SIEMENS

FS Product Training

Course: ACCESS Control

Section: SiPass integrated MP2.5

Topic: Hardware Installation and Configuration

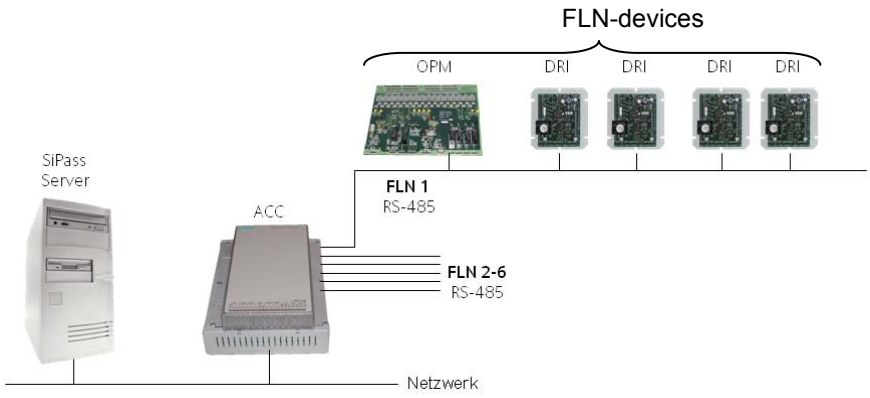
Table of contents

1. SiPass Installation step by step

To set up a SiPass system the following steps need to be performed:

- Installation of SiPass Software (Courseware “SW-Installation & Update”)
- Configuration of the ACC (Advanced Central Controller)
  ACC IP- Addresses, ACC- name, etc.
  Download the firmware to the ACC
- Connect the ACC to SiPass
- Connect the FLN-devices to the ACC
  Wiring between ACC and DRI, OPM, IPM etc.
- Search via SiPass “FLN Configuration” for devices connected to the ACC.
  FLN-devices (RIM, OPM,…) will be detected automatically.
  The “FLN Configuration” will also have the possibility to load the Firmware, enter device-names and settings for the devices.
- Enter the customer operators, cardholders and access conditions.

  (For the configuration and connection of the readers,
  please refer to the corresponding reader documentation)



2. Device overview

ACC

ACC (AC5100) controller (ACC = Advanced Central Controller)

Storage up to 500.000 cardholders
6 FLN-busses, each bus will have up to 16 connection points
Therefore it is possible to connect maximal e.g. 8 DRI per FLN-bus.

ACC-lite controller

The ACC-lite can only be connected to SiPass integrated.
SiPass integrated or SiPass Entro devices can be connected, no mix.
Storage up to 40.000 cardholders
1 FLN-bus, the bus will have up to 16 connection points but only
8 doors can be connected to the ACC-lite FLN-bus.

Please refer to the original ACC-lite / ACC-x manual for more information.

ACC-x controller (**x** will stay for the amount of connectable doors)

The ACC-x is an upgraded SiPass Entro SR34i.
Example: If an SiPass Entro SR34i/32 will get the ACC-x Firmware loaded, it will be recognized in SiPass integrated as ACC-32.
It is only possible to connect SiPass Entro devices to an ACC-x.
Also take care to enter the ACC-x license in between 30 days.
Storage up to 40.000 cardholders

Please refer to the original ACC-lite / ACC-x manual for more information.

RIM „Reader Interface Module“ general name for SRI, DRI and ERI.

SRI One reader via clock/data,
Connection via ACC FLN-Bus (1 FLN-connection point)
Storage for up to 212 cardholders in offline mode.

DRI

DRI (ADD5100) Door controller

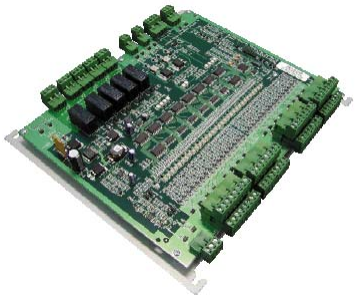
Connection for 2 readers via clock/data or RS485
2 readers as entry- and exit-reader (one door)
2 doors with entry reader on each door
2 readers at a turnstile
Connection via ACC FLN-Bus (2 FLN-connection point)
Storage for up to 212 cardholders in offline mode.

ERI

ERI (ADE5300) Door controller

8 reader interface (4 up to 8 doors)
Variable configuration as entry or entry- exit-readers
No turnstile function
Connection via ACC FLN-Bus (8 FLN-connection point)
Storage for up to 1668 cardholders in offline mode.

IPM



IPM (AFI5100) Input module
- 32 monitored inputs
- 4 relay outputs
- Connection via ACC FLN-Bus (4 FLN-connection point)

OPM

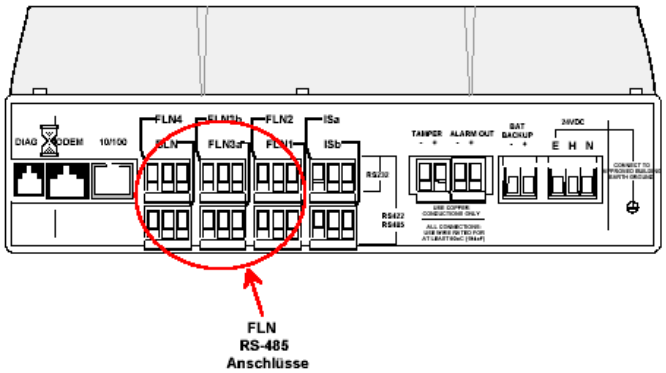
OPM (AFO5100) Output module
- 16 Inputs (not potential free; not monitored)
- 16 relay outputs
- Connection via ACC FLN-Bus (4 FLN-connection point)

8IO

8IO (AFO5200) In- / Output module
- 8 monitored inputs
- 8 relay outputs
- Connection via ACC FLN-Bus (4 FLN-connection point)

3. Connection ACC / RIM / Readers

3.1 Connection DRI (RIM) to ACC



At the 6 FLN-ports (Field Level Network) following devices can be connected:
DRI – SRI – ERI – IPM – OPM – 8IO (and several Entro devices)

Connection between ACC (FLN) and DRI:

ACC FLN 1, 2, 3a, 3b, 4, BLN, Isa Isb	**DRI RS485 bus**
+ (positive)	**+ (positive)**
- (negative)	**- (negative)**
E (shield)	**E (shield)**

3a and **3b** is one FLN-Bus, 16 connection points, wiring as above.
Advantage of this Bus: 3a maximal connection length 1000m, 3b also 1000m.

Isa and **Isb** will be one FLN-Bus, the wiring is shown below.

Isa **+** ——— **-** at FLN-device (e.g. DRI)
-

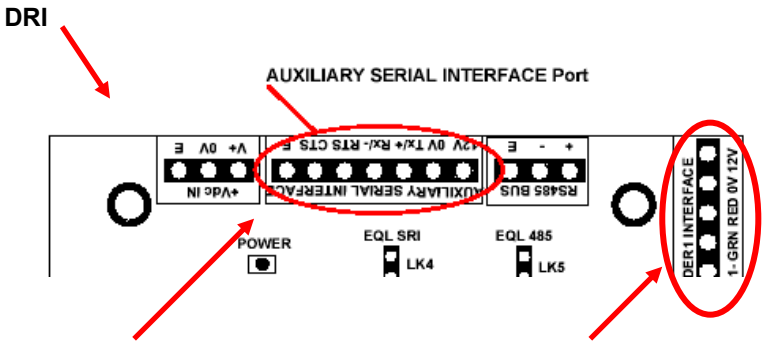
Isb **+** ——— **+** at FLN-device (e.g. DRI)
-

Attention! FLN port-limitation:
Maximal length of the ACC FLN Bus (RS485) is 1000m.
No “star” or “branch” wiring to the FLN-devices.
The devices have to be wired in serial (only one line).

One FLN will have 16 connection possibilities, “points”.
Each device will need a fix amount of connection points.
At page 4 the connection points of each device described.

e.g. DRI =2 points, OPM = 4 points
This means at one FLN-port 8 DRI can be connected.
Or 4 DRI and 2 OPM can be connected.
Or 4 OPM can be connected.

3.2 Connection card reader RS485 to RIM (CerPass protocol)



RS485 reader connection. (Clock Data Readers)

DRI - reader connection RS485 port	Card reader RS485 CerPass protocol Reader type –MS ; type -RX,-MT,-MX,		
12 V (positive / active)	+ V DC		
0 V (ground / neutral)	GND		
Tx/+	RS485	A	B
Rx/-	RS485	B	A
RTS	not used		
CTS	not used		
E	not used		

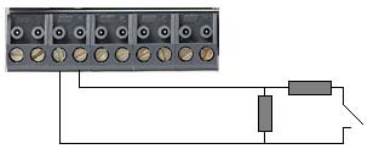
Please note:

The RIM's will need different voltage: **SRI (RIM-020) 12 VDC**
DRI (RIM-010) 12 VDC to **24 VDC**

! The DRI should have min 18 VDC, otherwise the 12 VDC output will not work!

Connection for "Monitored" or "Unmonitored" Inputs:

The functionality of the Inputs can be defined in the SiPass "FLN-Configuration".
If the option „Unmonitored" is activated,
a normal contact at the inputs is sufficient (magnetic contact, etc.).
If the option „Monitored" is activated, all inputs will be monitored.
Monitored Inputs will provide the line states:
"Short circuit"; "Break of line" or "line OK".
The jumpers LK6-10 on the DRI must always be inserted.
Exception: Only if the inputs have to work with external voltage the jumpers LK6-10 must be removed. (Please also refer at the „User Manual_DRI.pdf").



Example:
Resistor circuit for monitored inputs
(Resistors 22KOhm)

11KOhm Normal
22KOhm Alarm
0 Ohm Tamper
∞ Ohm Tamper

3.3 How to delete the RIM-firmware

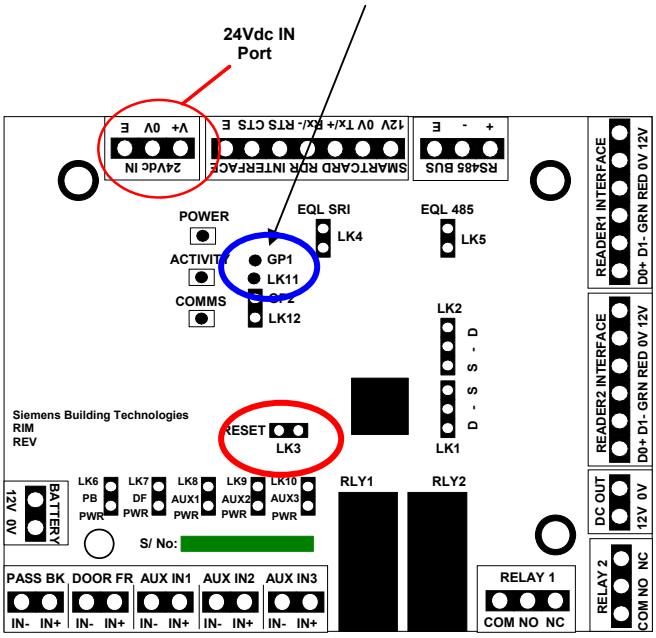
The RIM-firmware mustn't be deleted normally.
With the "FLN configuration" the old firmware will be overwritten.
Exception:
If the RIM is loaded with the SiPass networked firmware it is necessary to delete the DRC-firmware (networked) in front.

How to check if a firmware is loaded in the RIM:
If the "**ACTIVITY**" LED flashes quickly (3-4 times per second)
will show that no firmware is loaded into the RIM.

If the "**ACTIVITY**" LED flashes slowly (once per second)
the firmware is loaded.

How to delete the firmware:

a. Link the pins "GP1" and "LK11" using a jumper
b. Short connection of the „RESET" Pin's with a jumper
c. Leave the Pin "GP1" und "LK11" connected,
If the "**ACTIVITY**" LED will flash quickly (3-4 times per sec.)
"GP1" and "LK11" have to be disconnected.
The RIM-firmware is deleted.



RIM-010 DRI (Dual Reader Interface) layout

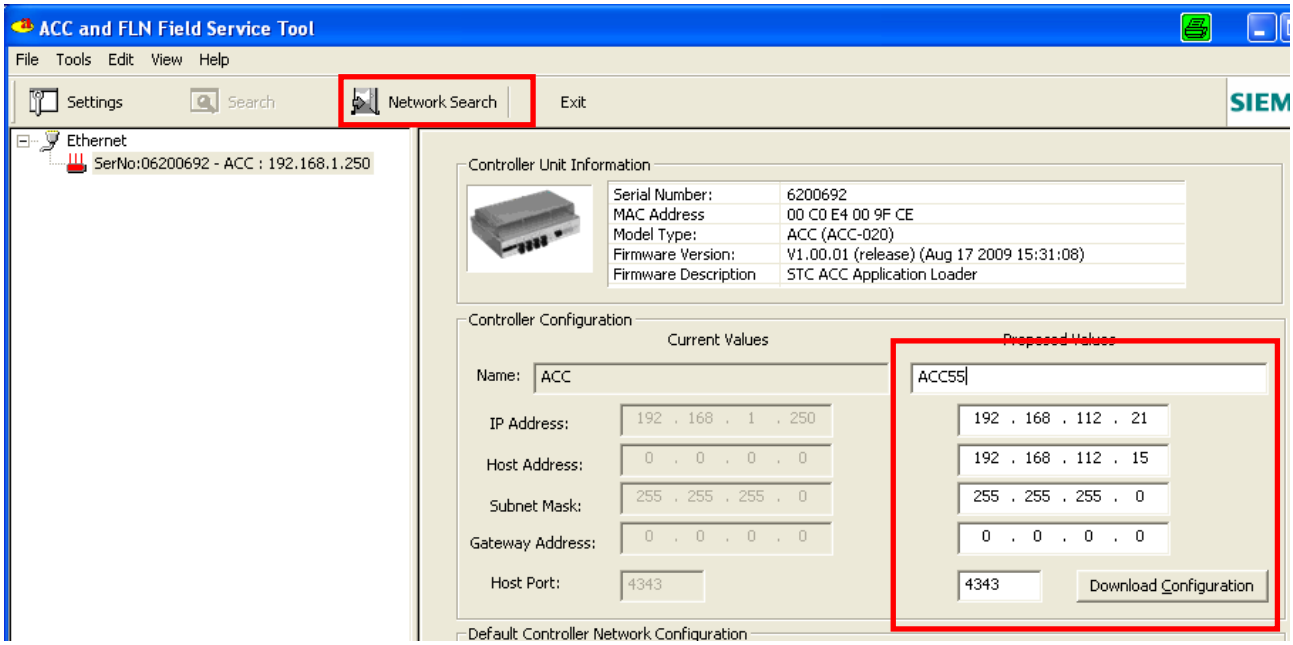
4. ACC configuration

Since 2010 new ACC will be delivered with a so called “Application Loader”. The ACC -Configuration tool can search now via broadcast for new ACC in the LAN. (Not over Routers)

Only for special ACC settings it is still needed to contact the ACC via Hyper Terminal or Telnet.

The button “Network Search” will start a broadcast to find all ACC with “Application Loader” in the LAN.
Now it is possible to enter the correct IP-Addresses into the ACC.
The “Download Configuration” button will load the new IP-Addresses.
The ACC-firmware has to be loaded via the SiPass integrated “Initialization”.

If the Server (Host) and ACC IP-Address is entered the ACC will be found and entered automatically in SiPass integrated. (next page)

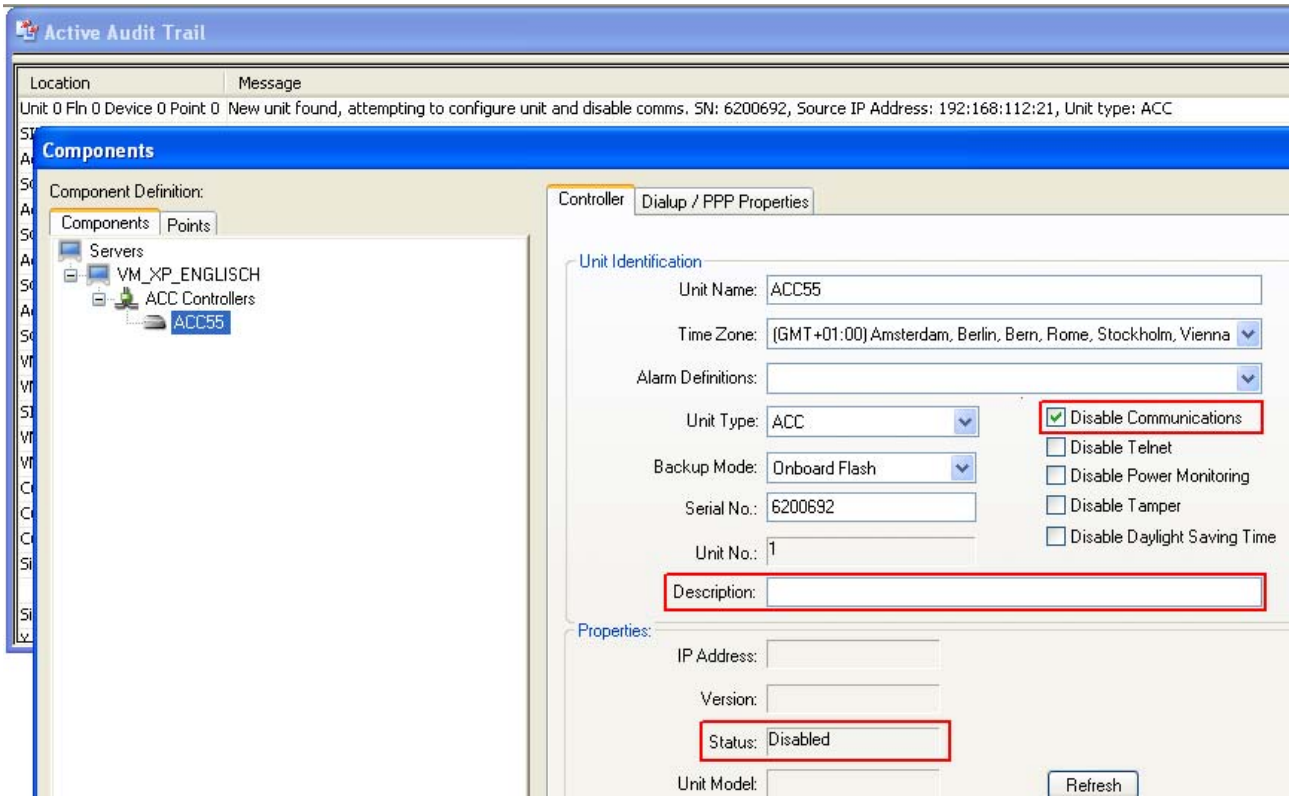


5. ACC quick start

A new ACC will be detected and entered automatically in the component mask of SiPass integrated.

The ACC will only be detected if the ACC or Application Loader firmware is loaded and the IP-Addresses already defined in the ACC.
For safety reasons the added ACC communication is disabled and has to be enabled manually.

The example below will show the “Audit Trail” with a found ACC and the component mask with the entered ACC.

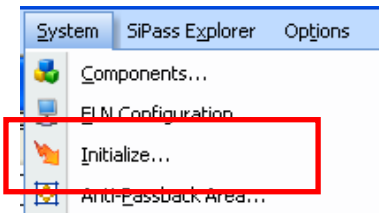


In the ACC component mask is also a new field added called “Description”. This new field is just an additional information field.

6. ACC firmware download

Firmware download or update via ACC “initialisation”:

If SiPass integrated has found the ACC and the communication is enabled the ACC firmware can easily be downloaded via the ACC initialisation.
The initialisation will be found on the “System” tab.



All connected ACC will be shown on the left side of the mask.
Move the selected ACC to the right side and press “Image Download”.
A browser will enable now to select the correct firmware for the download.

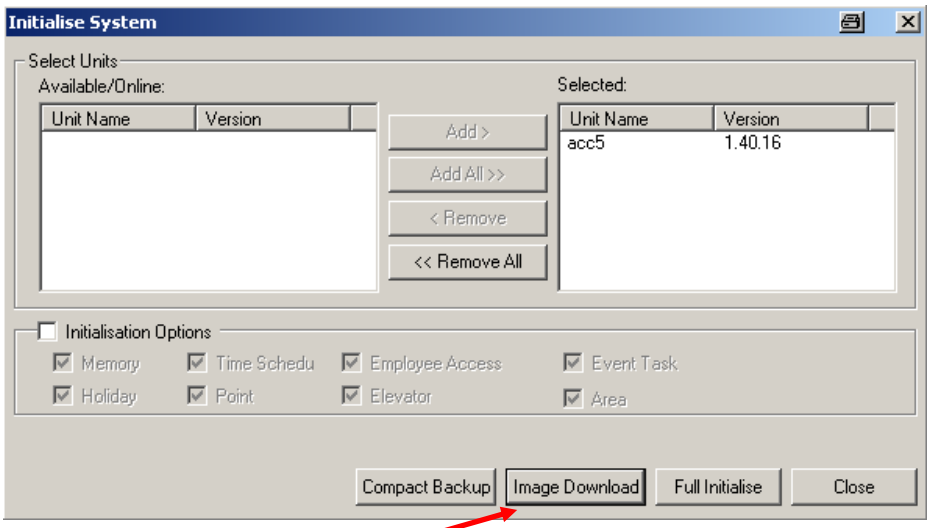


Image / Firmware download

! After the firmware download the ACC initialization must be started !

It is very important to load the actual system settings into the ACC for a correct function.

Select the ACC and Press 

to load the actual settings into the ACC.

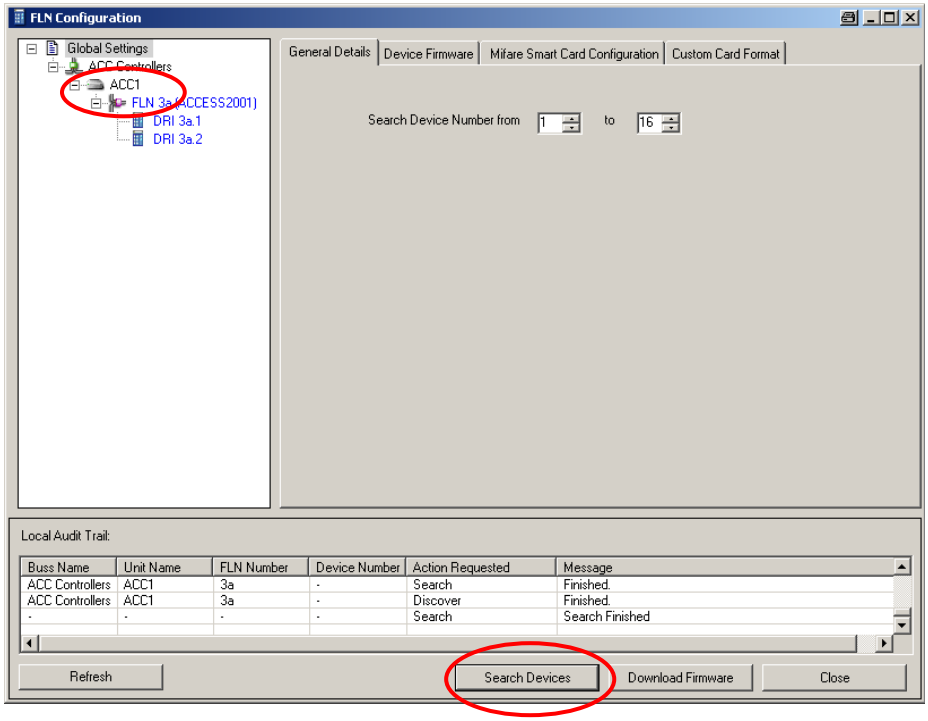
7. FLN Configuration

The SiPass FLN-configuration will provide the possibility to search for connected FLN-devices like SRI, DRI, ERI, OPM, etc.

The “FLN Configuration” will be found under **System – FLN Configuration**.

7.1 FLN Configuration search devices

Mark the ACC which should search for the connected devices, e.g. the “ACC1”.



The automatic search function will be started with the button “Search Devices”.

The new found FLN-Devices and the used FLN-Ports will be displayed in blue colour.
The blue colour will display that this device is new and not save in SiPass.

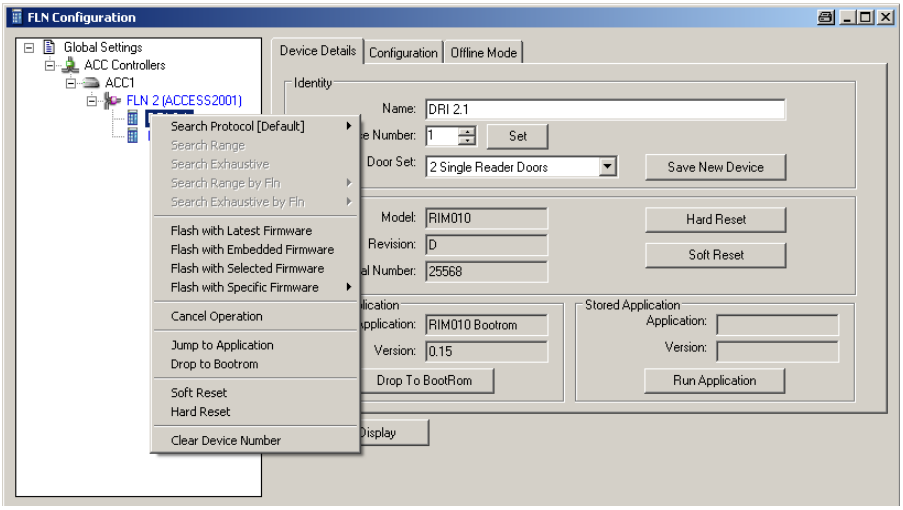
The next step will be to download the firmware, explained on the next page.

The device name and settings and save function will be explained after the firmware download.

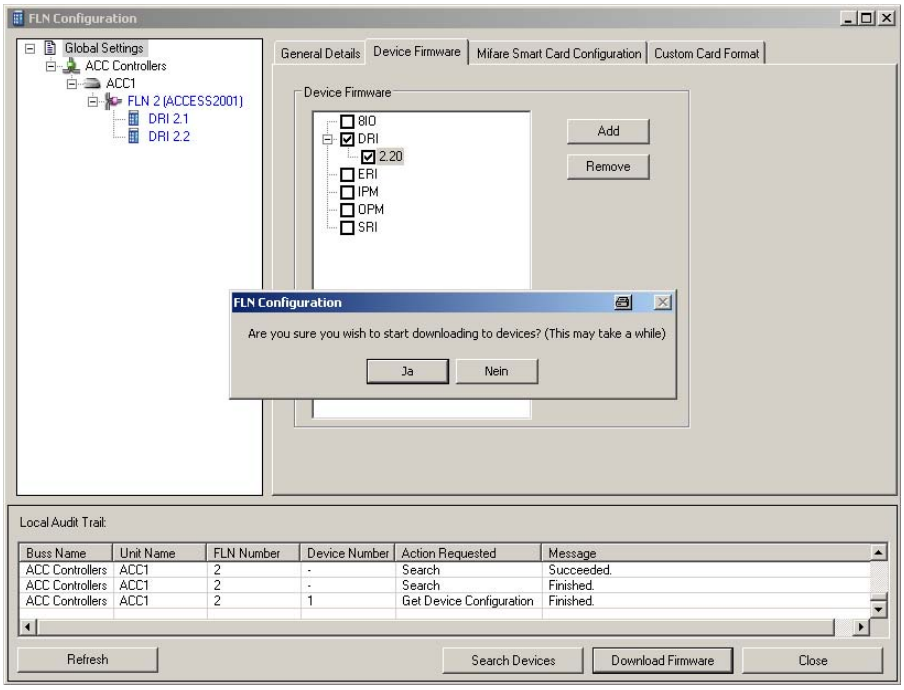
7.2 FLN-Configuration firmware download

The easiest way to download the firmware into the devices (e.g. DRI; OPM) is to use the embedded firmware. FLN-device firmware included in the ACC FW.

Example with DRI:
Mark the DRI and click right mouse button.
Click on Flash with Latest Firmware
The ACC will download the firmware into the DRI.



An other possibility to download the firmware:
In **"Global Settings"- "Device Firmware"** it is possible to define the firmware for the different FLN-devices.
With this possibility e.g. all DRI's can be downloaded in one step.

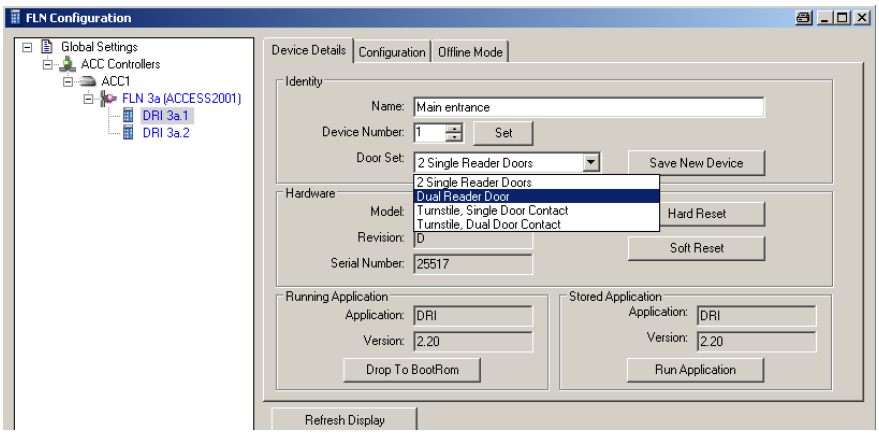


7.3 FLN Configuration device settings

Enter "**Device Details**":
The unique **"Name"** can be entered here, or later in the "configuration"-mask.
The next free **"Device Number"** has been given automatically.
The **"Door Set"** has to be defined now.
(2 Single Reader Door, Dual Reader Door or Turnstile)
If all entries correct, press **"Save New Device".**
The blue colour will change into black

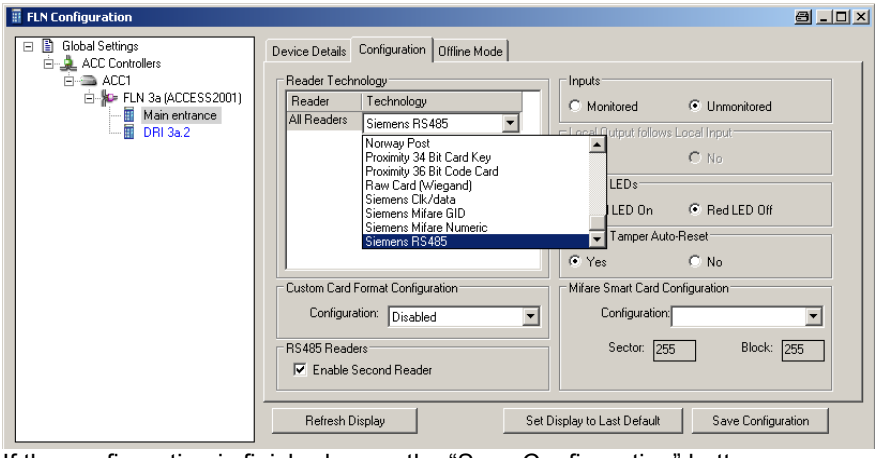
"Door Set" Info:

The **"Door Set"** can only be defined at **new RIM's !**
If the button **"Save New Device"** is pressed, the **"Door Set"** can't be changed again. To change the **"Door Set"** delete the device and search again.



Next tab: **Configuration**

-Select the "**Reader Technologie**", for example "Siemens RS485".
-**Inputs** behaviour "Monitored" will need a resistor-circuit.
"Unmonitored" just a switch.(Magnetic contact etc.)
(Example resistor-circuit will be found at Page 6)
-"Local Output will follow Local Input" is only used for devices with tamper contact (e.g. OPM, IPM, 8IO)
-"Reader LED" Red LED On: LED colour red and green (Asia Pacific and USA)
Red LED Off: LED colour red, yellow and green (Europe)
-"Reader Tamper Auto-Reset" If the tamper contact is closed again, the reader will work again immediately.

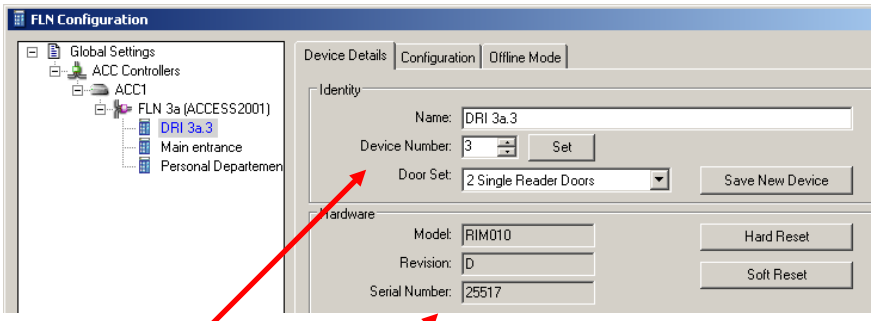


If the configuration is finished press the "Save Configuration" button.

7.4 FLN Configuration change a defect RIM

If a device is defect and has to be replaced, the FLN Configuration will help to exchange the defect device.

Example:



Device Number Serial Number

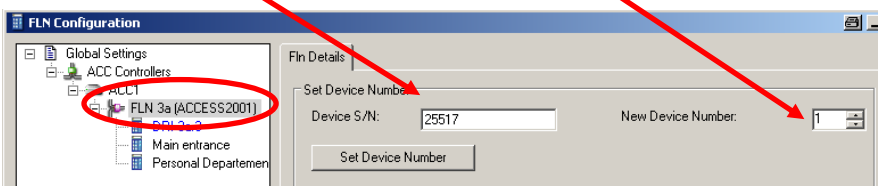
Example: The DRI at the Main Entrance (Device Number 1) is defect.

The FLN search function has found the new exchanged DRI. (blue clolor)
The new DRI will get automatically the next free Device Number. (e.g. 3)

How to get the new DRI to the original place Device Number 1:

Download the DRI-firmware at first.
Get the Device Serial Number of the new DRI (S/N) e.g.“25517”.
Get the Device Number of the broken DRI, “Main entrance” will have 1.

Mark the FLN-port where the DRI is connected.
Enter the Device S/N of the new DRI. Enter Device Number of broken DRI.



If all numbers entered press “Set Device Number”.

If the search function of the FLN-Configuration will be started again, the new DRI will be placed at the “Main entrance “position.

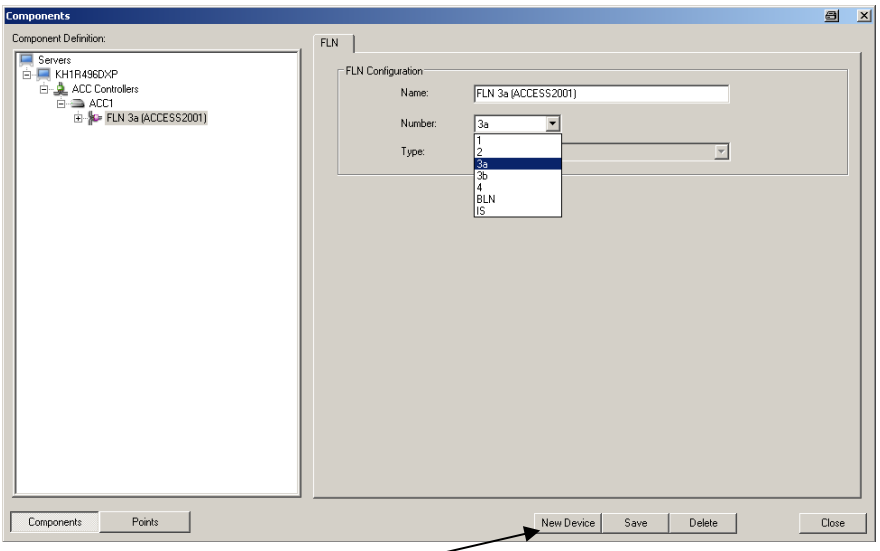
TIP:
It is also possible to enter the Device Number of the broken DRI directly at the new found exchanged DRI. (Only possible with a new DRI.)

7.5 Enter devices direct in SiPass

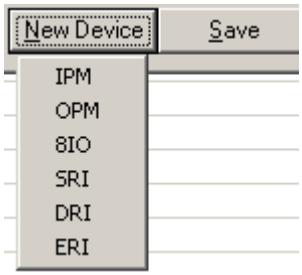
The devices can also be entered manually in SiPass.
At the SiPass “Component” tab, it is possible to enter the FLN-ports and devices.
With this feature all devices of the site can be predefined without hardware.
Personal and access-conditions can already be entered.

If the hardware will be delivered the devices just have to be set to the correct Device-Number. (Refer to capture 6.4)

Enter FLN-port:



“New Device” opens a pull down menu to select the FLN-device.



IPM	Input Module 32 monitored inputs
OPM	Output Module 16 outputs, 16 inputs(not monitored)
8IO	8 Outputs, 8 Inputs monitored.
SRI	Single Reader Interface (Asia Pacific only)
DRI	Dual Reader Interface (1 door 2 readers or 2 doors each 1 reader)
ERI	8 Reader Interface (8 readers, differnet door modes possible)

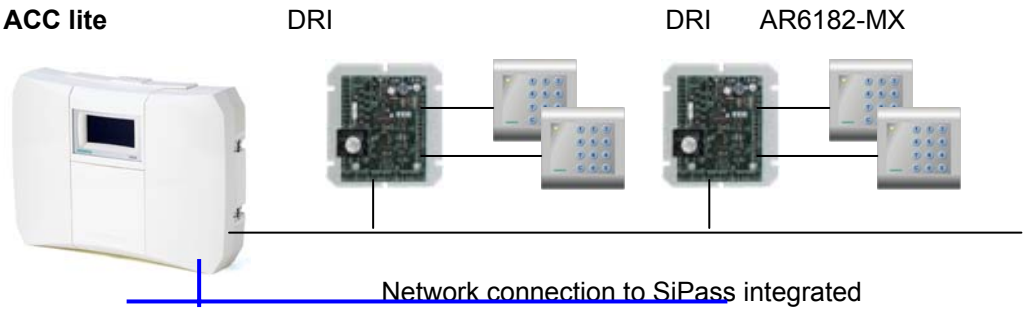
8. Entro devices and migration:

8.1 ACC-lite info

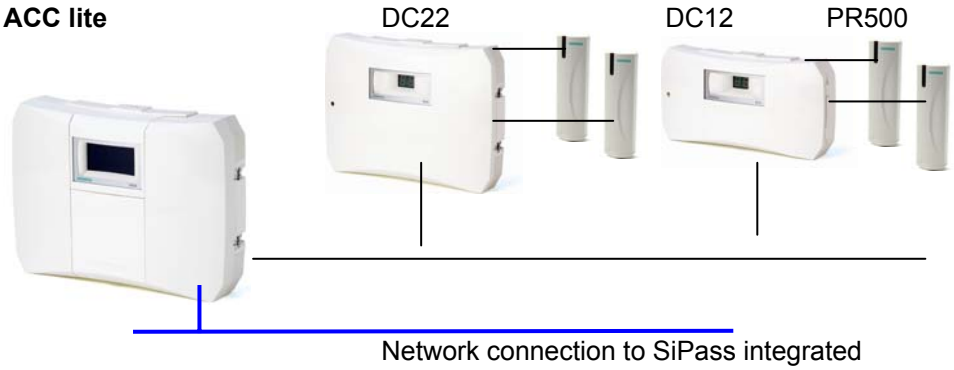
ACC-lite SiPass integrated controller:

The ACC-lite can only be connected to SiPass integrated.
It is possible to connect SiPass integrated or SiPass Entro devices.
A mix of Entro and integrated devices at the FLN is not possible.
Storage up to 40.000 cardholders
1 FLN-bus, the bus will have 16 connection points but
only 8 doors can be connected to the ACC-lite FLN-bus.
The SINTONY 400 can not be connected.

ACC lite with SiPass integrated devices:



ACC lite with SiPass Entro devices:



How to search via FLN-Configuration or how the devices will be connected, will be explained in the official “ACC-lite” Quick Start manual.
The document with number A6V10208242.pdf will be found on the original SiPass integrated software CD.

8.2 ACC-X info:

The SiPass range of access control systems is now truly scalable.
For those customers who start with the SiPass Entro system and decide that their needs have changed, they can easily migrate their existing hardware and install SiPass integrated software.
The license or Tenant-license has to have the card technology "Siemens Entro" as otherwise the Entro devices will not work.

To migrate the SiPass Entro SR34i to SiPass integrated, a new firmware has to be loaded via CF-card into the SR34i.
If an Entro SR34i will get the ACC-x firmware loaded it will be possible to connect the controller to SiPass integrated.
The ACC-X can only connect SiPass Entro devices.

ACC-x Licence:

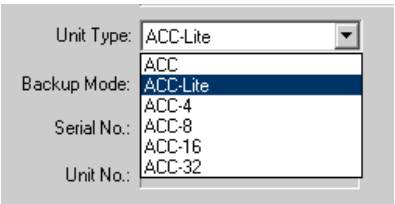
After the ACC-x firmware is loaded a license number must be entered in between 32 days. To create the license the serial number is needed.
Without license the initialization will not work and the Audit Trail will be filled with messages. The license number has to be entered in the initialization mask.

SR34i with ACC-X firmware (For SiPass Entro hardware migration):

SR34i/4	ACC4	Connection for 4 Entro devices only
SR34i/8	ACC8	Connection for 8 Entro devices only
SR34i/16	ACC16	Connection for 16 Entro devices only
SR34i/32	ACC32	Connection for 32 Entro devices only

ACC 4/8/16/32 DC22 Prox PR500 DC12

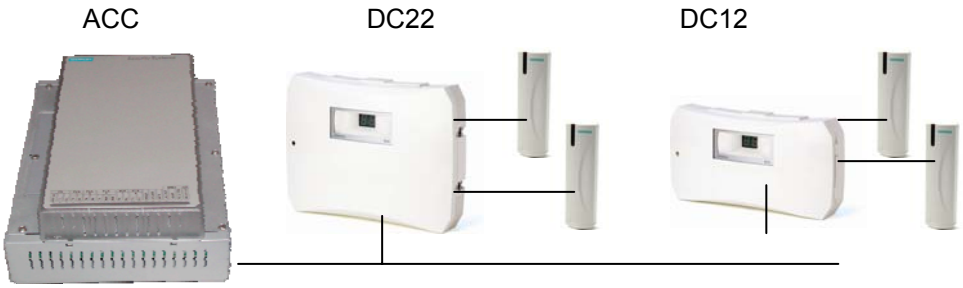
The different Unit Types can be selected in the ACC configuration mask.
(System – Components)



How to search via FLN-Configuration or how the devices will be connected, will be explained in the official "ACC-lite" Quick Start manual.
The document with number A6V10208242.pdf will be found on the original SiPass integrated software CD.

8.3 ACC with SiPass Entro devices

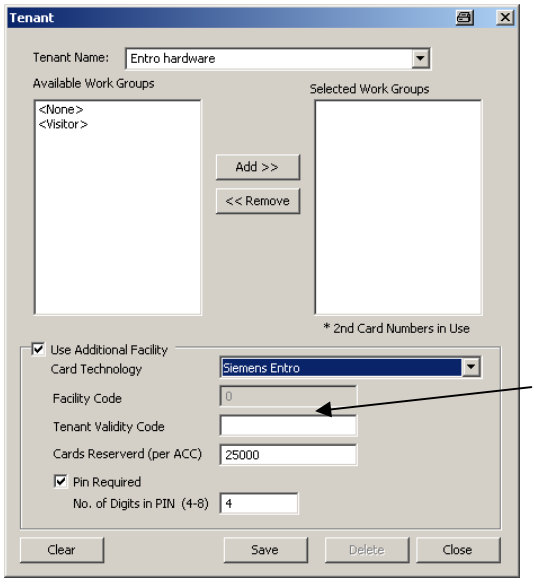
For migration purpose it is possible to connect SiPass Entro devices to SiPass integrated.
The Entro devices like DC12 / DC22 can be connected via the ACC FLN.
Entro specific features not available in SiPass integrated.
The DC12 and DC22 can both handle one door.
It is possible to connect only entry- or entry- and exit- readers (e.g. PR500).
Two readers can be connected via BC-link. Only one reader via Clk/Data.



It is not possible to mix SIPass Entro and SiPass integrated devices at the same FLN-Bus. Maximal 8 DC12/DC22 can be connected to one FLN-Bus.

Installation:
Select the “Card Technology” “Siemens Entro” during installation.

Tenant possibility:
It is also possible to select the “Card Technology” “Siemens Entro” for the tenant. This will be needed if the integrated and Entro hardware is mixed.



A “Tenant Validity Code” has to be ordered in front.

How to search via FLN-Configuration or how the devices will be connected, will be explained in the official “Entro integration manual”.
The document with number A24205-A335-B444.pdf will be found on the original SiPass integrated software CD.

9. Possible ACC problems

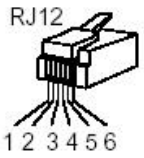
9.1 ACC can't be found

If the ACC IP-Address is entered and known, this chapter is not needed for the standard settings.

If the ACC is not found automatically and the ACC settings unknown, it is only possible to get in contact with the ACC via diagnostic cable!

The diagnostic cable is needed to connect the ACC (Diagnostic Port) to an RS232 PC COM port.

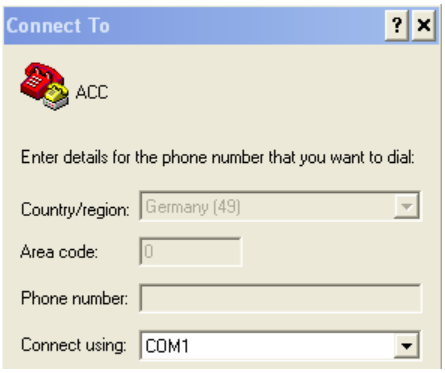
DIAG cable (RJ12 / 9-contact)
Order number of the cable: 6FL7820-8FB10.
(Cable is shown on the left side)

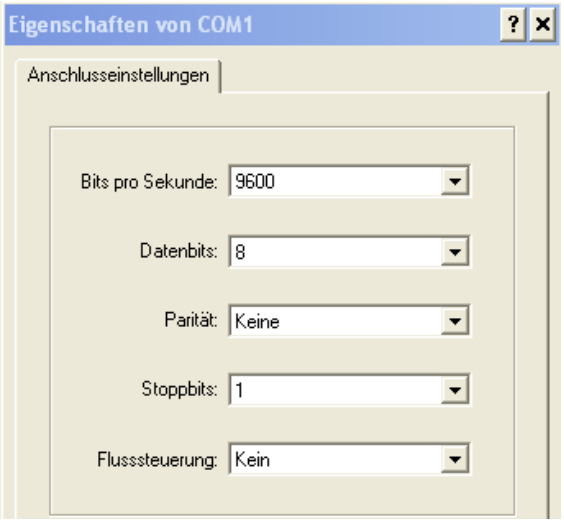


ACC config. Cable pinout
RJ12 Male pin > DB9 Female pin

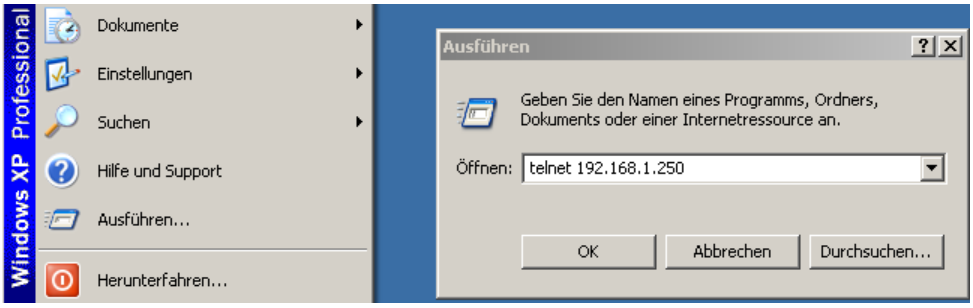
6	------>	2
5	------>	3
2	------>	5
1	------>	5
	->	7
	->	8

If the Diagnostic-cable is connected, it is possible to connect to the ACC via Terminal-program (e.g. Hyper Terminal, settings below)





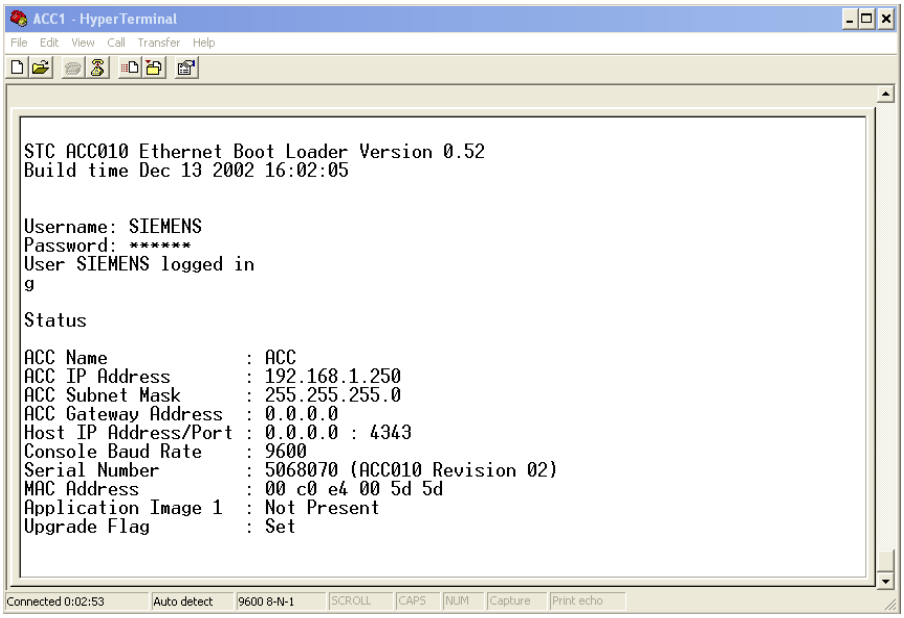
If the ACC IP-Address is known it is possible to contact the ACC via Telnet.
Select „**Start**" ➔ „**Run**" and enter the command "**telnet 192.168.1.250**":



9.2 How to change ACC IP-Addresses

The ACC password should not be changed.
To increase the network security the telnet connection can be disabled.

The Username is **SIEMENS**
The password is **spirit**
(Username and password case-sensitive.)



The following command parameters used for the ACC configuration.

g = get (to get the actual settings)

<u>The following parameters need to be set:</u>

- **set h [SiPass server IP address]** ↵ IP address of the SiPass server
- **set i [ACC IP address]** ↵ for the controller IP address
- **set g [gateway IP address]** ↵ for the gateway, Router of the segment
- **set s [subnetmaske]** ↵ for the subnet mask of the segment of the ACCs

<u>Example</u>: Set the ACC IP-Address into the ACC
(set = s)

```
s i 172.16.10.17
ACC IP address = 172.16.10.17
```

The new IP-Address will work after an ACC reboot.
A reboot can be made by the command **"reboot"**
or if the ACC power will be reconnected.

9.3 ACC found but can't communicate

If the ACC is found but the "Disable Communication" can't be switched off, it is possible that the "Upgrade Flag" is SET in the ACC.
To solve this problem the "Upgrade Flag" must be NOT SET.
The command "**boot"** will switch the "Upgrade Flag" into NOT SET.
To change the "Upgrade Flag" connect the ACC via Telnet or Hyper Terminal.

Information about the "Upgrade Flag":

With the **"Upgrade Flag"** it is possible to switch between
Load firmware and Communication with SiPass.

If the Upgrade Flag is "Set" ► Only ACC-Firmware can be loaded

Id the Upgrade Flag is "Not Set"► Communication to SiPass possible

To change the "**Upgrade Flag**" use the commands **upgrade** and **boot.**

For example:

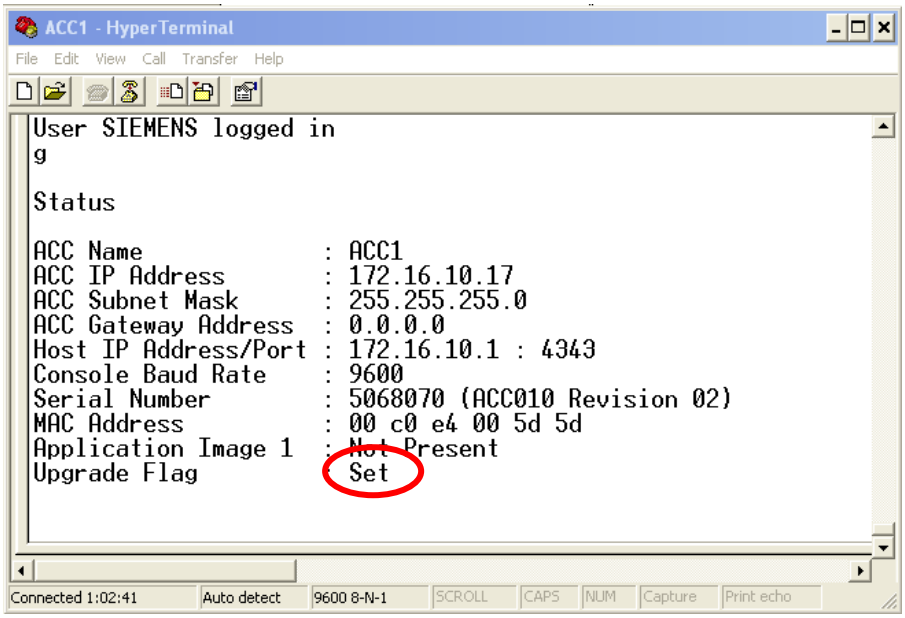
Upgrade Flag Command Upgrade Flag

"**Not Set**" → **upgrade** → "**Set**."

"**Set**". → **boot** → "**Not Set**"

If this commands entered the ACC will reboot.
The connection to the ACC will be disconnected during this time.

To check if the "Upgrade Flag" is correct enter the command "**g**" or "**get**".



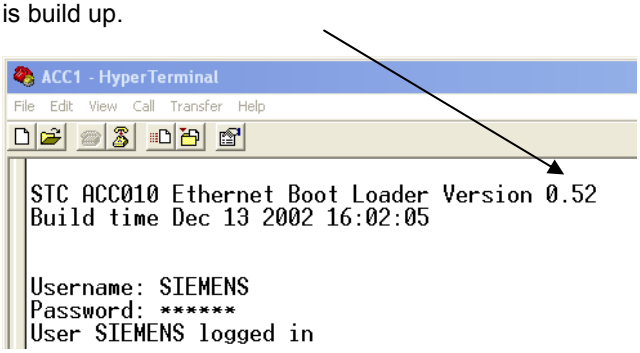
Example above:
If the „**Upgrade Flag**" is **Set**, it is possible to load the firmware,
but the ACC communicate to SiPass will not be possible.

10. Additional ACC information

10.1 Check the ACC-Boot Loader

The actual „Boot Loader“ version is 0.52 (04/2005).
If this version is already loaded in the ACC this capture is not needed!

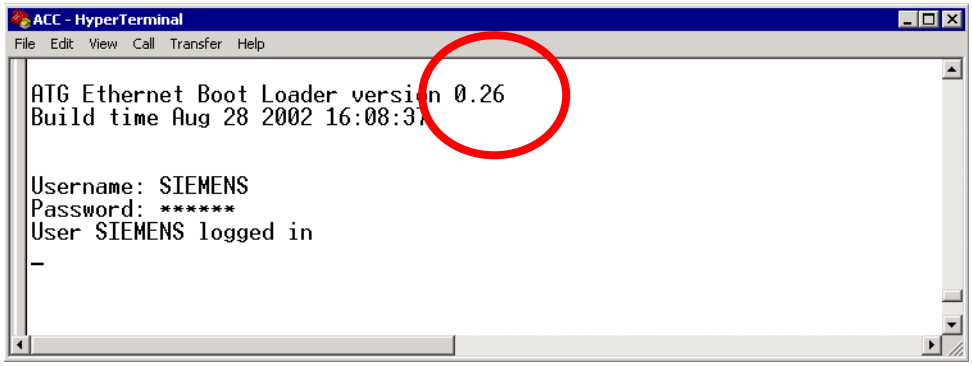
The actual „Boot Loader“ version will be displayed if the connection to the ACC is build up.



Information:

If the ACC-firmware is not loaded the ACC will display the
“Boot Loader“ version.
The „**Upgrade Flag**“ is automatically „**Set**“ if the firmware is not loaded in the ACC.
Has the „**Upgrade Flag**“ manually set to „**Set**“ the ”Boot Loader“ version will also be displayed if the connection to the ACC is build up.

(In this mask an older version of „Boot Loader“ displayed. Version 0.26)



10.2 ACC Boot Loader information

Since the last years the Boot Loader version hasn't been changed.
So normally the ACC Boot Loader should be correct.

If the Boot Loader is wrong, please contact the HOTLINE!
If the Boot Loader has to be changed it is necessary to take care for a special loading order. The ACC can be destroyed if this order will be ignored.

The ACC V2 (Version 2) has the Boot Loader version 0.52.

To identify the ACC V2:
ACC version is not written on the label.
The ACC housing has no whole for the Compact Flash card.

The ACC V3 (Version 3) has the Boot Loader version 0.70.

To identify the ACC V3:
ACC V3 is written on the label.
The ACC housing has a whole for the Compact Flash card.