Replacing the Parent Hardware Module with the Successor Hardware Module (Migration)

CP443-1 (Advanced)

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Service & Support

Answers for industry.

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Caution
The functions and solutions described in this article confine themselves predominantly to the realization of the automation task. Furthermore, please take into account that corresponding protective measures have to be taken in the context of Industrial Security when connecting your equipment to other parts of the plant, the enterprise network or the internet. Further information can be found in Entry ID 50203404.

http://support.automation.siemens.com/WW/view/en/50203404

Question

What do you have to watch out for when replacing the parent hardware module with the successor hardware module CP443-1 or CP443-1 Advanced?

Answer

The instructions and notes listed in this document provide a detailed answer to this question.

Table of Contents

1   Introduction

This document describes what you have to watch out for when upgrading from previous modules to the successor modules below.

- CP443-1 (6GK7443-1EX20-0XE0)
- CP443-1 (6GK7443-1EX30-0XE0)
- CP443-1 Advanced (6GK7443-1GX20-0XE0)
- CP443-1 Advanced (6GK7443-1GX30-0XE0)

In the following, the Industrial Ethernet CPs will be referred to in their abbreviated forms as below.

- CP443-1 EX20
- CP443-1 EX30
- CP443-1 GX20
- CP443-1 GX30

2 Upgrade (Exchange of Function-Compatible Modules)

2.1 Definition

The case when the modules described here are implemented instead of a previous module insofar the configuration is changed. Here, the CP previously used in the configuration is replaced by the new CP.

2.2 CP443-1EX30

The following previous products can be upgraded to
CP443-1 (6GK7443-1EX30-0XE0) firmware version V3.0.

- CP443-1EX20
- CP443-1EX11 with CPUs firmware version 4.1 onwards
- CP443-1EX10 with CPUs firmware version 4.1 onwards

When you upgrade one of the previous products to CP443-1EX30, pay attention to the following:

- The CP443-1EX30 is released only for CPUs with firmware version V4.1 and higher.
- The upgrade is not possible when you use a CPU with firmware version V4.0 and lower.
- You must upgrade CPUs with firmware V4.0 to firmware V4.1.

Note	When operating CP443-1EX30 with CPUs version V4.x, all the functions are supported that the CP443-1EX11 provided. Operation as PROFINET IO controller and SEND/RECV connections in the SPEED SEND/RECV mode are not supported.

2.3 CP443-1GX30

The following previous modules can be upgraded to
CP443-1 Advanced (6GK7443-1GX30-0XE0) firmware version V3.0.

- CP443-1EX30
- CP443-1EX20
- CP443-1GX20
- CP443-1EX41 with CPUs firmware version V4.1 onwards
- CP443-1EX40 with CPUs firmware version V4.1 onwards
- CP443-1GX11 with CPUs firmware version 4.1 onwards

When you upgrade one of the previous products to CP443-GX30, pay attention to the following:

- The CP443-1GX30 is released only for CPUs with firmware version V4.1 and higher.

- The upgrade is not possible when you use a CPU with firmware version V4.0 and lower.

- You must upgrade CPUs with firmware V4.0 to firmware V4.1.

- The modules CP443-1EX30 and CP443-1GX30 cannot be used as spare parts for each other (see chapter 3). However, you can upgrade CP443-1EX30 and CP443-1EX20 with CP443-1GX30 if you change the configuration.

2.4 CP443-1EX20

The following previous products can be upgraded to
CP443-1 (6GK7443-1EX20-0XE0) firmware version V2.1.

- CP443-1EX20 firmware version V2.0 / V1.0

- CP443-1EX11 with CPUs firmware version 4.1 onwards

- CP443-1EX10 with CPUs firmware version 4.1 onwards

When you upgrade one of the previous products to CP443-1EX20, pay attention to the following:

- The CP443-1EX20 is released only for CPUs with firmware version V4.1 and higher.

- The upgrade is not possible when you use a CPU with firmware version V4.0 and lower.

- You must upgrade CPUs with firmware V4.0 to firmware V4.1.

Note	When operating CP443-1EX20 with CPUs version V4.x, all the functions are supported that the CP443-1EX11 provided. Operation as PROFINET IO controller and SEND/RECV connections in the SPEED SEND/RECV mode are not supported.

2.5 CP443-1GX20

The following previous products can be upgraded to
CP443-1 Advanced (6GK7443-1GX20-0XE0) firmware version V2.1.

- CP443-1EX20

- CP443-1GX20 firmware version V2.0

- CP443-1EX40 with CPUs firmware version V4.1 onwards

- CP443-1EX41 with CPUs firmware version V4.1 onwards

- CP443-1GX11 with CPUs firmware version 4.1 onwards

When you upgrade one of the previous products to CP443-1GX20, pay attention to the following:

- The CP443-1GX20 is released only for CPUs with firmware version V4.1 and higher.

- The upgrade is not possible when you use a CPU with firmware version V4.0 and lower.

- You must upgrade CPUs with firmware V4.0 to firmware V4.1.

- The modules CP443-1EX20 and CP443-1GX20 cannot be used as spare parts for each other (see chapter 3). However, you can upgrade CP443-1EX20 with CP443-1GX20 if you change the configuration.

3 Spare Parts Scenario

3.1 Definition

The case when an existing module can be replaced by the new module (remove/insert) without changing the configuration.

3.2 CP443-1EX30

The CP443-1 (6GK7443-1EX30-0XE0), firmware version V3.0, can be used as a spare part for the following predecessor products:

- CP443-1EX20
- CP443-1EX11 with CPUs firmware version 4.1 onwards
- CP443-1EX10 with CPUs firmware version 4.1 onwards

You must continue to order CP443-1EX11 as spare part for CPUs with firmware earlier than V4.0.

You must upgrade CPUs with firmware V4.0 to firmware V4.1.

In the case of H CPUs, you can use CP443-1EX30 as spare part for the CP443-1EX11, even together with H CPUs with firmware version V4.0.

Note	In the following chapters of the CP443-1EX30 manual you will find detailed information on replacing previous products with the CP443-1EX30. • Replace previous modules: spare parts / upgrading • Replace previous modules: CPs with configurable data content The manual is available at the following link: http://support.automation.siemens.com/WW/view/en/59187251

3.3 CP443-1GX30

The CP443-1 Advanced (6GK7443-1GX30-0XE0), firmware version V3.0, can be used as a spare part for the following predecessor products:

- CP443-1GX20
- CP443-1EX41 with CPUs firmware version V4.1 onwards
- CP443-1GX11 with CPUs firmware version 4.1 onwards

You must continue to order CP443-1EX11 or CP443-1EX41 as spare part for CPUs with firmware earlier than V4.0.

You must upgrade CPUs with firmware V4.0 to firmware V4.1.

Note	In the following chapters of the CP443-1GX30 manual you will find detailed information on replacing previous products with the CP443-1GX30. • Replace previous modules: spare parts / upgrading • Replace previous modules: CPs with configurable data content The manual is available at the following link: http://support.automation.siemens.com/WW/view/en/59187252

3.4 CP443-1EX20

The CP443-1 (6GK7443-1EX20-0XE0), firmware version V2.1, can be used as a spare part for the following predecessor products:

• CP443-1EX20 firmware version V2.0 / V1.0

• CP443-1EX11 with CPUs firmware version 4.1 onwards

• CP443-1EX10 with CPUs firmware version 4.1 onwards

You must continue to order CP443-1EX11 as spare part for CPUs with firmware earlier than V4.0.

You must upgrade CPUs with firmware V4.0 to firmware V4.1.

In the case of H CPUs, you can use CP443-1EX20 as spare part for the CP443-1EX11, even together with H CPUs with firmware version V4.0.

Note	In the case of CPUs with firmware V4.1 and higher, you can remove the CP443-1EX11 and slot the CP443-1EX20 in replacement without having to change the hardware configuration. In the CP443-1EX20 manual, in the section entitled "Replacing older modules: spares / upgrading", you will find detailed information on replacing previous products with the CP443-1EX20. The manual is available at the following link: http://support.automation.siemens.com/WW/view/en/27013386

3.5 CP443-1GX20

The CP443-1 Advanced (6GK7443-1GX20-0XE0), firmware version V2.1, can be used as a spare part for the following predecessor products:

• CP443-1EX41 with CPUs firmware version V4.1 onwards

• CP443-1GX11 with CPUs firmware version 4.1 onwards

You must continue to order CP443-1GX11 as spare part for CPUs with firmware earlier than V4.0.

You must upgrade CPUs with firmware V4.0 to firmware V4.1.

Note	In the CP443-1GX20 manual, in the section entitled "Replacing older modules: spares / upgrading", you will find detailed information on replacing previous products with the CP443-1GX20.
	The manual is available at the following link:
	http://support.automation.siemens.com/WW/view/en/28011203

3.6 AUI/ITP Cabling

The following Industrial Ethernet CPs no longer have an AUI/ITP interface:

- CP443-1EX30
- CP443-1EX20
- CP443-1GX30
- CP443-1GX20

If you used the AUI/ITP interface with the previous product, you can use the following AUI or ITP cabling method when replacing with the above-mentioned Industrial Ethernet CPs.

AUI cabling

Use a SCALANCE X101-1 AUI media converter (6GK5101-1BX00-2AA3) and the IE TP Cord RJ45/RJ45 0.5m (6XV1870-3QE50), for example.

ITP cabling with RJ45 partner

You can use the following cables to connect terminals with RJ45 interface to the ITP cabling system.

Table 3-1

Cable	Length	Order number
IE TP Converter Cord 15/RJ45	0.5m	6XV1850-2EE50
IE TP Converter Cord 15/RJ45	1m	6XV1850-2EH50

These cables are prefabricated with an RJ45 male connector and 15-pin Sub-D female connector.

ITP cabling with a partner with 9-pin Sub-D female connector

You can use the cable IE TP Cord 9/RJ45 10m (6XV1 850-2JN10), for example, to connect the above-mentioned Industrial Ethernet CPs to a partner with 9-pin Sub-D female connector.

These cables are prefabricated with an RJ45 male connector and 9-pin Sub-D female connector.

4 Replacing Previous Product with CP443-1EX30 / CP443-1GX30 in the Hardware Configuration

Replace previous product with CP443-1EX30

The CP443-1EX30 can be configured as CP443-1EX30 with full range of functions as from STEP 7 V5.5 SP2 HF1 plus Hardware Support Package (HSP 1053).

In STEP 7 Professional V11, the CP443-1EX30 can be configured as CP443-1EX20 with its range of functions.

Note	You can download the Service Pack 2 (SP2) for STEP 7 V5.5 in this entry:
	http://support.automation.siemens.com/WW/view/en/57026339
	You can download the Hotfix 1 (HF1) for STEP 7 V5.5 SP2 in this entry:
	http://support.automation.siemens.com/WW/view/en/59216386
	The Hardware Support Package is on the DVD included in the CP443-1EX30 delivery package.

When due upgrading or installing a spare part in STEP 7 you replace the configured CP with CP443-1EX30, then the configured connections and data are applied as soon as drag the CP443-1EX30 from the hardware catalog and drop it on the module to be replaced in the hardware configuration.

Replace previous product with CP443-1GX30

The CP443-1GX30 can be configured as CP443-1GX30 with full range of functions as from STEP 7 V5.5 SP2 HF1 plus Hardware Support Package (HSP 1054).

In STEP 7 Professional V11, the CP443-1GX30 can be configured as CP443-1GX20 with its range of functions.

Note	You can download the Service Pack 2 (SP2) for STEP 7 V5.5 in this entry:
	http://support.automation.siemens.com/WW/view/en/57026339
	You can download the Hotfix 1 (HF1) for STEP 7 V5.5 SP2 in this entry:
	http://support.automation.siemens.com/WW/view/en/59216386
	The Hardware Support Package is on the DVD included in the CP443-1GX30 delivery package.

When due upgrading or installing a spare part in STEP 7 you replace the configured CP with CP443-1GX30, then the configured connections and data are applied as soon as drag the CP443-1GX30 from the hardware catalog and drop it on the module to be replaced in the hardware configuration.

5 Replacing CP443-1EX11 with CP443-1EX20 in the Hardware Configuration

5.1 Replacing CP443-1EX11 with CP443-1EX20 Firmware V1.0 in STEP 7 V5.4 SP3

As from STEP 7 V5.4 SP3 plus Hardware Support Package (HSP), you can configure the CP443-1EX20 V1.0 as CP443-1EX20.

Note	The Hardware Support Package is available for downloading in this entry:
	http://support.automation.siemens.com/WW/view/en/23183356

If you replace the CP443-1EX11 with a CP443-1EX20 V1.0 in the Hardware Configuration, the following parameters are not transferred automatically:

- The configured MAC address, IP address and subnet mask.
- The information about which network the module is connected to.
- The fixed settings of the Ethernet ports for "Transfer medium / Duplex".
- Connection information of the S7 connections in NetPro.

You must enter these parameters manually in the project.

The following parameters are retained:

- Time interval for the keep-alive signal.
- Activated H profile.
- Activated IP access protection with the IP addresses entered.
- Connection information of the SEND/RECEIVE connections in NetPro.

5.2 Replacing CP443-1EX11 with CP443-1EX20 Firmware V2.0 in STEP 7 V5.4 SP4

You require STEP 7 V5.4 SP4 or higher for configuring the full scope of functions of the CP443-1EX20 V2.0. The full scope of functions of the CP443-1EX20 V2.0 is only available with CPUs with firmware version V5.2 or higher.

If you upgrade or you replace the CP443-1EX11 with a CP443-1EX20 V2.0 in the Hardware Configuration, the following parameters are not transferred automatically and must be set manually:

- The fixed settings of the Ethernet ports for "Transfer medium / Duplex".

6 Special Features When Using PCS 7 Versions Earlier Than V7.1 SP1

System configuration

On the Engineering Station (ES) a PCS 7 version earlier than V7.1 SP1 and a CP1613 A2 are used.

Set the S7 online access point to CP1613 on the Engineering Station (ES) to access the AS from the ES over the CP443-1.

If you use a CP443-1EX11 in the AS, then you can unrestrictedly use the "Accessible Nodes" and "Edit Ethernet Users" functions in the SIMATIC Manager to access the CP443-1EX11.

If you use a CP443-1EX20 in the AS, then this is not displayed in the SIMATIC Manager by means of the "Accessible Nodes" and "Edit Ethernet Users" functions.

Background

CP443-1EX11 supports the CD7 protocol. CP443-1EX20 supports the DCP protocol.

The drivers of the CP1613 A2 of the SIMATIC NET PC software integrated in a version of PCS 7 earlier than V7.1 SP1 only support the CD7 protocol and not the DCP protocol.

Note	Both the CD7 and the DCP protocol will be supported as from PCS 7 V7.1 SP1 with SIMATIC NET PC software V7.1 SP2 HF4.

Remedy

You have the following option to use the "Accessible Nodes" and "Edit Ethernet Users" functions in the SIMATIC Manager to display the CP443-1.

• Upgrade the PCS 7 to at least version PCS 7 V7.1 SP1.

7 Downloading Firmware

The following Industrial Ethernet CPs no longer have a mode selector:

- CP443-1EX20
- CP443-1EX30
- CP443-1GX20
- CP443-1GX30

You can download the firmware when the CPU and CP are in RUN mode. No handling is necessary.

The following entry provides you with information on how to download firmware.

http://support.automation.siemens.com/WW/view/en/12213669

8 History

Table 8-1

Version	Date	Change
V 1.0	15.06.2009	First edition
V 1.1	09.07.2009	Definition extended for upgrading and spare parts replacement
V 1.2	06.08.2009	Note on downloading the HSP added in section 4.1
V1.3	21.04.2010	Chapter 5 "Special Features When Using PCS 7 Versions Earlier Than V7.1 SP1" added
V1.4	02.07.2010	Corrections to Chapter 5 "Special Features When Using PCS 7 Versions Earlier Than V7.1 SP1"
V2.0	01.07.2012	Document extended for CP443-1EX30 and CP443-1GX30