

AC500 – AC500-eCo  
update description V2.1.3  
Rev B

**AC500 / AC500-eCo**

Bootcode/Firmware/Display/  
RTC/Onboard IO update

# AC500-AC500- eCo FW update description V2.1.3 CPU without Ethernet



# Content

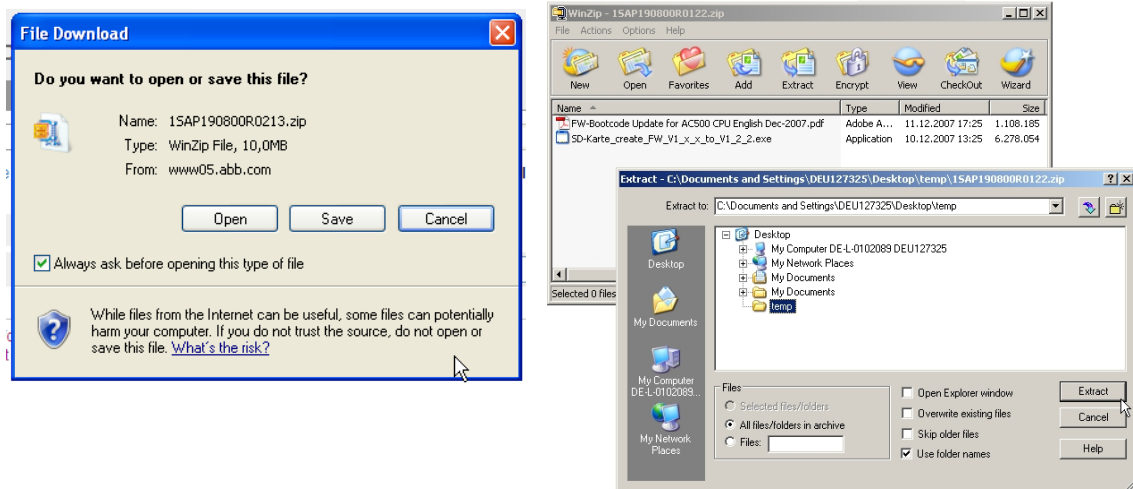
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# 1. What do you need?

To be able to make the CPU update, you need following materials:

Part number	Type	Description
1SAP180100R0001	<b>MC502</b>	MC502, SD Memory Card 512 MB
1TNE968901R0100	<b>MC503</b>	MC503, SD-Card adapter (only for eCo CPU)
1SAP180200R0001	<b>TK501</b>	TK501, Programming cable, D-Sub / D-Sub
1SAP190100R0200	<b>PS501</b>	PS501-PROG, Control Builder AC500, <b>V2.1.0</b> Programming software German / English / French (USB-DRIVE incl. Online-Help and Documentations- files)
1SAP190800R213_B	<b>FW5xx-UPDA</b>	Self-extracting ZIP data file FW V2.1.3 <b>only for AC500 CPU with rubric R02xx and AC500-eCo CPU without Ethernet</b>
	<b>PC- Accessories</b>	SD-Card reader/writer for PC to create SD Card Files

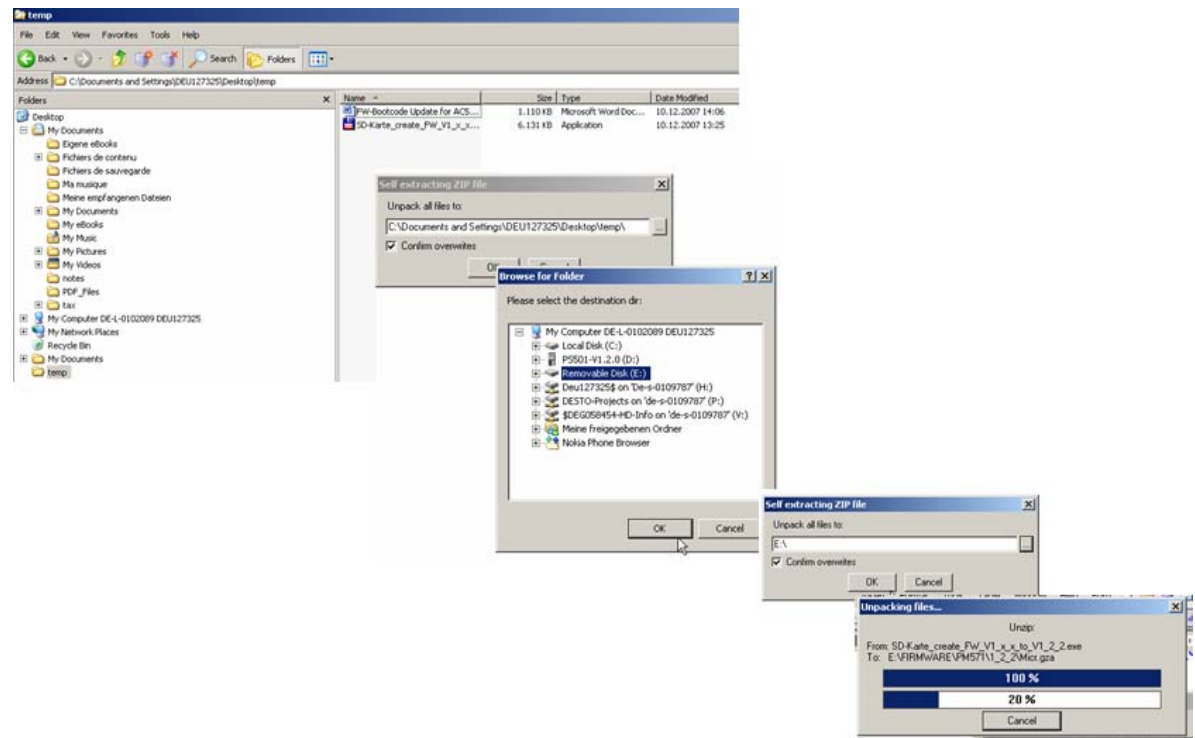
Download the desired file „1SAP190800R0213\_B.zip“and open the ZIP-File.



The file „1SAP190800R0213\_B.zip“contains:

- ❑ “SD-Card\_create\_FW\_V2\_x\_x\_to\_V\_2\_1\_3\_B.exe”: This is self-extracting files which produce automatically the SD-Card Directories and copy the desired data.
- ❑ Some Update instructions (English)

Put the SD-Card into the SD-Card reader from your PC. After that select the Data “SD-Card\_create\_FW\_V2\_x\_x\_to\_V\_2\_1\_3\_B.exe” with double click. The file is automatically extracted; select the SD-Card as target.



## 2. Update AC500

The functions of the SD-card are described in detail into the AC500-Documentation, System technique CPU' in the Chapter "The SD Memory Card in AC500".

In this short documentation are only described the functions and the data structure needed for the Firmware update.

In order to be able to use the newest functions of the AC500 and AC500-eCo, the CPU Boot-Code / Firmware, OnboardIO, RTC / Display Firmware have to be updated.

### 2.1 Update variants

The Firmware Update could be performed both only with SD-Card by booting the PLC or through PLC Browser commands and plugged SD-Card into the PLC.

The following table shows the Update possibilities:

Device / File	SD-Card + Power ON	PLC-Browser command + SD-Card
CPU – Bootcode	no	sdboot x* (x = according version; e.g sdboot 2_0_2)
CPU – Firmware	yes	sdfirm x* (x = according version; e.g sdfirm 2_1_3)
CPU – Display <sup>a</sup>	yes	sddisplay x* (x = according version; e.g sddisplay 2_3)
Coupler – Firmware	yes	sdcoupler x* (x = 1..4 = external coupler 1..4)
OnboardIO – Firmware <sup>b</sup>	yes	sdonboardio x* (x = according version; e.g sdonboardio 1_1_2)
RTC – Firmware <sup>c</sup>	yes	sdrtcbat x* (x = according version; e.g sdrtcbat 1_6)

(\*The released version could be found at chapter 3.2)

(<sup>a</sup> Only for PM57x, PM58x)

(<sup>b</sup> Only for PM55x, PM56x)

(<sup>c</sup> Only for TA561-RTC or TA562-RS-RTC as option of PM55x or PM56x)

#### **Attention:**

During the flash process it is not allowed to switch the power off; otherwise, the plc could be damaged and unavailable anymore. During the display update it is powered off and on automatically!

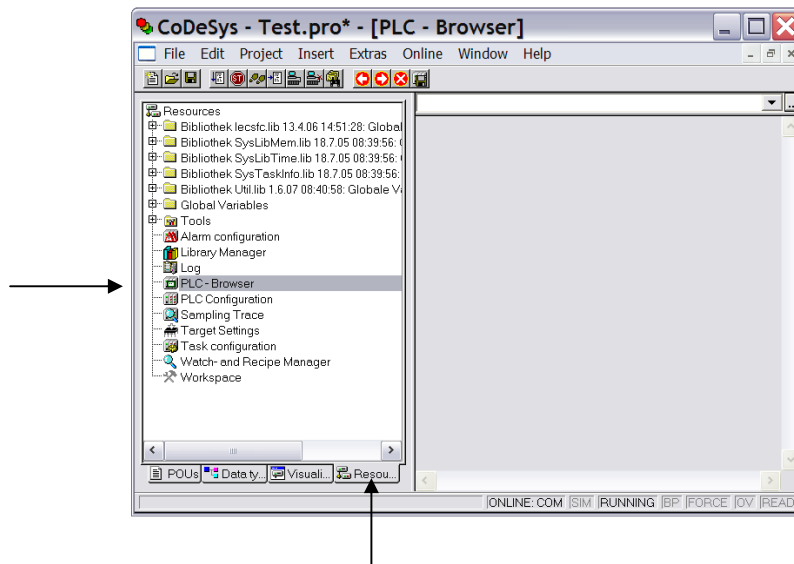
### 2.1.1 Update - boot up

If you want to do the firmware update without control by PLC browser commands then please follow these steps:

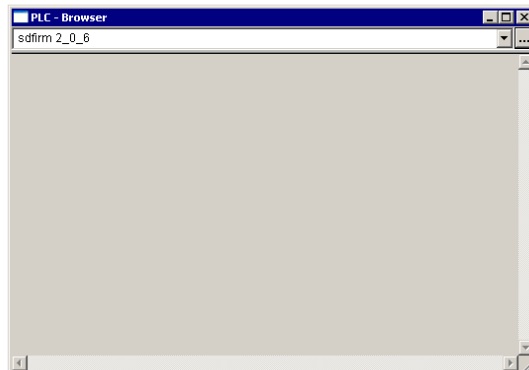
1. Download and extract the update files on your SD-card.
2. Insert prepared SD card into the plc. The file sdcard.ini on the SD-card contains settings that automatically perform the update.
3. Switch power on
4. Updates operation starts (green LED blinking = reading from SD card / red and green LED blinking fast = flash process)
- 4\*: Only for AC500-eCo PM5x4 modules: with firmware version < 2.x
  - First Update operation finished with Red LED is blinking slowly
  - Power off and Do not remove the SD card and redo the step 2~3
5. Update results:
  - Successful      =      Green LED is blinking slowly (only if all updates were done successfully)
  - Error            =      Red LED is blinking slowly (even if only one update was not done)

## 2.1.2 Update - online mode – PLC Browser

To do a firmware update with the PLC Browser, it is necessary to be logged in into the PLC with your PC. Now open the PLC-Browser, see below.



Now you have to insert the SD-Card (prepared as described in *chapter download of the update*) into the AC500 and write the requested (see chapter *Update variants*) command into the PLC-Browser and press enter. The corresponding command is now activated, see below – e.g. with the “**sdfirm 2\_1\_3**” command.



If the firmware update was successful, “**done**” is shown in the PLC-Browser, remove the SD-Card and restart the AC500 PLC to start the CPU with the new firmware.

**Attention:** *The SD card has to be removed before restart!!*

To get some information about the firmware version of the PLC enter the command “**rtsinfo**” into the PLC-Browser.

Only for AC500-eCo PM5x4 modules with firmware version < 2.x: First the CPU firmware has to be updated from V1.3.x to V2.0.x. After doing the update the CPU has to be restarted. Then any module can be updated as described in this chapter!

## 2.2 Current released versions

The following table contains the overview of the actual versions:

Device	Bootcode	Firmware	Display	RTC	Onboard IO
PM572	V2.0.2	V2.1.3	V2.3	-	-
PM582	V2.0.2	V2.1.3	V2.3	-	-
PM554	V1.3.0	V2.1.3	-	1.6	V1.1.2
PM564	V1.3.0	V2.1.3	-	1.6	V1.1.2



## 2.3 The file SDCARD.INI

The SDCARD.INI data file for the update of the AC500-CPU has the below shown entries. These entries are the default settings for the newest released firmware version and shouldn't be changed.

```
[Status]
FunctionOfCard=2                (*SDcard function: 2 = Update*)

[FirmwareUpdate]
CPUPM5x1=2                     (*Update CPU Firmware with below given values -> 2 = Version different*)
Display=2                      (*Update CPU Firmware with below given values -> 2 = Version different*)
OnboardIO=1                    (*Update OnboardIO Firmware with below given values -> 1 = from base directory*)
RtcBatt=2                      (*Update RtcBatt Firmware with below given values -> 2 = Version different*)
Coupler0=0                    (*Update communication module slot 0 -> No update*)
Coupler1=0                    (*Update communication module slot 1-> No update *)
Coupler2=0                    (*Update communication module slot 2-> No update *)
Coupler3=0                    (*Update communication module slot 3-> No update *)
Coupler4=0                    (*Update communication module slot 4-> No update *)

[UserProg]
UserProgram=0
RetainData=0
PersistentData=0
ConfData=0
CouplerConfig0=0
CouplerConfig1=0
CouplerConfig2=0
CouplerConfig3=0
CouplerConfig4=0

[PM554]                         (*CPU type*)
VERSION=2_1_3                  (*CPU firmware version*)
PLCBOOT=1_3_0                  (*CPU bootcode version*)
ONB_IO=1_1_2                   (*Onboard IO version*)
RTC_BATT=1_6                   (*RTC_Batt version*)

[PM564]
VERSION=2_1_3
PLCBOOT=1_3_0
ONB_IO=1_1_2
RTC_BATT=1_6

[PM572]                         (*CPU type*)
VERSION=2_1_3                  (*CPU firmware version*)
PLCBOOT=2_0_2                  (*CPU bootcode version*)
DISPLAY=2_3                    (*CPU display version*)

[PM582]
VERSION=2_1_3
PLCBOOT=2_0_2
DISPLAY=2_3
```

## 2.4 Data structure of the SD-card

<u>Directory</u>	<u>Data file</u>	<u>Comments</u>
Root	SDCARD.INI	Configuration data from the SD-card
FIRMWARE\PM572\2_1_3\	PM58xN.gza	FW V2.1.3,2011-07-26 (Build:11053)
FIRMWARE\PM572\2_0_2\	PM58xNB.gza	Boot V2.0.2,2010-03-26 (Build:7923,12:30:24,Rel)
FIRMWARE\PM572\Display\2_3	Display.app	Display firmware V2.3
FIRMWARE\PM582\2_1_3\	PM58xN.gza	FW V2.1.3,2011-07-26 (Build:11053)
FIRMWARE\PM582\2_0_2\	PM58xNB.gza	Boot V2.0.2,2010-03-26 (Build:7923,12:30:24,Rel)
FIRMWARE\PM582\Display\2_3	Display.app	Display firmware V2.3
FIRMWARE\PM554\2_1_3\	Pm55x.gza	FW V2.0.6,2011-05-19 (Build:10844)
FIRMWARE\PM554\1_3_0\	Pm55xB.gza	Boot V1.3.0,2009-02-25 (Build:5416,12:11:08,Rel)
FIRMWARE\PM554\ONB_IO\1_1_2 FIRMWARE\PM554\ONB_IO	5500.app	OnboardIO FW V1.1.2
FIRMWARE\PM554\RTC_BATT\1_6	RtcBatt.app	RTC FW V1.6
FIRMWARE\PM564\2_1_3\	Pm55x.gza	FW V2.0.6,2011-05-19 (Build:10844)
FIRMWARE\PM564\1_3_0\	Pm55xB.gza	Boot V1.3.0,2009-02-25 (Build:5416,12:11:08,Rel)
FIRMWARE\PM564\ONB_IO\1_1_2 FIRMWARE\PM554\ONB_IO	5501.app	OnboardIO FW V1.1.2
FIRMWARE\PM564\RTC_BATT\1_6	RtcBatt.app	RTC FW V1.6