

# Operating instructions X-BC 4 / U 953



# Buscontroller



## Copyright Notice

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Please use your webbrowser to access this information under the following address:  
<http://<your.bc4.ip.address>/doc/<package>/copyright>

Notes:

- replace <your.bc4.ip.address> with the actual configured IP-address of the device. Factory default is 192.168.1.70
- browse <http://<your.bc4.ip.address>/doc/> in order to receive a list of installed software packages

The source code of the free parts of the software is distributed on request for an administration fee.

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The program Iptloop was developed under GNU GPL,  
see <http://<your.bc4.ip.address>/doc/common-licenses/GPL>

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## Pictograms and safety instructions



Pictograms are pictorial symbols with a fixed meaning. You will come across the following pictograms in these installation and operating instructions:

**Warns about** situations in which there is **danger to life**, because of dangerous voltages and failure to follow these instructions.



Warns about various dangers to health, the environment and materials.



Recycling: all our packaging material (cardboard boxes, inserted labels, plastic film and bags) is fully recyclable.

Dispose of used batteries via licensed recycling centers. The batteries must be fully discharged when handed over.



Electronic devices do not belong in household garbage, but must be disposed of competently, in accordance with Directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND COUNCIL of January 27, 2003 about waste electrical and electronic equipment. When these devices are no longer in use, please hand them over for disposal at the public collection points which are provided for the purpose.

## Contents list

	X-BC 4 figures.....	4
	U 953 figures.....	7
<b>1</b>	<b>Introduction .....</b>	<b>9</b>
1.1	Safety instructions .....	9
1.2	Assembly instructions.....	9
1.3	Equipotential bonding / grounding .....	9
1.4	Maintenance and repair.....	10
1.5	Technical data about power supply.....	10
1.6	First startup.....	10
<b>2</b>	<b>HE configuration via HE programming software .....</b>	<b>11</b>
2.1	Introduction .....	11
2.2	Setting up the X-BC 4 / U 953 in the HE programming software.....	11
2.3	Transmitting a project file to the X-BC 4 / U 953.....	12
2.4	X-BC 4 / U 953 login with configuration file already open .....	13
2.5	Reading out an unknown project .....	14
2.6	Opening old configuration files (version < 5.40) .....	14
2.7	Setting up timesharing.....	16
<b>3</b>	<b>Remote HE management via Admin login .....</b>	<b>17</b>
3.1	First Admin login into the X-BC 4 / U 953.....	17
3.2	View of the Admin user interface .....	17
3.3	Network settings of the X-BC 4 / U 953 .....	18
3.4	Saving / writing back the X-BC 4 / U 953 configuration .....	19
3.5	SNMP configuration .....	20
3.5.1	General settings .....	20
3.5.2	Setting up / removing a trapsink.....	21
3.6	Specifying the update download server.....	22
3.7	Admin and User administration .....	23
3.7.1	Adding a User / Admin .....	23
3.7.2	Removing a User / Admin.....	24
3.8	Expert update.....	24
3.9	Configuring the alarm temperature .....	26
3.10	Logfile.....	27
3.11	Resetting the X-BC 4 / U 953.....	28
3.12	Powering down the X-BC 4 / U 953 .....	28
3.13	Password .....	29
3.14	Configuring the replacement option .....	30
3.14.1	Activating the replacement option.....	31
3.14.2	Deactivating the replacement option.....	32
<b>4</b>	<b>Remote HE management via user login .....</b>	<b>33</b>
4.1	First user login into the X-BC 4 / U 953.....	33
4.2	View of the user interface .....	34
4.3	Displaying errors.....	35
4.4	Update.....	35
4.4.1	Selective update of individual cards.....	36
4.4.2	Updating all headend modules including basic units .....	37
4.4.3	Aborting the update.....	37
4.4.4	Transmitting update files to the X-BC 4 / U 953 .....	38
4.4.5	Time-controlled automatic update / automatic download.....	40
4.5	Restarting a basic unit.....	41
4.6	Reprogramming headend modules.....	42
4.7	Entering the system date and time .....	42
4.8	Logfile .....	43
4.9	Restarting the bus controller .....	44
4.10	Restoring operating parameters automatically (auto restore) .....	45
4.11	Changing the password.....	46
4.12	Saving the instantaneous headend status.....	47
4.13	Replacing headend components .....	47
4.13.1	Replacing a plug-in card.....	48
4.13.2	Reversing the replacement of a plug-in card .....	48
4.13.3	Replacing a complete basic unit.....	49
4.13.4	Reversing the replacement of a complete basic unit .....	49



Fig. 1: Front view of X-BC 4

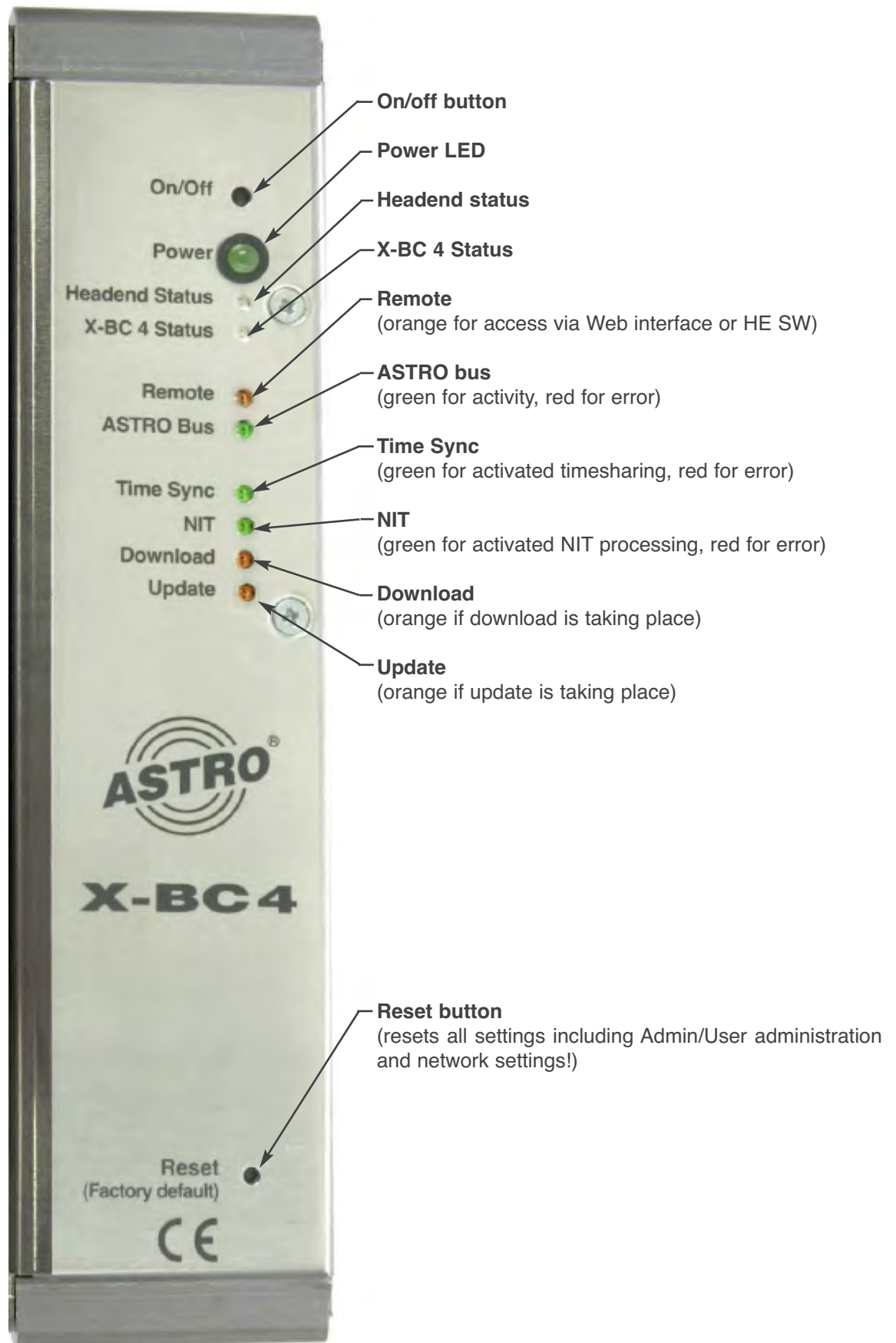


Fig. 2: Underneath of X-BC 4

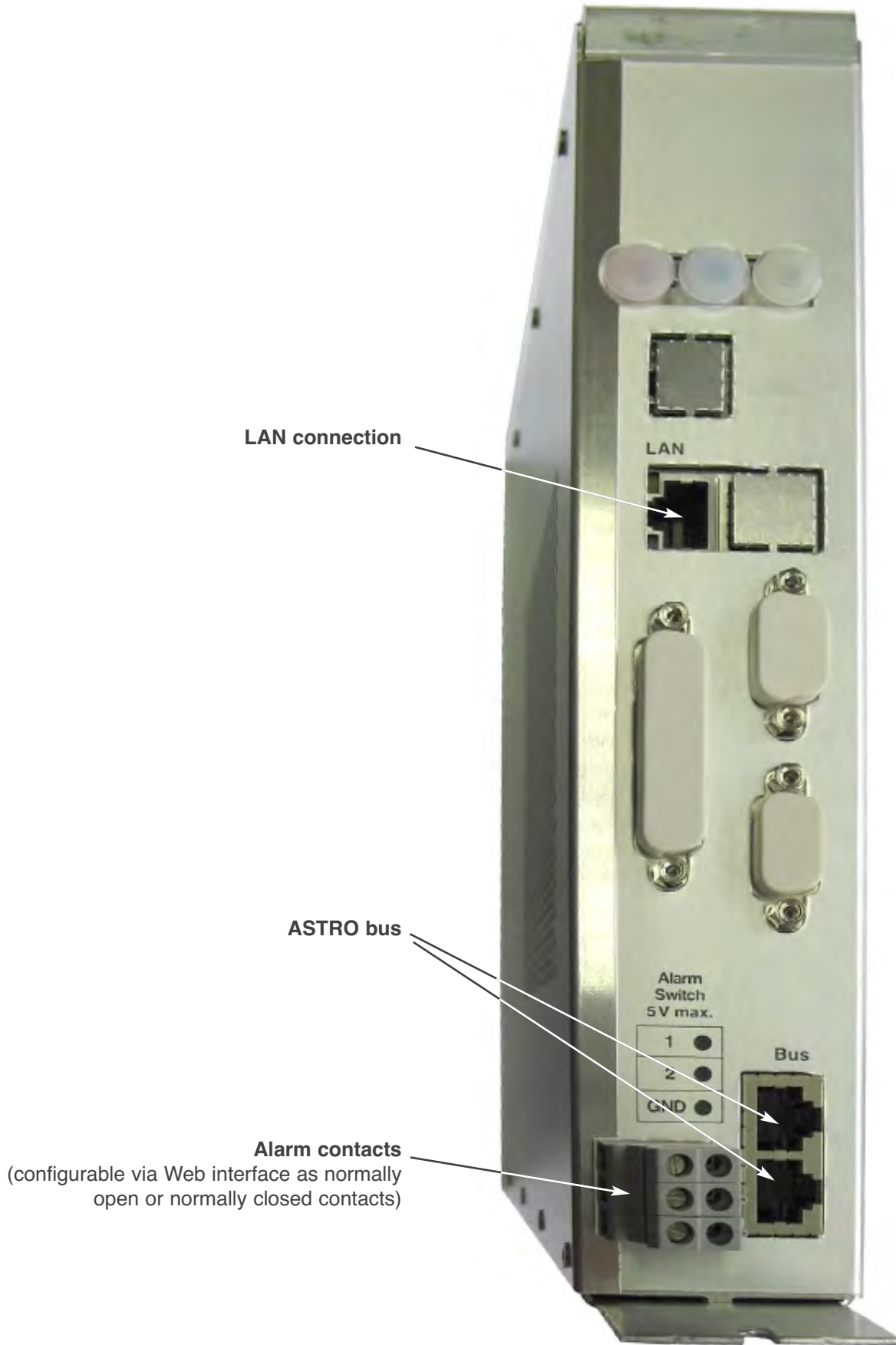


Fig. 3: Top of X-BC 4

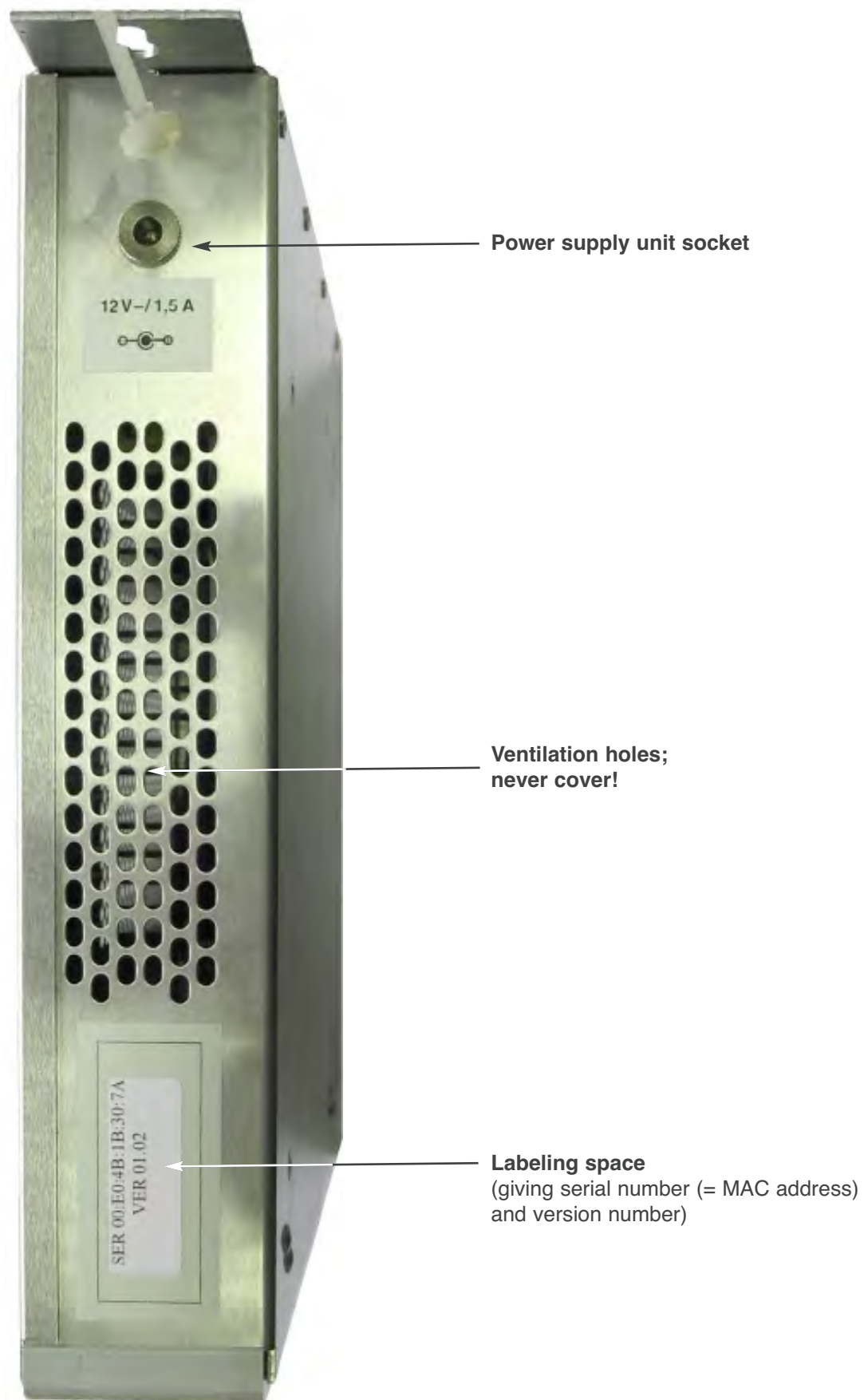
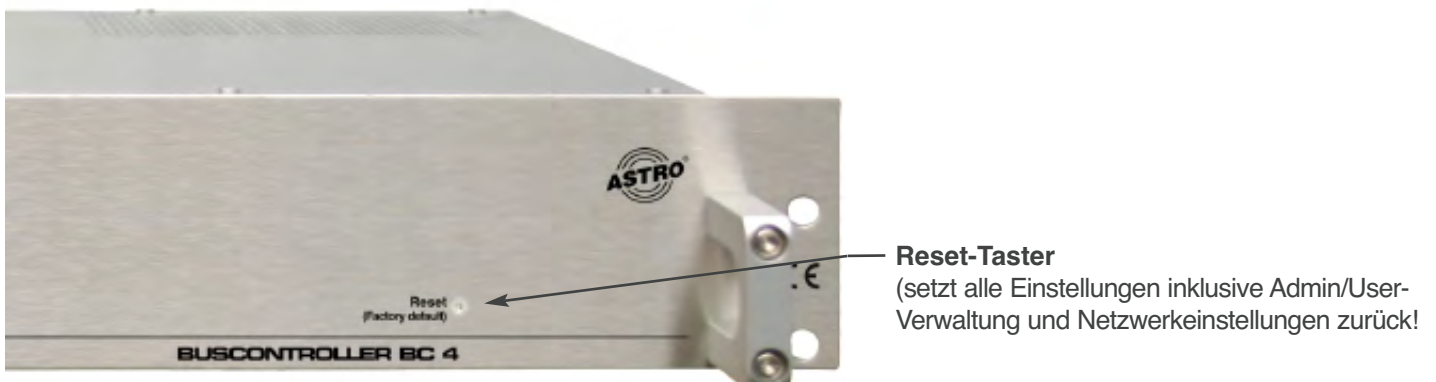
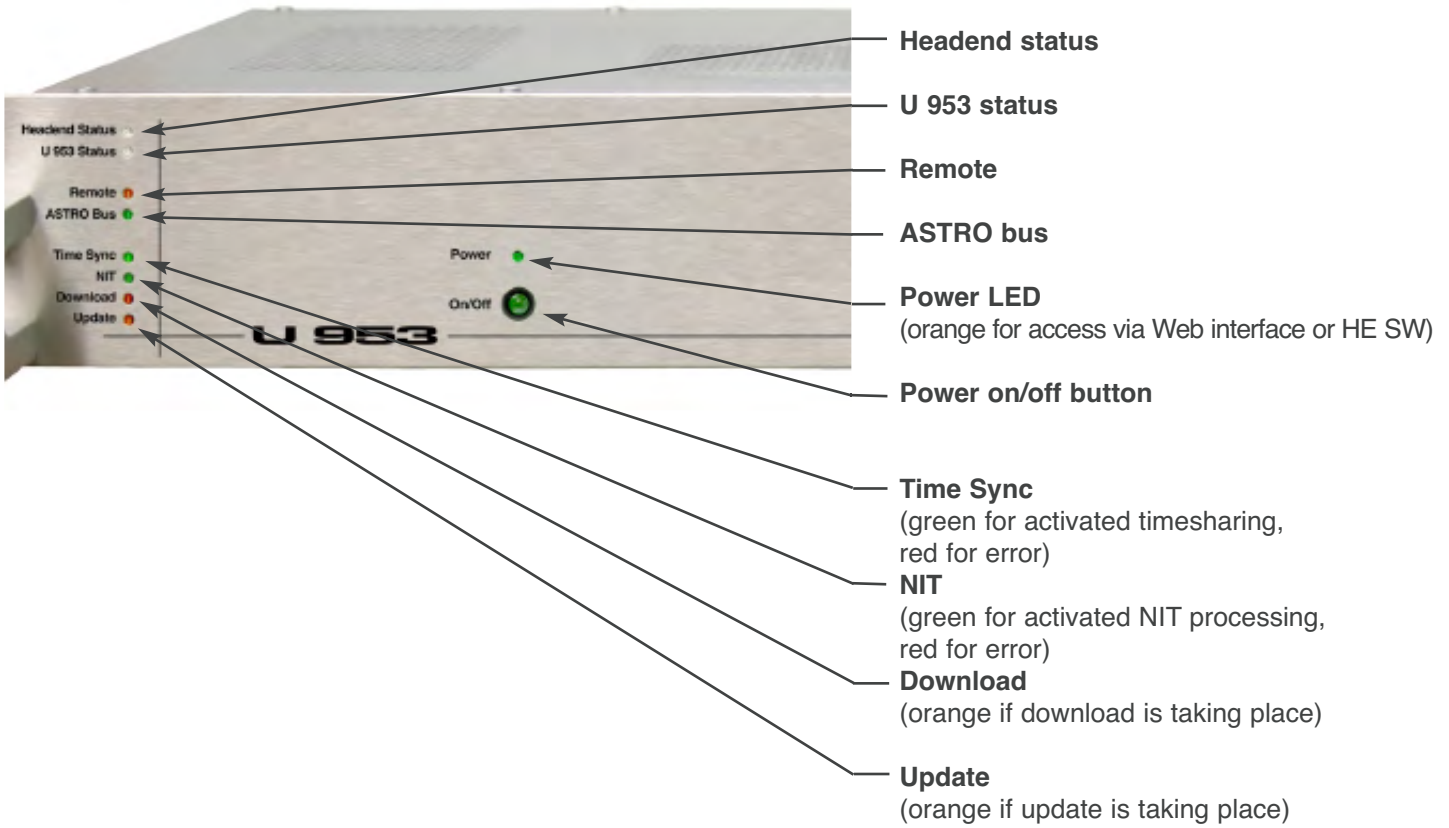
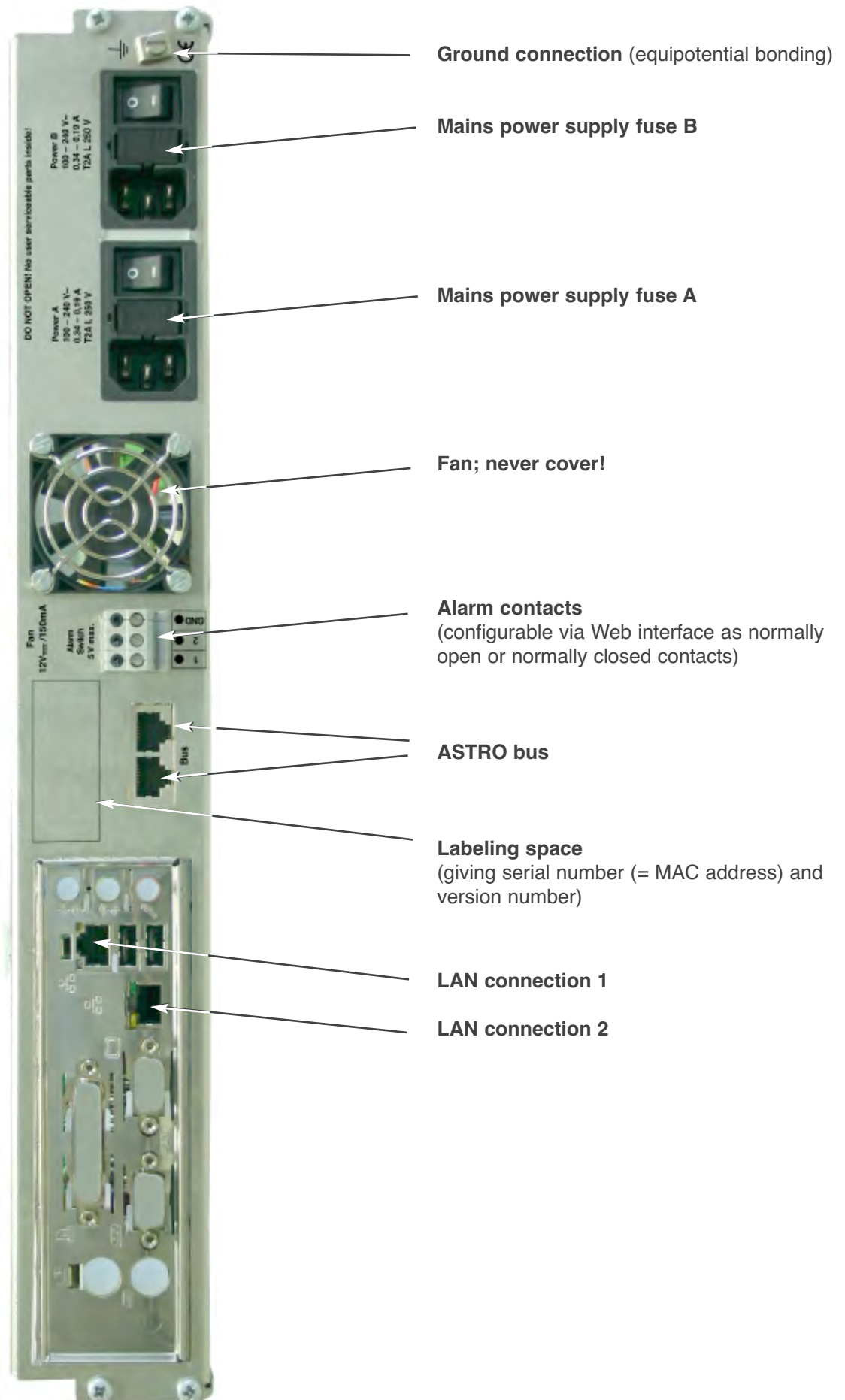


Fig. 4: Front of U 953



**Fig. 5: Rear of U 953**





# 1 Introduction

## 1.1 Safety instructions

### Before opening the device, unplug both mains plugs!

Take care during maintenance work on the power supply unit. Touching is dangerous because of parts which are live even if disconnected from the mains.



Operation indicators - if they are present - indicate only the presence of direct voltages which are disconnected from the mains but supply the components of the device. However, unlit operation indicators do NOT mean that the device is completely disconnected from the network or is de-energized.

The two mains switches and mains plugs are used for disconnection from the mains, and it must therefore be possible to reach and use them at all times. As soon as one power supply unit is connected to the operating voltage and the mains switch is set to "On", the device is in operation. If the second power supply unit is also put into operation, one of them idles while the other power supply unit is supplying the device.

The device must only be opened by skilled personnel who have been tested and authorized by the IHK (Industrie- und Handelskammer = chamber of industry and commerce). The device must only be repaired by skilled personnel who have been tested and authorized by the IHK, or by sending it to ASTRO with a precise description of the fault.

The mains cable(s) must only be replaced with original mains cables. Fuses must only be replaced with fuses of the same type, value and melting characteristic.

### Always observe:

DIN VDE 0701 - Parts 1 and 200, maintenance  
EN 50 083 - Part 1, safety requirements

### No servicing work during thunderstorms

## 1.2 Assembly instructions

### Protection from environmental effects:

The device must only be connected and operated in dry rooms. It must not be exposed to sprayed or dripping water or similar influences. If condensation water has formed, wait until the device has completely dried out. Objects filled with liquid must not be placed on the device.

**The permitted ambient temperature is 0 to 45°C.**



### Assembly environment:

The device is intended for operation in 19" racks, which are preferably metallically conducting, and which have sufficient air convection. It should be operated away from radiant heat and other heat sources. The device must only be installed in rooms in which the permitted ambient temperature can be maintained even if the climatic conditions change. To avoid trapped heat, free circulation of air on all sides must be ensured. Fitting in niches and unintended covering of the ventilation holes must always be avoided.

## 1.3 Equipotential bonding / grounding

The subscriber network must be and remain grounded as regulated in EN 60728 Part 11, even if the device is removed.

The equipotential bonding on the U 953 takes place via the fixing straps of the device or via the grounding clamp on its rear wall. Devices within arm's reach must be mutually integrated into the equipotential bonding.



**Operation without connection to a protective conductor, device grounding or device equipotential bonding is not permitted!**

## 1.4 Maintenance and repair



### Caution:

The device must not be opened by the user, since there are no parts to be maintained by the user inside the device.

If all instructions have been observed and the device has been used as stipulated, no maintenance is required. Repairs must be carried out exclusively in the factory.

### Replacing the fan:

Before removing a fan which may be defective, both mains switches must be put into the "Off" position, or both mains plugs must be disconnected. To remove the fan, 4 bolts must be undone, and then the protective grille and the fan must be removed. The connecting plug can be disconnected after the catch at the side is released. When fitting the fan, care must be taken that its cabling is toward the chassis, and the protective grille is fitted outside.

## 1.5 Technical data about power supply (U 953)

Mains voltage:	100 - 240 V~
Mains frequency:	50 / 60 Hz
Power consumption:	0.34 - 0.19 A
	per power supply unit
Degree of protection according to EN 60529:	IP 20
Max. device ambient temperature:	45°C
Mains fuses:	T2A L 250V
Fan:	12 V 150 mA max.



**The X-BC 4 must be operated only with the original power supply unit!**

## 1.6 First startup

When the operating voltage is applied, the X-BC 4 / U 953 switches itself on automatically. After the boot phase (about 30 seconds), an LED test takes place (orange red green), and the device is then ready for operation. Because of the lack of configuration, the "Headend Status" and "X-BC 4 / U 953 Status" LEDs flash alternately red and green. If the device has already been configured, and is connected to a headend with a different configuration, the result can be unwanted reprogramming of headend components! To prevent the unwanted programming, before the previously configured X-BC 4 / U 953 is connected, the "Stop BC 4" button in the main view of the Web interface must be operated. After the X-BC 4 / U 953 has been (remotely) programmed with the correct configuration file, the X-BC 4 / U 953 can be brought back into operation using "Start BC 4".

## 2 HE configuration via HE programming software

### 2.1 Introduction

The X-BC 4 / U 953 is capable of monitoring the components of a headend and configuring and interrogating the headend remotely.

For this purpose, the X-BC 4 / U 953 requires the current project data of the headend. This is produced using the HE software, and transmitted to the device including the SAT database. The project data can also be read out remotely.

There are the following options for producing project data for the X-BC 4 / U 953, or editing and transmitting existing project data:

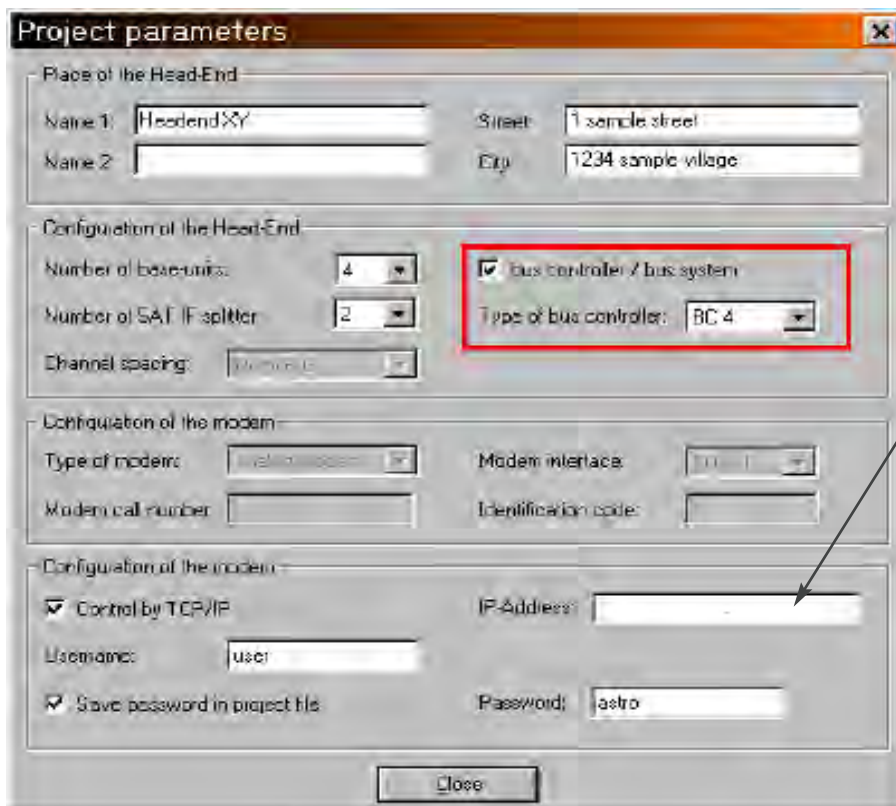
- Create new project and transmit it to X-BC 4 / U 953.
- Transmit locally existing project to X-BC 4 / U 953.
- Read out project from X-BC 4 / U 953, edit it as required and transmit it back.
- Read out headend configuration.

**NOTE:** It is strongly recommended that after the BC 4 is set up, you always work with the project data which is held on the BC 4. In this way, it is possible to ensure that you continue to work with the current configuration.



### 2.2 Setting up the X-BC 4 / U 953 in the HE programming software

To configure and monitor a headend with the BC 4, it must be given in the project settings. This occurs in the "Project Data" dialog, which appears automatically when a project is newly created using the HE programming software. For existing projects, this dialog can be called up via Planning -> Project Data.



*Note the default IP address as supplied!*

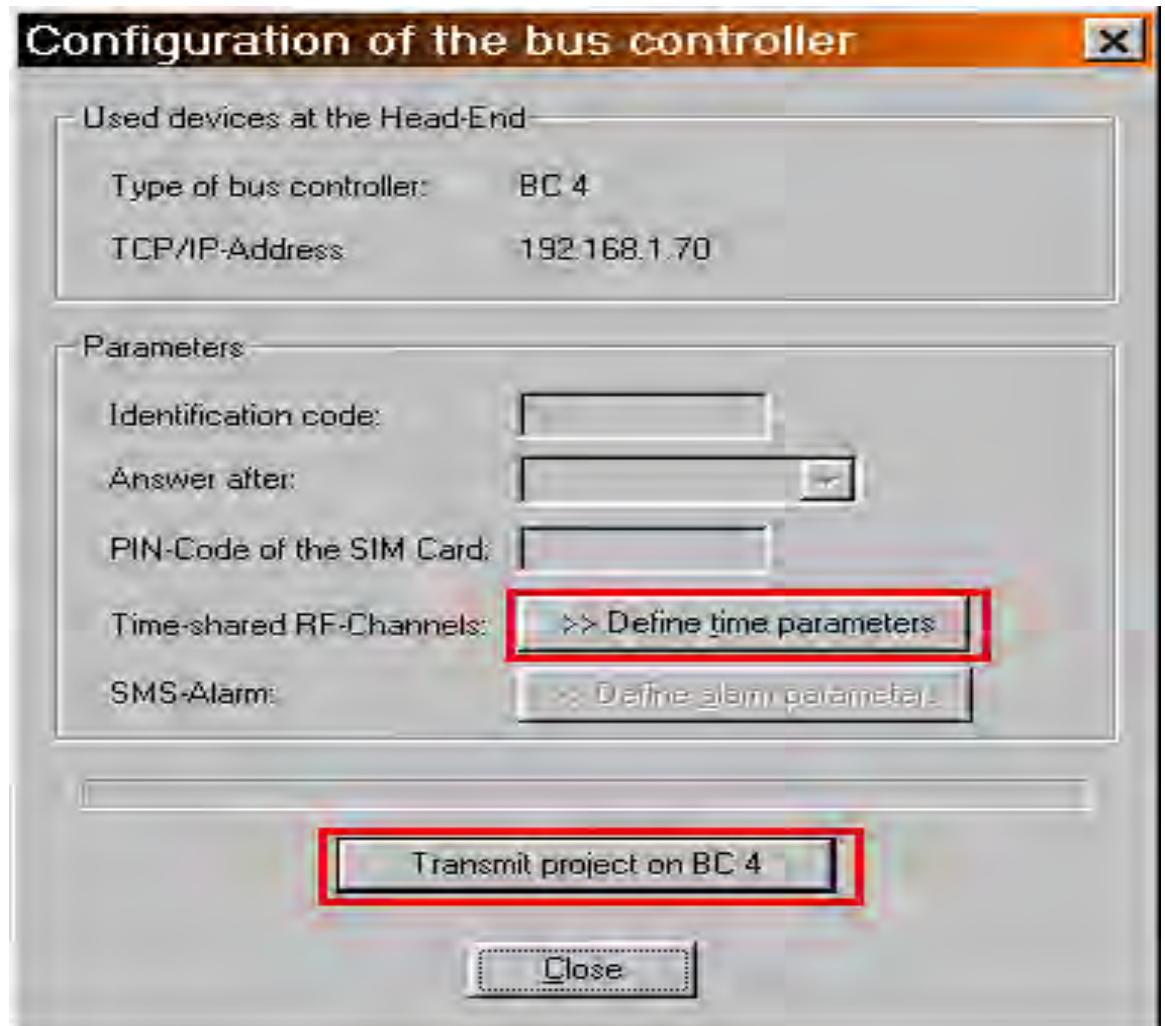
To control the X-BC 4 / U 953 via TCP/IP, the appropriate check mark must be set. The User name must correspond to a User who has been set up via the Web interface of the BC 4 (see Section 3.7.1). There is also the possibility of saving the password in the project file, so that at the next connection to the BC 4, the password need not be asked for again. Storing the password in the project file may represent a security risk!

**NOTE:**

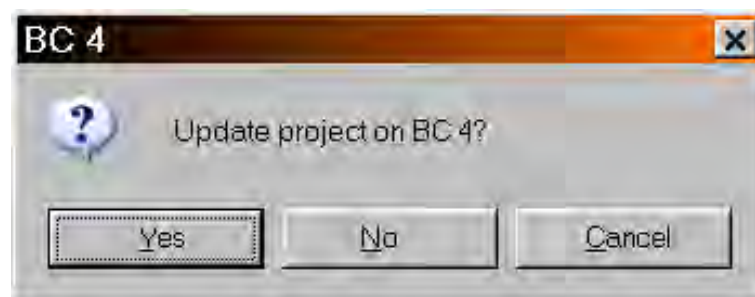
After you have set up your own User and Admin, delete the default User and Admin set up by ASTRO, as described in Section 3.7.2. In this way unauthorized access can be prevented.

### 2.3 Transmitting a project file to the X-BC 4 / U 953

To transmit a locally opened project to the BC 4, select the "Configuration" item in the "Bus Controller" menu. You then go into the "Bus Controller Configuration" dialog. In this window, the IP address which was entered in the project files is displayed.



If the "Transmit Project to X-BC 4 / U 953" button is selected, the HE programming software writes the existing system configuration via the IP connection into the X-BC 4 / U 953. To do this, the question which then appears must be answered with "Yes":



## 2.4 X-BC 4 / U 953 login with configuration file already open

Logging into the X-BC 4 / U 953 is reached via "Bus Controller" -> "BC 4 Login". In the following prompt, the IP address, user name and password must be entered.

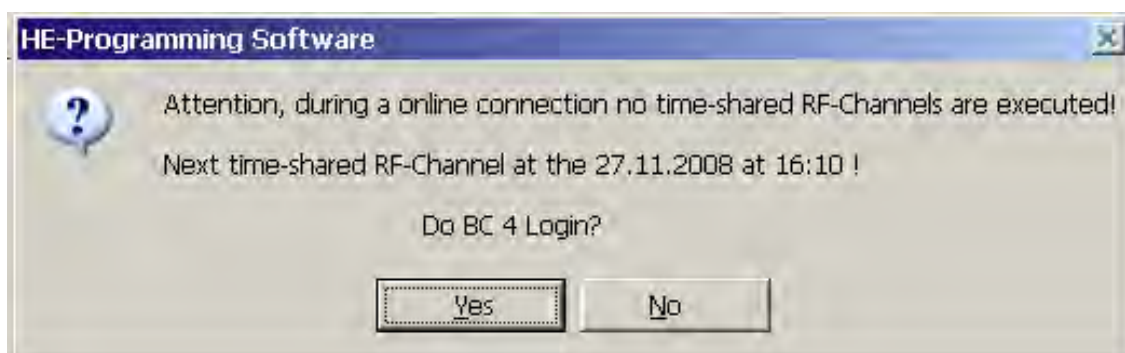


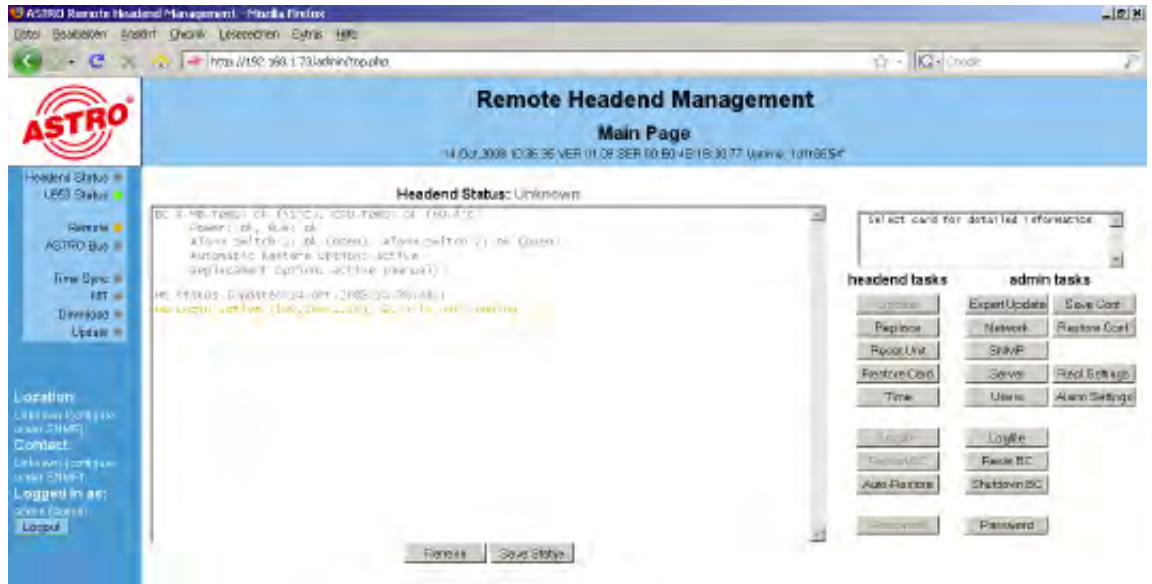
After a successful login, the following message appears:



It is now possible to configure the system via the X-BC 4 / U 953.

Without a successful login, it is impossible to operate the headend via the X-BC 4 / U 953. The prompt for the bus controller login appears automatically when you try to access the system.





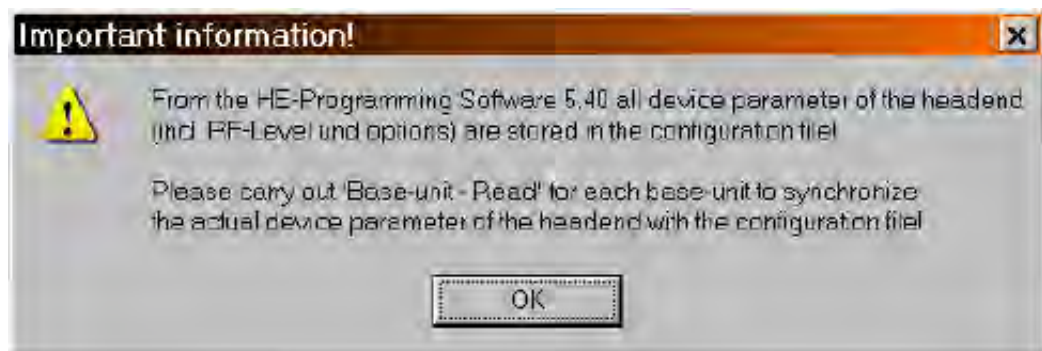
During a login via the HE programming software, monitoring functions, automatic updates and timesharing are impossible, since bus access to the headend is reserved for the HE programming software.

## 2.5 Reading out an unknown project

After the HE programming software is started, an unknown project can be read out of the X-BC 4 / U 953 using "Bus Controller" -> "Import Unknown Project (including SAT database) from X-BC 4 / U 953". The HE programming software then automatically generates a folder "BC\_Import", in which the files which have been read out are stored. This folder is created in the same path in which the HE programming software was installed.

## 2.6 Opening old configuration files (version < 5.40)

If configuration files which were created in an older version than 5.40 are to be opened with the HE programming software Version 5.40, all basic units must first be read out, since HF levels and options are stored in the configuration file. By being read out once, the current operating parameters of the headend are synchronized with the configuration file.



If the program names which are held in the modules do not agree with those of the local databases, the following instruction appears first:

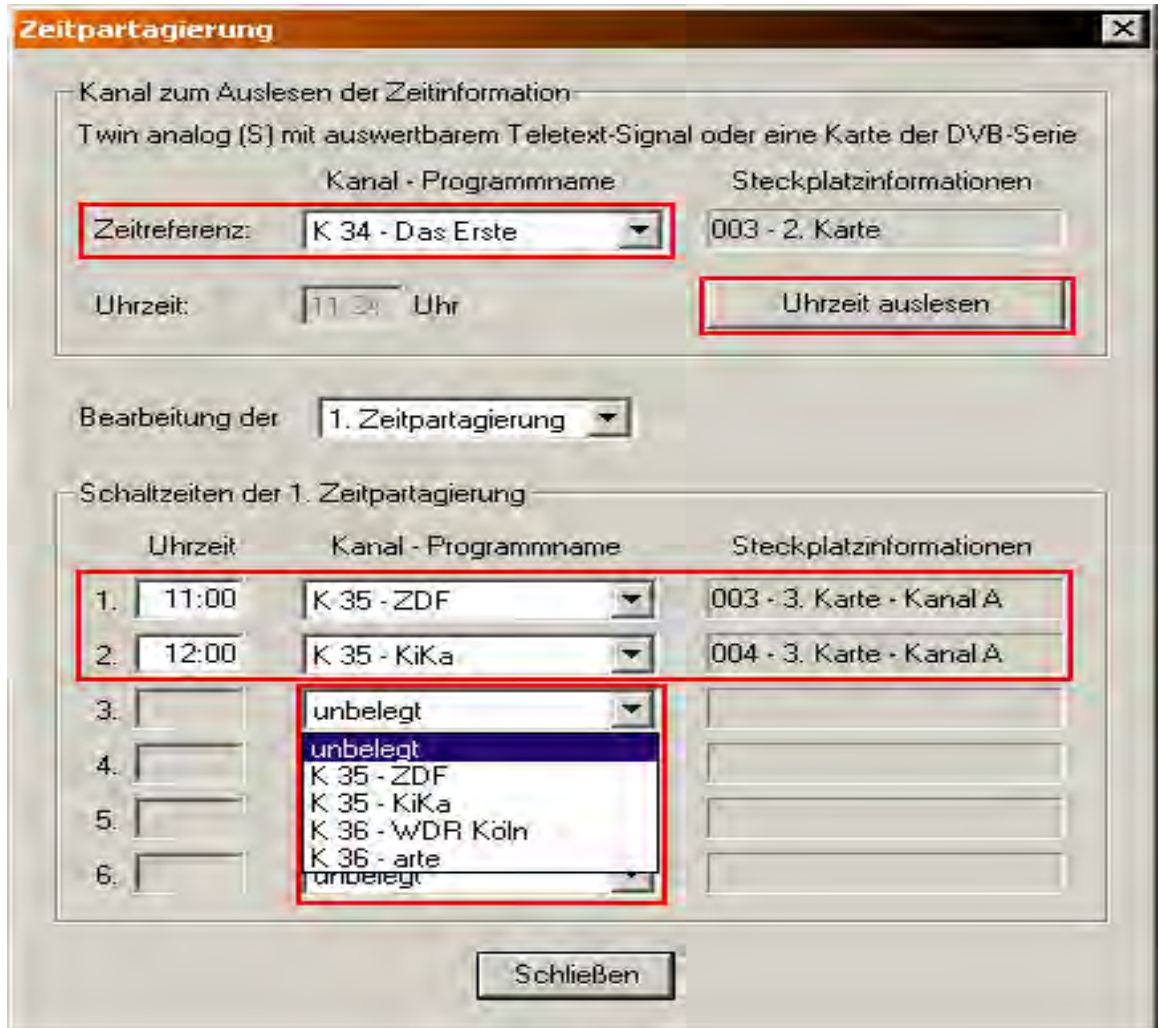


The affected programs are shown with "?Program Name?":



## 2.7 Setting up timesharing

To allow different programs to run on the same output channel in certain periods, the X-BC 4 / U 953 offers the option of setting up so-called timeshares. For this purpose, the start times of each program are entered as in the screenshot below.



**Zeitpartagierung**

Kanal zum Auslesen der Zeitinformation:  
Twin analog (S) mit auswertbarem Teletext-Signal oder eine Karte der DVB-Serie

Kanal - Programmname: **K 34 - Das Erste**      Steckplatzinformationen: 003 - 2. Karte

Uhrzeit: 11:30 Uhr      **Uhrzeit auslesen**

Bearbeitung der: 1. Zeitpartagierung

Schaltzeiten der 1. Zeitpartagierung

	Uhrzeit	Kanal - Programmname	Steckplatzinformationen
1.	11:00	K 35 - ZDF	003 - 3. Karte - Kanal A
2.	12:00	K 35 - KiKa	004 - 3. Karte - Kanal A
3.		unbelegt	
4.		unbelegt	
5.		unbelegt	
6.		unbelegt	

Schließen

Only those programs to which the same output channel is assigned in the configuration appear in the list of selectable programs. To define correct switching times, a time reference must be established. This time reference can be supplied by every card of the "DVB Series", or by an X-twin analog s with analyzable teletext signal.

Note that in the case of programmed timesharing in the Web user interface, the time can no longer be entered manually (see Section 4.7), since such a change would also change the programmed switching times.



### 3 Remote HE management via Admin login

#### 3.1 First Admin login into the X-BC 4 / U 953

For the first login into the X-BC 4 / U 953, the IP address of the X-BC 4 / U 953 to be operated must be entered into the Internet browser. The default Admin which was set up in the factory can be selected with the following data: login = admin, password = astro. After you, as Admin, have registered other Users and Admins, you should remove the default Admins and Users, to prevent unauthorized access (see Section 3.7.2).

If the login is successful, the following message appears:

**Login successful. Admin rights apply.**

You are redirected to the start page. If your browser does not support redirection please click [here](#).

If the login is unsuccessful, various error messages can appear

#### 3.2 View of the Admin user interface

In the top frame of the Admin menu, the date, time, version number and serial number (= MAC address) are displayed.

The "Location" and "Contact" data shown in the left frame can be changed in Admin mode (see Section 3.5.1). The Login status is also displayed, and Admin mode can be left by operating the Logout button.

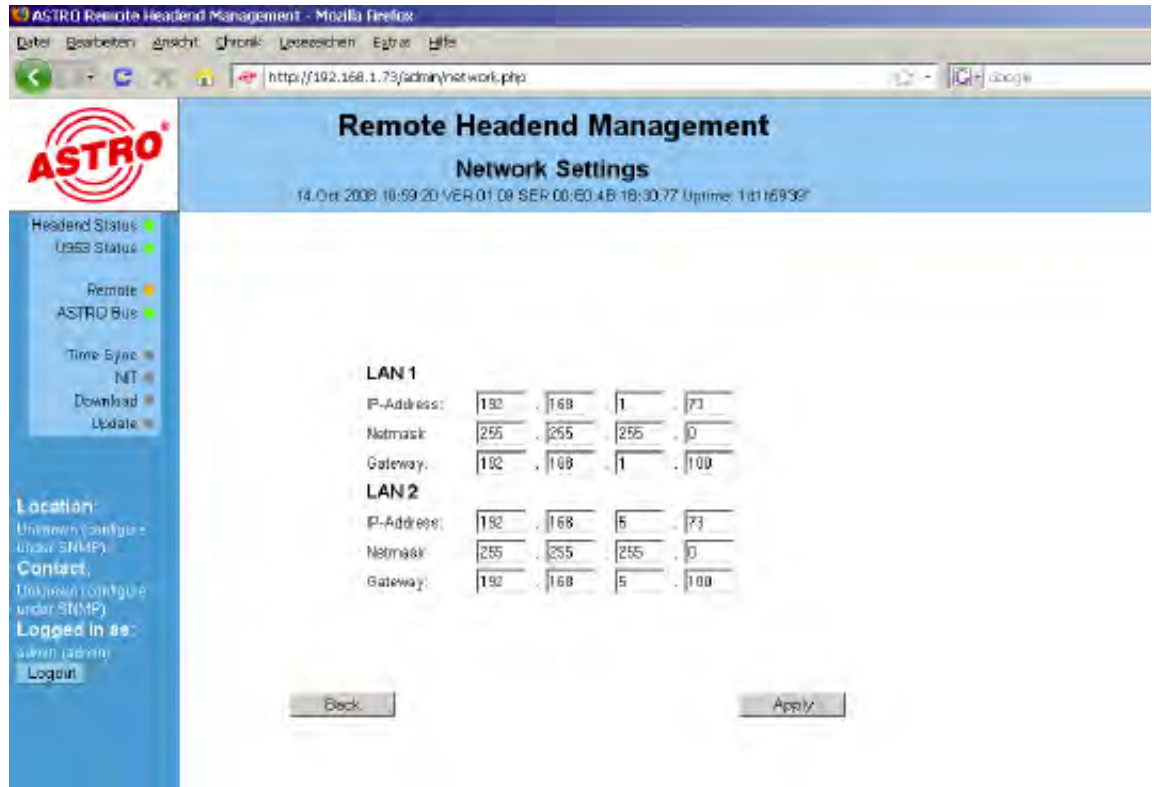


All important status indicators are placed in the main frame, as are all buttons which are available to the Admin for managing the headend.

If any plug-in card is marked, the operating parameters (channel, frequency, etc.) are displayed at top right.

### 3.3 Network settings of the X-BC 4 / U 953

By operating the "Network" button, the Admin reaches the network settings. Here the IP address, sub-network mask and default gateway for both LAN interfaces of the X-BC 4 / U 953 are entered.



#### Important:

Note changed IP addresses, so that after the change you can adjust your network settings on the PC / notebook and enter the correct IP address into the Web browser.

Changes become active only after you click on the "Apply" button. If you click on "Back", changes are not written to the X-BC 4 / U 953, and you return to the higher-level input window.

If the network settings are nevertheless lost, it is possible to reset the factory settings using the "Reset" button (factory default). The default IP address (192.168.1.70) is then valid again



#### Note:

Operating the "Reset" (factory default) button deletes all user-defined settings including User and Admin accounts! However, stored project data is retained.

### 3.4 Saving / writing back the X-BC 4 / U 953 configuration

As Admin, you have the option of storing the configuration file of the X-BC 4 / U 953. To do this, you operate the "Save Conf." button.



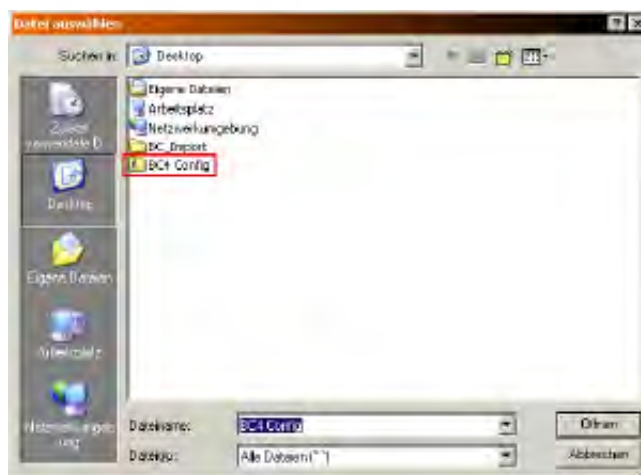
The configuration file which is then stored can then be written back again with the "Restore Conf." button. If the "Restore Accounts" and "Restore Network Settings" options are selected, the current user and network settings are replaced by the stored values.

**Note:**

Ensure that you know the account and network settings of the written-back data, since access to the X-BC 4 / U 953 otherwise becomes impossible. If necessary, the factory settings are restored by operating the "Factory Default" button.



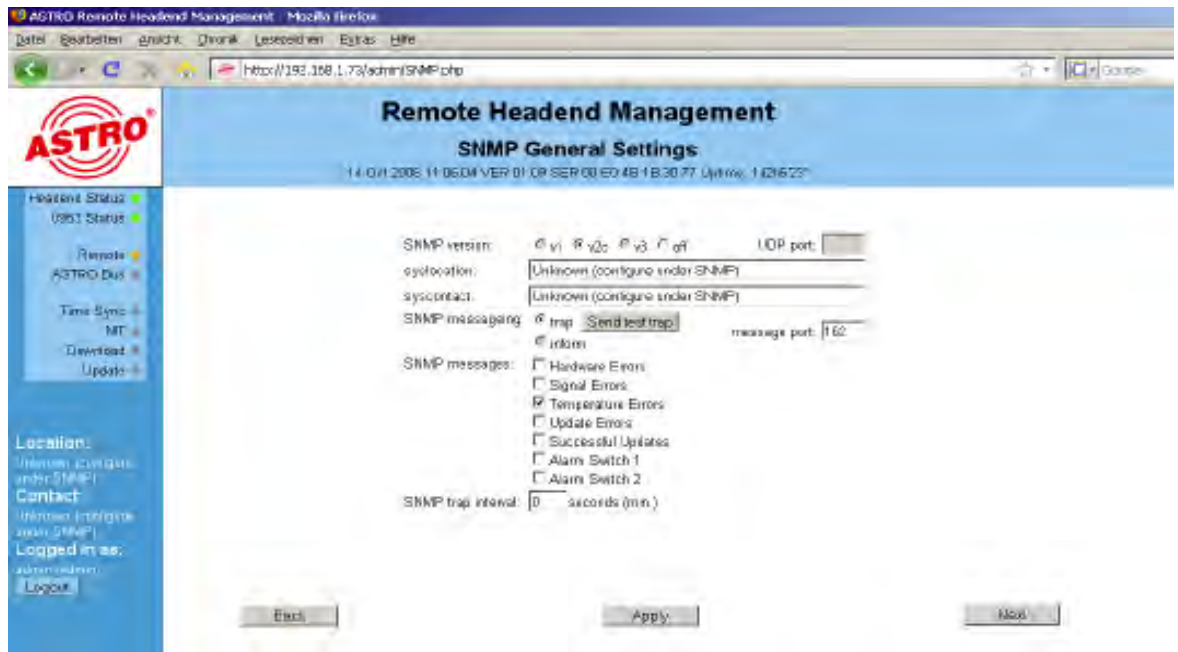
If the "Restore project data" option is selected, the project file stored in the BC 4 is overwritten-  
jektdatei überschrieben



## 3.5 SNMP configuration

### 3.5.1 General settings

With the general settings for the SNMP function, you have the option of setting up the location and a contact, which are then displayed in the left frame under "Location" and "Contact". In this input window, the SNMP functionality can also be switched on and off. Depending on the software version, the X-BC 4 / U 953 supports various SNMP versions, and thus various message types. With the "Send test trap" button, a test trap is sent to the previously set up trapsink. If SNMP messages are selected without a trapsink being set up, an error message is displayed. Set up a trap-sink as in 3.5.2.



It is also possible to specify the errors on the occurrence of which a trap is sent. By default, hardware, signal and temperature errors can be sent as traps. Under "SNMP trap interval", a dead time between sent traps can be set, to avoid flooding the networks with SNMP messages if an error occurs.

### 3.5.2 Einrichten / Entfernen einer Trapsink

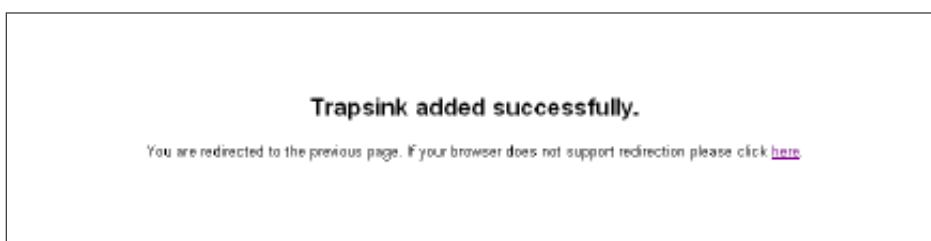
After the SNMP functionality is activated, the "Next" button becomes active. When you have selected it, the following input window opens:



Here you can enter the trap community and enter or remove more trapsinks. Use the "Add" button to enter a trapsink.

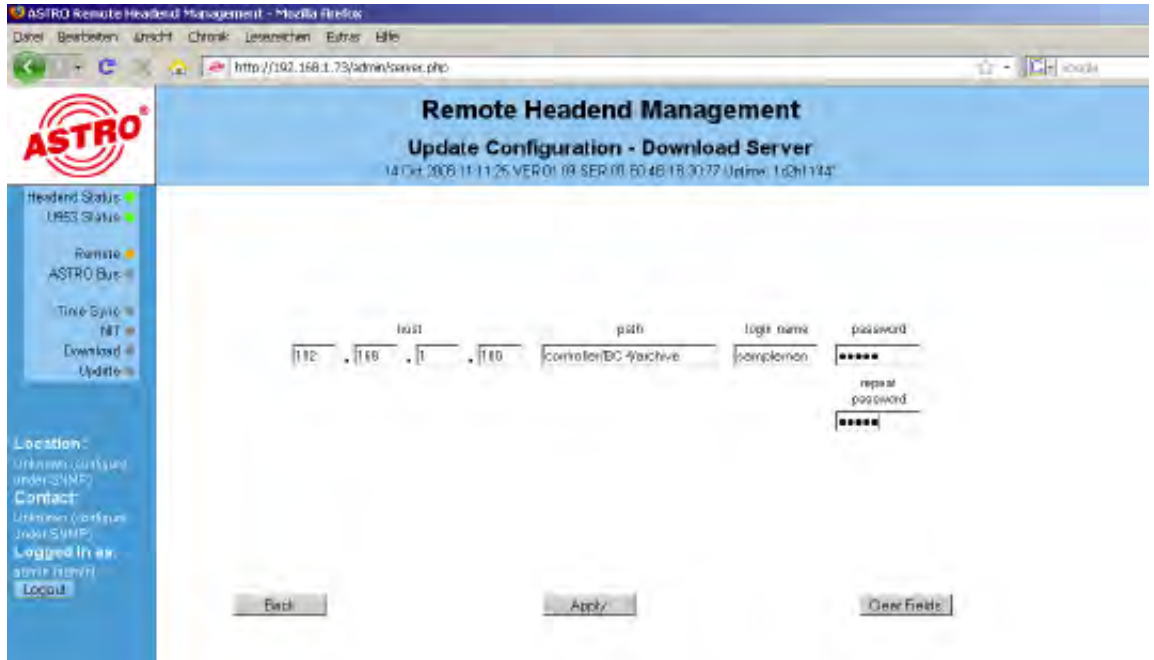


The trapsink which is entered here appears in the previously displayed list after you click on the "Apply" button. To remove a trapsink, the appropriate entry must be marked, and then the "Remove" button must be operated. When a trapsink has been successfully set up, the following message appears:

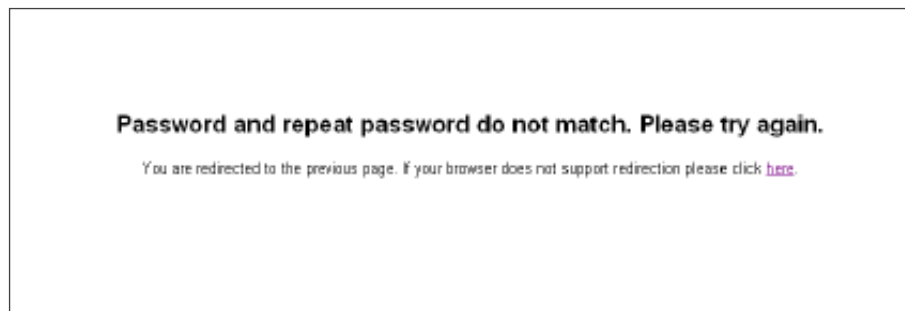


### 3.6 Specifying the update download server

To make it possible to download the update files for the headend components from a server, first an FTP server, which provides the required update archive in a directory, must be defined. To do this, the host IP address, the path in which the software archive is stored, and the access data for the download server are required.



When the "Apply" button is operated, the inputs are written to the X-BC 4 / U 953 and activated. "Back" takes you back to the main input window without accepting the changes, and "Clear Fields" deletes all data. If the access data to the download server is incorrect, the following error message appears:



**Note:**

The FTP protocol uses a not tap-proof transmission of log-in data (username / password). Do not use passwords, which have to be protected in a special way. Please ensure that the rights of the FTP account are restricted sufficiently.

## 3.7 Admin and User administration

Ex factory, the X-BC4 / U953 has one Admin access and one User access. The access data for the User is: login = user, password = astro. The access data for the Admin is: login = admin, password = astro.

### Note:

For security reasons, after you have set up your own Users and Admins, the default User and Admin should be removed. It is not possible to delete the last Admin account. Instead, first create a new Admin account and then delete the default Admin account.



You reach the input window for User administration via the "Users" button. The accounts which have been set up are displayed in the "Login Names" window. Admins are shown with "\*".



### 3.7.1 Adding a User / Admin

To add an Admin or User in User Management, the "Add" button must be operated. The following window appears:



Here, under "login", the name of the User / Admin is defined, and then the password is entered. To verify the input, the password must be repeated. Finally the access rights are assigned, as either User or Admin. Using the "Apply" button, the User / Admin is created and becomes visible in the list. Use "Back" to return to the User Management page without saving the changes.

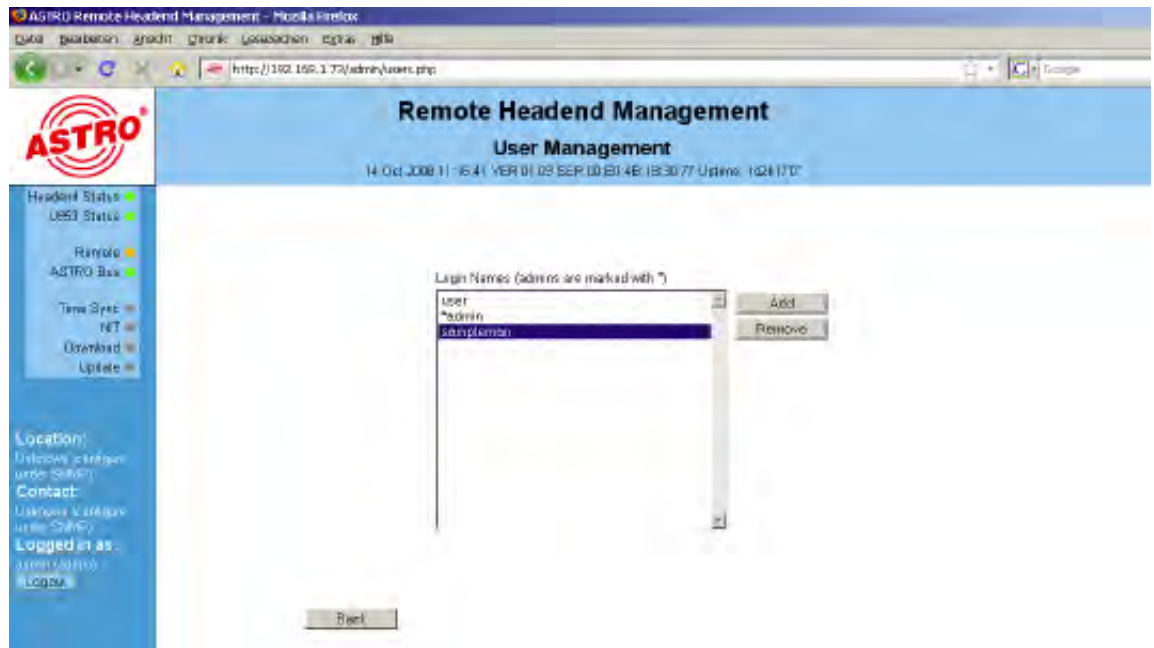
### Note:

The authentication protocol of the BC 4 / U 953 is not tap-proof. Do not use passwords, which have to be protected in a special way.



### 3.7.2 Removing a User / Admin

To remove a User / Admin, the appropriate account must be marked in the "User Management" window, and the "Remove" button must be operated.



### 3.8 Expert update

Using "Expert Update", the X-BC 4 / U 953 can downgrade basic units and plug-in cards to an older software version, or load test versions into them. Note that in expert mode it may be possible to load onto the headend components software versions which are not intended for the selected device. The result is that the affected component fails. Using the "Expert Update" button, the following view is reached:



In the "Headend Configuration" selection box, the module (basic unit or plug-in card) to be updated is selected. The desired software for the relevant module is then marked in the "Available Firmware" list, and with the "Update Selected" button, the loading of the software from the X-BC 4 / U 953 into the module begins.



The overview of the available software is divided into "Uploaded Firmware", "Fallback Firmware" and "Firmware Test Versions". The "Uploaded Firmware" is the software which is provided for an update, and the "Fallback Firmware" is the software which is reloaded if the regular update fails. During the upload, the selected archives are loaded into the "Uploaded Firmware" folder. If there is already an archive for this component at this time, it is moved to the "Fallback Firmware" folder.

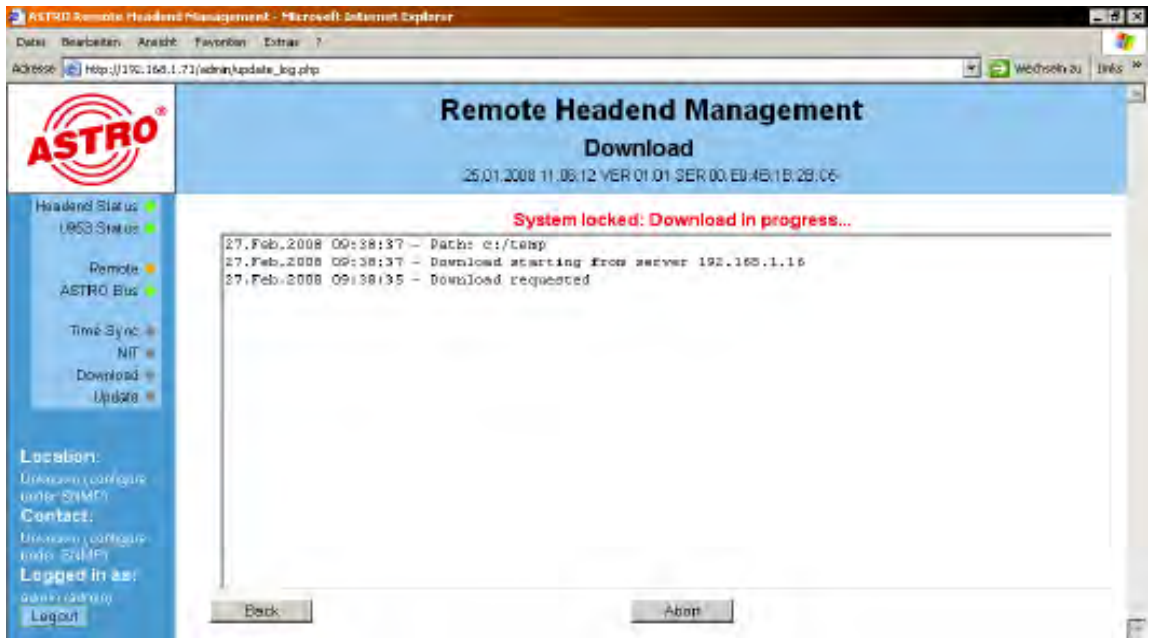
"Firmware Test Versions" are stored automatically in the appropriate folder, and can be used only in expert mode (as Admin). Test versions are identified by the addition of a letter after the version number.

The upload can be done manually using "Manual Upload". The required files are then selected locally on the connected PC / notebook. Only software archives can be loaded onto the X-BC 4 / U 953. If an unsuitable file is selected, the following error message appears:

**Firmware archive not valid, upload failed (details see logfile).**

You are redirected to the previous page. If your browser does not support redirection please click [here](#).

If the "Server Download" option is chosen, the X-BC 4 / U 953 immediately begins to download the software archive from the FTP server, which was defined in Section 3.6. The status of the current download is displayed:

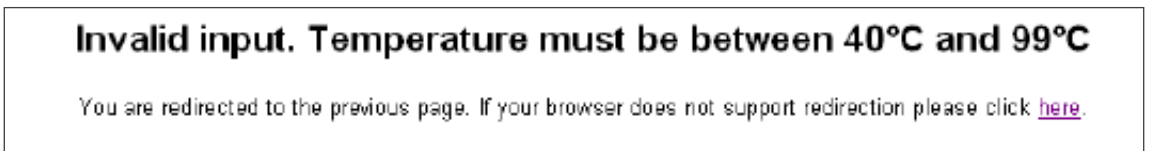


### 3.9 Configuring the alarm temperature

Using the "Alarm Settings" button, it is possible to enter the maximum basic unit temperature. This value is measured on the motherboards of the basic units. If the entered value is exceeded on a basic unit, and the SNMP configuration is correct, a trap is sent (see Section 3.5.2).



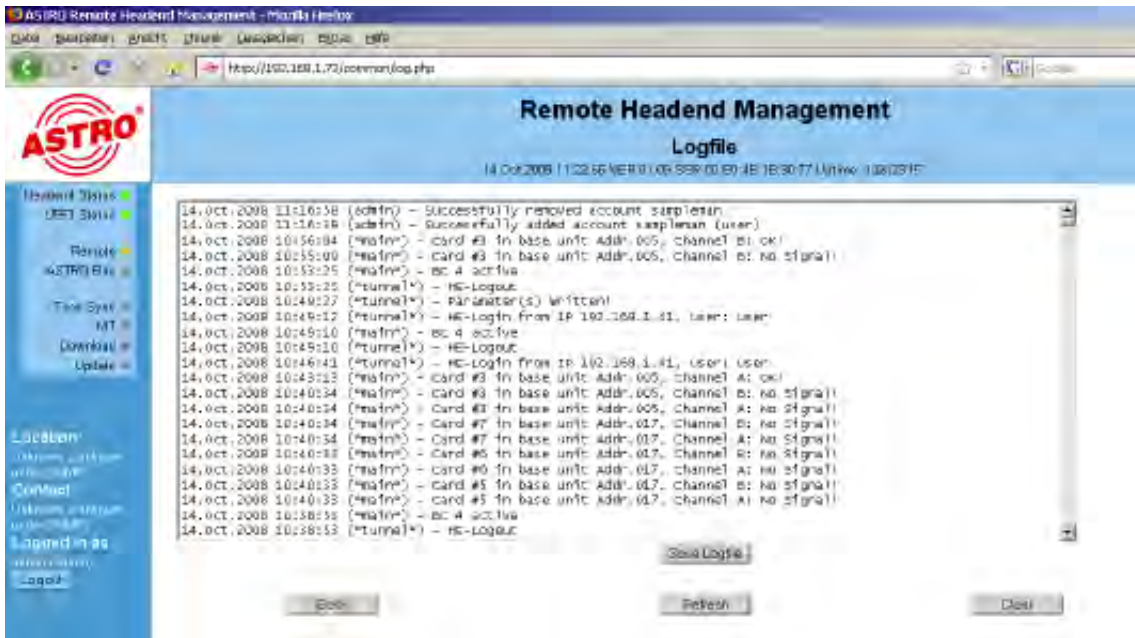
If the temperature is outside the valid range of 40 to 99°C, the following error message appears:



As Admin, you also have the option of configuring the alarm contacts of the X-BC 4 / U 953 as normally open or normally closed contacts.

### 3.10 Logfile

The X-BC 4 / U 953 has a logfile, in which all relevant events in operation are stored in date and time sequence. These include server downloads, login attempts giving the IP address of the User / Admin, and restarts of basic units, plug-in modules, etc. This logfile contains a maximum of 1,000 entries. The first entry always indicates the user who deleted the logfile.



The logfile can also be saved as a text file. To do this, the "Save Logfile" button is used.



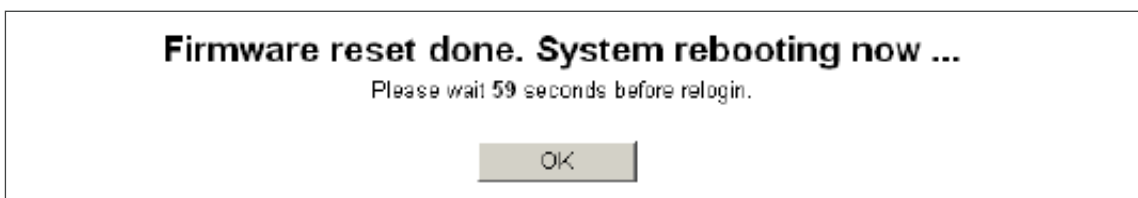
The text file which is then saved can be viewed with the editor or imported and sorted using any current spreadsheet program.

### 3.11 Resetting the X-BC 4 / U 953

In Admin mode, it is possible to restart the X-BC 4 / U 953 with various options. A restart ensures only that the bus controller is rebooted, without changes becoming effective. The reset to firmware defaults causes all settings to be reset except the network and account configurations. This includes, for example, SNMP settings and server settings.



So that the device can be accessed after the firmware is reset, the network settings and User / Admin accounts are retained. After the reset is confirmed using the "Confirm" button, the following message appears:



### 3.12 Powering down the X-BC 4 / U 953

The X-BC 4 / U 953 can be powered down via the Web browser.



#### Important:

Power down the bus controller only when you are on site. To put the bus controller back into operation, you must operate the "On/Off" button of the device.



### 3.13 Password

As Admin, you can change your own password. To do this, first enter the old password and then the new password, with confirmation. When the "Apply" button is operated, the change becomes effective. Operating the "Back" button leaves the original access data.



**Note:**

The authentication protocol of the BC 4 / U 953 is not tap-proof. Do not use passwords, which have to be protected in a special way.



### 3.14 Configuring the replacement option

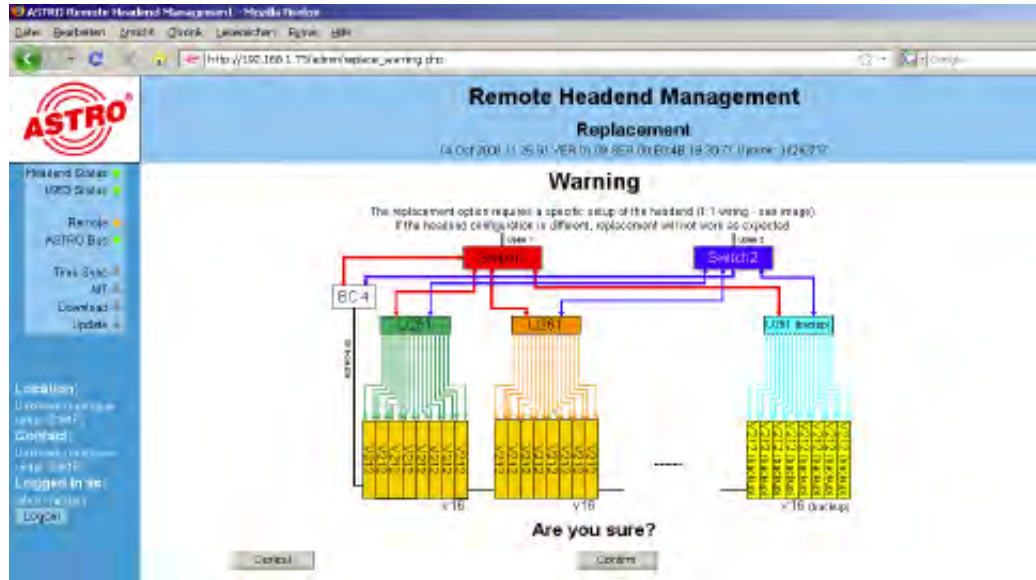
The replacement function provides the option of replacing one or more modules of the system, or basic units, with replacement modules or units, "at the press of a button".

In this way, a software update can be carried out without a signal failure, for example. System redundancies can also be achieved.



**NOTE:** This function currently supports only V 212 cards in association with U 261 gateways.

If the "Replacement Settings" button is operated, the following message appears:



Replacement is possible only in the displayed configuration.

1 to 1 - wiring gateway to V16, i.e.:

ports 1 and 2 of IP gateway U 261 on tuners A and B of V 212 on slot 1, ports 3 and 4 of IP gateway U 261 on tuners A and B of V 212 on slot 2

...

...

etc.

Replacement of individual modules is possible in the planning software, at subitem "Card Replacement".

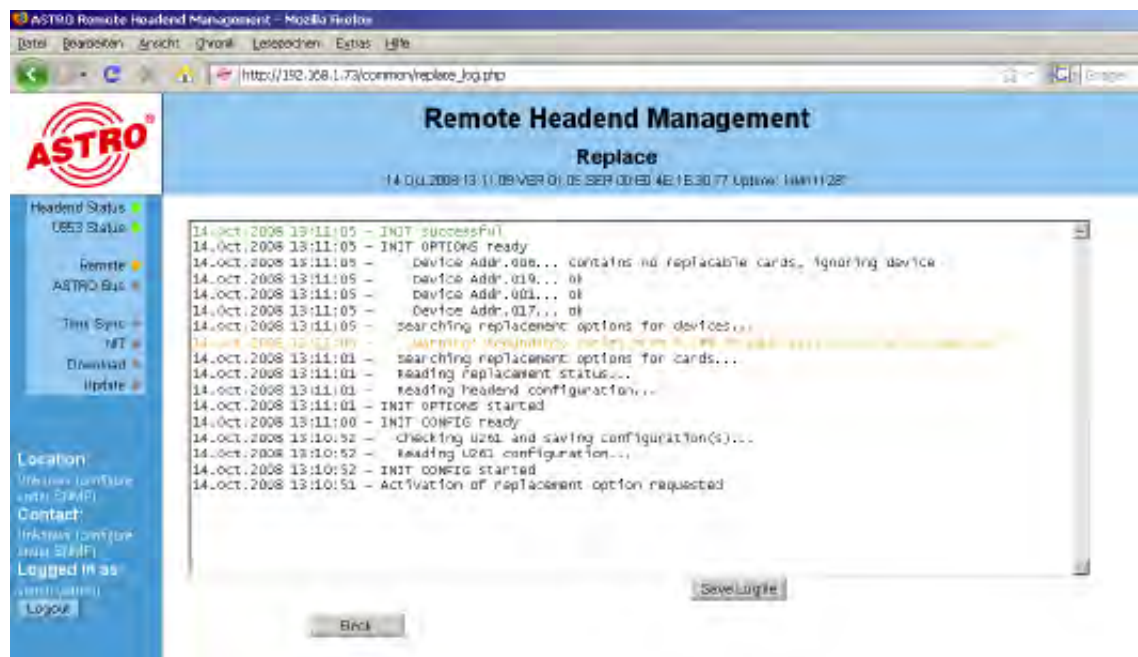
The input window if replacement is not activated looks like this:



Under "Unit", the basic units which are configured with the BC 4 are displayed, and if the check marks are activated, they are included in the replacement. For these units, the IP addresses of the associated gateways must be entered. So that the BC 4 can carry out the replacement and program the gateways, User accounts with the same usernames and passwords must be set up on the appropriate gateways. This access data must be entered on the configuration page, under "Gateway login".

### 3.14.1 Activating the replacement option

After the replacement is activated, the message "Replacement is being activated" is displayed. After a few seconds, the logfile for the process of activation is displayed, including any error messages / warnings which may occur.



When replacement is activated, it is not possible to change the settings. It is also not possible to log in and configure the IP gateways when replacement is activated, unless the IP gateway and all connected plug-in cards are running in backup mode. This can be exploited for IP gateway updates, for example.

### 3.14.2 Deactivating the replacement option

Deactivating card replacement is necessary if settings are to be carried out on the IP gateway, for example. Deactivation should be carried out only if no modules are replaced. Otherwise, malfunctions can occur, as described below:



For deactivation, the replacement option "Inactive" is selected, and executed by operating the "Apply" button. Successful deactivation is signaled by an appropriate message.



## 4 Remote HE management via user login

### 4.1 First user login into the X-BC 4 / U 953

To log into the X-BC 4 / U 953, the IP address of the X-BC 4 / U 953 to be operated must be entered in the Internet browser. It is recommended that you should log in first as Admin, so that you can configure further Admins and/or Users. The default Admin which was set up in the factory can be selected with the following data: login = admin, password = astro. The User which was set up in the factory can be selected with login = user, password = astro. After you, as Admin, have registered other Users and Admins, you should remove the default Admins and Users, to prevent unauthorized access (see Section 3.7.2).



When the correct data has been entered, the following message appears:



After a few seconds, this message disappears, and you reach the main window. An active login is indicated on the X-BC 4 / U 953 by an orange "remote" LED.

In this section, the view and the operating options of the user with no administrative rights are considered. If the data is entered wrongly, the following message appears, and it likewise disappears after a few seconds.



## No valid login.

You are redirected to the login page. If your browser does not support redirection please click [here](#).

You then have another opportunity to enter correct data.

If another user is already logged in, the following message appears:

## Login is active: user (user) on 192.168.1.40.

Please wait until session is logged out or until timeout occurs in 598 seconds.

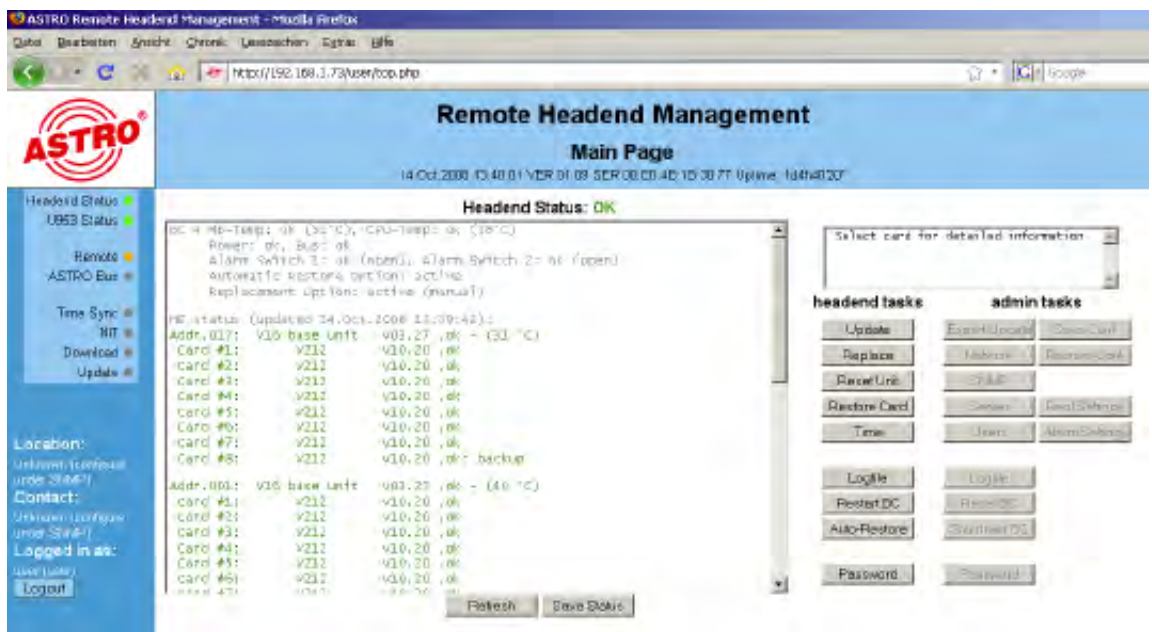
Click [here](#) to retry.

The timeout for the user is 10 minutes, and is reset on every activity in the Web browser.

Always leave the user interface via the "Logout" button, since logging in again is only possible after the timeout has expired.

## 4.2 View of the user interface

In the top frame of the User menu, the date, time, version number and serial number (= MAC address) are displayed.

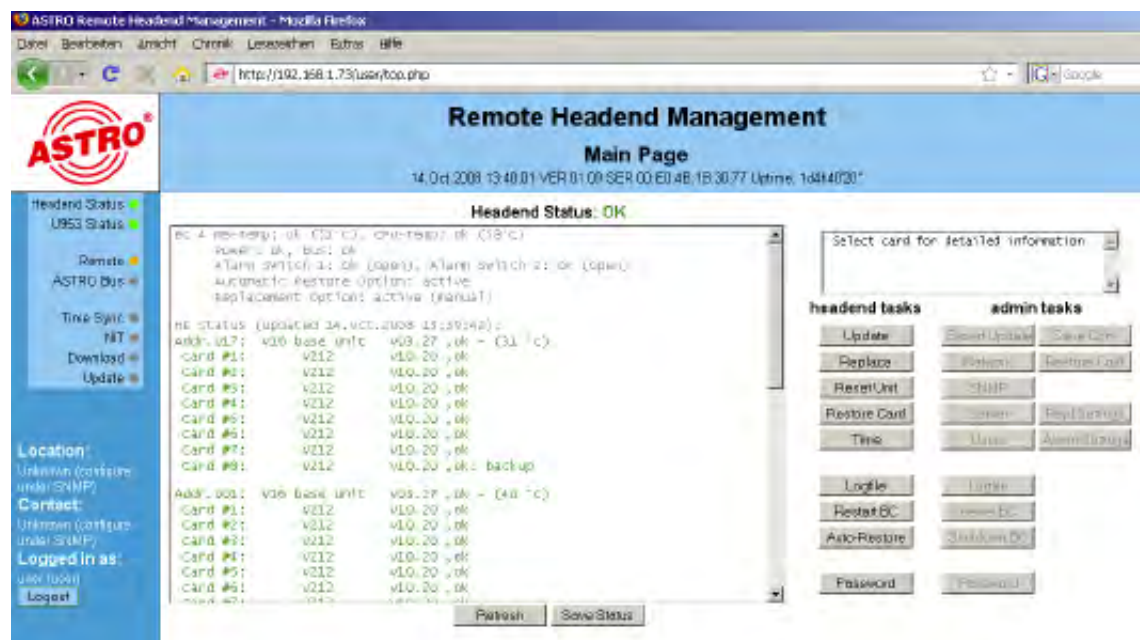


The "Location" and "Contact" data shown in the left frame can only be changed in Admin mode (see Section 3.5.1). The Login status is also displayed, and User mode can be left by operating the Logout button.

All important status indicators are placed in the main frame, as are all buttons which are available to the user for managing the headend.

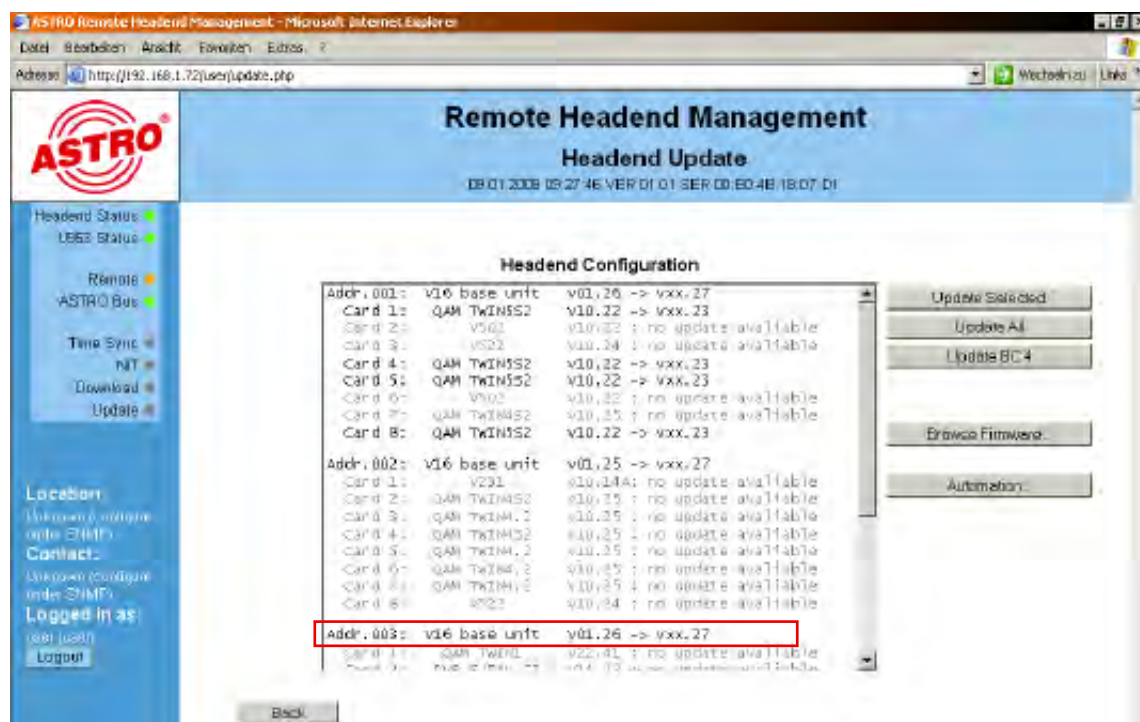
### 4.3 Displaying errors

If errors are currently present in the headend which is connected to the PC, they are indicated in two ways. Firstly the line of the affected plug-in card is marked in red, and secondly an error is shown in the main frame, so that attention is drawn to errors even if they are not displayed in the headend status because of the position of the scroll bar. If there is no error, "ok" is displayed in the main frame.



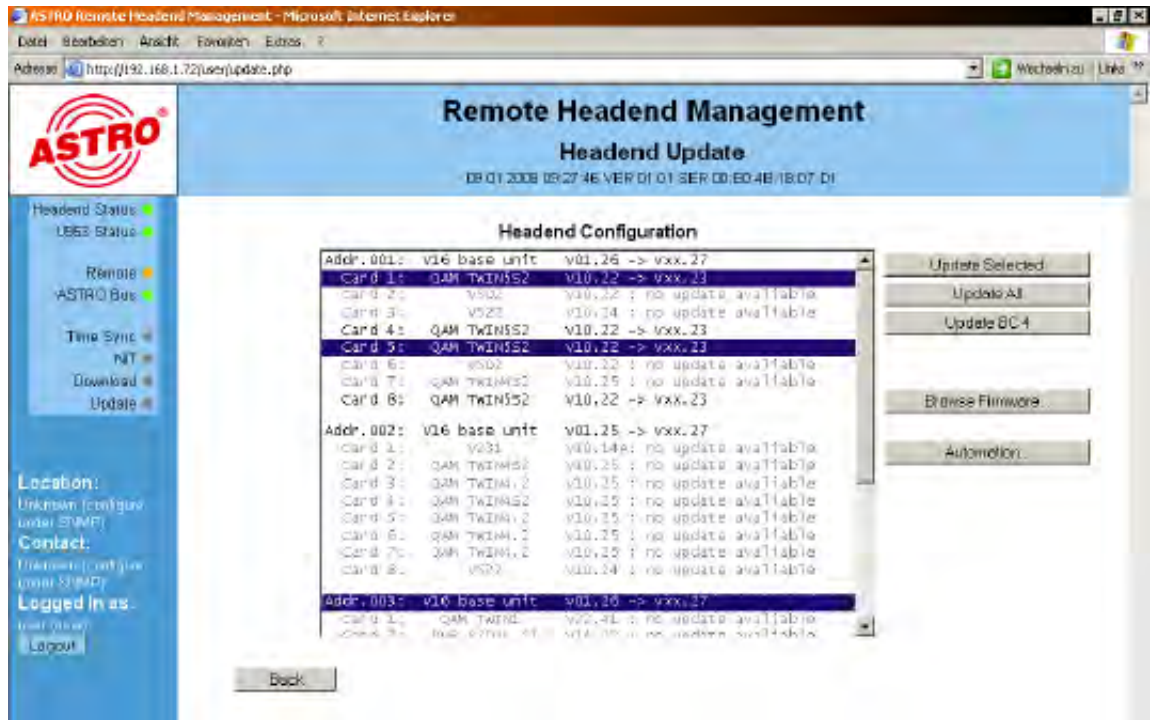
### 4.4 Update

After a click on the "Update" button, the following view appears, as an example:



#### 4.4.1 Selective update of individual cards

o update individual cards selectively, the "Update Selected" button must be activated, after you have marked the affected cards. It is possible to mark several modules by keeping the CTRL key pressed while clicking. Only the components for which a more up-to-date version than the current one exists can be selected.



After the start of the update, the following message appears:

**Update of selected devices is starting, please wait.**

You are redirected to the update logfile. If your browser does not support redirection please click [here](#).

If the "Selected Update" button is operated without a plug-in module being selected, an error message appears.

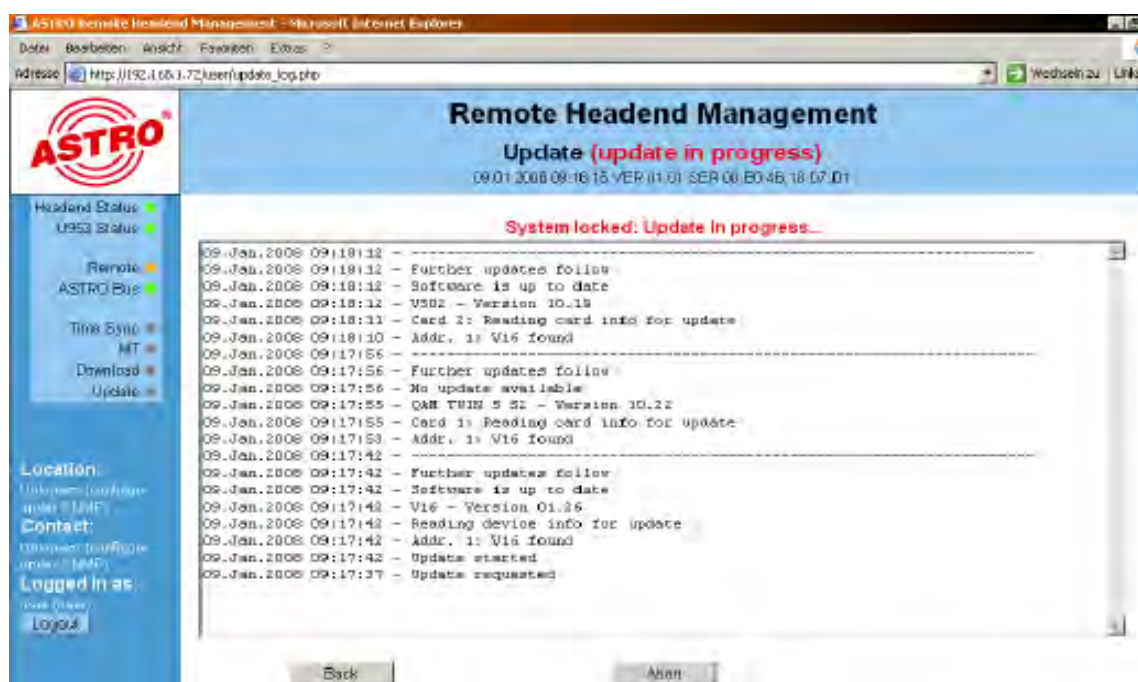
**Nothing selected.**

You are redirected to the previous page. If your browser does not support redirection please click [here](#).

While the update is running, the current tasks of the update processor are displayed for checking.

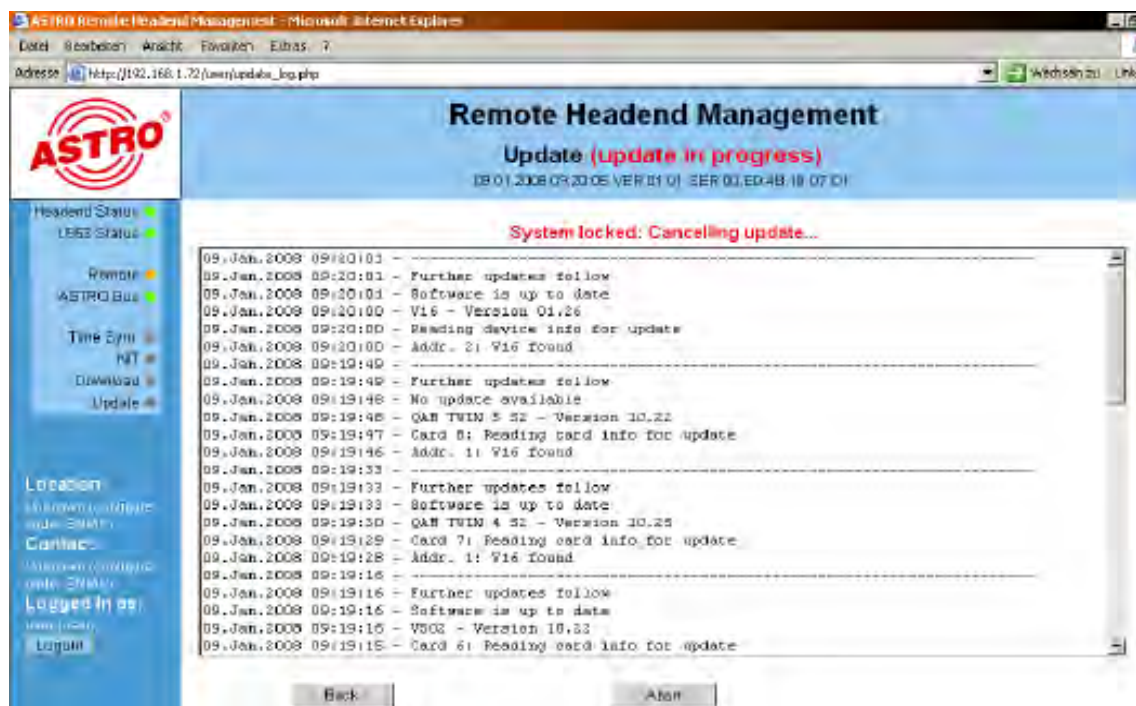
## 4.4.2 Updating all headend modules including basic units

When the "Update All" button is activated, all components of the headend including basic units are updated. Before this is done, the bus controller checks whether the stored software version is more up-to-date than the version on the component. If it is not, the update is skipped.



## 4.4.3 Aborting the update

If an update has to be aborted, this is done by clicking on the "Abort" button.



Since aborting the update for a plug-in module or basic unit would cause it to fail, the updating process for the current module is completed.

#### 4.4.4 Transmitting update files to the X-BC 4 / U 953

If the "Browse Firmware" button is operated, an overview of the available software versions on the X-BC 4 / U 953 for the headend components is reached. The overview of the available software is divided into "Uploaded Firmware", "Fallback Firmware" and "Firmware Test Versions". The "Uploaded Firmware" is the software which is provided for an update, the "Fallback Firmware" is the software which is reloaded if the regular update fails, and the "Firmware Test Versions" can be used only in expert mode (as Admin).



By clicking on the "Manual Upload" button, the user interface for manual selection of an update file which is to be uploaded to the X-BC 4 / U 953 is reached. The file must be stored locally in "\*.up" format to be received successfully by the X-BC 4 / U 953.



For example, if a file with a wrong extension is selected, or there is another error, an error message appears.

**Transfer error. Upload failed.**

You are redirected to the previous page. If your browser does not support redirection please

If a complete software package which has previously been provided on a server is to be downloaded, the "Server Download" button must be operated.

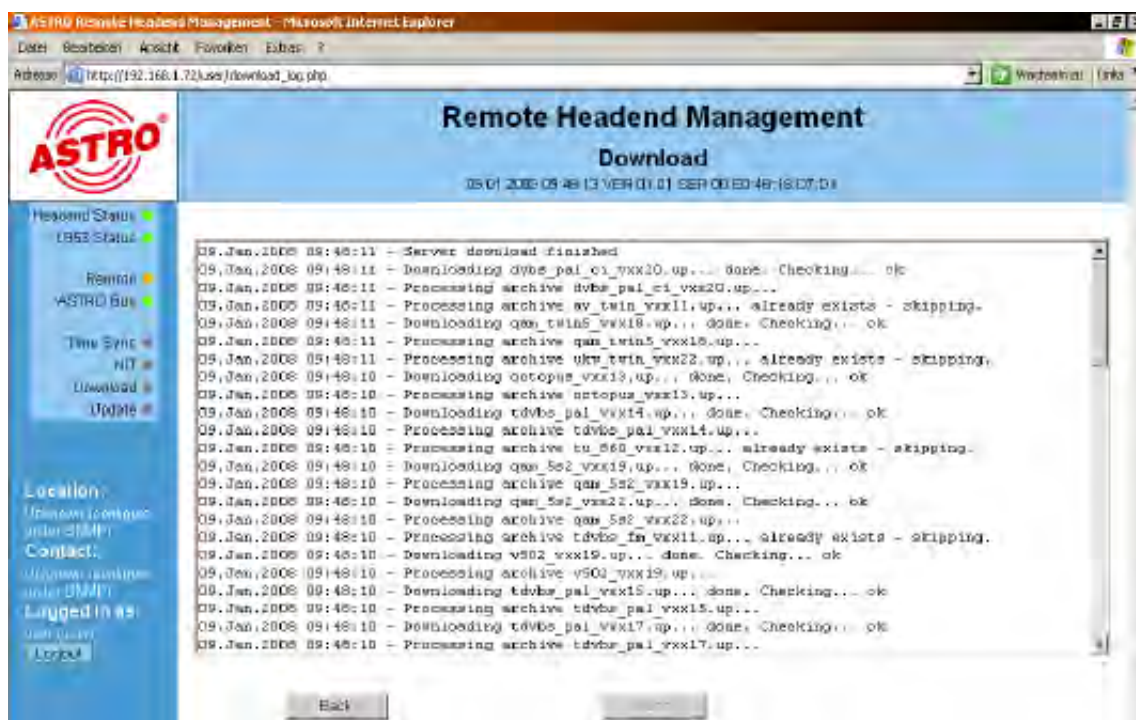
The following message is displayed:

**Server download is starting.**

You are redirected to the previous page. If your browser does not support redirection please click [here](#).

The download server for the X-BC 4 / U 953 can be set up only in Admin mode! (see Section 3.6.)

When downloading software packages, the bus controller compares the existing data with the files which are provided for download. If the files on the bus controller are identical to those on the server, the download of these files is skipped. After a successful download of the data onto the bus controller, the following window appears, to indicate the progress of the download:



#### 4.4.5 Time-controlled automatic update / automatic download

The X-BC 4 / U 953 offers the option of downloading card and basic unit software under time control, and transmitting it to the headend components. This makes it possible to update the headend at times when few subscribers are operating their terminals. The input window for defining the processes to be carried out (Download, Update or Download + Update) is reached via the "Automation" button in the "Headend Update" window:



First a list of previously entered processes is displayed. If no actions have yet been defined, the "Process list" window is empty. With the "Add" button, it is possible to enter new actions.





Here it is possible to choose between the three above-mentioned processes, and to define the time for carrying them out.

### Important:

The day on which the process is carried out can be specified by two fields (day of the week "Day" and day of the month "Date"). If both fields are restricted (not "\*\*\*"), the process is carried out if one of the two applies. For example, if January 20 and Monday are entered, an update is started on every January 20 and every Monday in January. But if an update is to be started only on January 20, "\*\*\*" must be selected under "Day"!



When the desired action has been entered, it is written into the X-BC 4 / U 953 by selecting the "Apply" button, and thus becomes active. A successfully entered action is indicated.

## Process added successfully.

You are redirected to the previous page. If your browser does not support redirection please click [here](#).

Obviously, processes which are no longer wanted can be deleted. To do this, the relevant action must be marked and removed using the "Remove" button. The following message appears:

## Process removed successfully.

You are redirected to the previous page. If your browser does not support redirection please click [here](#).

## 4.5 Restarting a basic unit

If it is necessary to restart a basic unit, it must be selected in the "Headend Status" window, and then the "Reset Unit" button must be operated.



When the "Reset Unit" button is operated without a basic unit being selected, the following error message appears:

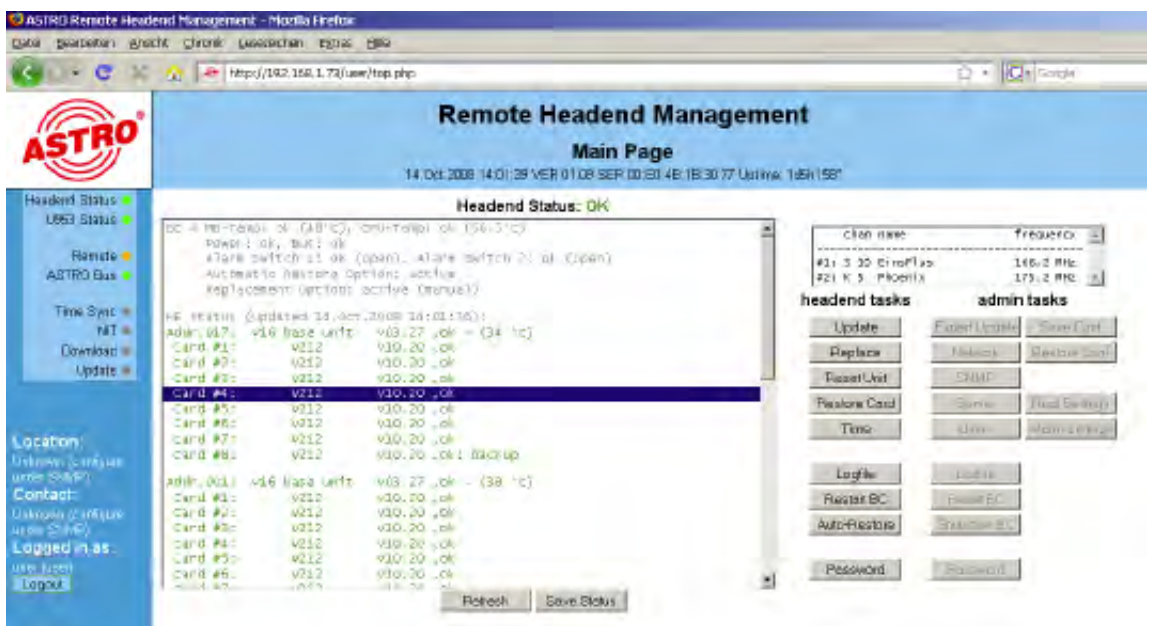
## Nothing selected.

You are redirected to the previous page. If your browser does not support redirection please click [here](#).

## 4.6 Reprogramming headend modules

The operating parameters of all headend modules are interrogated in turn by the X-BC 4 / U 953. If differences between the cards and the data stored in the bus controller are detected, the data stored in the X-BC 4 / U 953 is written again to the cards. This process runs permanently and automatically in the X-BC 4 / U 953 if the device has been configured accordingly (Auto Restore activated).

If a headend module has been replaced on site, the operating parameters can also be reprogrammed manually. To do this, the relevant card must be marked and then the "Restore Card" button must be operated



## 4.7 Entering the system date and time

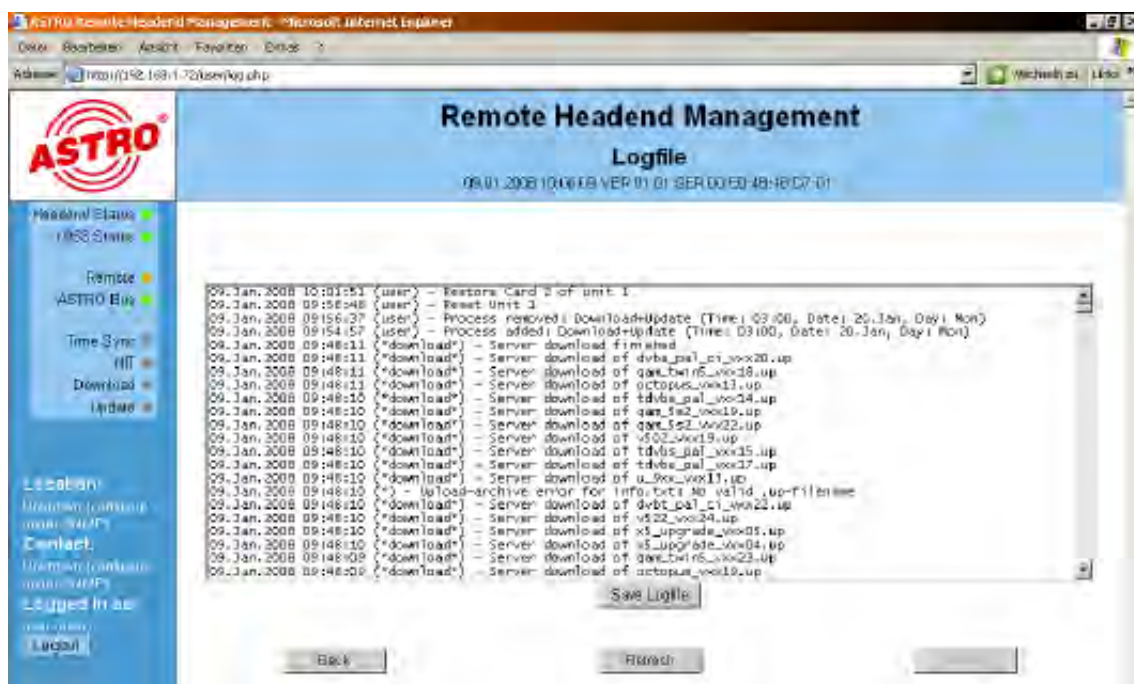
The system time of the X-BC 4 / U 953 can be entered manually, and the appropriate time zone can be selected. If timesharing has been specified in the HE programming software, the system time is taken from an MPEG data stream. In this case, the time cannot be changed in the Web interface.



If timesharing has already been programmed, the input window is inactive.

## 4.8 Logfile

The X-BC 4 / U 953 has a so-called logfile, in which all relevant events in operation are stored in date and time sequence. These include server downloads, login attempts giving the IP address of the User / Admin, and restarts of basic units, plug-in modules, etc. This logfile contains a maximum of 1,000 entries. The first entry always indicates the user who deleted the logfile.



The logfile can also be saved as a text file. To do this, the "Save Logfile" button is used.



The text file which is then saved can be viewed and edited with the editor.

#### 4.9 Restarting the bus controller

The X-BC 4 / U 953 can be rebooted by operating the "Restart BC" button. An indication of the processes which are interrupted by the restart appears, User login in this case. The restart must therefore be confirmed with the "Confirm" button, or cancelled with "Cancel".



After the restart is confirmed, the following message appears:



After the booting, the User / Admin must log in again with User name and password.

#### 4.10 Restoring operating parameters automatically (auto restore)

The automatic monitoring of operating parameters compares the operating data of the headend modules cyclically with the operating data which is stored in the X-BC 4 / U 953 by the HE programming software. If a discrepancy is established, the X-BC 4 / U 953 overwrites the data stored in the card. If the "Auto Restore" option is activated, automatic reprogramming takes place after a module has been replaced on site (alternatively, see Section 4.6).





### CAUTION:

If the programming of the X-BC 4 / U 953 differs from the current configuration of the headend, and the "Auto Restore" option is activated, the headend undergoes unwanted reprogramming. This causes failure of the headend!



## 4.11 Changing the password

Every user can change his or her password, and no other. To do this, first enter the old password and then the new password, with confirmation. When the "Apply" button is operated, the change becomes effective. Operating the "Back" button leaves the original access data.

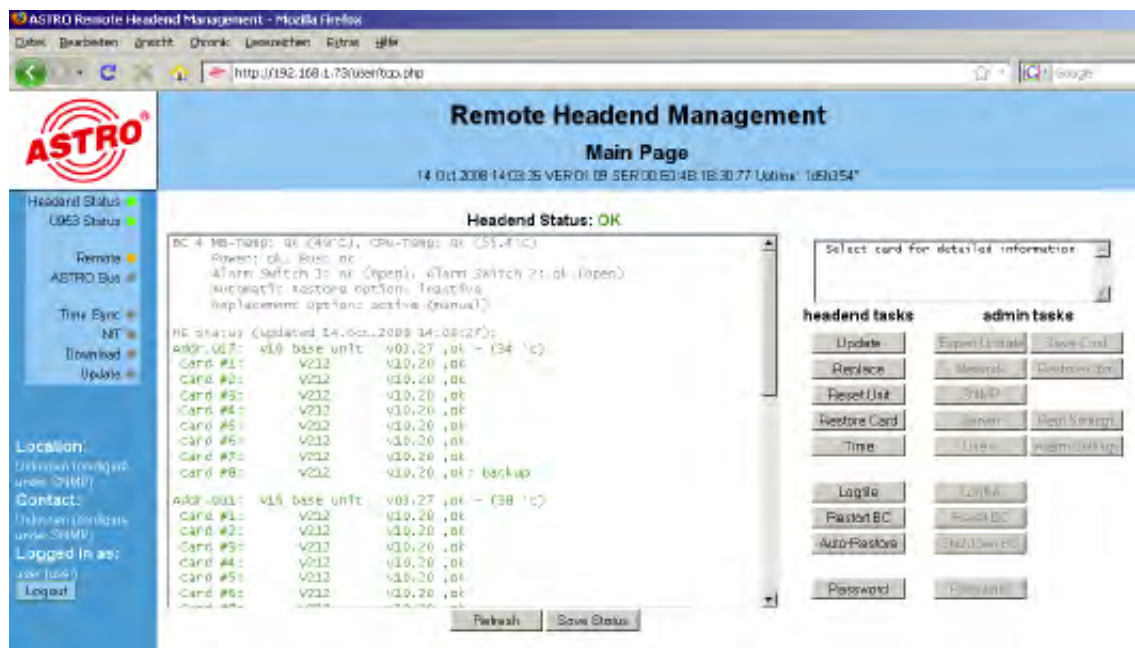


### Note:

The authentication protocol of the BC 4 / U 953 is not tap-proof. Do not use passwords, which have to be protected in a special way.

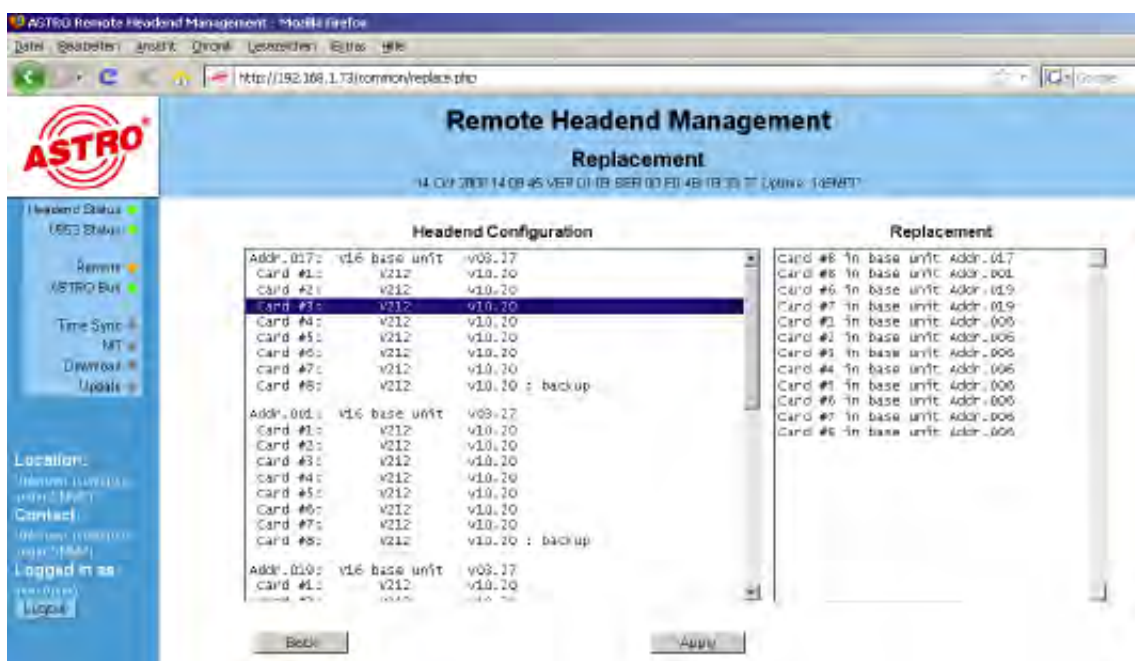
## 4.12 Saving the instantaneous headend status

The instantaneous status of the headend is saved by operating the "Save Status" button and then saving the text file which is output. The saved text file can be viewed and edited with the editor.



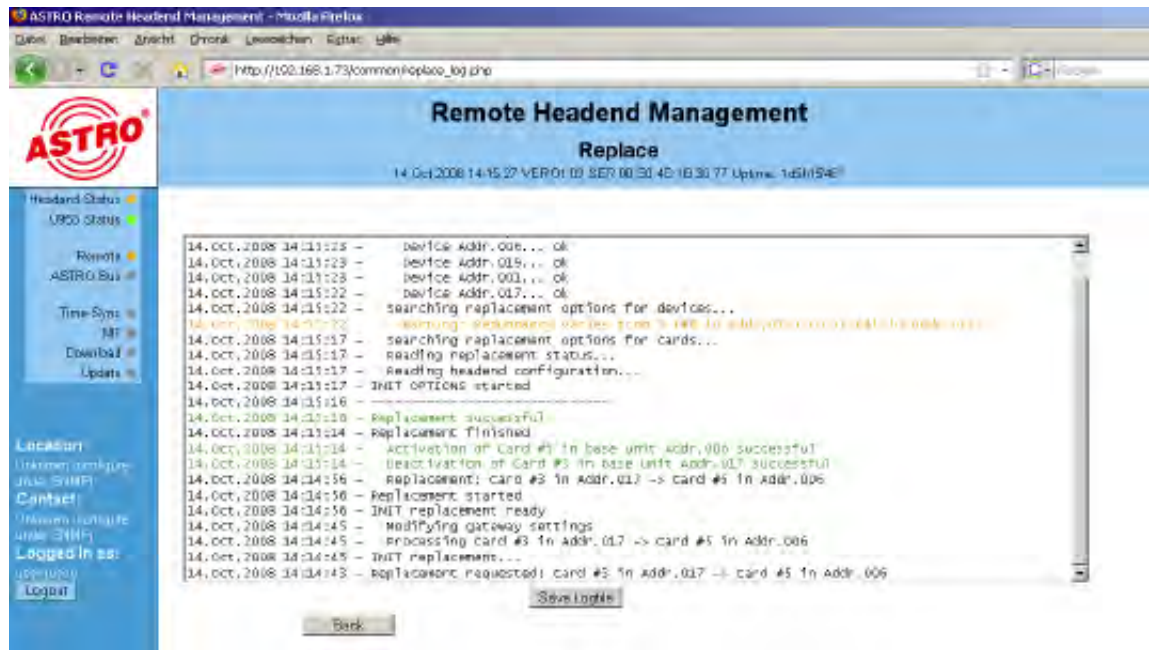
## 4.13 Replacing headend components

After the replacement option described in Section 3.14 is activated, the "Replace" button becomes active. After a click on this button, the following window is displayed:



### 4.13.1 Replacing a plug-in card

After a plug-in card is marked under "Headend Configuration", the replacement options are shown under "Replacement". To carry out a replacement, one of the displayed options is selected and activated with "Apply". This selection must be confirmed in the next dialog with "Confirm". Here too, the replacement process is logged in a logfile.

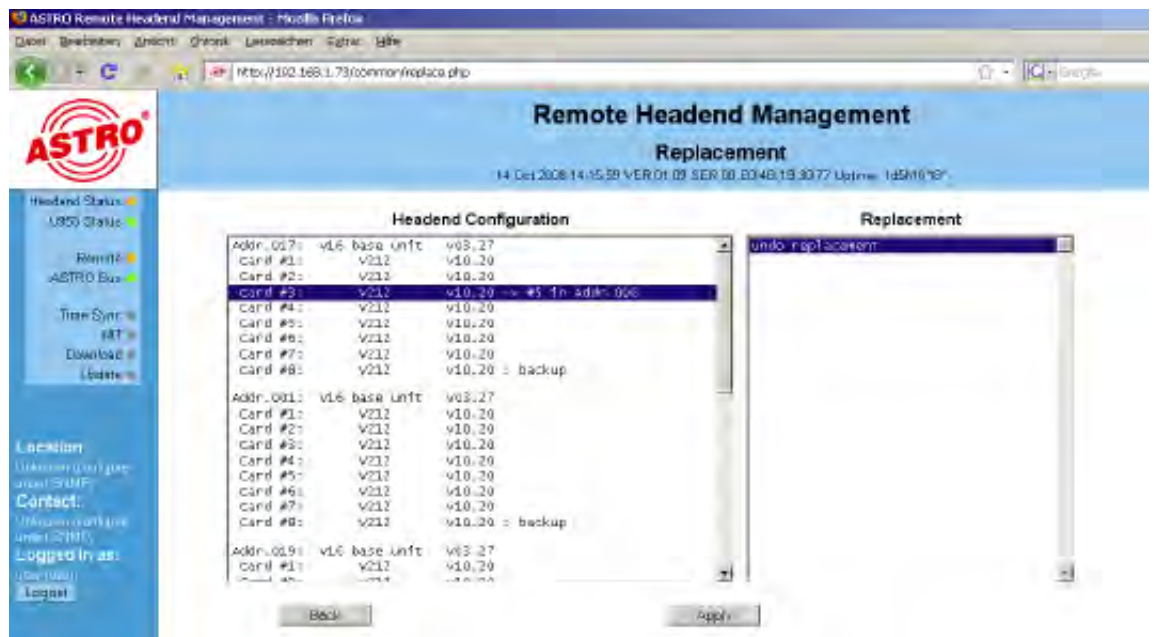


#### Note:

Even cards which are already active in a replacement can be replaced by another inactive card.

### 4.13.2 Reversing the replacement of a plug-in card

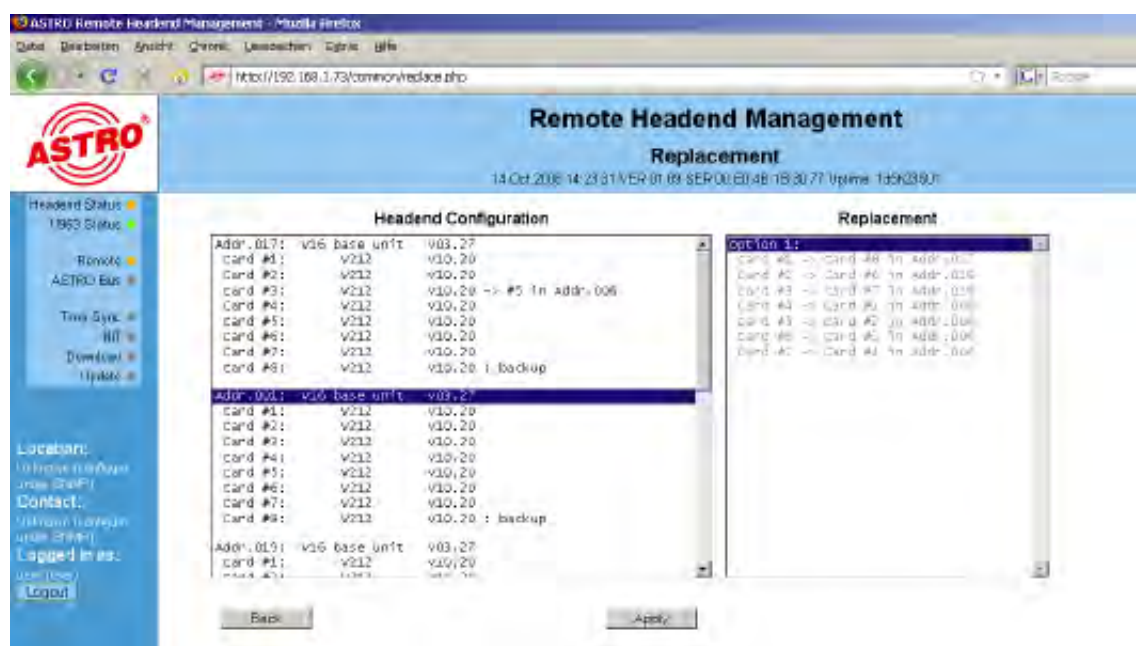
After a click on the "Replace" button, any replaced plug-in cards are displayed. If these plug-in cards are selected under "Headend Configuration", an option to reverse the replacement is offered under "Replacement" (undo replacement).





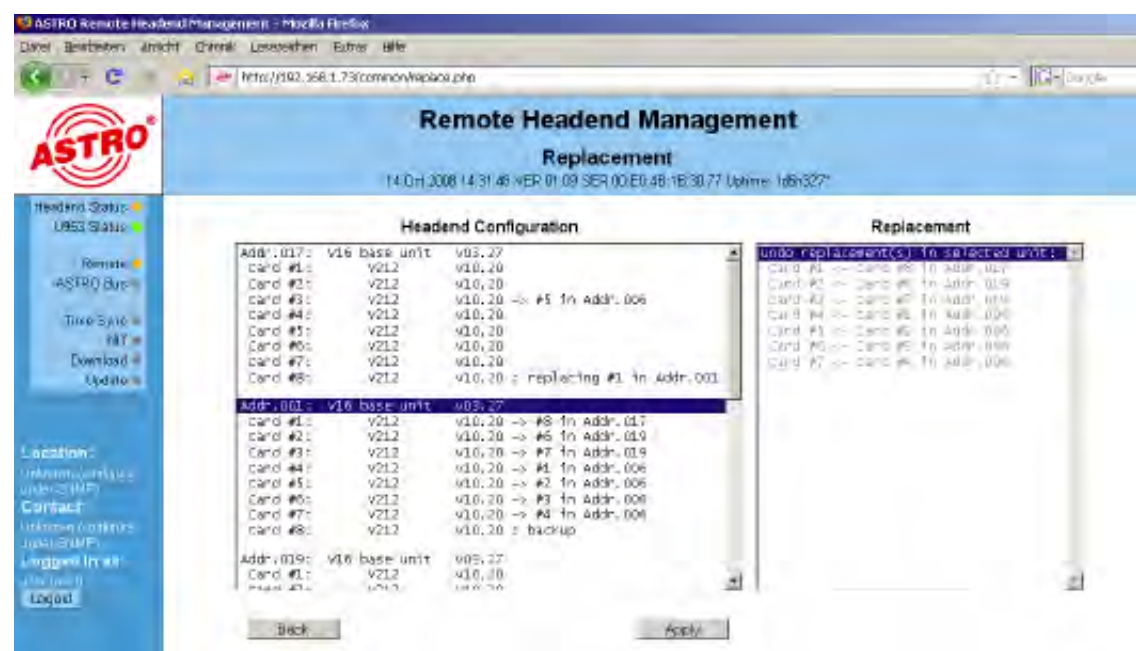
### 4.13.3 Replacing a complete basic unit

After a basic unit is marked under "Headend Configuration", the replacement option, in which all cards of the active basic unit are replaced by cards in other basic units, is shown under "Replacement". After successful replacement, any maintenance work can be carried out on the basic unit, which is then inactive.



### 4.13.4 Reversing the replacement of a complete basic unit

After a click on the "Replace" button, any replaced basic unit is displayed. If this basic unit is selected under "Headend Configuration", an option to reverse the replacement is offered under "Replacement" (undo replacement).





A series of horizontal lines spanning the width of the page, providing a space for writing or notes.



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