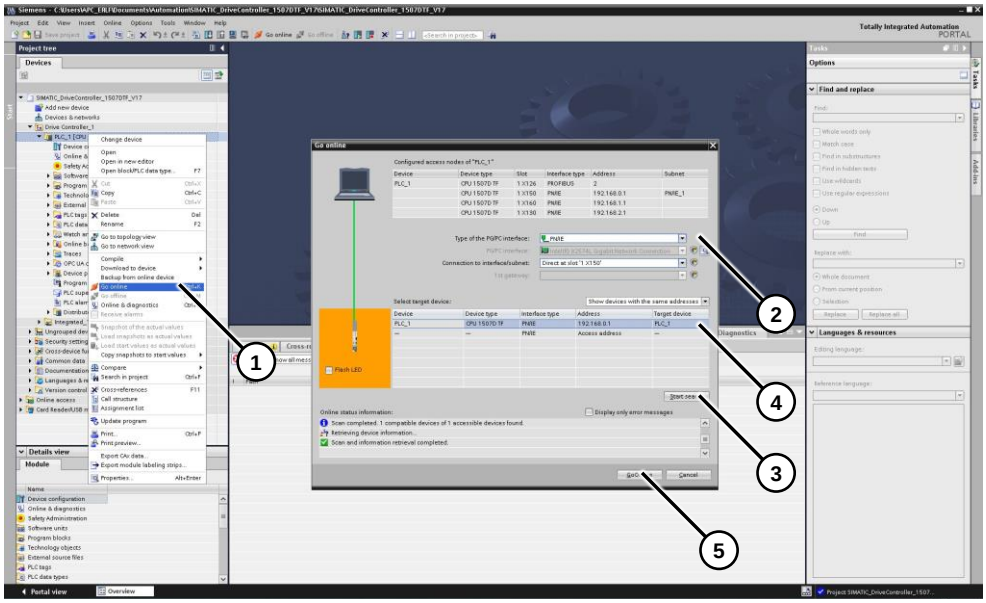
Before starting the firmware update of the SIMATIC Drive Controller, check the online access to the components of the SIMATIC Drive Controller from the project again after converting the TIA Portal project. If online access is not possible, the converted project may have to be repaired so that access is again possible.

Online access to the SIMATIC CPU (PLC)

Expand the components of the SIMATIC Drive Controller (folder) in the project directory of the TIA Portal and then open the context menu of the SIMATIC CPU (PLC) via the right mouse button.

Select the menu item "Connect online" (1) in the context menu. In the following dialog, set the interface parameters (2) for online access, start the search for the module via the button (3), select the target module found (4), and finally, establish the online connection via button (5).

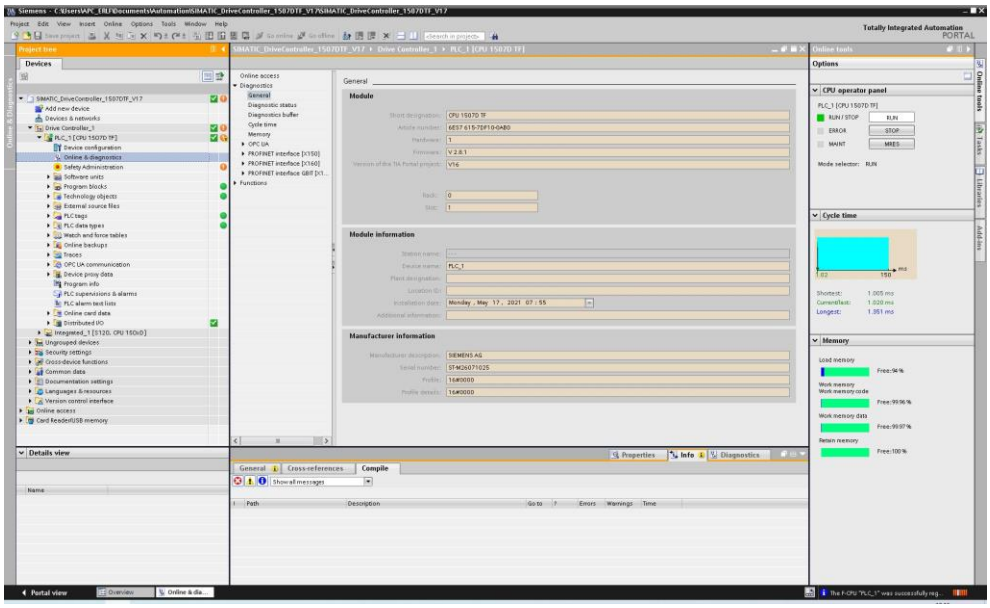
Figure 2-1 Online access to the SIMATIC CPU (PLC)



To check the online connection, you can use the online & diagnostic display of the SIMATIC CPU (PLC) of the SIMATIC Drive Controller.

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Figure 2-2 Online access to the "Online & diagnostics"



Note In the Online & diagnostics display, you can immediately check the firmware version of the SIMATIC CPU (PLC) that is active on the hardware.

After the check, disconnect the online connection again by going offline.

Online access to the SINAMICS Integrated

Right-click to open the context menu of the SINAMICS Integrated.

Select the menu item "Connect online" (1) in the context menu. In the following dialog, set the interface parameters (2) for online access, start the search for the module via the button (3), select the target module found (4), and finally, establish the online connection via button (5).

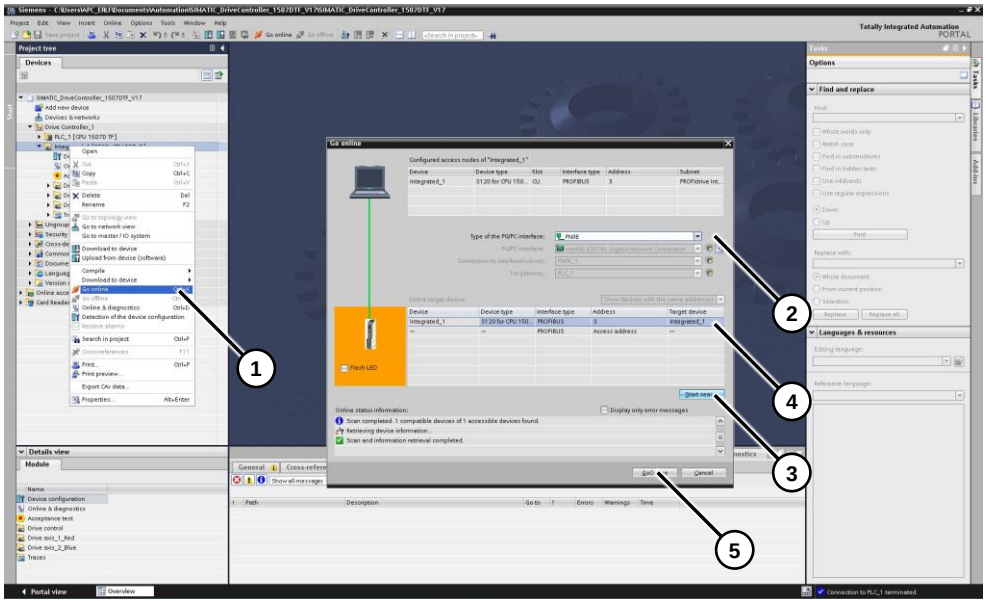
Note The online connection to SINAMICS Integrated is established via the routing function using the internal PROFIBUS connection available in the SIMATIC Drive Controller. The SINAMICS Integrated is, therefore, found in the dialog with PROFIBUS address 3.

Note As with all SINAMICS S120 CUs, online access to the SINAMICS Integrated of the SIMATIC Drive Controller is only possible if the same firmware version has been configured or is available in the TIA Portal and on the module.

Note To use the routing function to the SINAMICS Integrated, a PROFINET subnet must be configured at the PROFINET connection of the SIMATIC Drive Controller used. Otherwise, routing and, therefore, the online access to the SINAMICS Integrated is not possible.

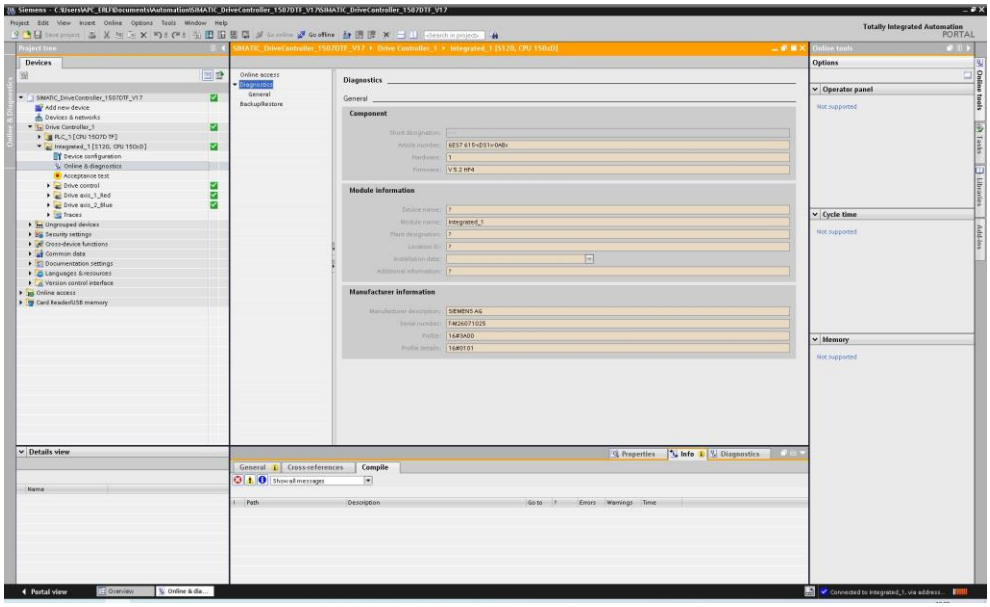
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Figure 2-3 Online access to the SINAMICS Integrated



To check the online connection, you can use the Online & diagnostics display of the SINAMICS Integrated of the SIMATIC Drive Controller.

Figure 2-4 Online access to the "Online & diagnostics"



Note

In the Online & diagnostics display, you can immediately check the firmware version of the SINAMICS Integrated that is active on the hardware.

After the check, disconnect the online connection again by going offline.

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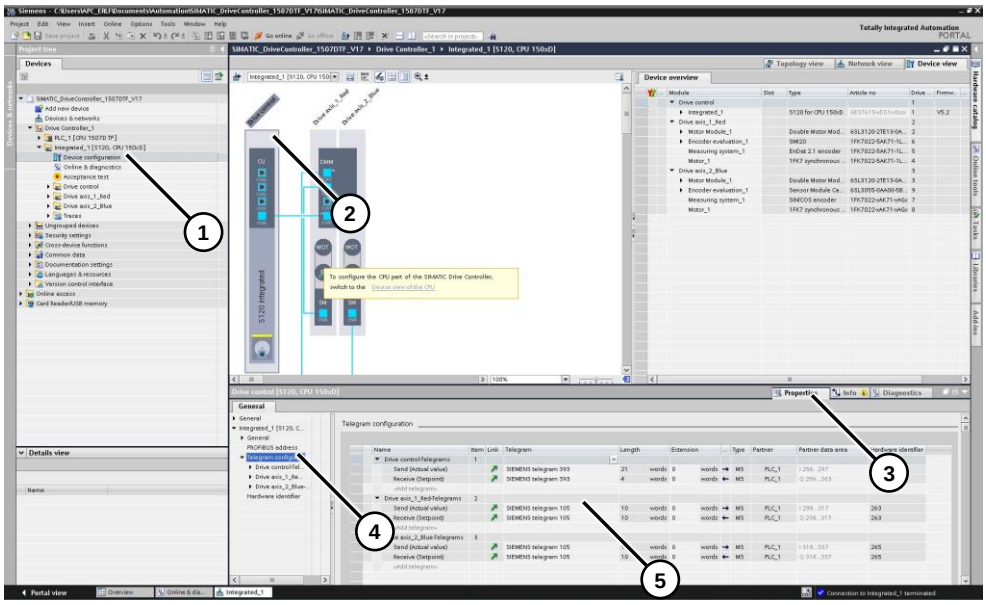
2.2.2 Note relevant data for later editing

Since the SINAMICS Integrated in the TIA Portal project cannot be adapted to the corresponding firmware version via a module exchange as is the case with the SIMATIC CPU (PLC), the SINAMICS Integrated must be deleted and recreated while the update is being performed in the TIA Portal project. For this reason, all relevant data for coupling the SINAMICS Integrated with the SIMATIC CPU (PLC) must be noted in the SIMATIC Drive Controller and kept ready for the later setup of the newly created SINAMICS Integrated.

Note telegram data

Open the telegram configuration of the SINAMICS Integrated by selecting the device configuration (1) in the project directory under the SINAMICS Integrated, then clicking the displayed Control Unit (2), and then displaying the properties (3). Open the telegram configuration (4) in the properties window (3) and note the telegram settings (5) displayed.

Figure 2-5 Note telegram data



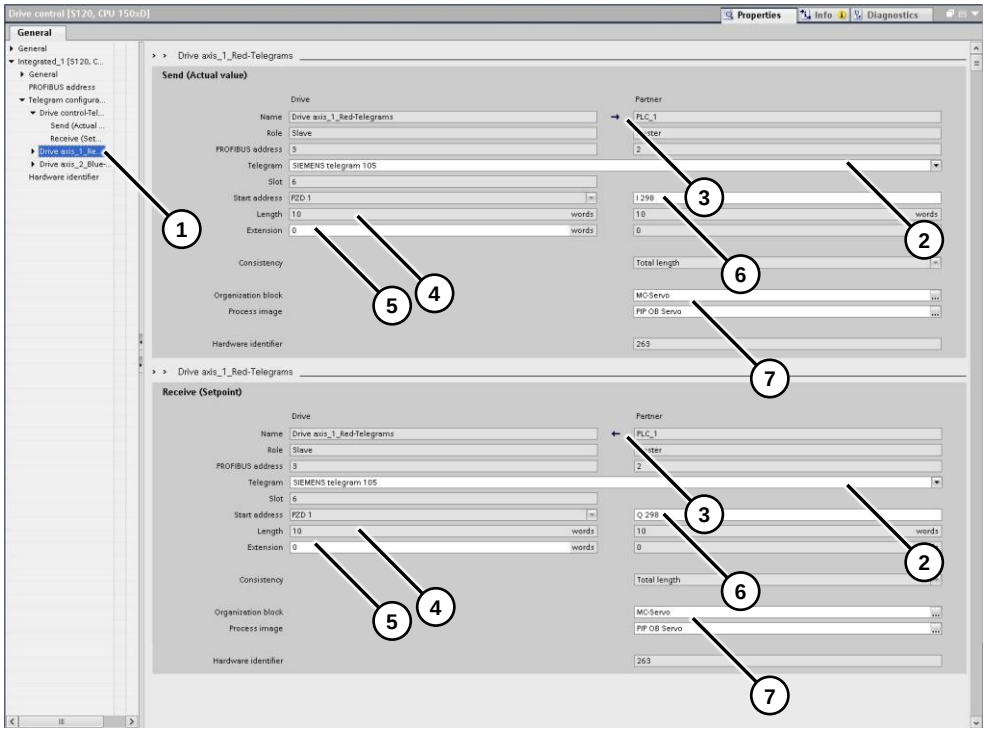
You should make a note of the following data so that you can later check the telegram configuration at the newly added SINAMICS Integrated and restore it if necessary:

- Module (1)
- Configured telegram (2), including data direction (3)
- Data length (4) or optional extension (5)
- Partner address (6)
- Possible assignment to organization block (OB) and process image for synchronous data transmission (7).

You can access this data very easily by selecting the corresponding module in the directory and looking at the telegram configuration for the send and receive direction.

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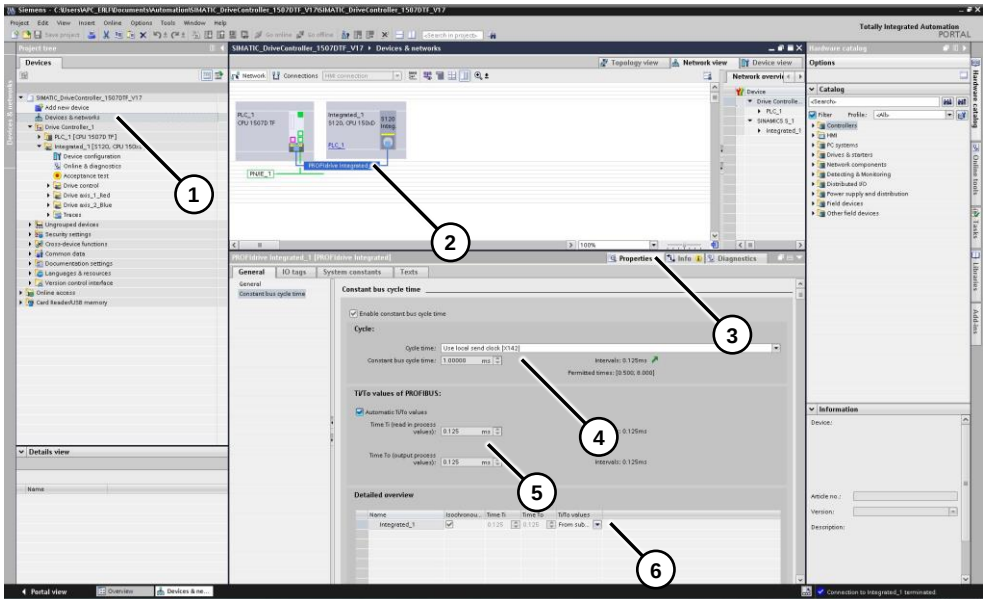
Figure 2-6 Telegram configuration backup



Note the coupling data on the PROFdrive Integrated

In the project directory, open the "Devices & Networks" section (1) and select the PROFIdrive Integrated (2) of the SIMATIC Drive Controller.
Then, open the Properties display (3) and note the data displayed there, such as cycle time (4), Ti/To values of the PROFIBUS (5), and the equidistance (6).

Figure 2-7 PROFdrive Integrated coupling data

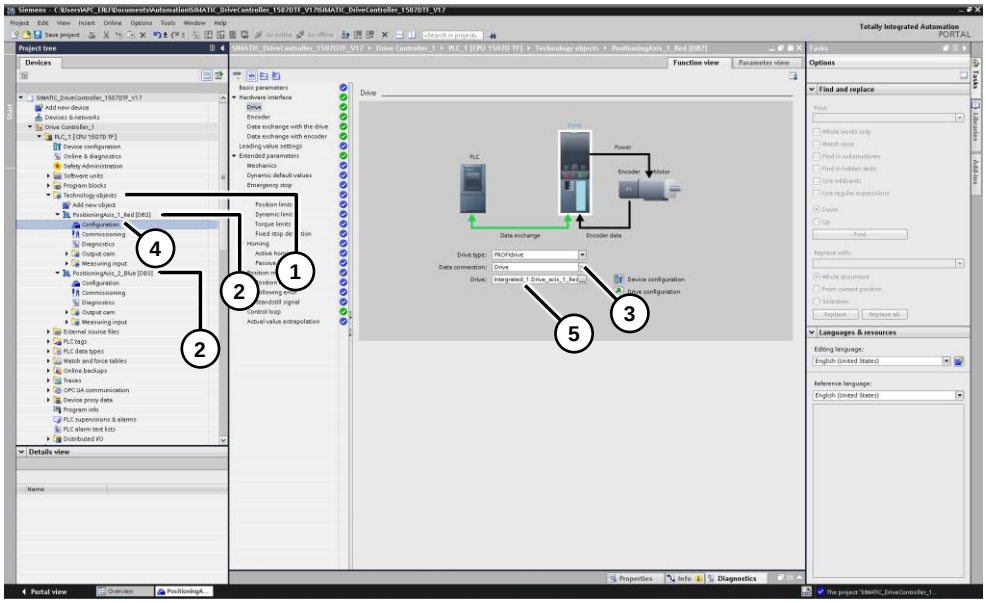


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Note coupling between technology objects and drive objects

In the project directory, open the "Technology objects" section (1) and note the connection to the corresponding drive object of the SINAMICS Integrated (5) in the "Configuration" section (4) for each technology object (2) that is connected to the SINAMICS Integrated of the SIMATIC Drive Controller (3).

Figure 2-8 Coupling data between technology and drive objects



Repeat this procedure for all technology objects that are connected to drive objects of the SINAMICS Integrated of the SIMATIC Drive Controller.

2.2.3 Saving Parameters of the SINAMICS Integrated

For operation, the SINAMICS Integrated uses the data from the internal memory of the SINAMICS (RAM or NVRAM). However, this data does not necessarily have to match the data on the memory card of the SIMATIC Drive Controller. To establish data consistency, the data from the internal memory must be stored retentively on the memory card. This function is usually also known as "RAM to ROM" functionality.

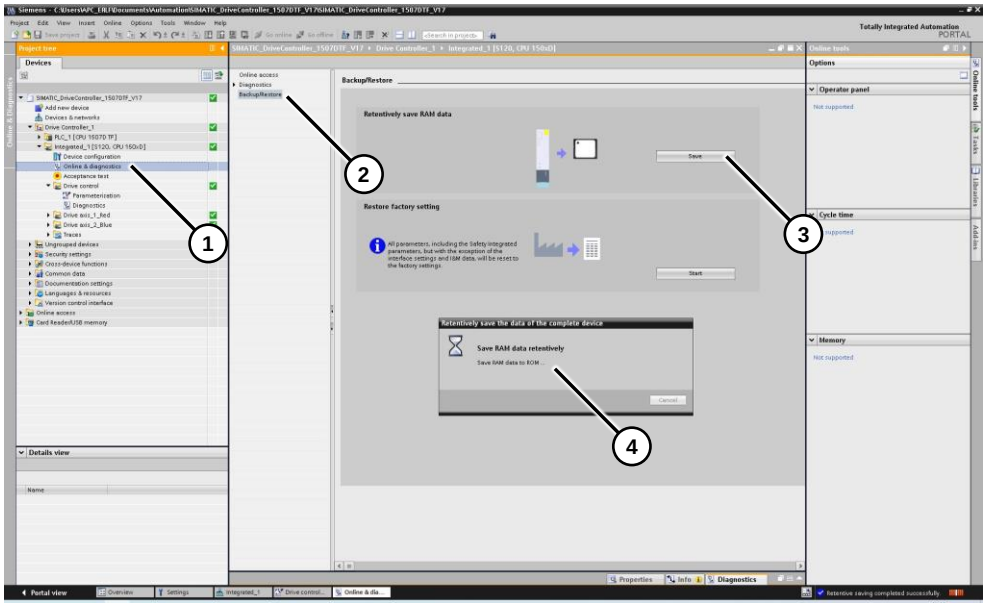
Backup all data from the SINAMICS Integrated NVRAM to the memory card

To save the parameters from the internal memory (NVRAM) of the SINAMICS Integrated to the memory card of the SIMATIC Drive Controller, establish an online connection to the SINAMICS Integrated.

Select the entry "Online & Diagnosis" (1) in the project directory and then display the functions for "Backup/Restore" (2). Start the function "Save RAM data retentively" (3) and wait until all parameters have been completely written to the memory card (4).

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Figure 2-9 Backing up the SINAMICS Integrated NVRAM to the memory card



Note

Using the "Save RAM data retentively" function described in the "Save/Restore" area, the parameter data of all drive objects are saved to the memory card with a function call.

Note

As an alternative to the procedure described here, the function "Save RAM data retentively" can also be carried out via parameter p7775=1 (RAM to ROM) of the SINAMICS Integrated.

For more detailed information, refer to the SIMATIC Drive Controller system manual (\5\).

Saving object-specific data from NVRAM to the memory card

The function described above saves the parameter data of all drive objects from the NVRAM to the memory card of the SIMATIC Drive Controller.

If the backup is only to be performed for individual drive objects, the drive object (1) can be selected in the project directory. Then, select the entry "Parameterization" (2) of the drive object and start backing up the parameters via the corresponding button (3).

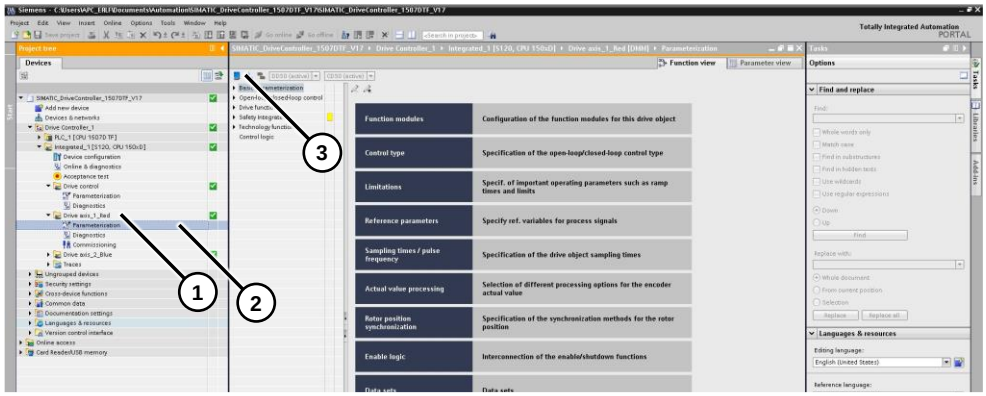
Note

To save all parameter data from the NVRAM to the memory card of the SIMATIC Drive Controller, the procedure described here must be repeated for each drive object.

To save the parameterization of all drive objects of the SIMATIC Drive Controller, use the procedure described in the previous section.

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Figure 2-10 Saving object-specific data from NVRAM to the memory card

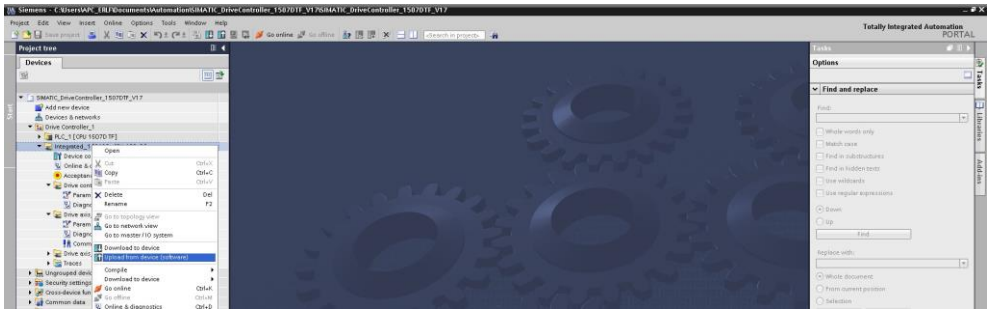


Uploading parameter settings of the SINAMICS Integrated to the TIA Portal project

After the data from the internal memory of the SINAMICS Integrated remanent has been stored on the memory card of the SIMATIC Drive Controller, it still has to be uploaded to the TIA Portal project. The current data, with which the SINAMICS Integrated of the SIMATIC Drive Controller is currently operated, will only then be available there as well.

Select the "Upload from device (software)" function in the context menu of the SINAMICS Integrated and wait until all data has been saved in the TIA Portal project. Then save the modified TIA Portal project.

Figure 2-11 Uploading parameters in the TIA Portal project



2.2.4 Saving the Unchanged TIA Portal Project

To have the unchanged TIA Portal project available later, it is recommended to save and archive the entire project again. In this way, you can still access the currently-set information later and, if necessary, add missing changes in the revised TIA Portal project.

Figure 2-12 Archiving a TIA Portal project



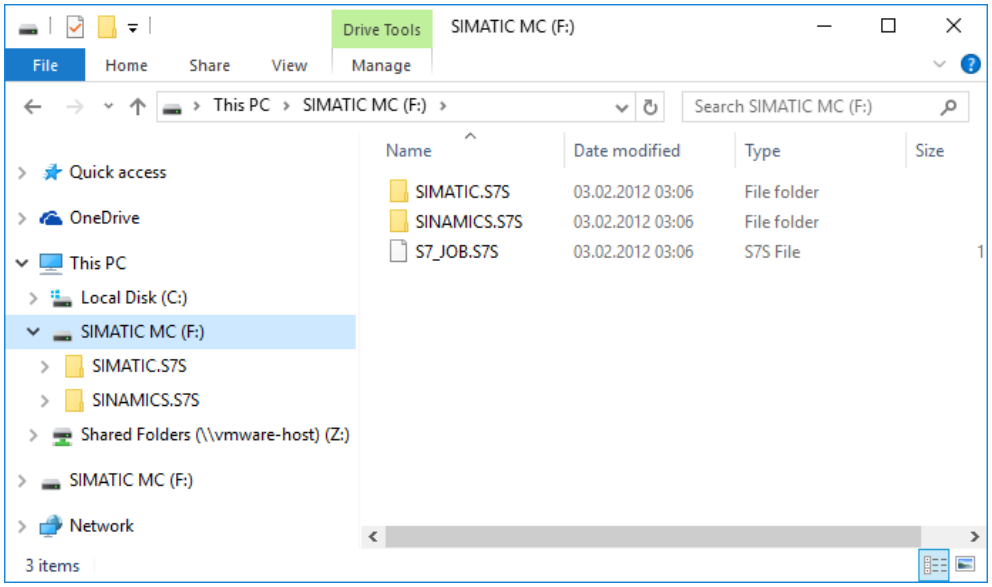
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2.2.5 Saving the Memory Card Image

Save an image of the SIMATIC Memory Card to the hard disk of your PG/PC until the firmware update is complete and the SIMATIC Drive Controller is restored to an operational state.

Switch off the SIMATIC Drive Controller, remove the SIMATIC Memory Card from the module, and back up all files and directories on the card by copying all files and directories to a backup directory on the hard disk of your PG/PC using Windows Explorer.

Figure 2-13 Saving the memory card image



Note A standard SD card reader is needed to read from or write to the SIMATIC Memory Card with the PG/PC. This allows you, for example, to copy files directly from or to the SIMATIC Memory Card using Windows Explorer.

Note The SIMATIC Memory Card is mandatory for the operation of the SIMATIC Drive Controller.

2.3 SINAMICS Integrated Firmware Update

The transfer of the new firmware version to the SINAMICS Integrated of the SIMATIC Drive Controller can only be performed via the SIMATIC Memory Card.

Note **Memory size of the SIMATIC Memory Card:**
For a firmware update of the SIMATIC Drive Controller, you need a memory card with at least 256 MB.

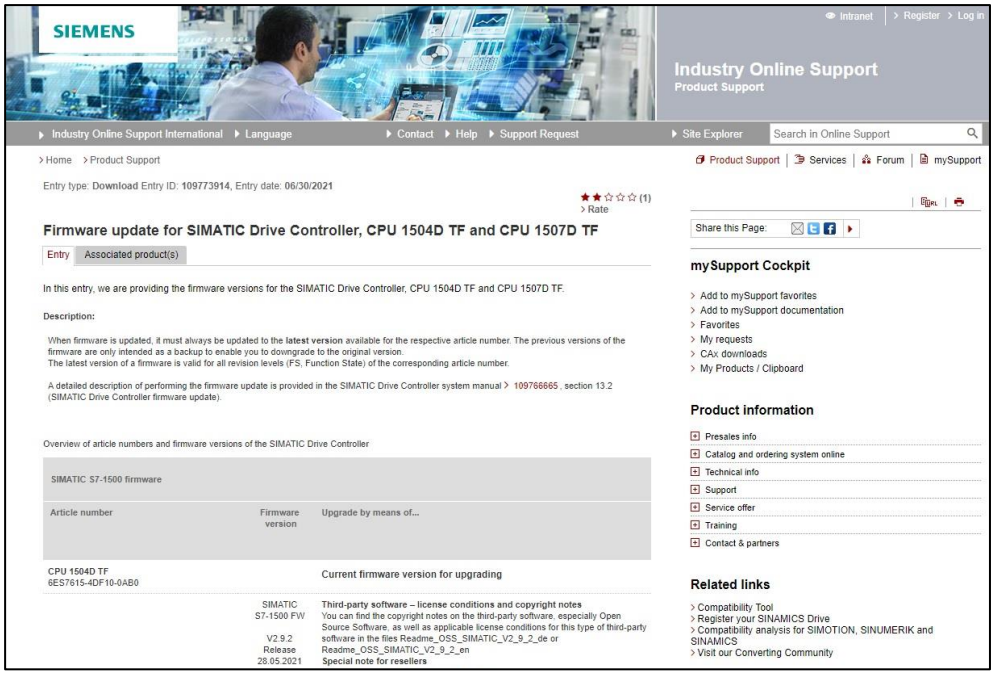
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For transferring the firmware files to the SINAMICS Integrated of the SIMATIC Drive Controller, the current program card or an additional SIMATIC Memory Card can be used, provided that this memory card has the size required for holding the firmware files.

2.3.1 Download Firmware Files

Download the firmware files for the firmware update from the Siemens Industry Online Support.
The download entry can be accessed via:
https://support.industry.siemens.com/cs/ww/en/view/109773914

Figure 2-14 Download firmware files



Note

The download entry in Siemens Industry Online Support contains the firmware files for the SIMATIC CPU (PLC) and the SINAMICS Integrated of the SIMATIC Drive Controller. In addition, the entry provides more information for performing the update.

2.3.2 Writing a Firmware File to the Memory Card

WARNING

Never format the SIMATIC Memory Card via Windows Explorer!

If the SIMATIC Memory Card is formatted via Windows Explorer, the card can no longer be used in SIMATIC Controllers.

You can write the downloaded firmware file to the SIMATIC memory card in various ways after unzipping the download files:

- About the TIA Portal

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- About Windows Explorer

Note

The previous contents of the SIMATIC Memory Card may be lost when writing the firmware files.

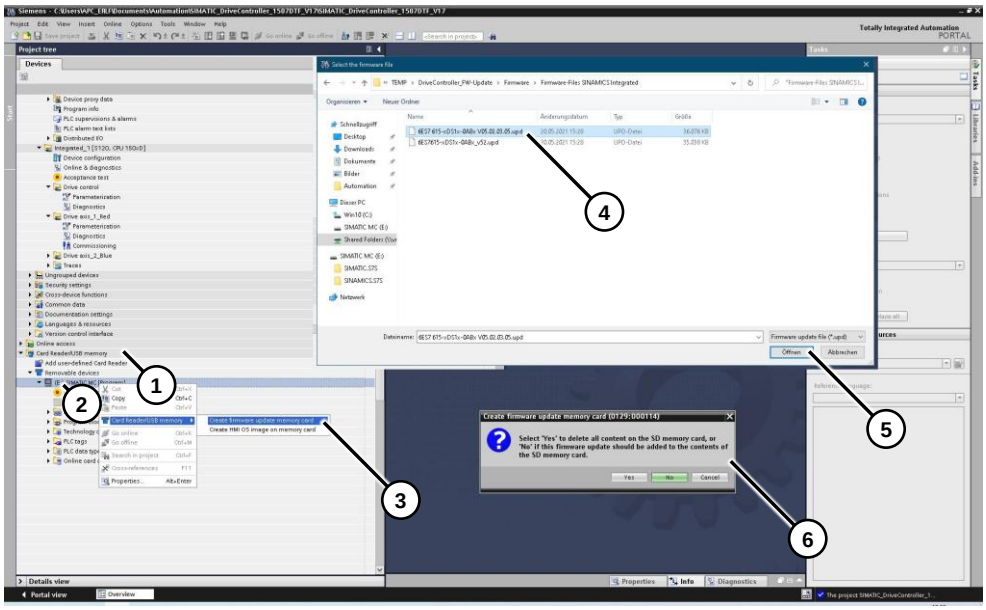
Writing firmware files to the memory card via the TIA Portal

In the TIA Portal project directory, select the card reader (1) and click the memory card (2) in the card reader. Select the function "Create firmware update memory card" (3) via "Card Reader/USB Memory" in the context menu of the memory card. Now you can select the desired firmware file on the hard disk of your PG/PC (4) and confirm the selection via the button (5).

Finally, via the displayed dialog (6), you can still decide…

- ...whether the SIMATIC Memory Card is to be used only as an update card and the previous files on the card are to be deleted.
- ...whether the firmware files are to be copied to the memory card in addition to the existing files.

Figure 2-15 Writing firmware files to the memory card via TIA



Note

When selecting the firmware files, consider the usability for the module you have. The firmware files are usually specific to the respective module article number (MLFB).

Writing firmware files to the memory card via Windows Explorer

You can also transfer the firmware files from the hard disk of your PG/PC to the SIMATIC Memory Card via Windows Explorer.

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Note

If you use the Windows Explorer for editing the SIMATIC Memory Card, **do not** select the setting for displaying system files there!

The system files must not be removed from the SIMATIC Memory Card; otherwise, the memory card becomes unusable for SIMATIC Controllers!

Follow these steps:

1. If the memory card is only to be used as an update card, select all files on the card and remove them.
   If the firmware files are also to be stored on the SIMATIC Memory Card, skip this step.
2. Create the directory "FWUPDATE.S7S" on the memory card.
3. Copy the firmware file (*.UPD) of the SINAMICS Integrated into this directory.
4. Create a text file with the name "S7_JOB.S7S" on the memory card or open this already existing file with a text editor and save the "FWUPDATE" text in this file.

Note

If the firmware update was downloaded from the Siemens Industry Online Support (SIOS) page as a ZIP file (\6\), then the directory "FWUPDATE.S7S" with the firmware file and the text file "S7_JOB.S7S" are already contained there. In this case, you can simply copy the entire contents of the ZIP file to the memory card.

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SIMATIC Memory Card as firmware update card

If the SIMATIC Memory Card (1) was created as a firmware update card via the TIA Portal or Windows Explorer, it should now have the following contents:

- The folder "FWUPDATE.S7S" (2), which contains the required update file (3) of the desired firmware version.
- The file "S7_JOB.S7S" (4) with the text entry "FWUPDATE" (5), which prompts the SIMATIC Drive Controller to perform the firmware update during the startup of the module.

Note

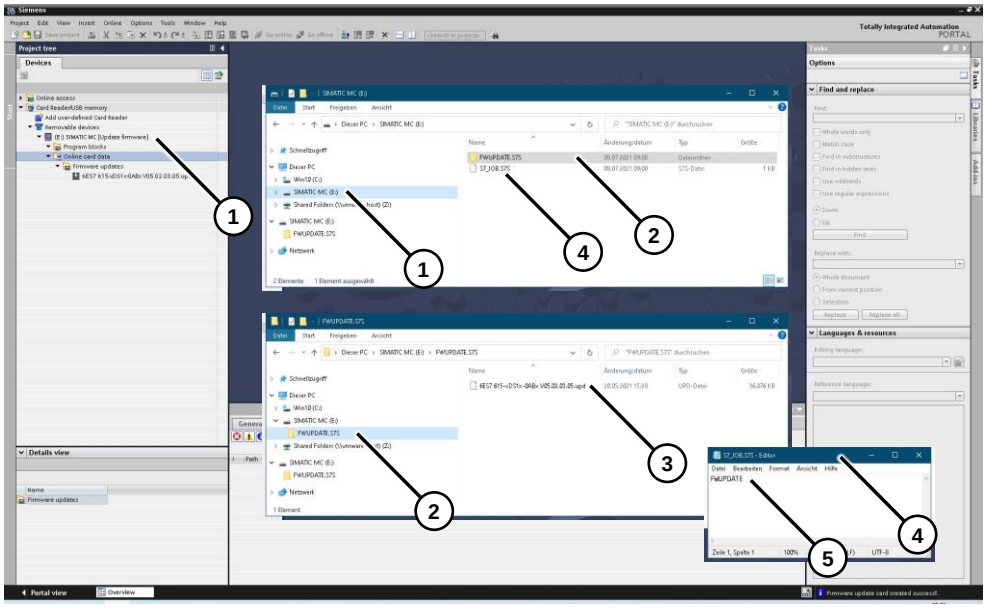
For more information on using and handling the SIMATIC memory card, refer to the SIMATIC Drive Controller system manual (\5\) in the Section "SIMATIC Memory Card".

Note

If the previous program card of the SIMATIC Drive Controller is used for the firmware update, there may also be other files and directories on the memory card.

However, at minimum, the above-mentioned content must be on the SIMATIC Memory Card in order to perform the firmware update.

Figure 2-16 SIMATIC Memory Card as the firmware update card



2.3.3 Performing a Firmware Update on the Hardware

To perform the firmware update, the created SIMATIC Memory Card with the update files is now inserted into the switched-off SIMATIC Drive Controller and the module is switched on.

The firmware update of the SIMATIC Drive Controller proceeds as follows:

- Shortly after switching on the SIMATIC Drive Controller, the firmware update starts.
- During the firmware update, the "RUN" LED flashes yellow.
- The firmware update has been successfully completed when the "RUN" LED of the SIMATIC Drive Controller is permanently illuminated yellow and the "MT" (Maintenance) LED flashes yellow.
- Now switch off the SIMATIC Drive Controller and remove the SIMATIC Memory Card.

Note

Via the FUNCT key, you may also execute a firmware update starting with firmware version V2.9 of the SIMATIC CPU (PLC) (Function 2: Insert SIMATIC Memory Card as firmware update card and execute firmware update).

The procedure is described in the SIMATIC Drive Controller system manual (\5\) in the Section "Setting the Card Type".

2.3.4 Restarting the SIMATIC Drive Controller

The SIMATIC Drive Controller must be restarted with an inserted SIMATIC Memory Card.

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Note The SIMATIC Memory Card is mandatory for the operation of the SIMATIC Drive Controller.

Note The data on the SIMATIC Memory Card is not changed as long as the function "Save RAM data retentively" is not executed and the converted data is written back from the NVRAM of the module to the memory card.

Using an additional memory card as the firmware update card

If an additional memory card was used as the firmware update card for the firmware update, the previous program memory card can now be reinserted in the SIMATIC Drive Controller and the Drive Controller can be switched on.

The SIMATIC Drive Controller runs with the previous configuration for the SIMATIC CPU (PLC) and the SINAMICS Integrated located on the SIMATIC Memory Card. The data on the SIMATIC Memory Card in the data structure of the previous firmware version is converted into the data structure of the new firmware version during the startup of the SINAMICS Integrated and stored in the NVRAM of the module.

Using the previous program memory card as a firmware update card

If the firmware update card used is to be converted back into a program memory card, the folder "FWUPDATE.S7S" can be deleted from the card and "PROGRAM" must be entered in the file "S7_JOB.S7S". The TIA Portal or Windows Explorer can be used for this purpose.

Note Alternatively, the SIMATIC Memory Card can also be converted into a program memory card via the TIA Portal. To do this, select the required card type in the properties of the SIMATIC Memory Card marked in the project navigation (see Section 3.3.3).

If the SIMATIC Drive Controller is switched on, it starts up with the previous configuration available on the SIMATIC Memory Card.

Online access to the SINAMICS Integrated of the SIMATIC Drive Controller

Online access to the SINAMICS Integrated of the SIMATIC Drive Controller from the TIA Portal project is not possible in the current status of the SIMATIC Drive Controller, since the configured firmware of the SINAMICS Integrated in the TIA Portal and on the module must correspond to this.

Note Online access to the SIMATIC CPU (PLC) of the SIMATIC Drive Controller is possible in this state via the TIA Portal.

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2.4 Recreating SINAMICS Integrated in the TIA Portal

To enable online access to the SINAMICS Integrated of the SIMATIC Drive Controller again, the SINAMICS Integrated existing in the TIA Portal project must be replaced as follows:

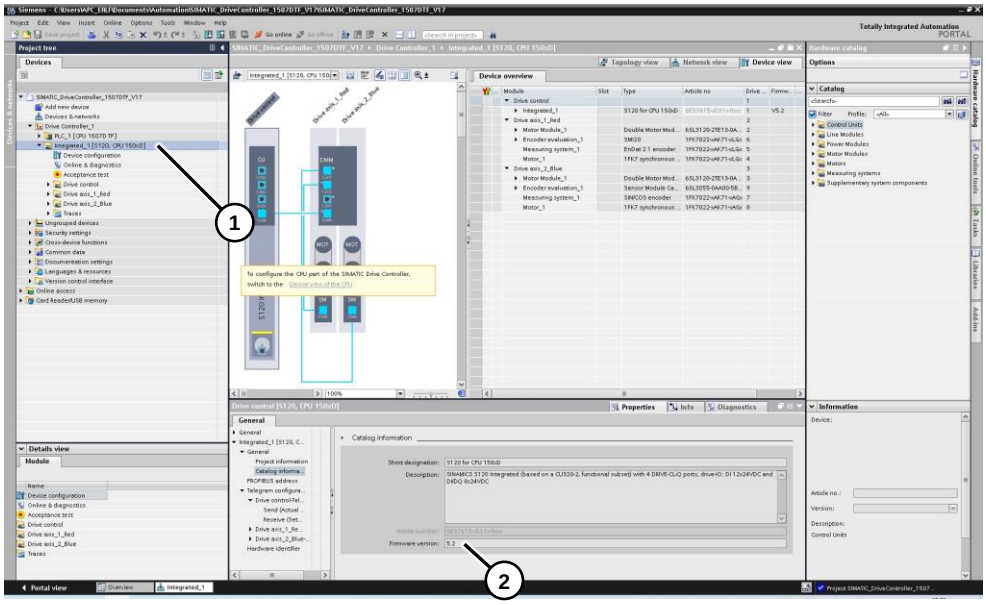
- Remove the previous SINAMICS Integrated from the TIA Portal project.
- Create a new SINAMICS Integrated with the appropriate firmware version in the TIA Portal project.
- Integrate the newly created SINAMICS Integrated into the SIMATIC Drive Controller.

2.4.1 Removing the Previous SINAMICS Integrated

First make note of the name of the SINAMICS Integrated previously present in the SIMATIC Drive Controller. In the figure below, this is the default name "Integrated_1" (1), as it is assigned when a SIMATIC Drive Controller is created.

Here, you can also see that the SINAMICS Integrated included in the TIA Portal project is still equipped with the previous firmware version (2).

Figure 2-17 Note the name of the SINAMICS Integrated



Now the SINAMICS Integrated in the TIA Portal project can be deleted or moved to another location in the TIA Portal project.

Deleting the SINAMICS Integrated in the TIA Portal project

Open the context menu of the SINAMICS Integrated and select the "Delete" function. Confirm the following security prompt for deleting the SINAMICS Integrated with "Yes".

The SIMATIC Drive Controller now only contains the SIMATIC CPU (PLC) in the project directory of the TIA Portal.

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Figure 2-18 Deleting the SINAMICS Integrated via the context menu

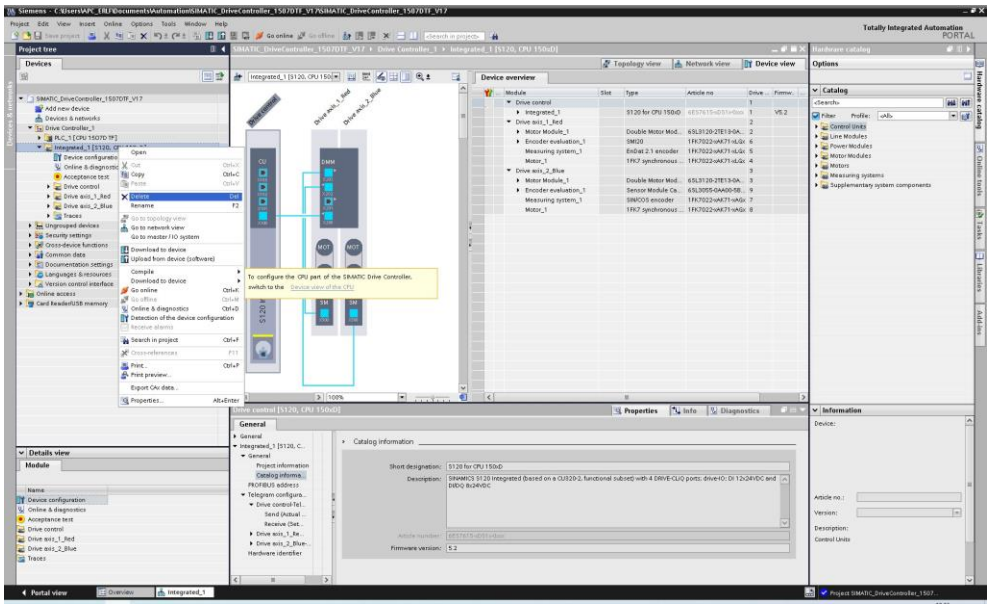
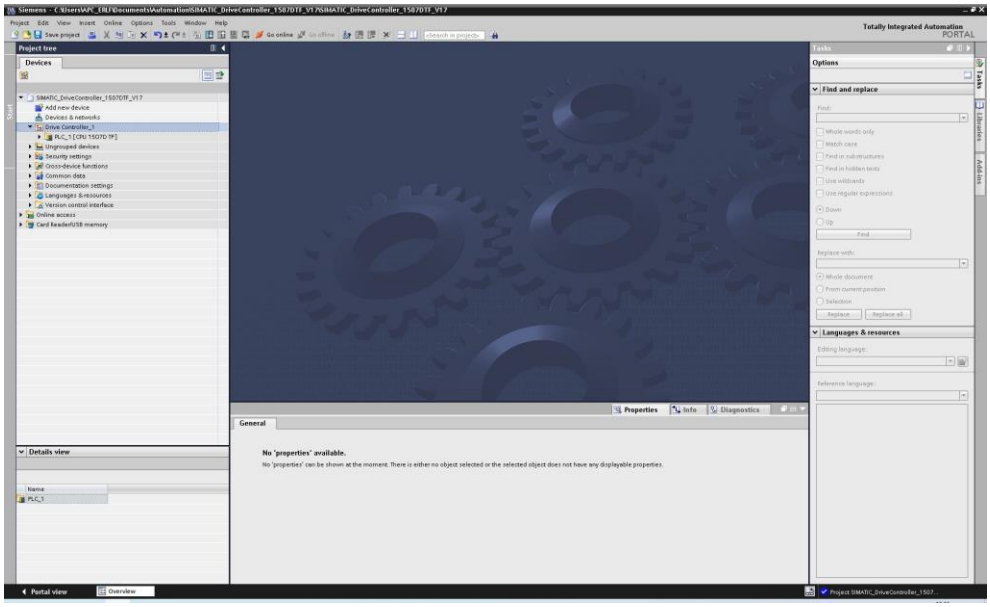


Figure 2-19 SIMATIC Drive Controller without SINAMICS Integrated



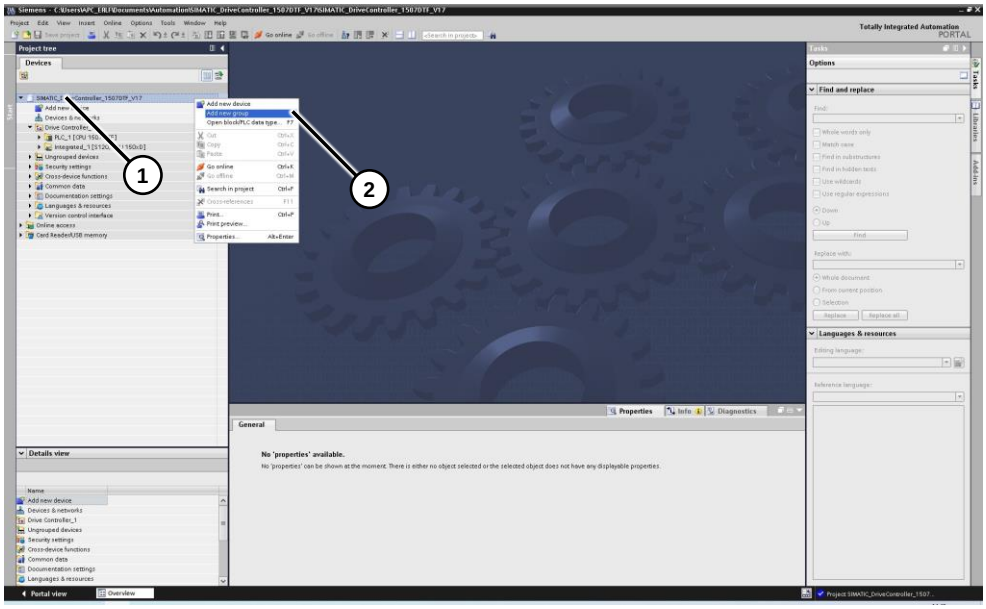
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Moving the SINAMICS Integrated in the TIA Portal project

In order to be able to access the data of the SINAMICS Integrated previously present in the SIMATIC Drive Controller more easily, you can also remove it from the SIMATIC Drive Controller in the TIA Portal project and move it to a different location in the project.

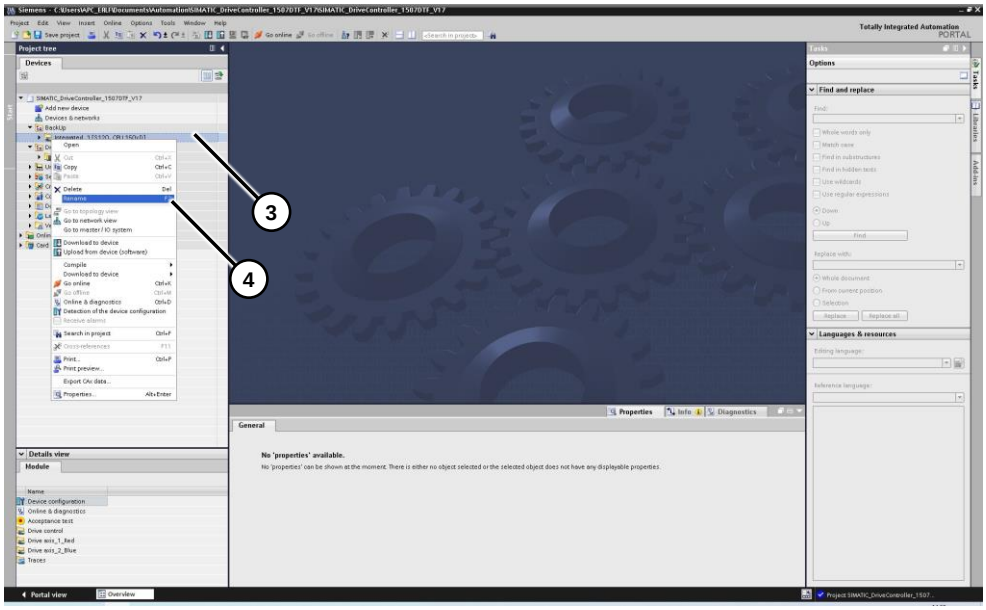
Create a new folder or group in the TIA Portal project by opening the context menu in the project directory in the root node (1) and selecting the function "Add new group" (2). For example, name the new group "BackUp".

Figure 2-20 Creating a new group in the TIA Portal project



Now move the SINAMICS Integrated from the SIMATIC Drive Controller to the newly created group (3) via drag & drop and rename it via the context menu (4) to "Integrated_1_BackUp", for example.

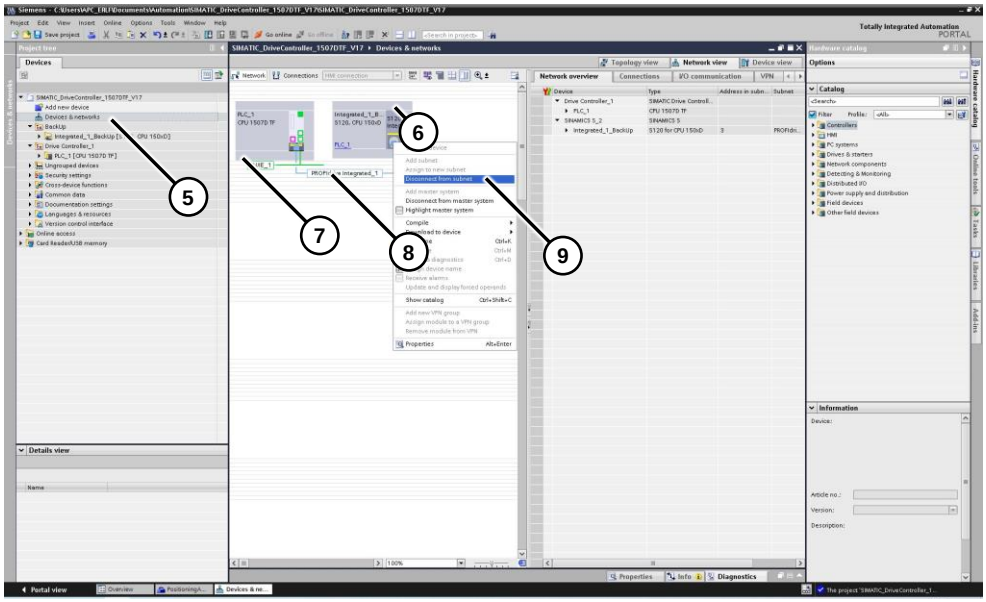
Figure 2-21 Move and rename the SINAMICS Integrated



Finally, open the "Devices & Networks" area (5) and disconnect the SINAMICS Integrated (6) from the SIMATIC CPU (PLC) (7) of the SIMATIC Drive Controller by disconnecting the PROFIdrive_Integrated connection (8) (9).

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Figure 2-22 Disconnect the PROFIdrive connection



After disconnecting the PROFIdrive connection, the SINAMICS Integrated is released from the SIMATIC Drive Controller and the internal PROFIBUS address is free again for coupling a newly added SINAMICS Integrated.

2.4.2 Creating a New SINAMICS Integrated

In the project directory under "Devices & Networks" (1), the disconnected and renamed SINAMICS Integrated (2) can first be rearranged so that space is created in the display for creating a new SINAMICS Integrated with the correct firmware version.

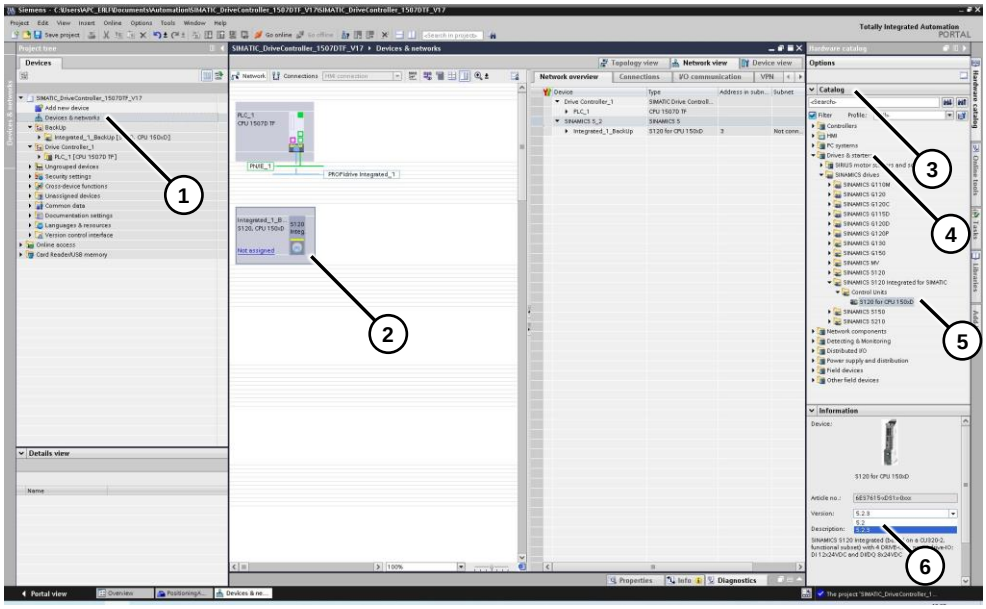
In the catalog (3), select a SINAMICS Integrated for the SIMATIC Drive Controller with the correct firmware version as follows:

1. Open the "Drives & Starters" folder in the catalog (4).
2. Open the "SINAMICS drives" sub-menu.
3. Select the subfolder "SINAMICS Integrated for SIMATIC".
4. Open the subfolder "Control modules".
5. Click the entry "S120 for the CPU 150xD" (5).
6. In the detailed information, select the desired firmware version from the drop-down list (6) with which the new SINAMICS Integrated should be created.

After selecting the appropriate module and setting the correct firmware version, the module "S120 for CPU 150xD" can be moved into the Network overview via drag & drop.

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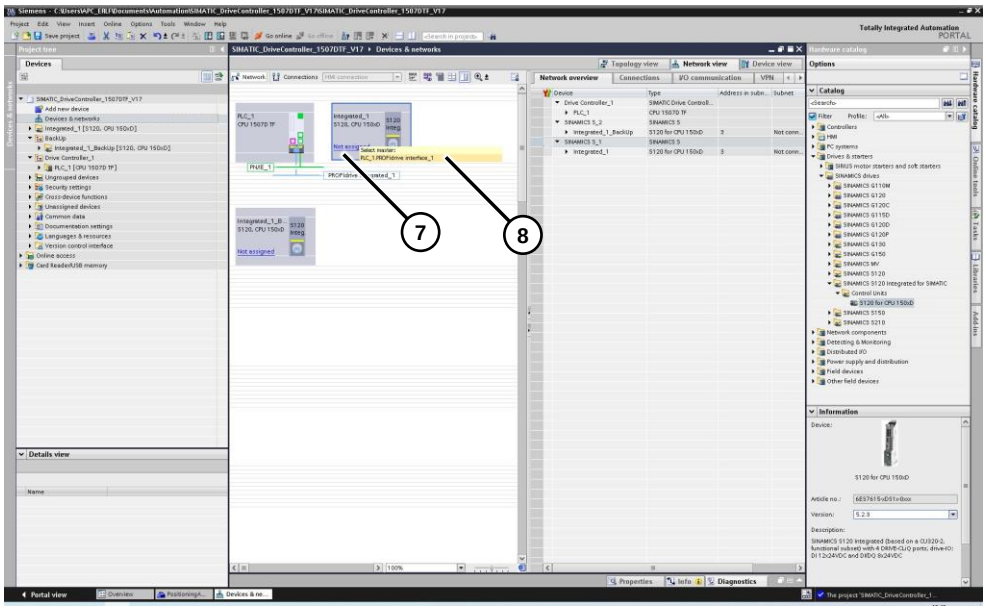
Figure 2-23 Create new SINAMICS Integrated



Now the newly created SINAMICS Integrated must be integrated into the SIMATIC Drive Controller.

To do this, click the link "Not assigned" (7) in the Network view in the displayed SINAMICS Integrated and then select the corresponding entry from the list that is now displayed (8). In the example shown, this is the entry "PLC_1.PROFIdrive interface_1".

Figure 2-24 Coupling SINAMICS Integrated to the SIMATIC CPU (PLC)



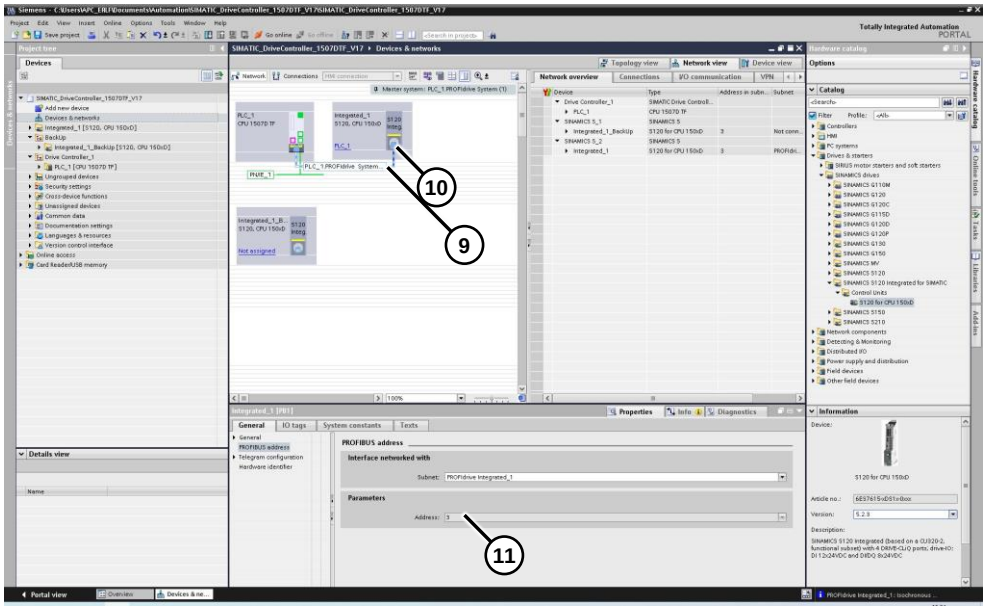
Now the newly created SINAMICS Integrated with the selected firmware version is again connected to the SIMATIC CPU (PLC) of the SIMATIC Drive Controller via the internal PROFIdrive connection (9).

By clicking on the PROFIBUS connection (10) of the SINAMICS Integrated, the PROFIBUS address (11) used for it can be checked in the properties window. For

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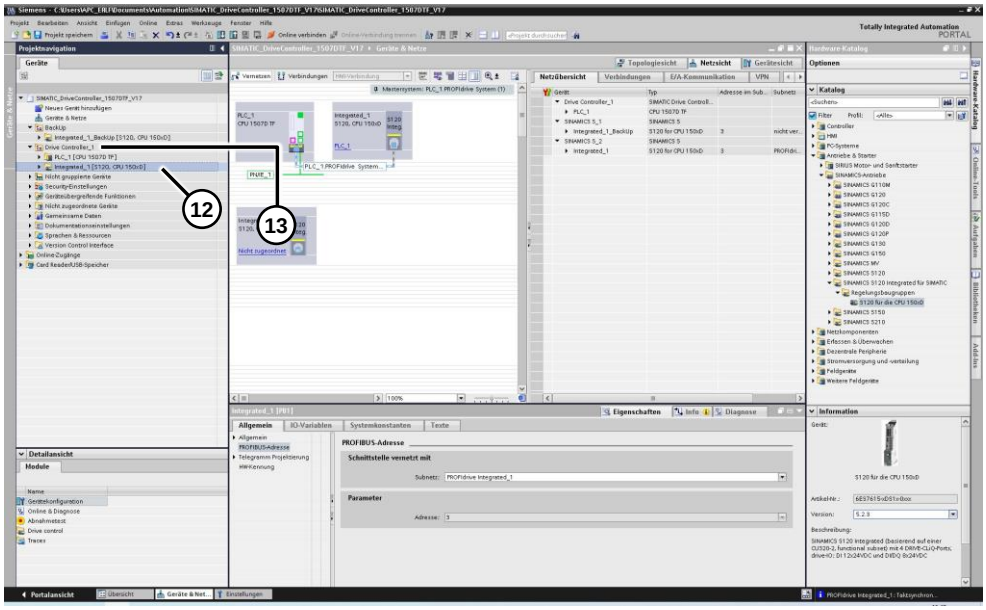
the internal connection, PROFIBUS address 3 must always be used on the SINAMICS Integrated.

Figure 2-25 SINAMICS Integrated coupled with PROFIBUS address 3



Finally, the newly created SINAMICS Integrated (12) in the project directory can be moved into the folder or group of the SIMATIC Drive Controller (13) via drag & drop.

Figure 2-26 Move SINAMICS Integrated to the SIMATIC Drive Controller



Finally, save the modified TIA Portal project under the same or a modified name.

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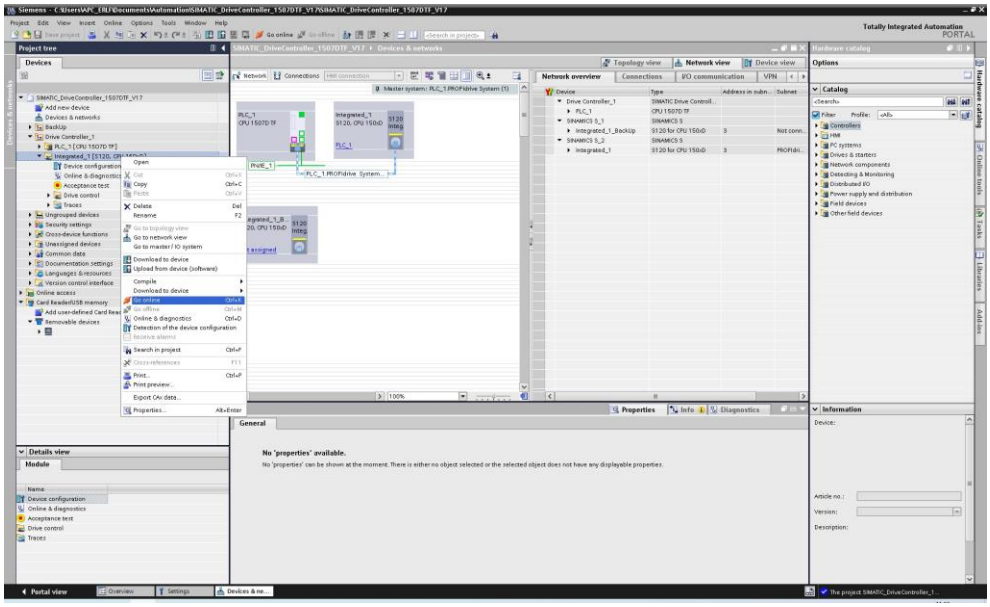
2.4.3 Loading the SINAMICS Integrated Configuration into TIA Portal

In the TIA Portal project, the SINAMICS Integrated is now equipped with the same firmware version as the hardware module. This allows an online connection to the SINAMICS Integrated on the module to be established again from the TIA Portal project.

Establishing an online connection with the SINAMICS Integrated

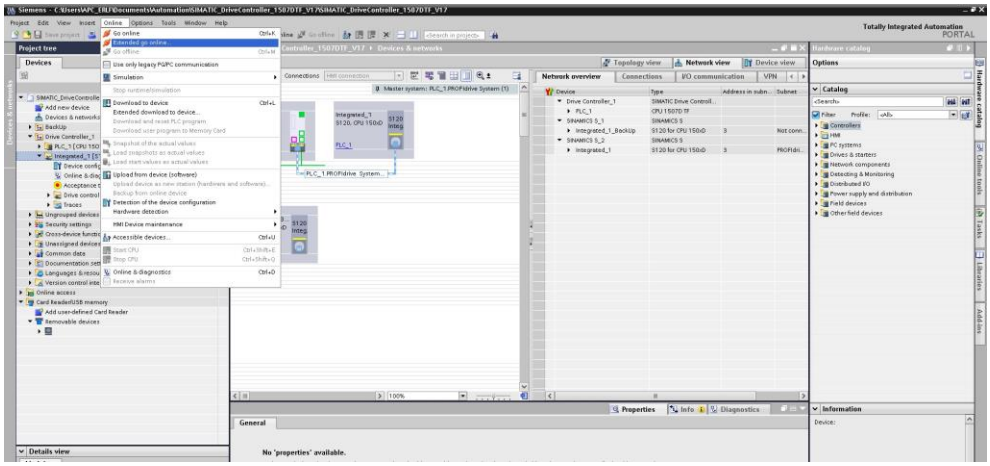
Use the context menu of the SINAMICS Integrated with the new firmware version to establish an online connection to the module.

Figure 2-27 Online connection to the SINAMICS Integrated



If connection via this function is not possible, the routing information for online access in the TIA Portal may have to be refreshed. To do this, use the "Extended go online" function (advanced online connection), as also described in Section 3.2 of this document.

Figure 2-28 "Extended go online" in SINAMICS Integrated



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Note

If it is not possible to establish an online connection to the SINAMICS Integrated of the SIMATIC Drive Controller at this point, the firmware update of the SINAMICS Integrated may not have been carried out without errors and the SINAMICS Integrated is still operated with the previous firmware.

For additional information, refer to Section 3.1 of this document.

Uploading SINAMICS Integrated Configuration from the Module

If the SIMATIC Drive Controller has already been started with the previous configuration of the SINAMICS Integrated, the configuration can now be uploaded from the module into the TIA Portal project. Otherwise, the SINAMICS Integrated newly created in the TIA Portal project must be configured again or the saved configuration must be transferred manually to the SINAMICS Integrated.

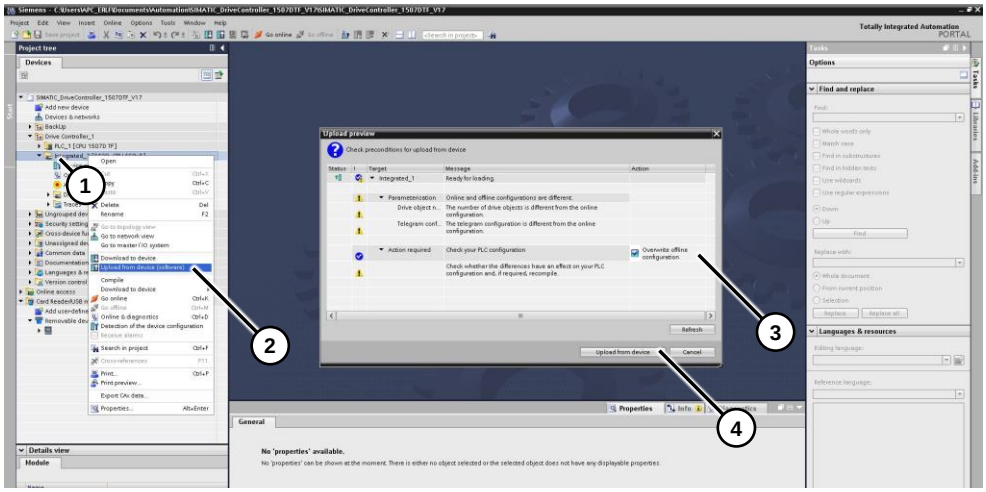
Note

During startup, the SINAMICS Integrated of the SIMATIC Drive Controller loads the configuration in the data structure of the previous firmware from the SIMATIC Memory Card and converts the data structure to the structure of the new firmware version. The new data structure of the configuration is, therefore, already available in the internal memory of the SINAMIC Integrated (NVRAM).

As long as the NVRAM data of the SINAMICS Integrated is not stored retentively on the SIMATIC Memory Card, the configuration on the memory card is not changed.

Select Integrated (1) in the SINAMICS Integrated project directory and select the function "Upload from device (software)" (2) via the context menu. If necessary, allow the offline PLC configuration to be overwritten in the TIA Portal (3) and start the upload via the button (4).

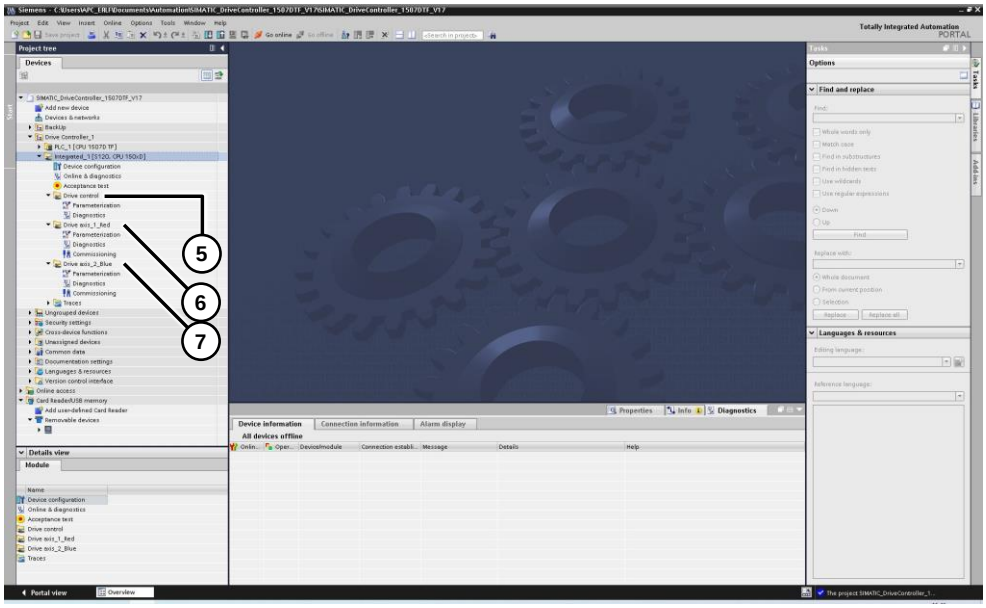
Figure 2-29 Uploading the configuration from SINAMICS Integrated



After the upload, the TIA Portal project contains the configuration of the parameters of the SINAMICS Integrated drive controller (5) and the drive objects available in SINAMICS Integrated, such as the "Red" axis (6) and the "Blue" axis (7) in this example.

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Figure 2-30 Completed configuration upload



After uploading the configuration of the SINAMICS Integrated project, save the TIA Portal project.

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2.5 Final Steps

2.5.1 Restoring Settings in the TIA Portal Project

In the newly created TIA Portal project, check the information and settings saved in Section 2.2.2 of this document and correct if necessary.

Figure 2-31 Restoring telegram settings of the drive objects

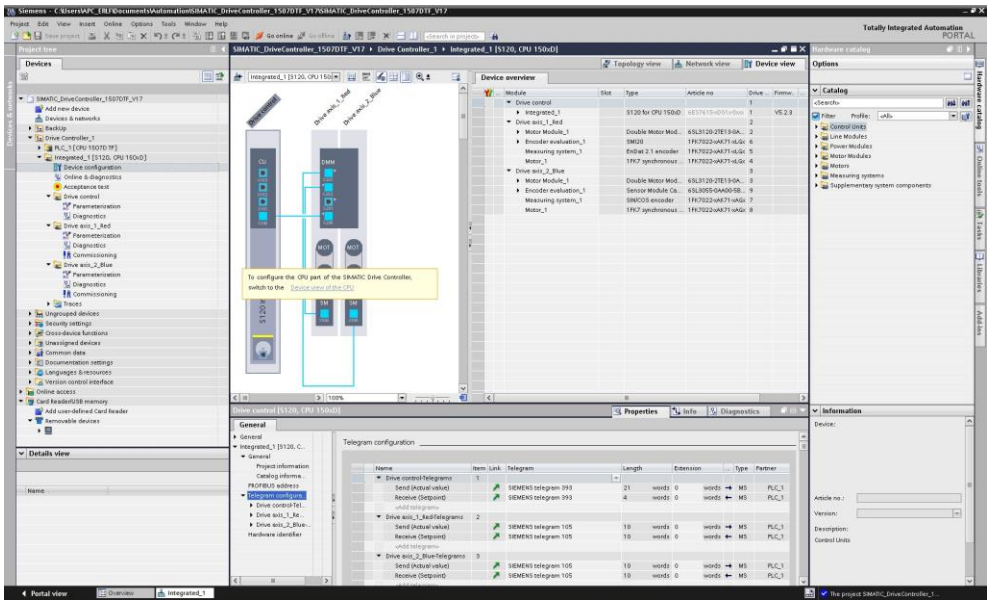


Figure 2-32 Restoring settings of the PROFIdrive connection

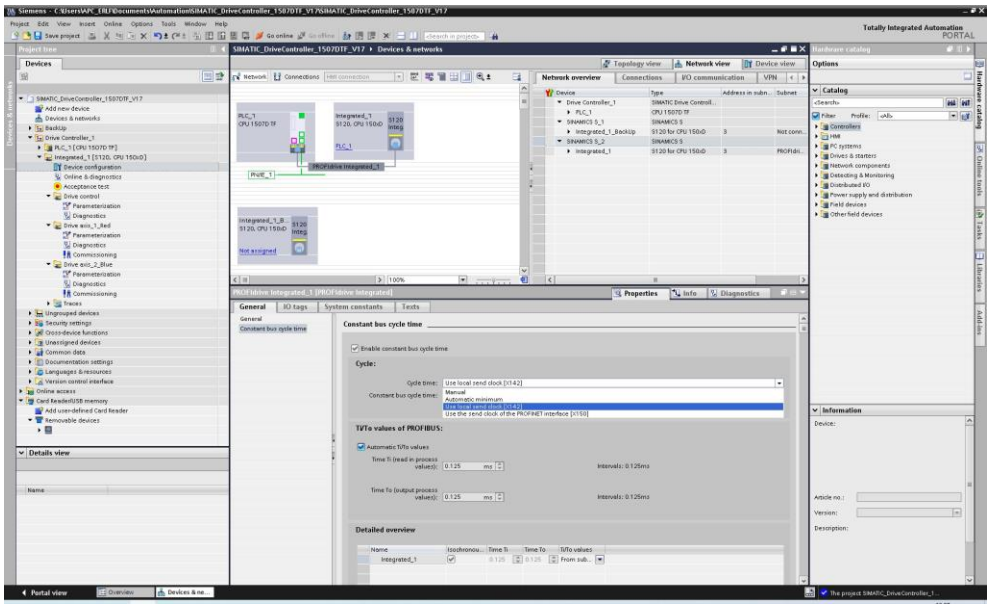
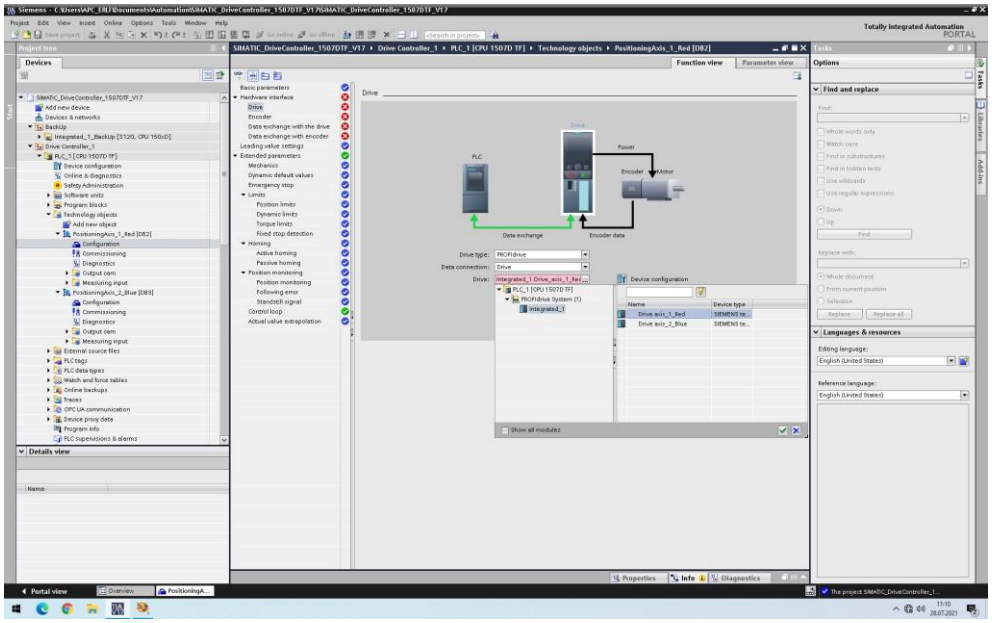


Figure 2-33 Restoring coupling of technology objects and drive objects



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Note

Check the coupling to the drive objects at all technology objects that are connected to drive objects of the SINAMICS Integrated. Restore the coupling by selecting the same drive object.

2.5.2 Compiling and Loading the Complete TIA Portal Project

Compile the SIMATIC CPU (PLC) of the SIMATIC Drive Controller in the newly created TIA Portal project and load the complete project into the CPU (PLC) and the SINAMICS Integrated of the SIMATIC Drive Controller.

Therefore, the state of the SIMATIC Drive Controller again matches the configuration in the TIA Portal project.

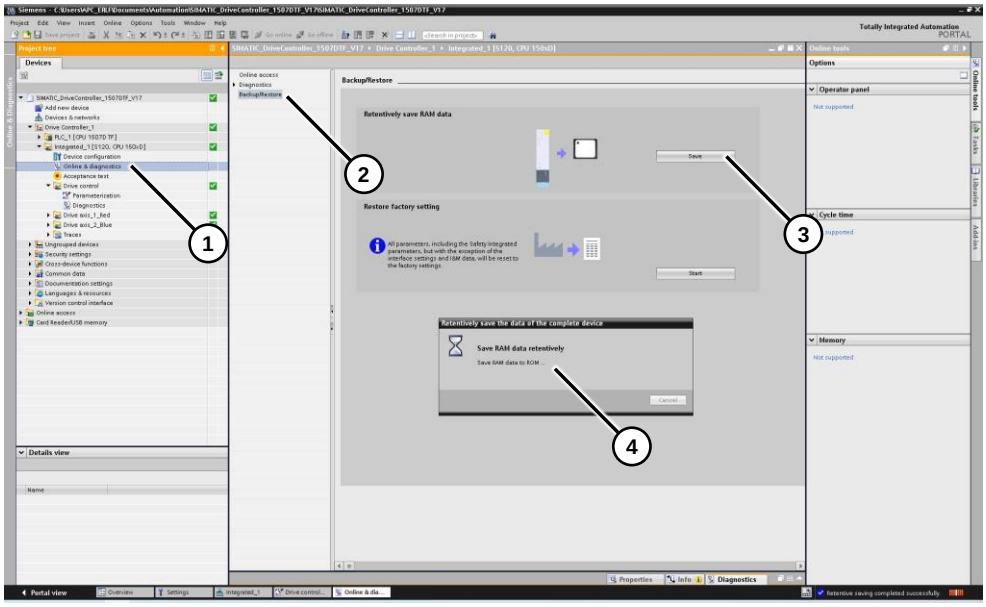
2.5.3 Saving RAM Data of the SINAMICS Integrated Retentively

To this point, the data on the SIMATIC Memory Card was not changed by uploading and downloading the configuration of the SINAMICS Integrated. During the start-up of the SIMATIC Drive Controller, the configuration is converted internally, and during the download, the configuration is loaded into the internal memory (NVRAM) of the SIMATIC Drive Controller, provided that the retentive storage has not been activated. Therefore, the configuration on the memory card is still stored in the data structure of the previous firmware version.

To save the parameters from the internal memory (NVRAM) of the SINAMICS Integrated to the memory card of the SIMATIC Drive Controller, establish an online connection to the SINAMICS Integrated.

Select the entry "Online & Diagnosis" (1) in the project directory and then display the functions for "Backup/Restore" (2). Start the function "Save RAM data retentively" (3) and wait until all parameters have been completely written to the memory card (4).

Figure 2-34 Backing up the SINAMICS Integrated NVRAM to the memory card



Note

Using the "Save RAM data retentively" function described in the "Save/Restore" area, the parameter data of all drive objects are saved to the memory card with a function call.

Note

As an alternative to the procedure described here, the function "Save RAM data retentively" can also be carried out via parameter p7775=1 (RAM to ROM) of the SINAMICS Integrated.

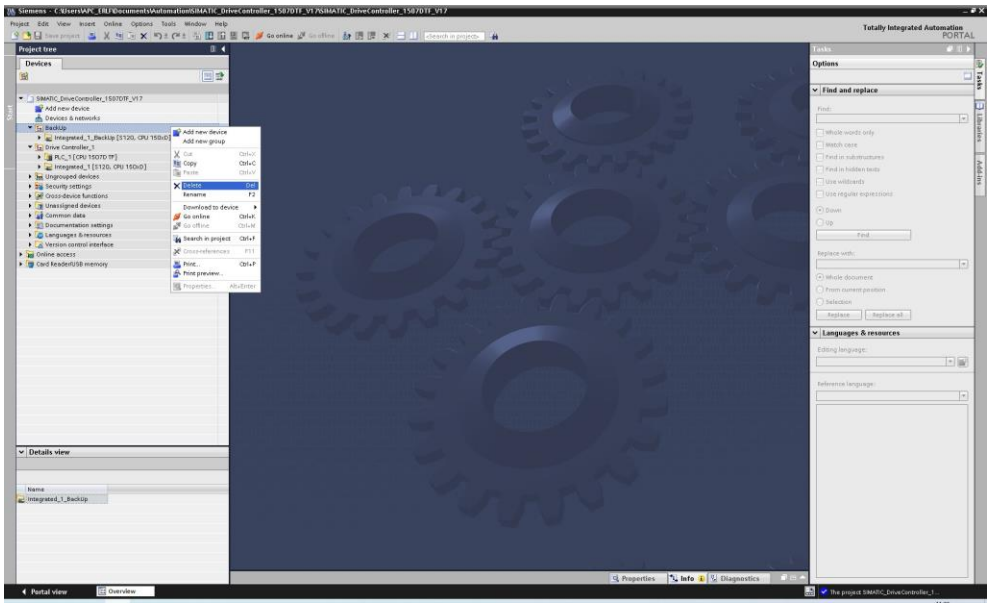
For more detailed information, refer to the SIMATIC Drive Controller system manual (\5\).

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2.5.4 Final Steps in the TIA Portal Project

Finally, the SINAMICS Integrated with the previous firmware version that was moved into the TIA Portal (e.g., to the "BackUp" folder) can be removed from the TIA Portal project. To do this, delete the SINAMICS Integrated_1_BackUp together with the BackUp folder from the project, if it still exists.

Figure 2-35 Delete "BackUp" folder with "Integrated_1_BackUp"



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3 Tips & Tricks

In the following sections, you will find additional information that is not mandatory, but may be helpful for performing the firmware update on the SINAMICS Integrated of the SIMATIC Drive Controller.

3.1 Moving the SINAMICS Integrated into the Project

If the SINAMICS Integrated is not deleted from the project when removing the previous SINAMICS Integrated in the TIA Portal project for firmware version adjustment, as described in Section 2.4.1, but only renamed and moved to another location (e.g., to the newly created "BackUp" folder), this can be advantageous in case of problems with online access to the SINAMICS Integrated.

3.1.1 Online Access Testable via both Firmware Versions

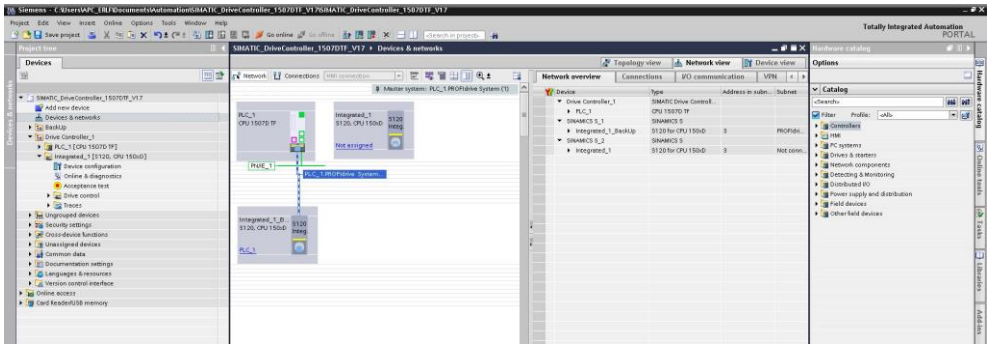
If online access to the SINAMICS Integrated is not possible during or after the firmware update, the firmware update may not have been completed and the SINAMICS Integrated is still operating with the previous firmware version. In this case, online access from the TIA Portal with the modified SINAMICS Integrated to the module is not possible.

Note

As with all SINAMICS CUs, online access to the SINAMICS Integrated of the SIMATIC Drive Controller is only possible if the same firmware version has been configured or is available in the TIA Portal and on the module.

To re-integrate the SINAMICS Integrated with the previous firmware version in the TIA Portal project, disconnect the PROFIdrive connection to the newly created SINAMICS Integrated with the new firmware version. This can be done in "Devices & Networks" at the PROFIdrive Integrated of the SIMATIC CPU (PLC) of the SIMATIC Drive Controller. Next, establish a new PROFIdrive connection to the moved SINAMICS Integrated with the previous firmware version via drag & drop. Then save the TIA Portal project.

Figure 3-1 Connecting the SINAMICS Integrated that has been moved into the TIA Portal project



If an online connection to the SINAMICS Integrated can now be established, the firmware update for the SINAMICS Integrated was not performed properly and the module is currently still operated with the previous firmware version.

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In this case, repeat the update procedure as described in this document from Section 2.3.

3.1.2 Name of the SINAMICS Integrated has no Influence

The name chosen for the SINAMICS Integrated in the TIA Portal project has no effect on the coupling of the SINAMICS Integrated with the SIMATIC CPU (PLC) in the SIMATIC Drive Controller.

For alternate coupling of the SINAMICS Integrated with the newly created firmware version and the previous firmware version in the TIA Portal project, the respectively coupled SINAMICS Integrated does not have to be renamed in the project.

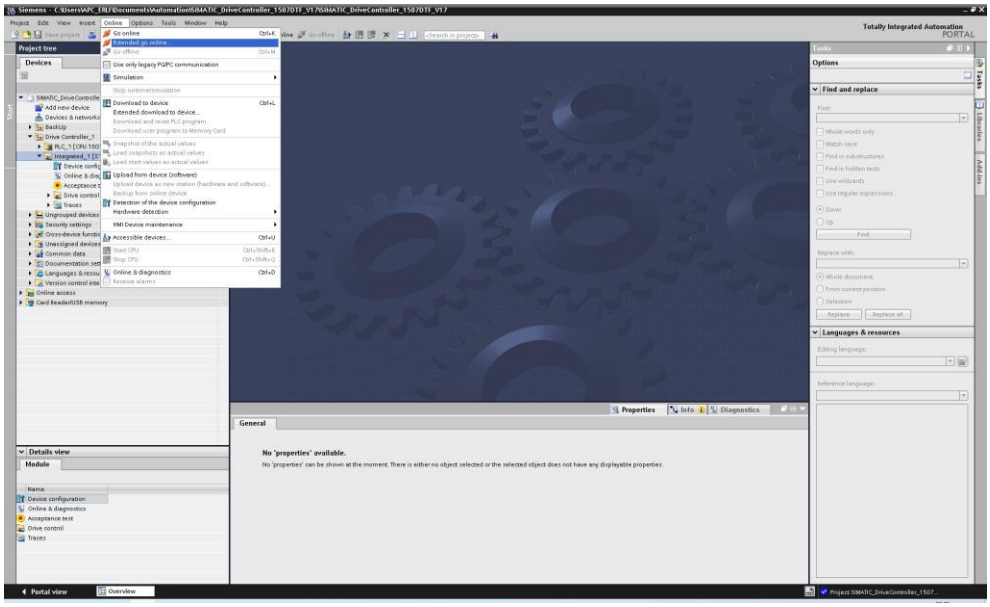
Note

The PROFIBUS address is decisive for the coupling between SIMATIC CPU (PLC) and SINAMICS Integrated in the SIMATIC Drive Controller via the internal PROFIBUS, the PROFIdrive Integrated. For this purpose, the SINAMICS Integrated must have the PROFIBUS address 3, which is automatically created when a SINAMICS Integrated is generated and cannot be changed.

3.2 Routing Access via "Extended Go Online"

If you want to avoid long waiting times for the connection attempts of the TIA Portal when reconnecting online (e.g., after replacing the SINAMICS Integrated in the TIA Portal project), the "Extended go online" function can be used for this.

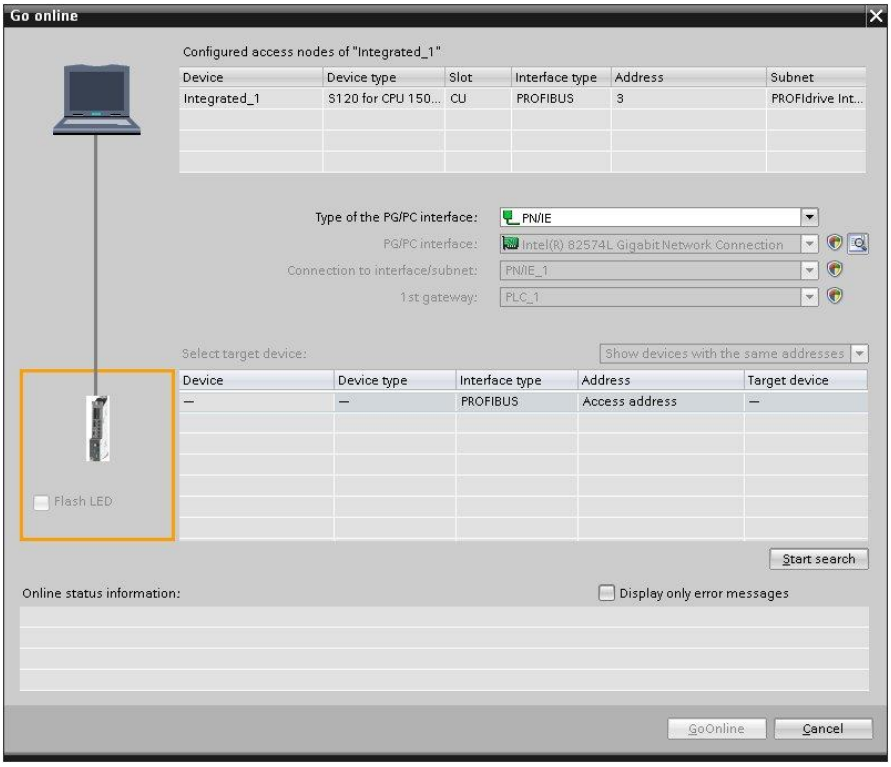
Figure 3-2 Establishing an online connection via "Extended go online"



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By using this function, the routing dialog for the establishment of the online connection is called directly. Thereby, the access point for the online connection can be defined directly and the desired target module can be searched for.

Figure 3-3 Routing dialog for establishing the online connection



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3.3 Generating a Firmware Update Card via the TIA Portal

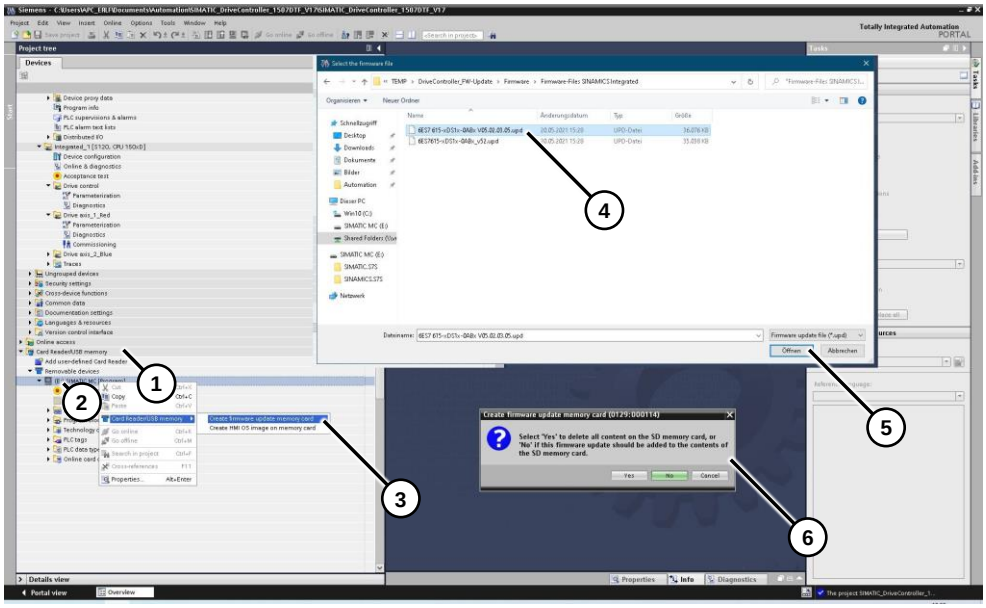
3.3.1 Loading Firmware Update to Memory Card

In the TIA Portal project directory, select the card reader (1) and click the memory card (2) in the card reader. Select the function "Create firmware update memory card" (3) via "Card Reader/USB Memory" in the context menu of the memory card. Now you can select the desired firmware file on the hard disk of your PG/PC (4) and confirm the selection via the button (5).

Finally, via the displayed dialog (6), you can still decide…

- ...whether the SIMATIC Memory Card is to be used only as an update card and the previous files on the card are to be deleted.
- ...whether the firmware files are to be copied to the memory card in addition to the existing files.

Figure 3-4 Writing firmware files to the memory card via TIA



Note

When selecting the firmware files, consider the usability for the module you have. The firmware files are usually specific to the respective module article number (MLFB).

3.3.2 Using a Memory Card with Insufficient Storage Space

If you use a memory card with insufficient memory in the TIA Portal for the firmware update, you will receive an error message after selecting the firmware file.

Figure 3-5 Using a memory card with insufficient storage space



ATTENTION

Despite the error message, the memory card is converted into a firmware update card by the TIA Portal!

After the error message, although copying the firmware files was not possible, the memory card cannot be used directly as a program card again. The card type must first be changed back to "program card" as described in Section 3.3.3.

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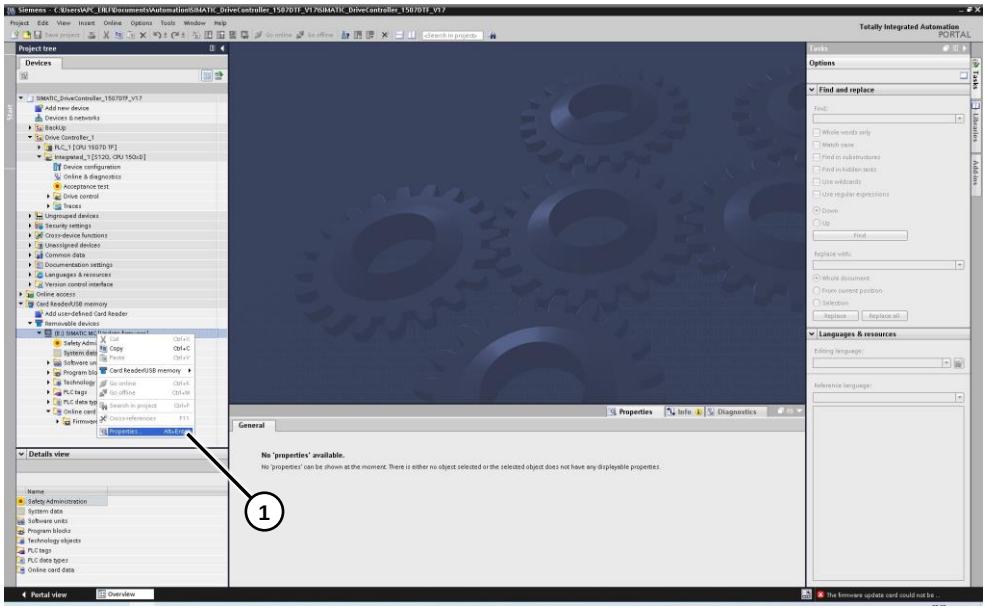
The lack of memory on the memory card may be due to the following reasons:

- The size of the memory card is too small.
  To perform the firmware update on the SINAMICS Integrated, at least one memory card with a memory size of at least 256MB must be used.
- You want to keep the files on the memory card and the remaining space is not enough for the firmware files.

3.3.3 Changing the Memory Card Type

The memory card type can be changed or the current type setting can be checked in the TIA Portal via the context menu in the properties of the memory card (1).

Figure 3-6 Calling the properties of the memory card in the TIA Portal



The memory card type can be set in the "PLC Card Mode" section of the memory card properties in the TIA Portal.

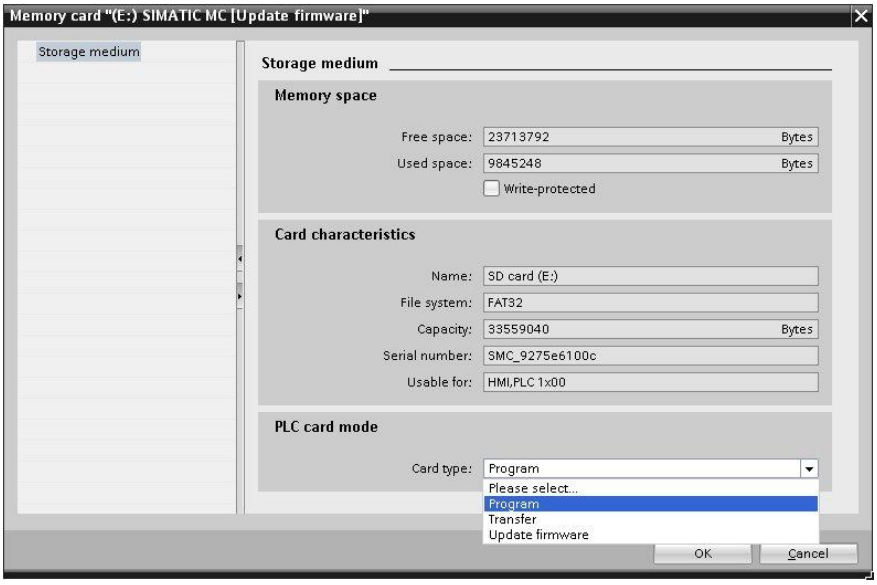
The following selection options are available:

- Program
  As a program card, the SIMATIC Memory Card is used as external load memory of the SIMATIC CPU.
  To save the user program, the folder "SIMATIC.S7S" is created on the memory card.
- Transfer
  The SIMATIC Memory Card is used as a program container for the SIMATIC S7-1200, which does not require a memory card for operation. With the help of the transfer card, the user program can be transferred from one controller of the S7-1200 family to another controller. More information can be found in the FAQ mentioned in the link list (\9\).

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- Update firmware
  The SIMATIC Memory Card can be used as a firmware update card for transferring firmware files to the module.
  To save the firmware files, the folder "FWUPDATE.S7S" is created on the memory card.

Figure 3-7 Memory card type settings



Using the FUNCT button on the SIMATIC Drive Controller

As of firmware version V2.9 of the SIMATIC CPU (PLC) of the SIMATIC Drive Controller, the FUNCT key on the front of the controller can also be used to change the memory card type:

- Function 2:
  Insert the SIMATIC Memory Card as firmware update card and execute firmware update.
- Function 3:
  Use the SIMATIC Memory Card as the program card.

Note For more information on this topic and a description of how to use the FUNCT button on the SIMATIC Drive Controller, refer to the SIMATIC Drive Controller System Manual (\5\) in the Section "Setting the Card Type".

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3.4 Firmware Update of the SIMATIC CPU (PLC)

3.4.1 Procedure

A firmware update of the SIMATIC CPU (PLC) may be executed in several ways:

- Via online access to the SIMATIC Drive Controller from the TIA Portal.
  Via the SIMATIC Memory Card during startup of the SIMATIC Drive Controller.
- Via the Web server (\7\) of the SIMATIC Drive Controller.
- By online access via the SIMATIC Automation Tool (\8\).

Note Further information on this topic can also be found in the system manual for the SIMATIC Drive Controller (\5\) in the Section "Firmware Update of SIMATIC Drive Controller"

Two of the possibilities for a firmware update of the SIMATIC CPU (PLC) are briefly described in the following sections.

Firmware update via online access

Establish an online connection to the SIMATIC Drive Controller in the TIA Portal using the "Accessible devices" function and then select the functionality for the firmware update on the module in the "Online & diagnostics" area. Follow the TIA Portal instructions.

Firmware update via SIMATIC Memory Card

The firmware update is carried out as follows:

- The firmware update begins shortly after the SIMATIC Memory Card has been plugged in.
- During the firmware update, the "RUN" LED flashes yellow.
- The firmware update has been successfully completed when the "RUN" LED of the SIMATIC Drive Controller is permanently illuminated yellow and the "MT" (Maintenance) LED flashes yellow.
- Now switch off the SIMATIC Drive Controller and remove the SIMATIC Memory Card.

Note Via the FUNCT key, you may also execute a firmware update starting with firmware version V2.9 of the SIMATIC CPU (PLC) (Function 2: Insert SIMATIC Memory Card as firmware update card and execute firmware update).

The procedure is described in the SIMATIC Drive Controller system manual (\5\) in the Section "Setting the Card Type".

Certificate confirmation

You may need to perform a certificate confirmation on the module after performing the firmware update and mark the module as "trusted".

To do this, follow the instructions in the TIA Portal when establishing the first online connection to the SIMATIC CPU (PLC) after the firmware update.

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3.4.2 Simultaneous Update of SINAMICS Integrated and SIMATIC

You can also perform a complete firmware update of the SIMATIC Drive Controller via the SIMATIC Memory Card by storing both firmware files for the SIMATIC CPU (PLC) and the SINAMICS Integrated on the memory card.

Basically, a complete firmware update of the SIMATIC Drive Controller should be performed in the following order:

1. Firmware update of the SIMATIC CPU (PLC).
2. Firmware update of the SINAMICS Integrated.

Note If both firmware files for the SIMATIC CPU (PLC) and the SINAMICS Integrated of the SIMATIC Drive Controller are stored on the SIMATIC Memory Card, the update is automatically performed in the order mentioned above.

To perform a complete firmware update of the SIMATIC Drive Controller, proceed as follows:

- Save both firmware files for the SIMATIC CPU (PLC) and the SINAMICS Integrated of the SIMATIC Drive Controller on the SIMATIC Memory Card in the directory "FWUPDATE.S7S".
- Save the text "FWUPDATE" in the text file "S7_JOB.S7S".
- Insert the SIMATIC Memory Card into the switched-off SIMATIC Drive Controller and switch on the module.
- Shortly after switch-on, the firmware update of the SIMATIC CPU (PLC) of the SIMATIC Drive Controller starts. During the firmware update, the "RUN" LED flashes yellow.
- The firmware update of the SIMATIC CPU (PLC) of the SIMATIC Drive Controller has been completed successfully when the "RUN" LED is permanently yellow and the "MT" (Maintenance) LED is flashing yellow.
- Now switch off the SIMATIC Drive Controller and leave the SIMATIC Memory Card in the module.
- Switch on the SIMATIC Drive Controller again. The SIMATIC Drive Controller now starts up with the new firmware of the SIMATIC CPU (PLC).
- Shortly after switch-on, the SIMATIC Drive Controller detects another firmware update for the SINAMICS Integrated on the SIMATIC Memory Card due to the new firmware of the SIMATIC CPU (PLC) and executes this update. During the firmware update, the "RUN" LED flashes yellow.
- The firmware update of the SINAMICS Integrated of the SIMATIC Drive Controller has been successfully completed when the "RUN" LED is continuously yellow and the "MT" (Maintenance) LED is flashing yellow.
- Switch off the SIMATIC Drive Controller and remove the SIMATIC Memory Card from the module.
- Now reinsert the previous SIMATIC Memory Card with the configuration of the SIMATIC Drive Controller or delete the update files from the memory card and reinsert the empty memory card into the module.
- Switch on the SIMATIC Drive Controller again. The SIMATIC Drive Controller now runs with the new firmware of the SIMATIC CPU (PLC) and with the new firmware of the SINAMICS Integrated.
  Depending on the contents of the memory card now in the module, the SIMATIC Drive Controller starts up with the previous configuration (if the previous SIMATIC Memory Card was reinserted with the configuration of the SIMATIC Drive Controller), or without configuration, if the memory card was deleted.

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Note After the startup of the SIMATIC Drive Controller, observe the instructions given in Section 2.3.4, especially for the permanent storage of the RAM data of the SINAMICS Integrated on the SIMATIC Memory Card.

3.5 Determining the Current Firmware Version

3.5.1 In the TIA Portal Project

The firmware of the SIMATIC Controller (1) currently configured in the TIA Portal project and of the SINAMICS Integrated (2) of the SIMATIC Drive Controller can be determined via the catalog information of the configured components.

Figure 3-8 SIMATIC-Controllers catalog information

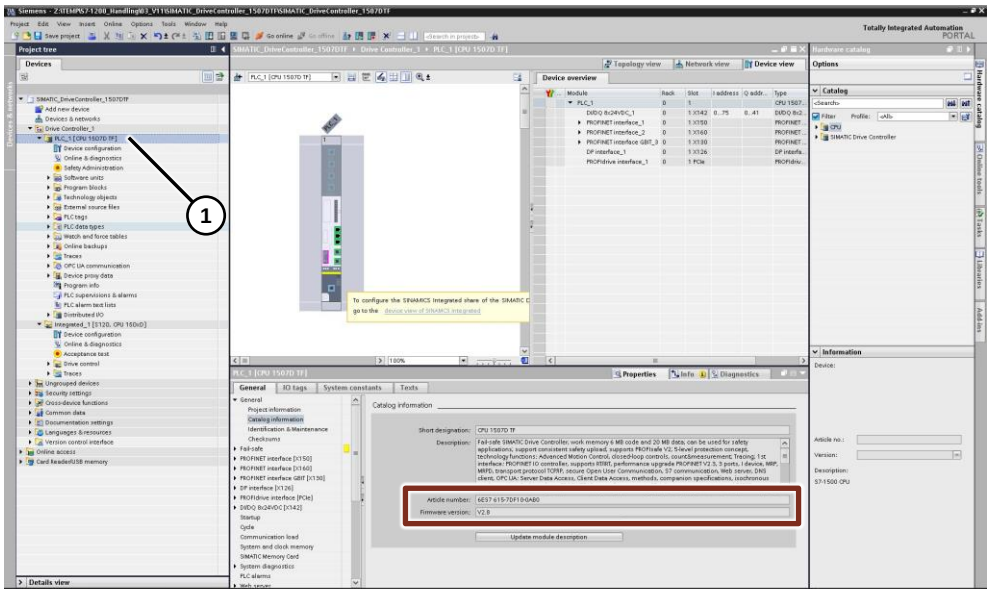
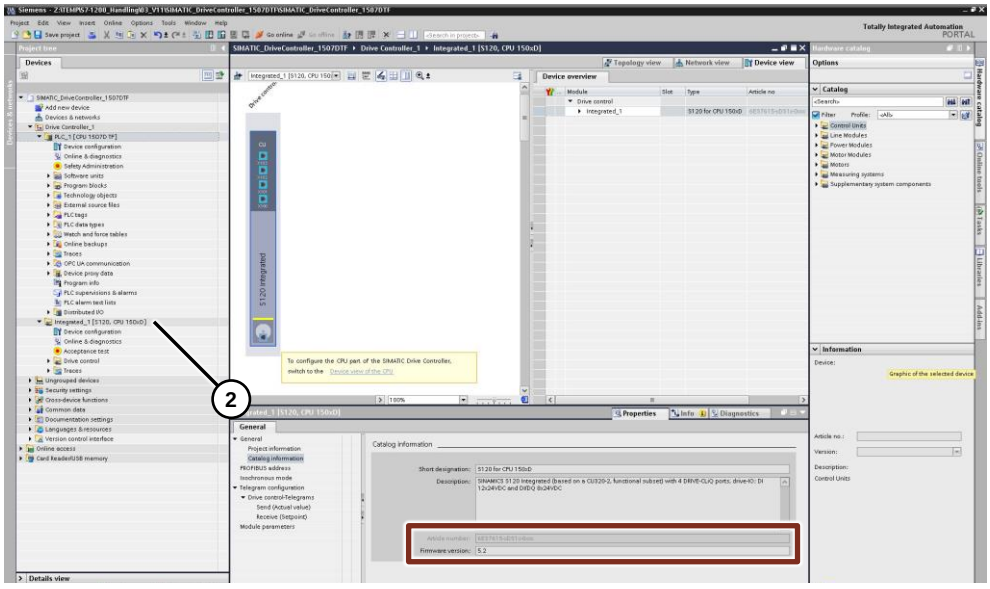


Figure 3-9 SINAMICS Integrated catalog information



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Note

The catalog information of the configured components can be called up via the context menu of the corresponding component using the "Properties" menu item or displayed in the device configuration in the Inspector window under the "Properties" of the respective components. However, the "Device view" of the respective component must be selected for this.

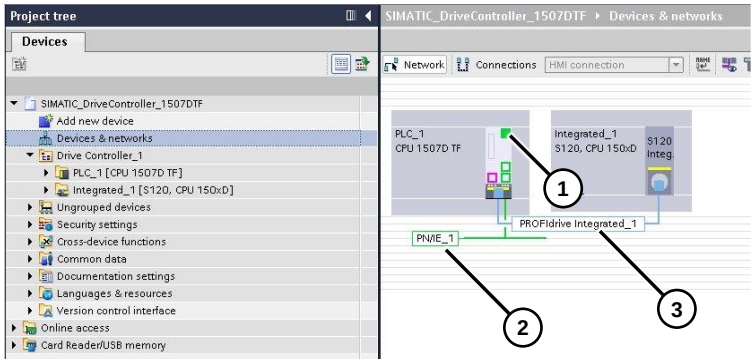
3.5.2 On the Module

Via the entry "Online & diagnostics" of the respective component in the project directory, you may retrieve the corresponding module information of the components, which also contains the firmware version.

Note

A subnet (2) must be configured for the interface (1) to which you connect the programming device. Routing to the SINAMICS Integrated (3) is only possible if a subnet is available.

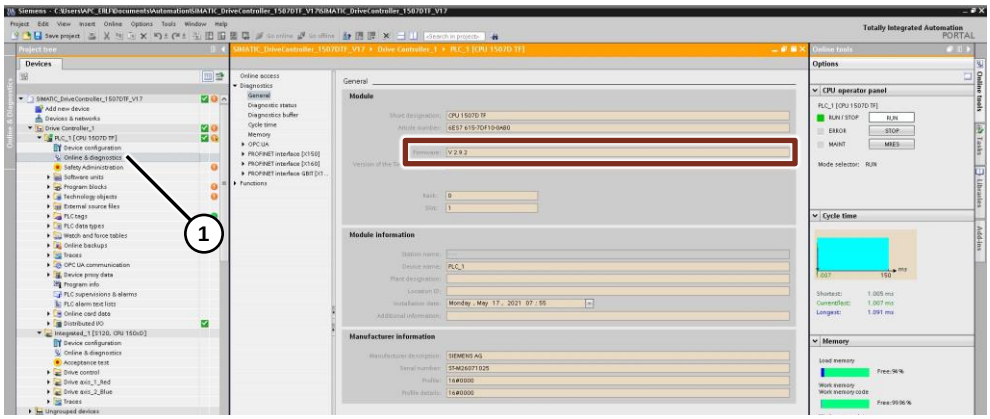
Figure 3-10 Routing to the SINAMICS Integrated only with configured subnet



Online access

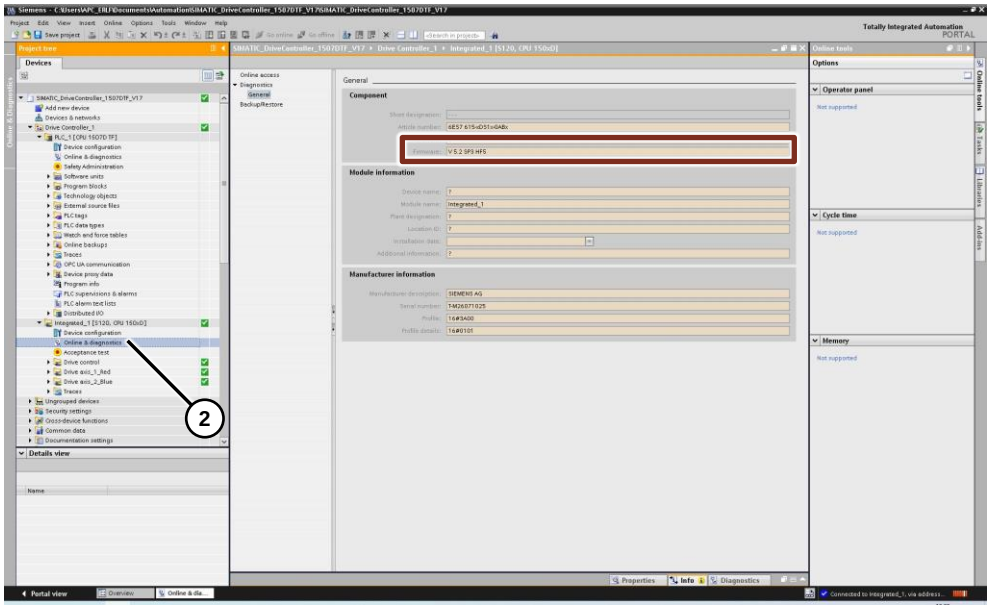
Via online access to the SIMATIC Controller (1) or the SINAMICS Integrated (2), you can determine the firmware versions of the individual components currently loaded on the module.

Figure 3-11 Online access to the SIMATIC Controller



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Figure 3-12 Online access to the SINAMICS Integrated



Note

A subnet needs to be configured for the interface to which you are connecting the programming device. Routing to the SINAMICS Integrated is only possible with an existing subnet.

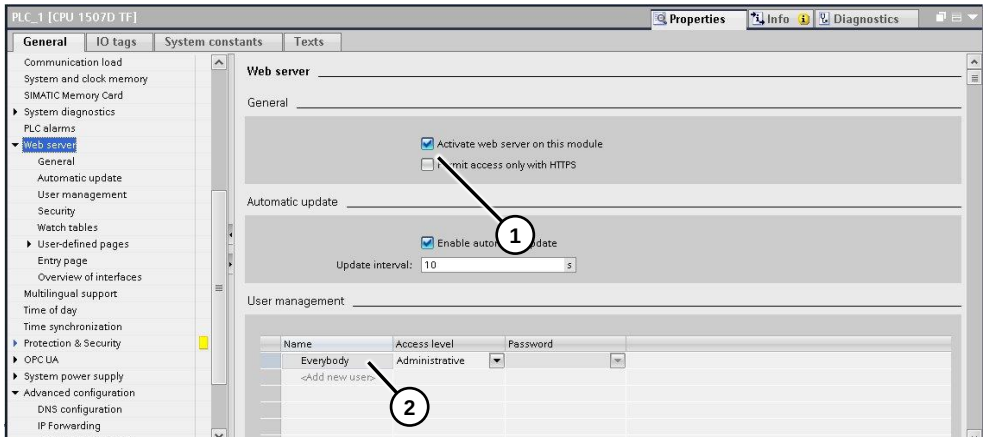
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WEB server

If the Web server is activated on the SIMATIC Drive Controller (1) and the corresponding access rights are set up (2), or if you are logged into the Web server with the corresponding access permissions, you can also determine the currently loaded firmware of the SIMATIC Controller here.

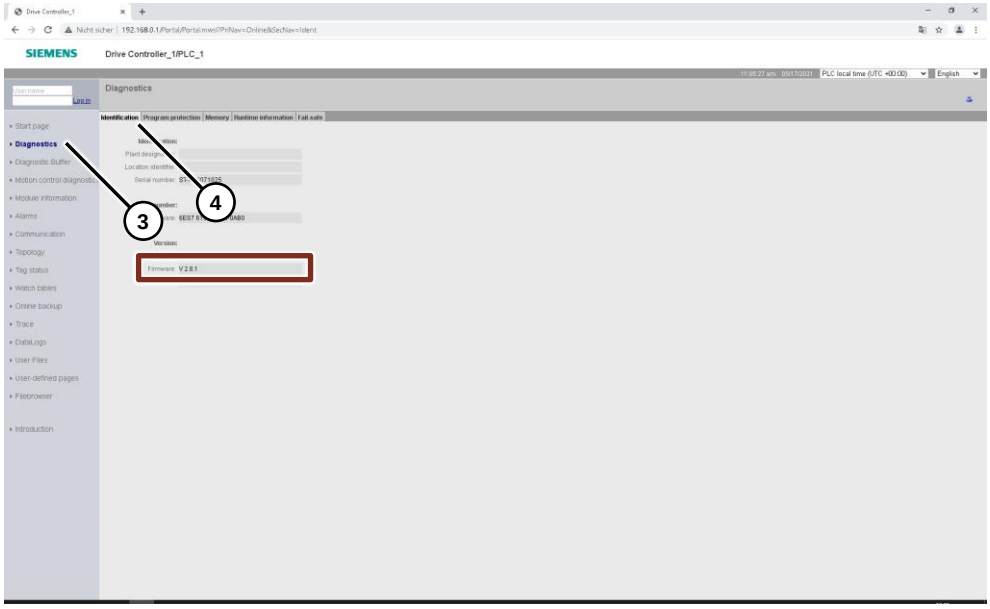
Access to the data of the SINAMICS Integrated is not possible via the web server.

Figure 3-13 SINAMICS Drive Controller web server



You will find the required data on the web page of the web server under the menu item Diagnostics (3) on the Identification (4) tab.

Figure 3-14 Online access to the SIMATIC Controller via the web server



Note

The currently loaded firmware of the SINAMICS Integrated cannot be determined via the web server. A firmware update of the SINAMICS Integrated is also not possible this way.

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4 Appendix

4.1 Links and literature

Table 4-1

No.	Subject
\1\	Siemens Industry Online Support https://support.industry.siemens.com
\2\	Link to the entry page of the FAQ https://support.industry.siemens.com/cs/ww/en/view/109782271
\3\	SIMATIC Drive Controller Product Information – Edition 05/2021 https://support.industry.siemens.com/cs/ww/en/view/109772684
\4\	SIMATIC Drive Controller Manual – Edition 05/2021 https://support.industry.siemens.com/cs/ww/en/view/109766666
\5\	SIMATIC Drive Controller System Manual – Edition 05/2021 https://support.industry.siemens.com/cs/ww/en/view/109766665
\6\	Firmware Update for SIMATIC Drive Controller CPU 1504D TF and CPU 1507D TF Download https://support.industry.siemens.com/cs/ww/en/view/109773914
\7\	SIMATIC S7-1500, SIMATIC Drive Controller, ET 200SP, ET 200pro Web server Function manual – Edition 05/2021 https://support.industry.siemens.com/cs/ww/en/view/59193560
\8\	SIMATIC Automation Tool The tool to support commissioning, service, and maintenance of SIMATIC devices Download and manual https://support.industry.siemens.com/cs/ww/en/view/98161300
\9\	How can you use the memory card for the S7-1200 CPU? FAQ – Edition 26.03.2021 https://support.industry.siemens.com/cs/ww/en/view/87133851

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