



**User Manual**

# **ABC-CPU Systems**

**Knowledge Base**

**26/2012**

© Copyright 2003-2012 by ABC IT, Ahrens & Birner Company GmbH

Virchowstraße 19/19a

D-90409 Nuremberg

Fon +49 911-394 800-0

Fax +49 911-394 800-99

<mailto:mail@abcit.eu>

<http://www.abcit.eu/>

ABC IT	is a registered trademark of ABC IT GmbH
Simatic	is a registered trademark of Siemens AG
STEP	is a registered trademark of Siemens AG

# Contents

1. KNOWLEDGE BASE.....	4
1.1 Siemens 115 Rack .....	4
1.1.1 Integration .....	4
1.1.2 Power supply unit.....	4
1.2 Siemens 135/155 Rack .....	5
1.3 Siemens 150 Rack .....	6
1.4 ABC X-CPU-2 CPU948, CPU416/948.....	7
1.4.1 CP1430-TF synchronisation with SSNR 232/236 .....	7
1.4.2 Siemens CPU946/947 data handling function blocks .....	7
1.4.3 150U - Mode .....	8
1.5 ABC X-CPU-2 CPU416/945, CPU416/948.....	9
1.5.1 Access to S5 periph al areas.....	9
1.6 STEP7 V5.4 .....	10

# 1. Knowledge Base

## 1.1 Siemens 115 Rack

### 1.1.1 Integration

The CPU must be integrated in the rack using an adapter casing as used for 135/155 peripheral components. Proceed as follows:

- 1) Ensure that the power supply unit for the rack is a 7/15A unit. 3A power supply units cannot be used.
- 2) The upper connecting strip at the back of the double adapter casing must be removed. The quadruple connector strip of the CPU requires this space for the connections.
- 3) Remove the Siemens CPU 941-945 and fasten the prepared adapter casing.
- 4) Fit the ABC-X5 CPU in the adapter casing. Ensure that the module is fully inserted up to the mechanical limit.

### 1.1.2 Power supply unit

A 7/15A power supply unit must be used with the ABC-X5 CPU. 3A power supply units cannot be used.

## 1.2 Siemens 135/155 Rack

The CPU is integrated directly in one of the designated CPU slots. Multiprocessor operation is not possible. The function of the coordinator is also not supported. The CPU is provided with two 3 row connectors for making the connection to the backplane bus.

## 1.3 Siemens 150 Rack

The CPU 150 is designed for use in Simatic 150 systems. To install proceed as follows:

- 1) Ensure that the latest STEP5 program version is used.
- 2) Remove the following components:

<b>Slot</b>	<b>Designation</b>
27	Marshalling card 756
35	CPU924
43	CPU925
51	CPU926
59	CPU927
69/79	PG-AS511
89/99	AS512
79..117	Memory 340

- 3) Make a note of the slot allocation for the removed modules.
- 4) Fit the ABC-X5 CPU 150 in the slot 59 of the CPU927.
- 5) Please note that the X5-CPU 150 is only functional in the slot of the CPU927, even when slot markings are not distinguishable.



### **Note!**

Older 150 systems have a 4-row female connector strip on slot 59 (CPU927) that does not have a slit between strip three and four. In this case, the upper connector of the ABC-X5 CPU must be modified accordingly.

- 6) The ABC-X5 CPU is programmed via the cable (9-pole PC, 15-pole CPU) provided.



### **Note!**

The CPU and the PLC may be destroyed if the ABC-X5 CPU 150 is installed in a different slot to the one described.

## **1.4 ABC X-CPU-2 CPU948, CPU416/948**

### **1.4.1 CP1430-TF synchronisation with SSNR 232/236**

#### ***Description***

The STEP5 backplane communication via the SSNR 232 and 236 of the CP1430-TF is not supported in the ABC-X5 CPU948.

The NCM 1430 parameter software is used to pre-assign page 2 with the parameter R (backplane communication), which is automatically synchronized by the operating system of the Siemens CPU948.

#### ***Solutions***

- 1) Additional synchronous call in the startup OBs (OB20-OB22) to the interface assigned with ,R'.
- 2) Deactivate the interface assigned with ,R' (no interface).

### **1.4.2 Siemens CPU946/947 data handling function blocks**

#### ***Description***

The data handling function blocks of the CPU946/947 are programmed in STEP5 and are not part of the system. These blocks are not supported by the X5-CPU948.

#### ***Solutions***

The data handling function blocks FB120-FB127 are generated after the X5-CPU948 is reset. These function block can be copied to the STEP5 application. The parameters of the FBs are identical.

### 1.4.3 150U - Mode

#### ***Description***

Function blocks are breakable on the end of each block.

#### ***Solutions***

This mode is activated in the systemparameter section SDP with ,INT B'.



## **1.5 ABC X-CPU-2 CPU416/945, CPU416/948**

### **1.5.1 Access to S5 peripheral areas**

Access to S5 peripheral areas takes place directly with the:

- loading/transfer operations (L PEn x, T PAn y)

Access takes place linearly by way of the S5 P and S5 Q areas:

- S5 P-Area 0..255 with S7 P-Area 0..255
- S5 Q-Area 0..255 with S7 P-Area 256..511

The parameterisation of the hardware configuration is not necessary.

## 1.6 STEP7 V5.4

The STEP7 version V5.4 installs a "STEP7 IEPG Help Service". This service uses the RFC1006 port, which is used for the communication of STEP7 ↔ CPU.



### **Note!**

When you use a WIN32 CPU version together with the STEP7 on the same PC, communication is only possible when the "STEP7 IEPG Help Service" has been deactivated.