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MANUAL

for

Hiltron

LNB Power Supply System

Table of Contents

1   Overview

The **Hiltron LNB Power Supply System** is a modular redundant system for the supply, the protection, the monitoring and control of LNBs. The system is equipped with an Ethernet interface which allows the monitoring and control of any individual LNB.

The supply system is integrated on a 19" rack-mountable base plate. The total height is predefined by the height of the LNB supply modules (type LNB.50) and is not higher than 100mm

The system is expandable and consists of one or more supply blocks comprising each four LNB supply modules. (The number of blocks is limited by the max. available power of the selected main power supplies).
A single module type LNB.50 contains a power control circuitry for setting and monitoring the supply voltage and the max. tolerable current. Furthermore it contains a RF level detector to monitor the total LNB output RF output level. Each block has a redundant power supply interface A and B and two communication bus interfaces type RS422 which allows to cascade several blocks easily.

Due to the modular structure of the system all the supply voltage, the maximum current and the thresholds for the minimal and maximal tolerable voltages and currents as well the RF level can be set individually for each LNB. The adjustable thresholds can be set via the Web-interface. In case of a malfunction an alarm will be generated and shown in the Web-Interface.

The LNB supply voltage can be adjusted in the range from 5 V to 18 V. The maximum supply current is 400 mA.

The communication card module type ACU-NET provides the RS422 serial interface to be used for communication with the supply blocks and its modules an Ethernet interface for system monitoring and control.

2   Design

2.1 Mechanical Design

19" rack-mountable base plate
Base plate dimension for configuration acc. Fig. 2-1
      Length: 425 mm
      Width   260 mm
      Height   100mm

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2.2 Electrical Design

The **Hiltron LNB Power Supply system** consist of the following modules:

➢ Two power supplies type
   Modell: SPC Electronic
   Eingang: 100-240VAC 47–63 Hz
   Ausgang: 24V / 2.5A

➢ supply blocks consisting each of 4 LNB supply modules type LNB.50

In Fig 3-1 the Block Diagram of the **Hiltron LNB Power Supply System** is shown. It describes the main functions of the modules.
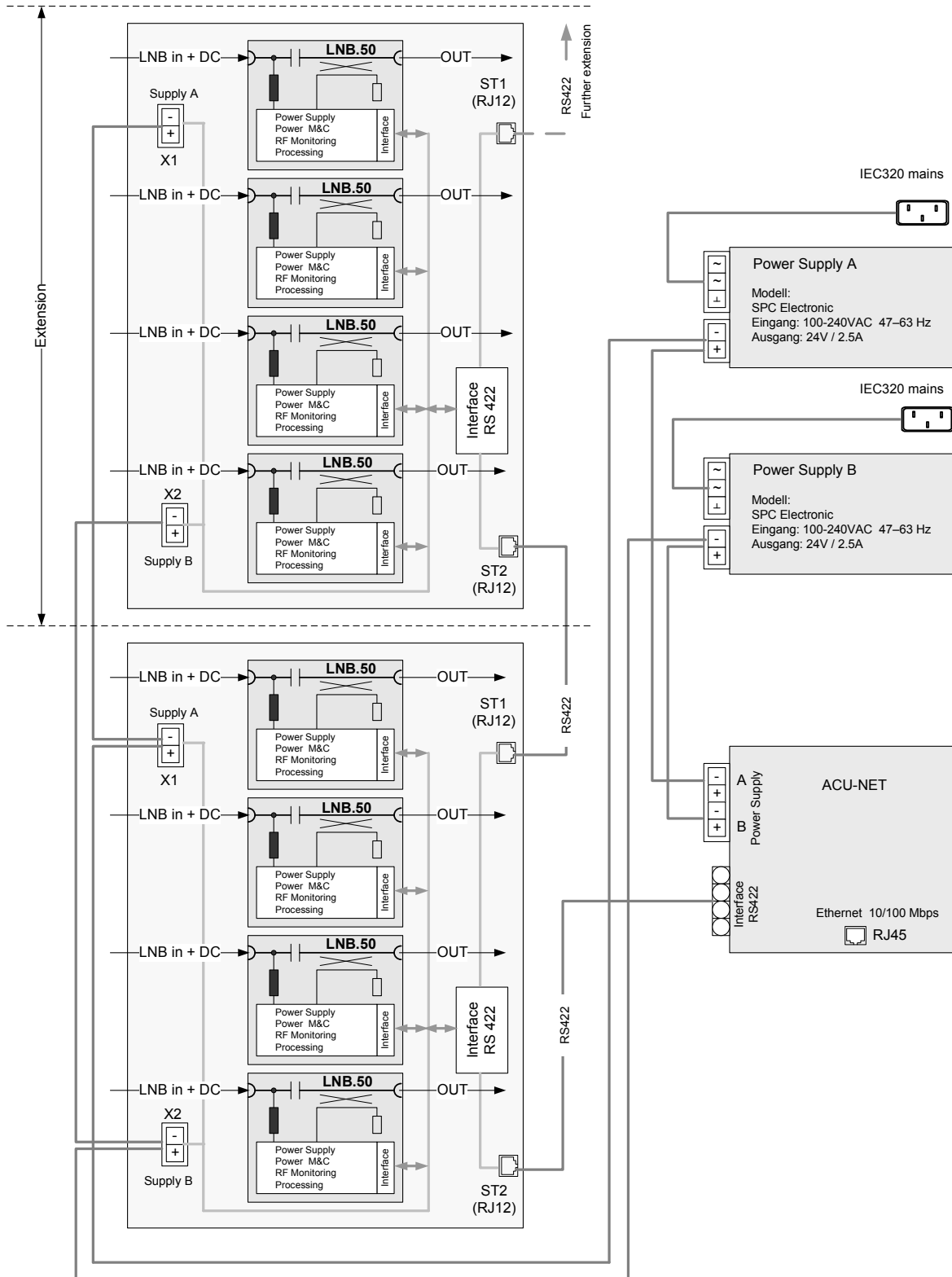
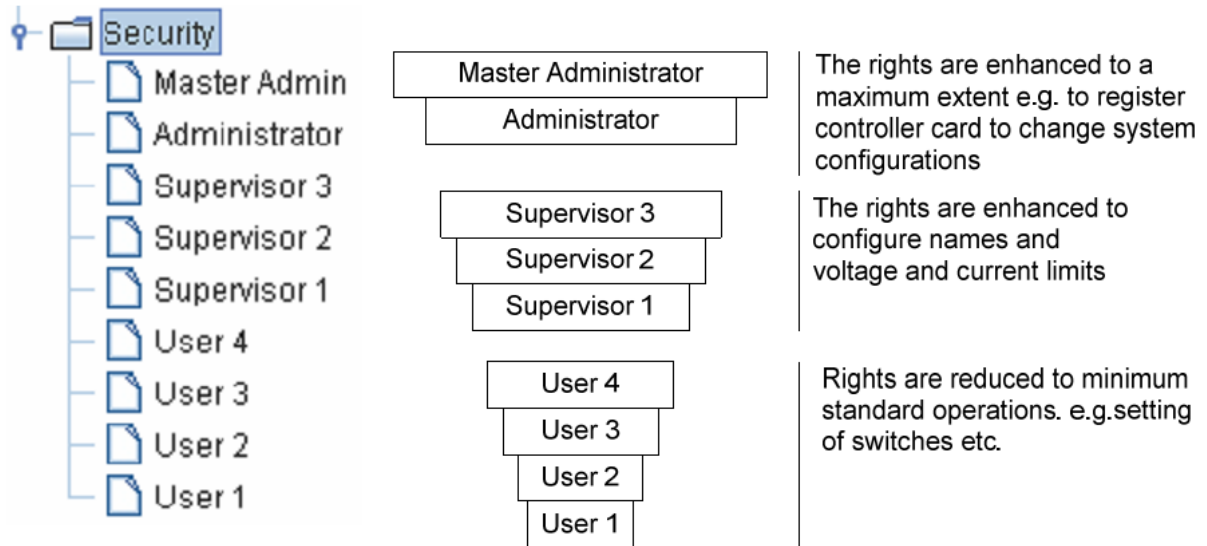*Fig 2-2 Functional Block Diagram of the Hiltron LNB Power Supply System*

3 Webinterface

3.1 Access to the System

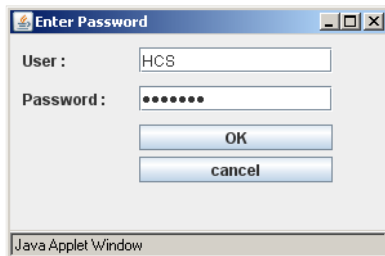To manage the controller via Web-interface there are three different user access settings:
- a "default" access mode
- a "no password" access mode
- a "user level" access mode

User Levels:

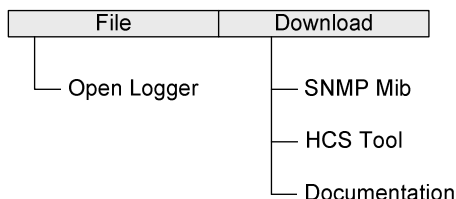The controller is configured in "default" access mode when it is delivered.

When you want to change a parameter first click on the button "Control" and you will be asked for a user name and a password, which are the same for all parameters and which you only have to enter once per open web interface. This protects the system against unauthorized parameter changes.
.

Enter the default setting for access

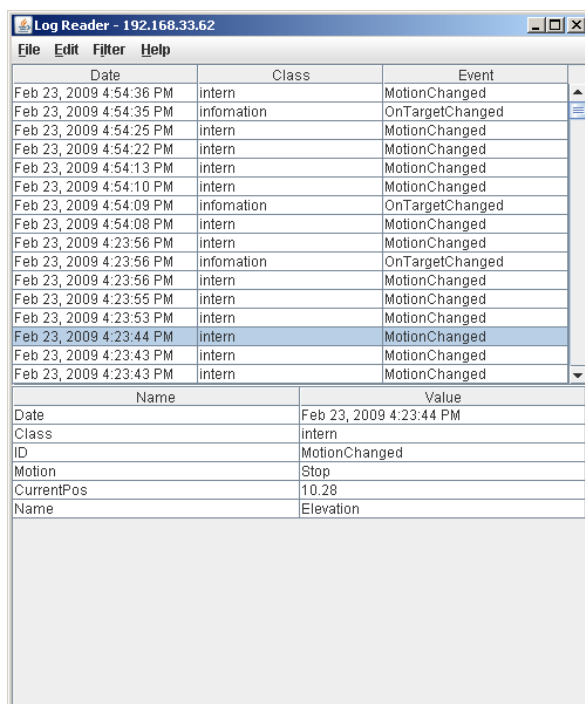User: **HCS**
Password: **hiltron**

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3.2 Menu

Fig. 2-1

The menu consists of 2 main items File and Download. The main menu is split in directories according Fig. 2-1

3.2.1 File / Open Logger

When in the menu "file" the directory "open Logger " is selected a table with all events with their classification and a time stamp is depicted. When a line is selected in the area below the table more details on the event are given.

In the table there are the menu items
- File
- Edit
- Filter (if a line is selected)
- Help

The menu item "File" with the option "Print" allow the printout of the Log-file. (all other options are not active and cannot be used)

The menu item "Edit" enables with the option "Refresh" an refresh of the contents of the list.
The menu item "Help" informs about the Version:

3.2.2 Download / SNMP Mib

When in the menu "Download" the directory "SNMP Mib " is selected in an internet explorer the SNMP Mib – File is shown and can be downloaded.

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3.2.3 Download / HCS Tool

Per default every HILTRON Control Unit is configured and delivered with following ad-dresses:

IP:	192.168.33.xxx
Network Mask:	255.255.255.0
Gateway:	192.168.33.2
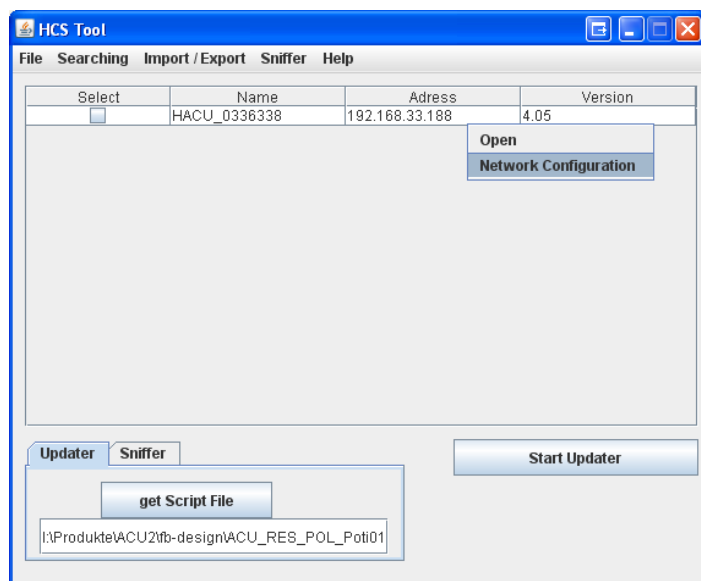
With the menu item **Download / HCS Tool** an extra tool is loaded which allows reconfiguring the IP address.
A table with all tin the network con-nected equipment with information on their IP addresses.

Clock in the table the equipment you want to config-ure and right click and selected "Network Configura-tion" an additional window is opened which allows setting the required addressed.
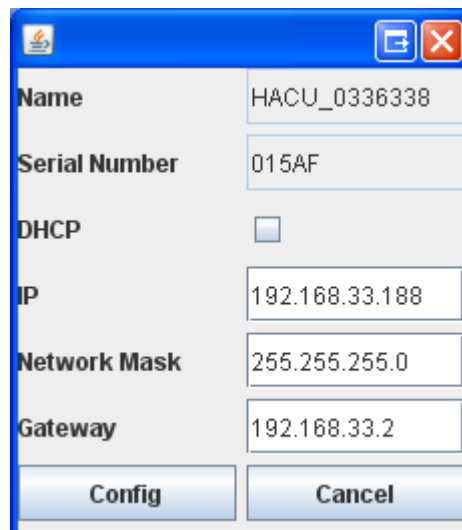
3.2.4 Download / Documentation

When in the menu "Download" the directory "Documentation " is selected the operator is guided to a collection of available documentation for this Device.

Date: 30.08.2012		Rev.: C

3.3 The Modules

After start of the web interface, a list of all operational modules is displayed. Each module is represented by a button containing important information for identification.
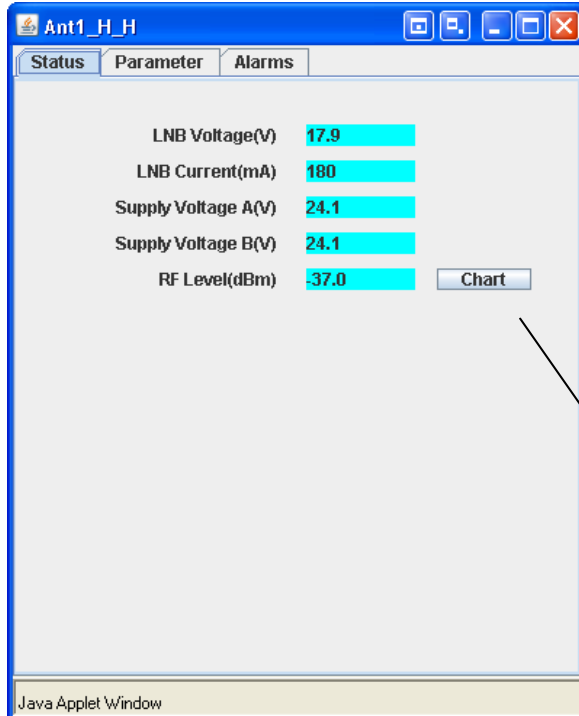

The first text line shows the unique name composed with the type information of the module.

The second line shows the link/functional name, which can bet set by the user (see below). This link name should be a unique name of the card which should be chosen according to the application.

The buttons are displayed in one of three colours: white, green or red. When the button is white no card is plugged into this slot. When the button is green the card is ready for use and has no alarms. When the button is red, an alarm occurred for this card. The alarms are explained later.

By clicking on a button, a new window opens with specific card information enabling the user to set and read parameters available for this card type.

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The status tab

The status tab comprises the basic module parameters like voltage, current and measured RF level. It is not possible to change any parameters in this tab.
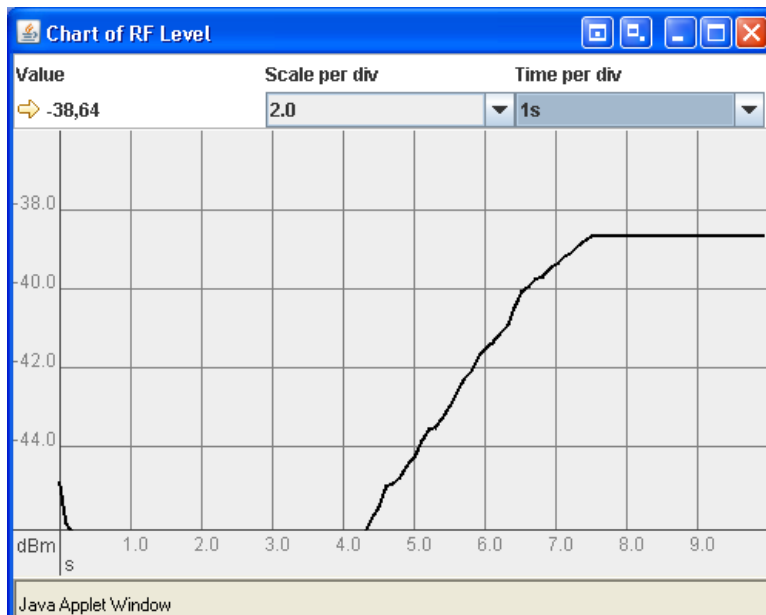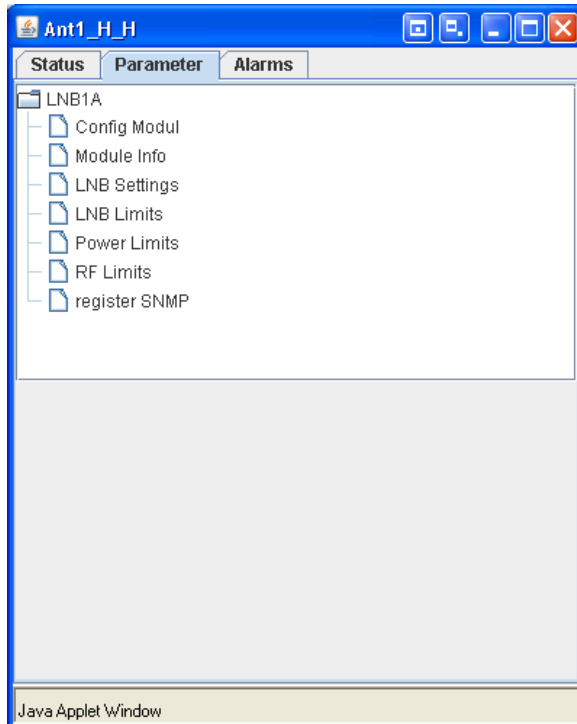
Chart

The button "Chart" opens the window "Chart of RF level". This chart is a useful tool to monitor the RF level vs. time.

The scale can be changed in the resolutions 0,5, 1, 2 and 5 dB per division

The time base can be selected and set in 1, 2, 5, 10, 20 and 50s per division.
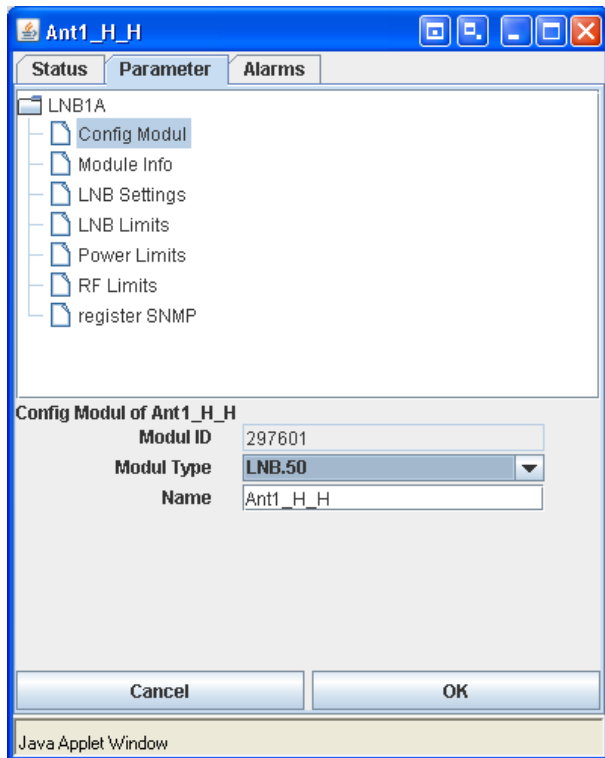
The parameter tab

In the parameter tab you can set and change the parameter values of the card. For this click on the respective nodes at the upper part of the window. All parameters are displayed, but some of them are read only. As an example all parameters under "Module Info" are read only, but the parameters under "Config Module" can be changed.

When you want to change a parameter first click on the button "Control". Then you will be asked for a password, which is the same for all parameters and which you only have to enter once per open web interface. This protects the system against unauthorized parameter changes. After authorization, click again on the button "Control", type in the new value and click the "OK" button to activate the changes. Whenever you change the configuration of a card, a restart of the Web interface is required.

Enter the default setting for access
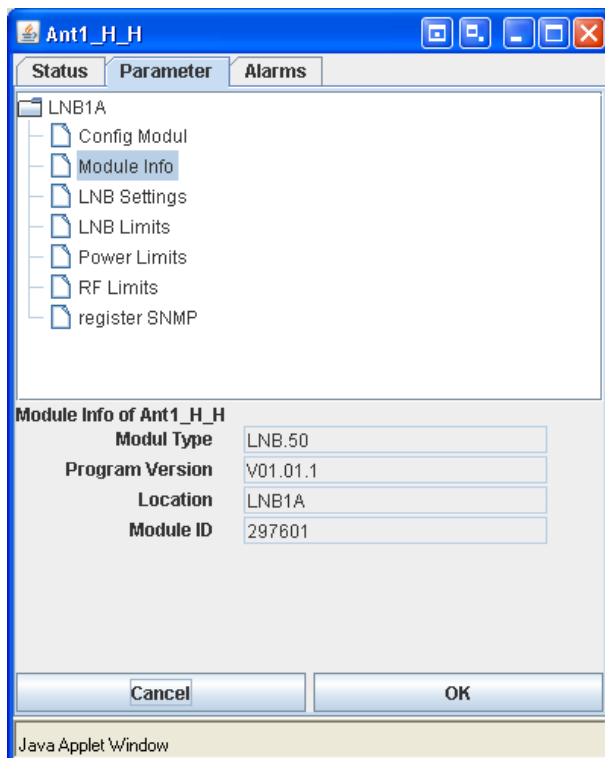
User: **HCS**
Password: **hiltron**

Parameter Group *Config Modul*

By clicking on the parameter group "Reconfigure Card" the parameters belonging to this group are presented on the window.

Modul ID:
This value is unique and cannot be changed.

Modul Type:
There are 2 settings LNB.50 and None

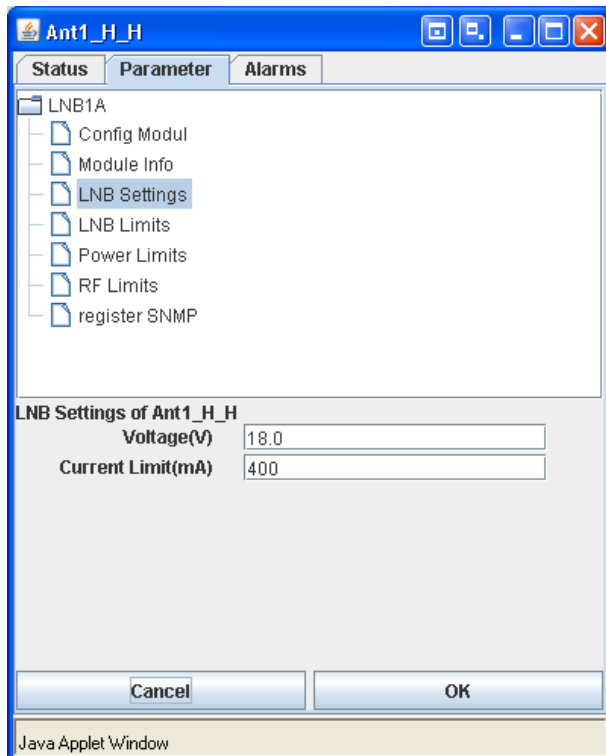Selecting LNB.50 will register the module in the system (group).

Name:
The link name can be set or changed.

Parameter Group *Modul Info*

By clicking on the parameter group "Module Info" the parameters belonging to this group are presented on the window.

Modul Type
Type of the card module

ProgramVersion
Version of the card specific software

Location
Unique name, cannot be changed.

CardID
Unique card module identification no.

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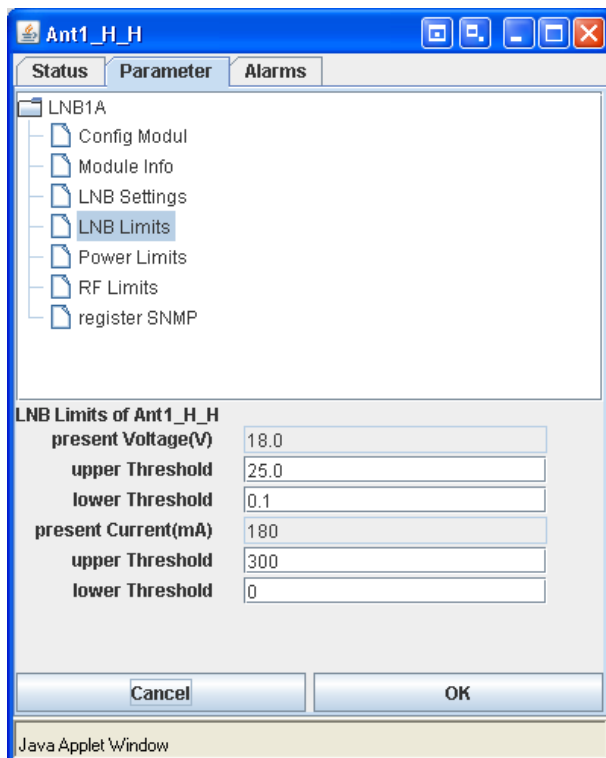L_DET_LNB.doc | Page 13 of 15

Parameter Group *LNB Settings*

By clicking on the parameter group "LNB Settings" the parameters belonging to this group become visible.

Voltage (V)
Allows to set the supply voltage of the LNB

Current Limit (mA)
Setting of max. permitted current.

Parameter Group *LNB Limits*

Present Voltage [V] (read only)
Present supply voltage for the LNB.

upper Threshold
Setting of the upper threshold of the supply voltage for the LNB.

lower Threshold
Setting of the lower threshold of the supply voltage of the LNB.
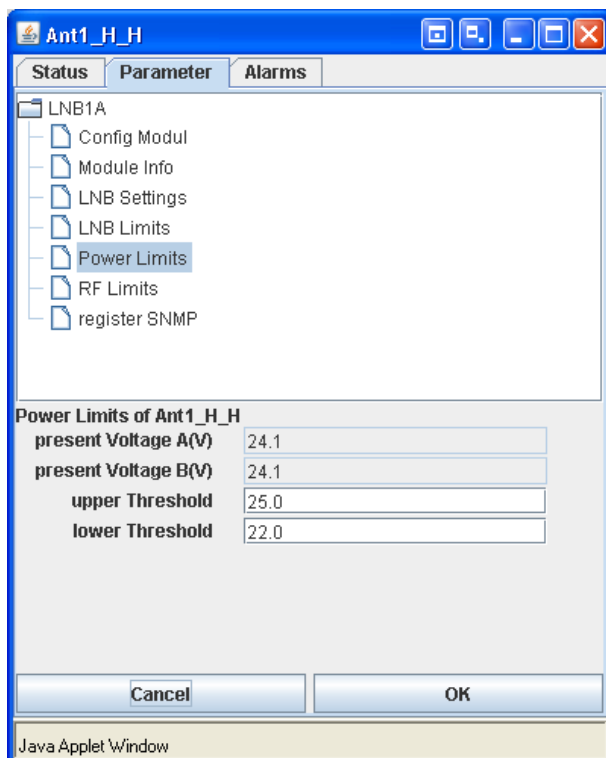
Present Current [mA] (read only)
Present supply current for the LNB.

upper Threshold
Setting of the upper threshold of the supply current for the LNB.

lower Threshold
Setting of the lower threshold of the supply current for the LNB.

Parameter Group **Power Limits**

By clicking on the parameter group "Power Limit" the parameters belonging to the power supply A and B (redundancy) becomes visible.

present Voltage A (V)
   The present value of the output voltage of the power supply A is indicated.
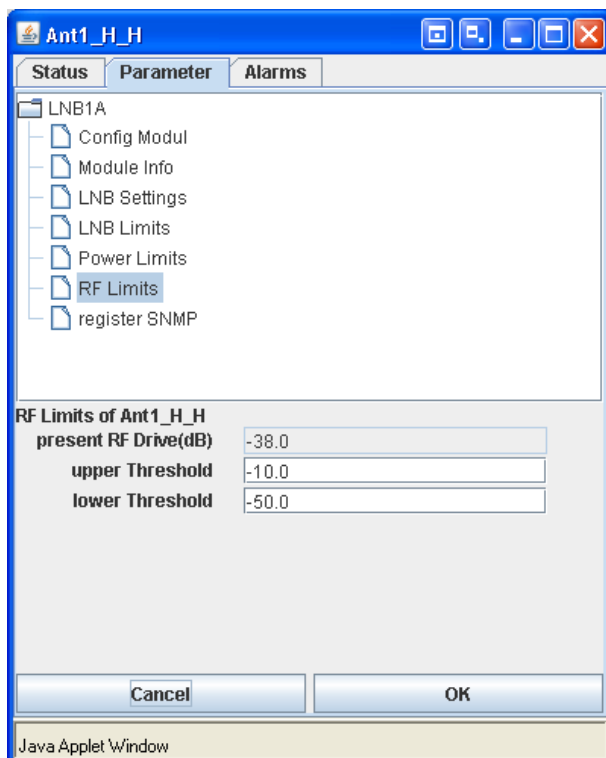
present Voltage B (V)
   The present value of the output voltage of the power supply B is indicated.

upper Threshold
   Setting of the upper threshold of both supply voltages A and B (alarm limit)

lower Threshold
   Setting of the lower threshold of both supply voltages A and B (alarm limit). limit)

Parameter Group **RF Limits**

By clicking on the parameter group "RF Limits" the parameters belonging to this group become visible.
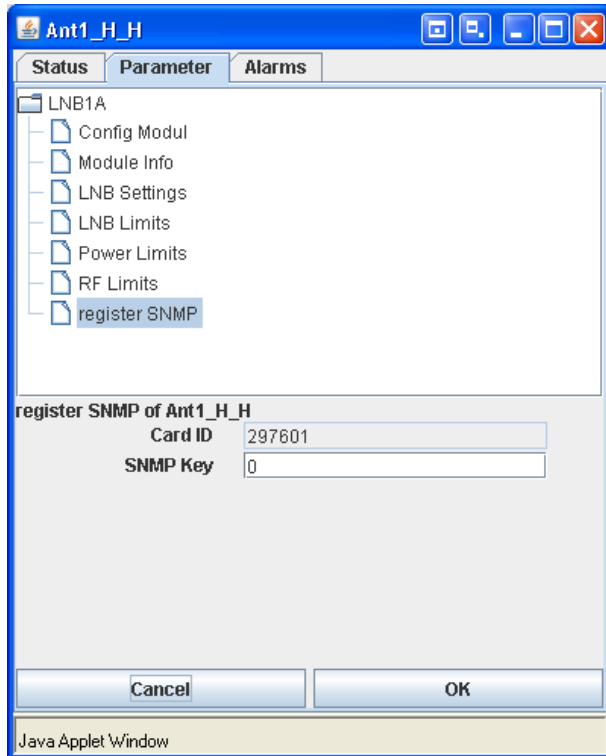
Present RF Drive [dBm]
   Present detected LNB RF output power.

upper Threshold
   Setting of the upper threshold of the RF power of the LNB (RF alarm limit)

lower Threshold
   Setting of the lower threshold of the RF power of the LNB (RF alarm limit)

Parameter Group **register SNMP**

By clicking on the parameter group "Register SNMP" the parameters belonging to this group are presented on the window.

Card ID
Unique card module identification no.

SNMP Key
This key is required to activate the SNMP operation mode.
This key is related to specific card ID.

In case of the customer orders the option for SNMP operation after the delivery of the LNB control unit, the card ID is required to generate the SNMP key. Setting the correct key and confirming with "OK" the SNMP option is enabled and permanently activated.
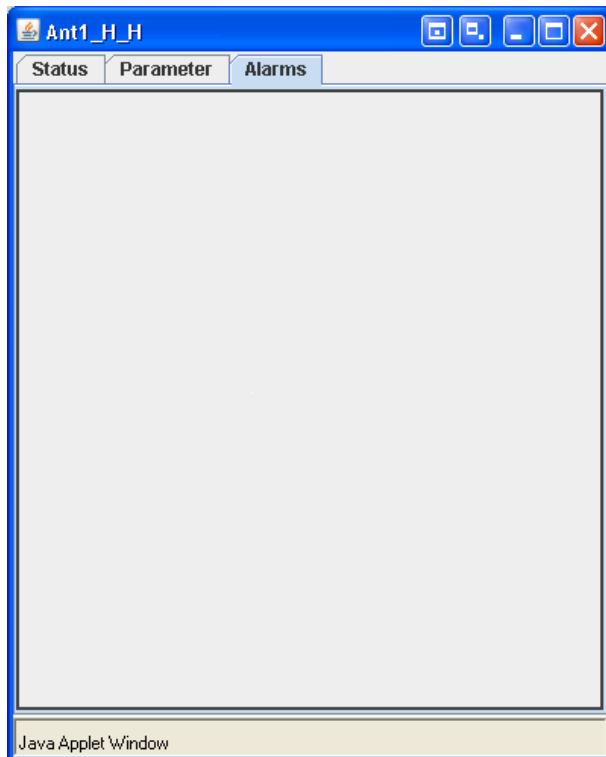
The Alarms tab

In the alarms tab the alarms of the card are displayed if any.
The format of an alarm message is as follows: alarm number, colon, name of the alarm. The alarm name enables the operator to determine whether it is only a wrong parameter setting or the card itself is corrupt.

Example in case of a malfunction