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Manual\_HCS4-LNB\_B\_en.docx

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**MANUAL**  
**for**  
**Monitoring & Control**  
**LNB Control Unit**  
**ComSys**  
**Based on HCS4**

Prepared by M.Hayer, H.Hayer

Date: 04.05.2018

Rev.: B

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## 1 Overview

### 1.1 Variants

The ComSys HCS4 Controller is available in 2 different form factors:

- 19" rack mountable 2 RU Unit with built in redundant power supply for wide range AC input and 16 slots for modules.
- DIN rail unit for cabinet installation, single or redundant 24V Power supply for 8 or 16 slot modules

Also the Applications can be different

- Supply Only without relationship of the Signals
- Redundancy with 1:1
- Redundancy with 2:1
- The Redundancies above with dual Band

## 2 Default Web-Interface

### 2.1 Prerequisites

This Hiltron device can be monitored and controlled via Web interface. The following section describes this interface in detail.

In order to use the Web interface, the following prerequisites must be met:

- A PC connected to the controller directly or via an IP network.
- A standard web browser installed on this PC

The Web interface is started by typing the correct IP address of the controller into the Web browser address field.

### 2.2 Setting up the IP Address

Per default every HILTRON Antenna Control Unit is configured and delivered with following addresses:

IP: 192.168.33.189  
Network Mask: 255.255.255.0  
Gateway: 192.168.33.2

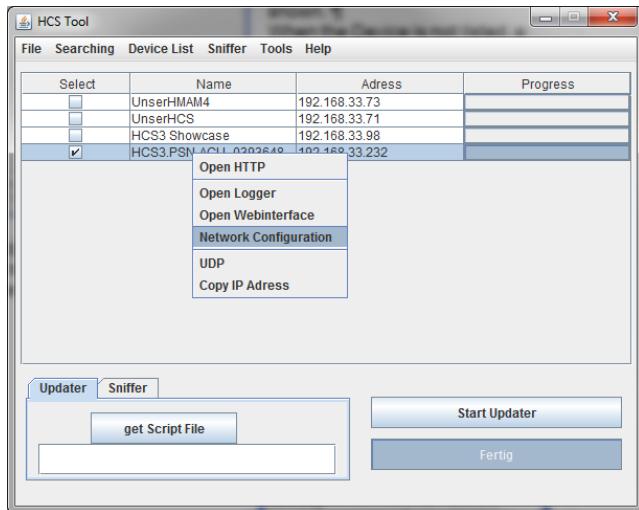
The last octet of the IP address can vary from .181 to .189.

To change the IP address please use the HCS Tool which can be downloaded from the device webinterface "Download" Menu.

The HCS Tool can also be downloaded from the internet at:  
<http://hiltron-files.de/download/hcstool.jar>.

## 2.2.1 HCS Tool for IP Setting

To search and configure the device please temporarily shutdown the firewall of the PC because the procedure uses broadcasts that can be blocked by firewalls.



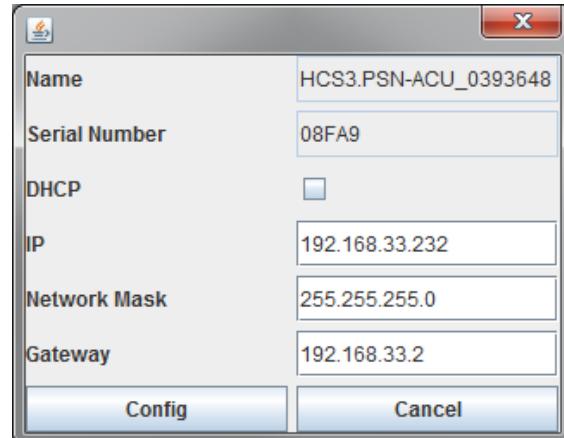
A table listing all equipment connected to the network showing their IP addresses.

If the device is not listed or can't be read out correctly, a special mode can be used.

In this mode other devices might be found:

For this procedure select "Searching" and click on "search for chip". After answering the question positively the device should be listed.

Select in the table the equipment, then click right and select "Network configuration" to show the current configuration. An additional window is opened which allows setting the required IP address.



## 2.3 Modular System Structure

The webinterface is based on a modular structure and is tailored to the technical requirements of the application.

Each module consists of an active button which is presenting the operational status of the related module.

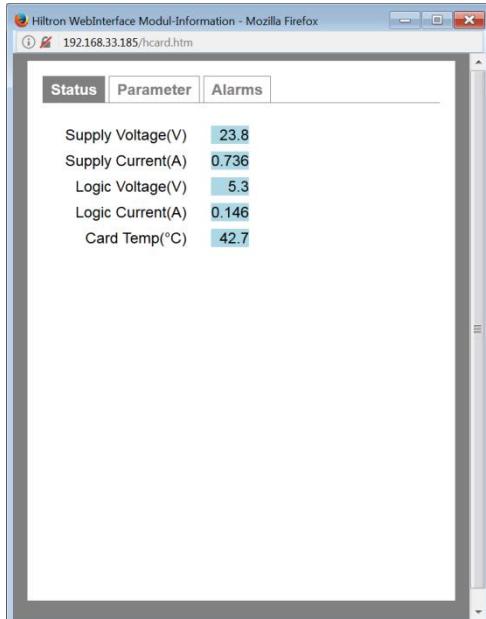


The button's name represents the function of the module. The name, however, can slightly differ between the applications even if the module has the same function.

After clicking on an active button (module), a new window with a Status-, Parameter- and an Alarm-tab is opening.

### 2.3.1 Status

The first tab is the Status-tab which presents the current value or status of a parameter.



Example:

The current value of a parameter with details on unit, e.g. °C

The current status of a parameter, e.g. OK, ON, OFF or fail.

More information can be found in the description of the module functions in the relevant chapters.

## 2.3.2 Parameter

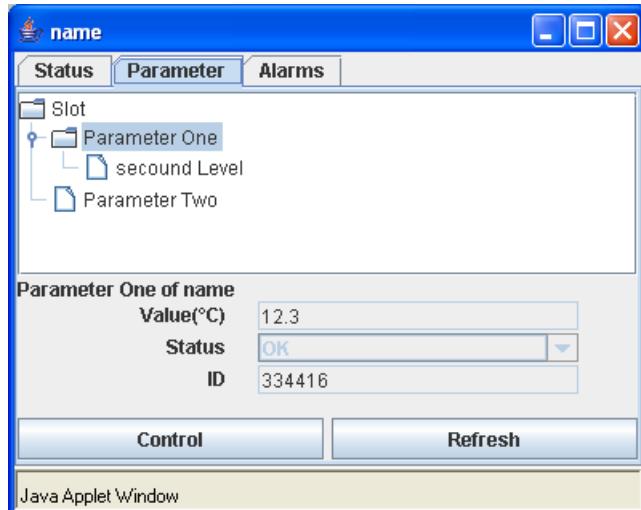
In the second tab all available parameters of the module are listed and are grouped according to their category. When the tab is opened only the categories are visible in the upper part of the window area.



The categories (e.g. Parameter One, Parameter Two ...) are presented in a tree structure. After clicking on a category the related parameters are presented.

More information can be found in the description of the module functions in the relevant chapters. Here you can find information regarding user access rights. (see chapter „Verification of Access Rights“).

### 2.3.2.1 Parameter - Reading



The parameter window consists of two parts.  
 The upper window (white) contains the parameter categories and listed sub parameters belonging to the category. The lower window part (grey) contains parameter detailed information (Value, status etc.)

Selecting a parameter category (e.g. "Parameter One") further sub parameters depending on the application will appear which are branched to the category (e.g. "Second Level").

If a parameter is selected the following details will be displayed in the lower window part:

- The first line presents the selected parameter.
- The lines below (see example) contain the parameters with their settings (value, status, read only values).

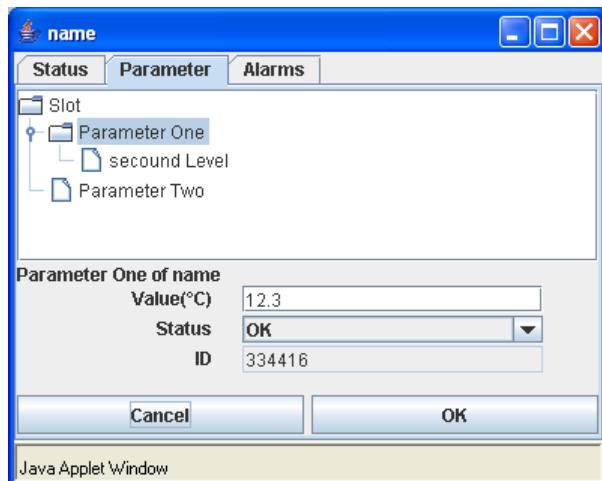
To recall or update the contents of a parameter setting a click on the "Refresh" button is recommended, because the parameter values are not recalled cyclically.

To enable any changes the operator has to click on the "Control" button. At this moment his user level with his access security rights will be checked. See chapter „Verification of Access Rights“.

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### 2.3.2.2 Parameter - Editing

After successful registration check the operator gains access to all writeable parameters according to his dedicated security level.



Example:

The operator can enter in the Value (°C) display a **floating point number**.

He can select a **status**:

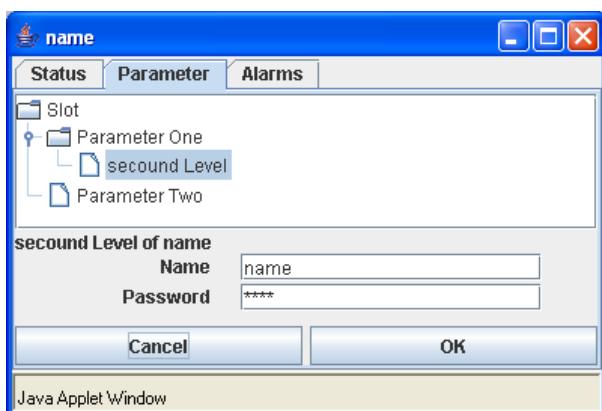


Some parameters (e.g. ID 334416) are **read only values** and cannot be changed by the operator.

To make any changes effective the "OK" button has to be clicked to confirm the entries. The new parameter setting is transferred and indicated.

### 2.3.2.3 Parameter –text input

Besides the parameter types "floating point number", "status" and "read only values" there are two further parameter types "text format" and "password"



Example:

Selecting e.g. the sub parameter "Second Level" the parameter **Name** and **Password** are indicated.

The parameter "Name" is a standard entry in text format.  
 However, the parameter "Password" is dedicated for a secured entry of a text of the parameter "Name".

### 2.3.3 Alarms

The third tab is the Alarm-tab which presents the current status of alarms.

The alarms – if any – are listed in the alarm window as long as they are present.

The alarm message consists of an alarm number and an alarm name which describes the alarm.

More details can be found in the relevant chapters of the description of modules.

Example:



No alarm



Alarm message with alarm number and name

## 2.4 Verification of Access Rights

There are three types for Log – on:

- „Standard“ Verification
- „User Level“ Verification
- „no Password“ Verification

When the operator wants to edit parameters or command the system via Web-interface he has to be logged on. The registration must be entered once per session.

The access rights are checked when the operator is changing parameters or commands the system by the Web-interface. According to the access level the operator is allowed to command or edit the system.

### 2.4.1 „Standard“ Verification

In this mode (default mode) the device is delivered.



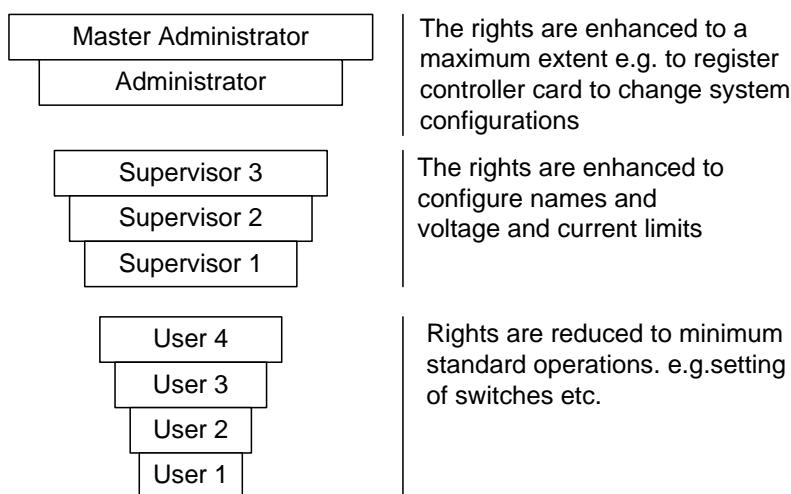
When “Standard” verification setting is active the operator has to enter the default setting

User: **HCS**  
 Password: **hilttron**

to enable change of any parameter. Or by clicking at the Overview GUI controls.

## 2.4.2 „User Level“ Verification

When “User Level” is selected the administrator can assign the user rights in three categories. The category “user” allows the user only operational activities, e.g. to configure a switch. The category “Supervisor” allows the user to edit current and voltage limits. The category “administrator” allows the operator high level work, e.g. to configure cards. The figure below show the hierarchical structure.



To initiate the „User Level“-mode the operator has to log-on in the “Standard” mode with the user name and password. In this case the operator possesses administrator rights. The level of the security group can now be selected and the user’s name and its password be entered.

To log-on and log-off to/from the system just reload the browser page.  
 All users with their password are registered in the module “System setting” and can be edited, choosing the parameter group “Security”

### What to do when the password for administrator has been lost?

In case the passwords are lost/forgotten or generally there is no access to manage the controller there is a possibility to generate with the help of the serial number “Device ID” a user with a password with administrator rights which is allowed to change even the “Master Administrator” password.

Please contact **Hilttron GmbH** and send the serial number („Device ID“).

In this emergency case the user name is the „Device ID“ and the password will be generated and sent by Hilttron.

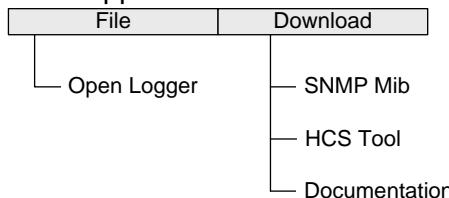
## 2.4.3 “No Password” Verification

When “no password” is selected there is no registration necessary. Everybody is allowed to change parameters without restrictions.

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## 2.5 Menu

In the upper area is a Menu.



The menu consists of 2 main items File and Download.

### 2.5.1 File / Open Logger

| Log Reader - 192.168.33.62 |                         |                 |
|----------------------------|-------------------------|-----------------|
| File                       | Edit                    | Filter Help     |
| Date                       | Class                   | Event           |
| Feb 23, 2009 4:54:36 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:54:35 PM    | information             | OnTargetChanged |
| Feb 23, 2009 4:54:25 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:54:22 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:54:13 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:54:10 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:54:09 PM    | information             | OnTargetChanged |
| Feb 23, 2009 4:54:08 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:23:56 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:23:56 PM    | information             | OnTargetChanged |
| Feb 23, 2009 4:23:56 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:23:55 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:23:53 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:23:44 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:23:43 PM    | intern                  | MotionChanged   |
| Feb 23, 2009 4:23:43 PM    | intern                  | MotionChanged   |
| <hr/>                      |                         |                 |
| Name                       | Value                   |                 |
| Date                       | Feb 23, 2009 4:23:44 PM |                 |
| Class                      | intern                  |                 |
| ID                         | MotionChanged           |                 |
| Motion                     | Stop                    |                 |
| CurrentPos                 | 10.28                   |                 |
| Name                       | Elevation               |                 |

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

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" allows 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" a refresh of the contents of the list. The menu item "Help" informs about the Version:

### 2.5.2 Download / SNMP Mib

Selecting "SNMP Mib" in the Download menu allows to download the complete Mib table..

### 2.5.3 HCS Tool

Additional to the configuration of the IP address the HCS Tool has some additional features.

#### Update

To send an update to a device use the "get Script File" and choose the Script file (mostly ended with .fb) that you received from Hilttron.

There are two possibilities to select a device for an update

If the device/s are listed, select the device/s you want to update.

If the devices are not listed you will be asked for an IP Address of the respective device.

After a click on "Start Update" the progress is shown in the line showing the device.

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In the right lower corner the progress of the device is shown and the current step, when this information is available.

#### **Sniffer**

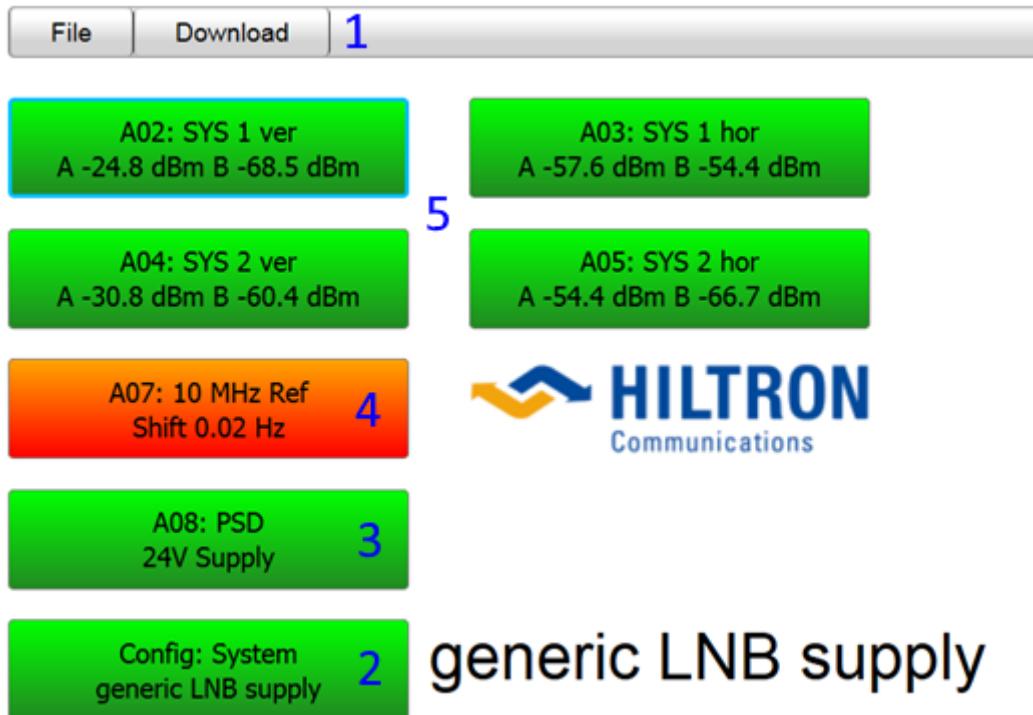
By selecting the “Sniffer” Tab the data and settings of all Hiltron devices can be saved in different formats. Select the devices you want to read out in the list and click on “Start Sniffer”. After defining an output file the HCS Tool reads all Values, Alarms and Parameter from the devices. After collecting the data the output is written to a file.

#### **2.5.4 Download / Documentation**

When in the menu “Download” the directory “Documentation“ is selected the operator is guided to a collection of available documentation.

### 3 HCS-LNB Web Interface

Simple LNB Supply without a Redundancy



#### 3.1.1 Functional Blocks:

The table below gives a short overview over the elements of the web interface, summarizes the items to be set, monitored and controlled and provides a reference to the chapter containing the detailed description.

| Item No. | Item         | Elements  |
|----------|--------------|---|
| 1        | Menu         | <ul style="list-style-type: none"> <li>• Open Logger</li> <li>• SNMP Mib-File</li> <li>• HCS Tool</li> <li>• Help (Documentation)</li> </ul>  |
| 2        | ConfigSystem | <ul style="list-style-type: none"> <li>• Equipment name setting</li> <li>• Access to parameters (Security).</li> <li>• SNMP parameter setting</li> <li>• Logging time base reference setting</li> </ul> |



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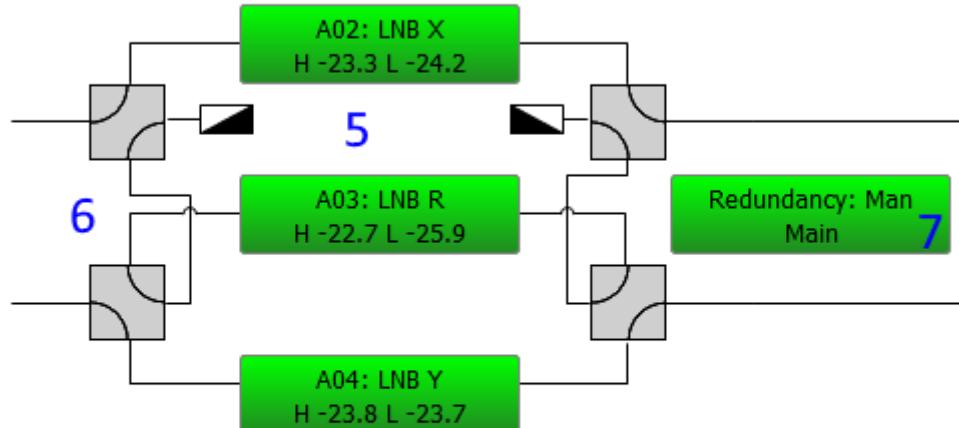
| Item No. | Item                                     | Elements  |
|----------|--|---|
| 3        | Power Supply (2 x for redundant systems) | <ul style="list-style-type: none"><li>• View the system Voltage and Current</li><li>• View the Temperature of the Module</li><li>• Configuration for additional system functions.</li></ul> |
| 4        | 10 MHz Reference oscillator              | <ul style="list-style-type: none"><li>• View the GPS data</li><li>• View the stability of the reference</li><li>• Configuration of the output levels and the synchronisation</li></ul>      |
| 5        | Supply / BIASTEE                         | <ul style="list-style-type: none"><li>• View the Voltage, Current and RF-Level</li><li>• Configure the thresholds</li></ul>   |

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## 4 HCS-LNB 1:1 Redundancy Web Interface

Simple LNB Supply with a 1:1 Redundancy



### 4.1.1 Functional Blocks:

The table below gives a short overview over the elements of the web interface, summarizes the items to be set, monitored and controlled and provides a reference to the chapter containing the detailed description.

| Item No. | Item         | Elements  |
|----------|--------------|---|
| 1        | Menu         | <ul style="list-style-type: none"> <li>• Open Logger</li> <li>• SNMP Mib-File</li> <li>• HCS Tool</li> <li>• Help (Documentation)</li> </ul>  |
| 2        | ConfigSystem | <ul style="list-style-type: none"> <li>• Equipment name setting</li> <li>• Access to parameters (Security).</li> <li>• SNMP parameter setting</li> <li>• Logging time base reference setting</li> </ul> |



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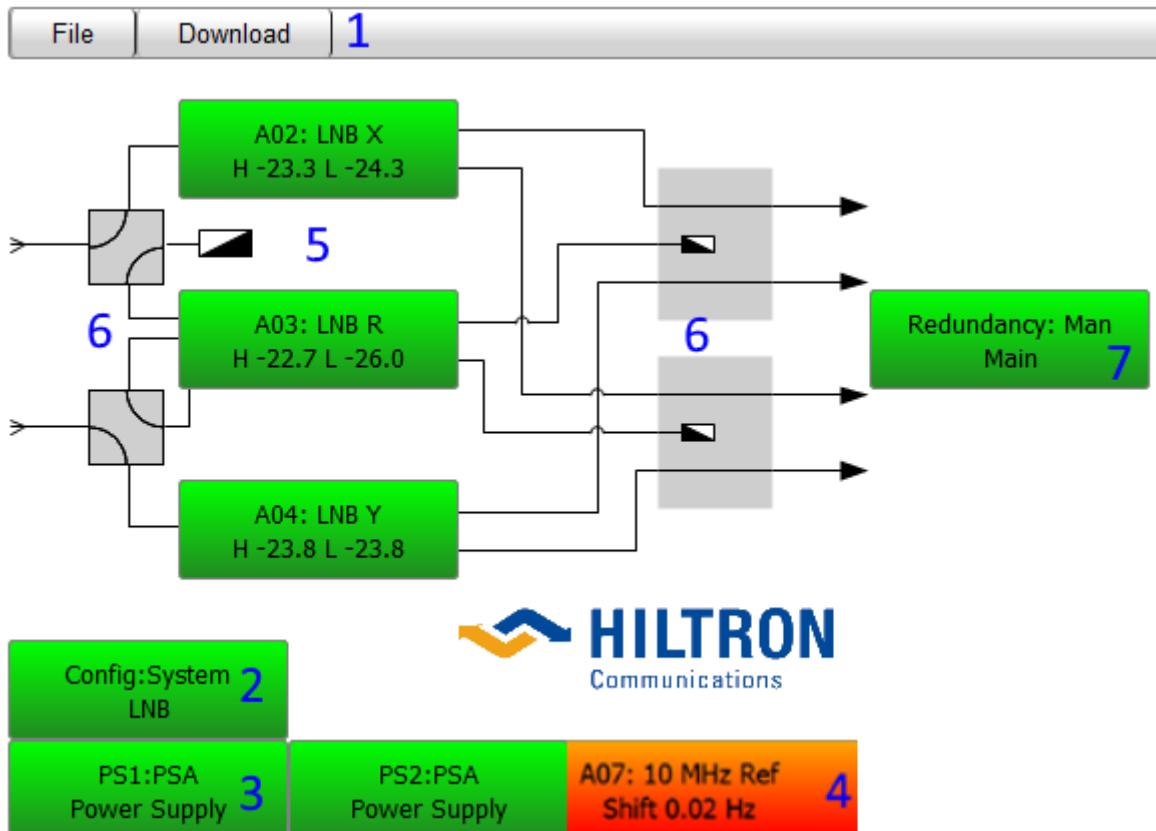
| Item No. | Item                                     | Elements  |
|----------|--|---|
| 3        | Power Supply (2 x for redundant systems) | <ul style="list-style-type: none"><li>• View the system Voltage and Current</li><li>• View the Temperature of the Module</li><li>• Configuration for additional system functions.</li></ul> |
| 4        | 10 MHz Reference oscillator              | <ul style="list-style-type: none"><li>• View the GPS data</li><li>• View the stability of the reference</li><li>• Configuration of the output levels and the synchronisation</li></ul>      |
| 5        | Supply / BIASTEE                         | <ul style="list-style-type: none"><li>• View the Voltage, Current and RF-Level</li><li>• Configure the thresholds</li></ul>   |
| 6        | Switches                                 | <ul style="list-style-type: none"><li>• Switching Positions</li></ul>   |
| 7        | Redundancy                               | <ul style="list-style-type: none"><li>• Selecting the active Device</li><li>• Configuration of the Redundancy</li></ul>   |

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## 5 HCS-LNB 2:1 Redundancy Web Interface

Dual Band LNB Supply with a 2:1 Redundancy



### 5.1.1 Functional Blocks:

The table below gives a short overview over the elements of the web interface, summarizes the items to be set, monitored and controlled and provides a reference to the chapter containing the detailed description.

| Item No. | Item         | Elements  |
|----------|--------------|---|
| 1        | Menu         | <ul style="list-style-type: none"> <li>• Open Logger</li> <li>• SNMP Mib-File</li> <li>• HCS Tool</li> <li>• Help (Documentation)</li> </ul>  |
| 2        | ConfigSystem | <ul style="list-style-type: none"> <li>• Equipment name setting</li> <li>• Access to parameters (Security).</li> <li>• SNMP parameter setting</li> <li>• Logging time base reference setting</li> </ul> |

| Item No. | Item                                     | Elements  |
|----------|--|---|
| 3        | Power Supply (2 x for redundant systems) | <ul style="list-style-type: none"> <li>• View the system Voltage and Current</li> <li>• View the Temperature of the Module</li> <li>• Configuration for additional system functions.</li> </ul> |
| 4        | 10 MHz Reference oscillator              | <ul style="list-style-type: none"> <li>• View the GPS data</li> <li>• View the stability of the reference</li> <li>• Configuration of the output levels and the synchronisation</li> </ul>      |
| 5        | Supply / BIASTEE                         | <ul style="list-style-type: none"> <li>• View the Voltage, Current and RF-Level</li> <li>• Configure the thresholds</li> </ul>  |
| 6        | Switches                                 | <ul style="list-style-type: none"> <li>• Switching Positions</li> </ul>   |
| 7        | Redundancy                               | <ul style="list-style-type: none"> <li>• Selecting the active Device</li> <li>• Configuration of the Redundancy</li> </ul>  |

## 6 Units

### 6.1 Module – HCS4.10M Reference source 10 MHz

A07: 10 MHz Ref  
 Shift 0.00 Hz

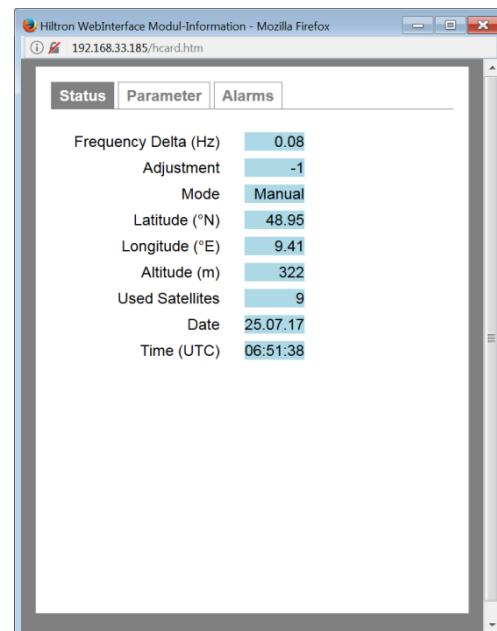
Opens the menu to monitor and control the reference oscillator.

The colour of the button informs about the status of the drive. (Green: OK, red: Alarm).

#### 6.1.1 Status

The Status TAB shows the current value of the reference module:

- **Frequency Delta** – the output frequency difference between the measured frequency and the selected reference.
- **Adjustment** – the value of the frequency adjustment. One step of the adjustment is approx.. 6e-10 -> 0.006Hz
- **Mode** - actual used mode (see parameters)
- **Latitude** – from GPS signal; Current location's Latitude
- **Longitude** - from GPS signal; Current location's Longitude
- **Altitude** - from GPS signal; Current location's altitude
- **Used Satellites** – count of the visible GPS satellites
- **Date / Time** – received timestamp from GPS (always UTC)

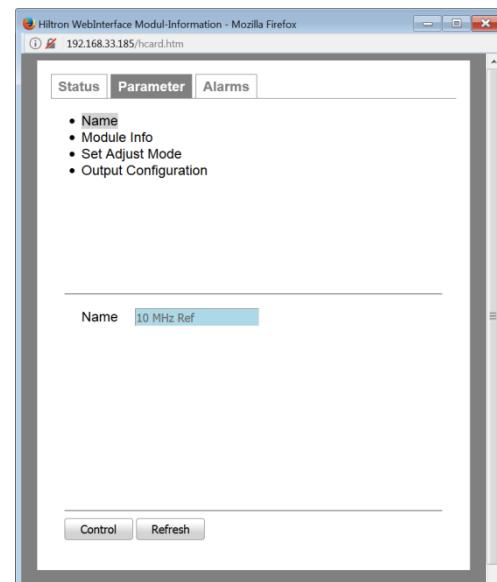


#### 6.1.2 Parameter / Alarms

On the Parameter TAB all important settings of the module are editable.

Within the upper area you can select a group of parameters, in the lower area the values of the parameters are shown.

By clicking on the **Control** Button, depending on the user level the editable field's show now with a grey background. After changing the value the **Save** Button activates the new parameter on the unit. See table below for detailed information about the parameters.



### 6.1.2.1 List of HCS4-10M Card Module Parameters

| Parameter            | Format        | Range  | UserLevel                          | Comment                                   |
|----------------------|---------------|--|------------------------------------|---|
| Name                 | Text          |  | 5                                  | Name of the Module                        |
| Module Info          |               |  |                                    |   |
| Firmware Version     | xx.xx         |  | R/O                                | Version of the core                       |
| Software Version     | xx.xx         |  | R/O                                | Version of the Application                |
| Card ID              | nnnnnn        |  | R/O                                | Hardware ID of the Module                 |
| Set Adjust Mode      |               |  |                                    |   |
| Frequency Delta      | n.nn          | +/- 1.00   | R/O                                | Same as on the Status                     |
| Mode                 | Selection Box |  | 5                                  |   |
|                      | Auto          | The frequency adjustment by comparing the reference will be done automatically in small steps.   |                                    |   |
|                      | Manual        | No automatic frequency adjust is selected  |                                    |   |
| Sync Source          | Selection Box |  | 5                                  |   |
|                      | None          | The oscillator works without synchronisation the Frequency delta is not valid  |                                    |   |
|                      | GPS           | The monitor / adjustment is based on the 1pps of the GPS   |                                    |   |
|                      | 5MHz          | The Module expects external 5MHz on the reference input. If no valid reference signal is present, the module works in free running mode  |                                    |   |
|                      | 10MHz         | The Module expects external 10MHz on the reference input. If no valid reference signal is present, the module works in free running mode |                                    |   |
| Adjustment           | +/-nn         | -2000 to +2000   | 3                                  | Manual adjustment of the frequency offset |
| Output Configuration |               |  |                                    |   |
| Output J2,J3,J4      | Selection Box |  | 5                                  | Level select for the SMA output           |
|                      | Disable       | The corresponding output is switched off   |                                    |   |
|                      | Low Level     | ~3dBm  | The Level is set to +3dBm +/-2 dB  |   |
|                      | High Level    | ~10dBm   | The Level is set to +10dBm +/-2 dB |   |
| Signal for Bus       | Selection Box |  | 5                                  | Mainly used for redundant systems         |
|                      | Disable       |  |                                    |   |
|                      | Enable        |  |                                    |   |

### 6.1.2.2 List of HCS4-10M Card Module Alarms

| Alarm # | Display                       | Comment  |
|---------|-------------------------------|--|
| 0       | GPS Timeout                   | No communication to internal GPS receiver                                  |
| 1       | GPS not valid                 | The GPS receiver can't find a valid satellite signal                       |
| 2       | Oscillator fail               | OCXO not ready   |
| 3       | Reference measurement invalid | The comparison between the signal and the synchronisation is not plausible |
| 4       | 10MHz missing                 | The synchronization module can't see 10MHz                                 |
| 15      | HCS Communication             | No communication with the module   |

## 6.2 Module – HCS4.DBT Double Bias Tee

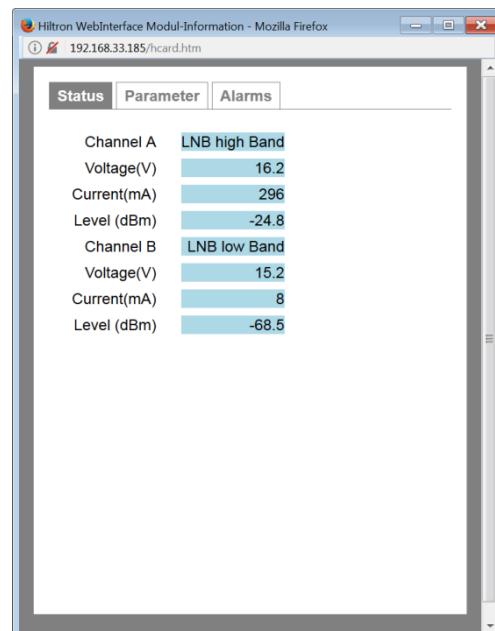
A02: SYS 1 ver  
A -24.8 dBm B -68.5 dBm

The button opens the menu for monitoring and control of the Bias Tee module.  
 The colour of the button informs about the status of the drive. (Green: OK, red: Alarm).

### 6.2.1 Status

The Status TAB shows the current value of the reference module:

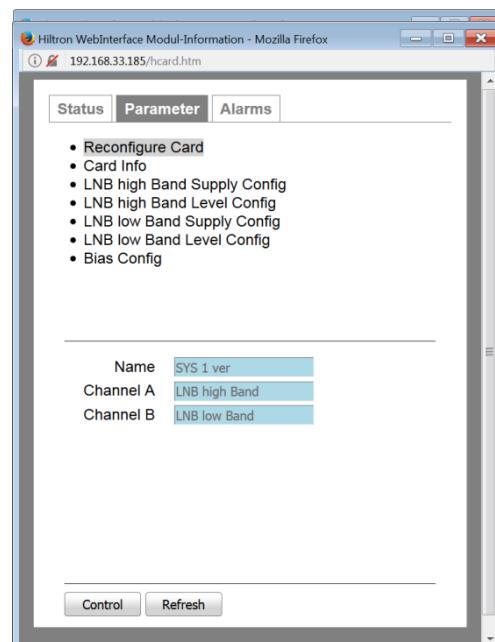
- **Channel A** – Signal name of the first channel
- **Voltage** – displays the current supply voltage of the LNB on the connector J1
- **Current** – display of the current consumption of the LNB, connected to the connector J1
- **Level** – shows the measured composite RF level (all carrier in the band) on the connector J1-J2
- **Channel B** – Signal Name of the second channel
- **Voltage** – displays the current supply voltage of the LNB
- **Current** – display of the current consumption of the LNB on the connector J3
- **Level** – displays the measured composite RF level (all carrier in the band) on connector J3-J4



### 6.2.2 Parameter / Alarms

At the Parameter TAB all editable items of the module are listed. In the top area you can select a group of parameters, in the bottom area values for single parameter characteristic are shown. By clicking the **Control** button, depending on the user level, editable fields are shown now with a grey background.

After changing the values the **Save** Button activates the new parameter on the unit. See table for detailed information about each parameter.



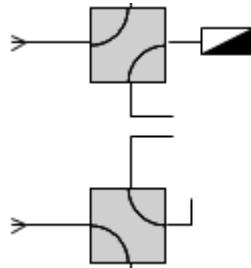
### 6.2.2.1 List of HCS4-DBT Card Module Parameters

| Parameter                     | Format   | Range           | UserLevel | Comment   |
|-------------------------------|----------|-----------------|-----------|---|
| <i>Name</i>                   |          |                 |           |   |
| Name                          | Text     |                 | 5         | Name of the Module  |
| Channel A                     | Text     |                 | 5         | Signal name for channel A   |
| Channel B                     | Text     |                 | 5         | Signal name for channel B   |
| <i>Module Info</i>            |          |                 |           |   |
| Firmware Version              | xx.xx    |                 | R/O       | Version of the core   |
| Software Version              | xx.xx    |                 | R/O       | Version of the Application  |
| Card ID                       | nnnnnn   |                 | R/O       | Hardware ID of the Module   |
| <i>&lt;&gt; Supply Config</i> |          |                 |           | <i>&lt;&gt;</i> is the Signal Name  |
| Present Voltage               | xx.x V   |                 | R/O       | Same as on the Status   |
| Target Voltage                | xx.x V   | 0 or<br>6 to 19 | 5         | Nominal voltage for supply  |
| Upper Threshold               | xx.x V   | 0 to 24         | 5         | If the voltage exceeds the threshold an error is indicated  |
| Lower Threshold               | xx.x V   | 0 to 24         | 5         |   |
| Present Current               | xxx mA   | 0 to 500        | R/O       | Same as on the Status   |
| Shortcut                      | xxx mA   | 0 to 600        | 5         | If the current exceeds the threshold, the output switches off. Every 10 seconds the module restarts the supply. |
| Upper Threshold               | xxx mA   | 0 to 500        | 5         | If the current exceeds the threshold, an error is indicated   |
| Lower Threshold               | xxx mA   | 0 to 500        | 5         |   |
| Present Current               | xxx mA   | 0 to 500        | R/O       | Same as on the Status   |
| <i>&lt;&gt; Level Config</i>  |          |                 |           | <i>&lt;&gt;</i> is the Signal Name  |
| Present Level                 | xx.x dBm |                 | R/O       | Same as on the Status   |
| Offset                        | xx.x dB  | + / - 50        | 5         | e.g for cable loss  |
| Upper Threshold               | xx.x dBm | -60 to 0        | 5         | If the level exceeds the set value, an error is indicated   |
| Lower Threshold               | xx.x dBm | -60 to 0        | 5         |   |

### 6.2.2.2 List of HCS4-DBT Card Module Alarms

| Alarm # | Display                | Comment   |
|---------|------------------------|---|
| 0       | <A>Voltage fail        | Voltage of Channel A not in range                 |
| 1       | <A> Current fail       | Current of Channel A not in range                 |
| 2       | <A> Shortcut           | Voltage source of channel A has detected shortcut |
| 3       | <A> Level out of range | the RF level on channel A is not in range         |
| 4       | <B>Voltage fail        | Voltage of Channel B not in range                 |
| 5       | <B> Current fail       | Current of Channel B not in range                 |
| 6       | <B> Shortcut           | Voltage source of channel B has detected shortcut |
| 7       | <B> Level out of range | the RF level on channel B is not in range         |
| 15      | HCS Communication      | No communication with the module                  |

## 6.3 Module – HCS4.SWI WG Switch



This Module can manage up to four Waveguide Switches. There are Applications with two or four Switches shown in the Unit.

### 6.3.1 Status

#### Switch 1 Name:

Position of the first Switch

#### Switch 1 Name Mode:

Automatic or Manual Mode of the first Switch.

In case of Redundancy always Auto

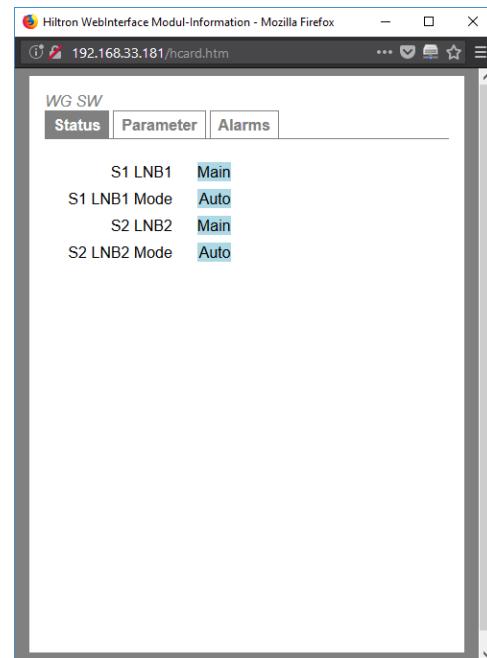
#### Switch <N> Name:

Position of the N Switch

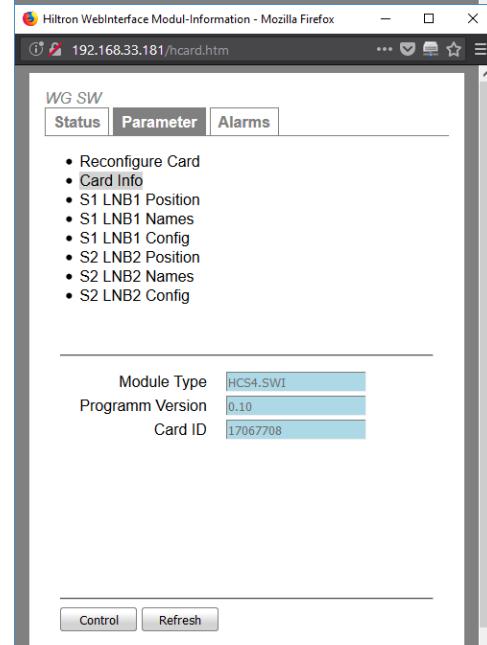
#### Switch <N> Name Mode:

Automatic or Manual Mode of the <N> Switch.

In case of Redundancy always Auto



|              | Status | Mode |
|--------------|--------|------|
| S1 LNB1      | Main   |      |
| S1 LNB1 Mode | Auto   |      |
| S2 LNB2      | Main   |      |
| S2 LNB2 Mode | Auto   |      |



|                  |  |
|------------------|--|
| Reconfigure Card |  |
| Card Info        |  |
| S1 LNB1 Position |  |
| S1 LNB1 Names    |  |
| S1 LNB1 Config   |  |
| S2 LNB2 Position |  |
| S2 LNB2 Names    |  |
| S2 LNB2 Config   |  |

---

|                  |          |
|------------------|----------|
| Module Type      | HCS4.SWI |
| Programm Version | 0.10     |
| Card ID          | 17067708 |

---

### 6.3.2 Parameter / Alarms

In the Parameter TAB all important settings are editable. In the upper area you can select a group of parameters, in the lower area the editable settings and their actual values are shown. By clicking the  Button, depending on the user level, editable fields are displayed with a grey background.

After changing the values the  Button activates the new parameter on the unit. See the table below showing all parameters.

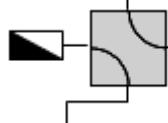
### 6.3.2.1 List of HCS4-SWI Card Module Parameters

| Parameter              | Format | Range               | UserLevel | Comment   |
|------------------------|--------|---------------------|-----------|---|
| Name                   |        |                     |           |   |
| Name                   | Text   |                     | 5         | Name of the Module  |
| Module Info            |        |                     |           |   |
| Firmware Version       | xx.xx  |                     | R/O       | Version of the core   |
| Software Version       | xx.xx  |                     | R/O       | Version of the Application  |
| Card ID                | nnnnnn |                     | R/O       | Hardware ID of the Module   |
| Switch <N><br>Position |        |                     |           | Manual Switching  |
| Command                |        | Pos A /<br>Pos B    | 1         | Only taken with not part of<br>a Redundancy                                     |
| Switch <N><br>Names    |        |                     |           | Names for every Switch  |
| Switch Name            | Text   |                     | 8         | Name of the Switch  |
| Pos A                  | Text   |                     | 8         | Name of the First Position  |
| Pos B                  | Text   |                     | 8         | Name of the Second<br>Position  |
| Switch <N><br>Config   |        |                     |           |   |
| Switch Inversity       |        | Normal /<br>reverse | 8         | When the Signal and the<br>Hardware is not the Same<br>this can be swapped here |

### 6.3.2.2 List of HCS4-SWI Card Module Alarms

| Alarm # | Display           | Comment                          |
|---------|-------------------|----------------------------------|
| 15      | HCS Communication | No communication with the module |

## 6.4 Module – HCS4.LST L-Band Transfer Switch



The LST Module is a transfer-switch that is mainly used as a Redundancy Switch of the L-Band Signal behind the Bias Tee.

### 6.4.1 Status

**Position:**

Position of the Switch

**Mode:**

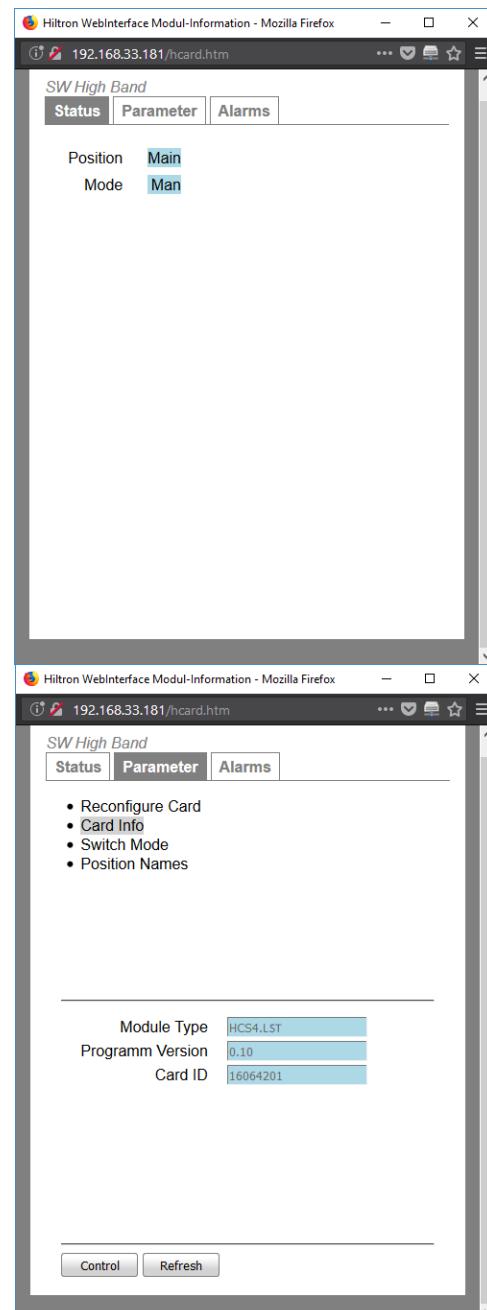
Automatic or Manual Mode of the Switch.

In case of Redundancy always Auto

### 6.4.2 Parameter / Alarms

In the Parameter TAB all important settings are editable. In the upper area you can select a group of parameters, in the lower area the editable settings and their actual values are shown. By clicking the **Control** Button, depending on the user level, editable fields are displayed with a grey background.

After changing the values the **Save** Button activates the new parameter on the unit. See the table below showing all parameters.



| Module Type      | HCS4.LST |
|------------------|----------|
| Programm Version | 0.10     |
| Card ID          | 16064201 |

#### 6.4.2.1 List of HCS4-LST Card Module Parameters

| Parameter        | Format | Range            | UserLevel | Comment                                     |
|------------------|--------|------------------|-----------|---|
| Name             |        |                  |           |   |
| Name             | Text   |                  | 5         | Name of the Module                          |
| Module Info      |        |                  |           |   |
| Firmware Version | xx.xx  |                  | R/O       | Version of the core                         |
| Software Version | xx.xx  |                  | R/O       | Version of the Application                  |
| Card ID          | nnnnnn |                  | R/O       | Hardware ID of the Module                   |
| Switch Mode      |        |                  |           | Manual Switching                            |
| Command          |        | Pos A /<br>Pos B | 1         | Only taken with not part of<br>a Redundancy |
| Position Names   |        |                  |           | Names for Switch Position                   |
| Pos A            | Text   |                  | 8         | Name of the First Position                  |
| Pos B            | Text   |                  | 8         | Name of the Second<br>Position              |

#### 6.4.2.2 List of HCS4-LST Card Module Alarms

| Alarm # | Display           | Comment  |
|---------|-------------------|--|
| 0       | Signal A          | Alarm when the Signal on the first Input are faultily  |
| 1       | Signal B          | Alarm when the Signal on the second Input are faultily |
| 15      | HCS Communication | No communication with the module                       |

## 6.5 Module – HCS4.L21 L-Band 2 to 1 Redundancy Switch Switch



The L21 Module is a redundancy switch for L-Band.

### 6.5.1 Status

#### Position:

Position of the Red Switch: Main, Pos A or Pos B

#### Mode:

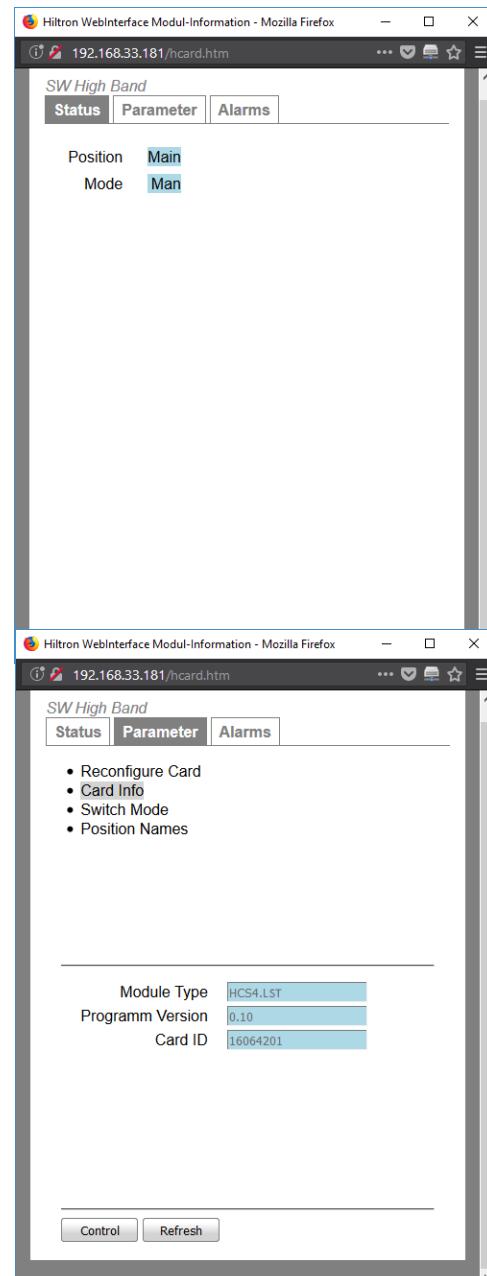
Automatic or Manual Mode of the Switch.

In case of Redundancy always Auto

### 6.5.2 Parameter / Alarms

In the Parameter TAB all important settings are editable. In the upper area you can select a group of parameters, in the lower area the editable settings and their actual values are shown. By clicking the  Button, depending on the user level, editable fields are displayed with a grey background.

After changing the values the  Button activates the new parameter on the unit. See the table below showing all parameters.



**Status Tab (Top Screenshot):**

|          |      |
|----------|------|
| Position | Main |
| Mode     | Man  |

**Parameter Tab (Bottom Screenshot):**

- Reconfigure Card
- Card Info
- Switch Mode
- Position Names

|                  |          |
|------------------|----------|
| Module Type      | HCS4.LST |
| Programm Version | 0.10     |
| Card ID          | 16064201 |

#### 6.5.2.1 List of HCS4-L21 Card Module Parameters

| Parameter        | Format | Range                      | UserLevel | Comment                                     |
|------------------|--------|----------------------------|-----------|---|
| Name             |        |                            |           |   |
| Name             | Text   |                            | 5         | Name of the Module                          |
| Module Info      |        |                            |           |   |
| Firmware Version | xx.xx  |                            | R/O       | Version of the core                         |
| Software Version | xx.xx  |                            | R/O       | Version of the Application                  |
| Card ID          | nnnnnn |                            | R/O       | Hardware ID of the Module                   |
| Switch Mode      |        |                            |           | Manual Switching                            |
| Command          |        | Main /<br>Pos A /<br>Pos B | 1         | Only taken with not part of<br>a Redundancy |
| Position Names   |        |                            |           | Names for Switch Position                   |
| Pos A            | Text   |                            | 8         | Name of the First Position                  |
| Pos B            | Text   |                            | 8         | Name of the Second<br>Position              |

#### 6.5.2.2 List of HCS4-L21 Card Module Alarms

| Alarm # | Display           | Comment  |
|---------|-------------------|--|
| 0       | Signal A          | Alarm when the Signal on the first Input are faultily  |
| 1       | Signal B          | Alarm when the Signal on the second Input are faultily |
| 15      | HCS Communication | No communication with the module                       |



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|                  |  |         |
|------------------|--|---------|
| Date: 04.05.2018 |  | Rev.: B |
|                  |  |         |

## 6.6 Module – HCS4.PSD Power Supply

A08: PSD  
24V Supply

This module is used to supply 24VDC, mainly used for the cabinet version.  
 For redundant Systems 2 of this modules will be used.

### 6.6.1 Status

**Supply Voltage [V]:**

Input voltage for the HCS4-PSD supplied by external power supply. Nominal 24 V.

**Supply Current [A]:**

present current load of the supply voltage.

**Logic Voltage [V]:**

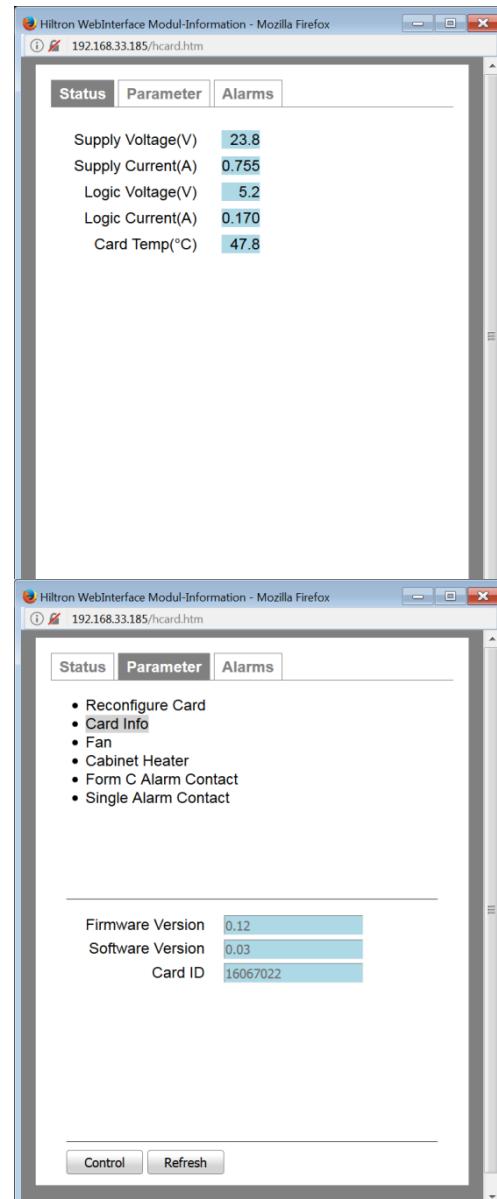
Internal voltage for the HCS4. Nominal 5 V.

**Logic Current [A]:**

present current load of the logic voltage.

**Card Temperature [°C]:**

The measured temperature of the PSD Card



The figure consists of two side-by-side screenshots of a web-based interface for a module. Both screenshots show a header bar with tabs for 'Status', 'Parameter', and 'Alarms'. The left screenshot shows the 'Status' tab selected, displaying real-time values for Supply Voltage (23.8), Supply Current (0.755), Logic Voltage (5.2), Logic Current (0.170), and Card Temperature (47.8). The right screenshot shows the 'Parameter' tab selected, displaying a list of parameters that can be configured, including 'Reconfigure Card', 'Card Info', 'Fan', 'Cabinet Heater', 'Form C Alarm Contact', and 'Single Alarm Contact'. Below this list, there are fields for Firmware Version (0.12), Software Version (0.03), and Card ID (16067022). At the bottom of the right screenshot, there are 'Control' and 'Refresh' buttons.

### 6.6.2 Parameter / Alarms

In the Parameter TAB all important settings are editable. In the upper area you can select a group of parameters, in the lower area the editable settings and their actual values are shown. By clicking the **Control** Button, depending on the user level, editable fields are displayed with a grey background.

After changing the values the **Save** Button activates the new parameter on the unit. See the table below showing all parameters.

#### 6.6.2.1 List of HCS4-PSD Card Module Parameters

| Parameter             | Format        | Range                              | UserLevel | Comment  |
|-----------------------|---------------|------------------------------------|-----------|--|
| Name                  |               |                                    |           |  |
| Name                  | Text          |                                    | 5         | Name of the Module   |
| Module Info           |               |                                    |           |  |
| Firmware Version      | xx.xx         |                                    | R/O       | Version of the core  |
| Software Version      | xx.xx         |                                    | R/O       | Version of the Application   |
| Card ID               | nnnnnn        |                                    | R/O       | Hardware ID of the Module  |
| <i>Fan</i>            |               |                                    |           | Internal fan control   |
| Current Temp          | xx.x °C       |                                    | R/O       | Same as on the Status  |
| Current Speed         | Text          | Off, slow,<br>normal,<br>fast, max | R/O       | Current fan speed  |
| <n> Temp Threshold    | xx.x °C       | 20 to 60                           | 5         | If the temperature rises above the threshold the fan speed, shown in the next row, is selected |
| <n> Fan Speed         |               | Off .. max                         | 5         |  |
| Cabinet Heater        |               |                                    |           | Power to optional heater   |
| Current Temp          | xx.x °C       |                                    | R/O       | Same as on the Status  |
| Temp Threshold        | xx.x °C       | 0 to 10                            | 5         | If the temperature falls below the threshold the cabinet heater is switched on.                |
| Heating Time          | Xxx s         | 0..500                             | 5         | Additional heating time  |
| <i>Form C Contact</i> |               |                                    |           | Additional Alarm input   |
| Alarm Name            | Text          |                                    | 5         | Display if active  |
| Configuration         | Selection box |                                    | 5         | Inactive, Form C, inverse  |
| Pin x                 | Info          |                                    | R/O       | Inactive, active   |
| <i>Single Contact</i> |               |                                    |           | Additional Alarm input   |
| Alarm Name            | Text          |                                    | 5         | Display if active  |
| Configuration         | Selection box |                                    | 5         | Inactive, NC,NO  |
| Pin 2                 | Selection box |                                    | R/O       | Inactive, active   |

#### 6.6.2.2 List of HCS4-PSD Card Module Alarms

| Alarm # | Display            | Comment                                    |
|---------|--------------------|--|
| 0       | Low Input Voltage  | The DC Input Voltage is lower than 20V     |
| 1       | High Input Voltage | The DC Input Voltage is higher than 26V    |
| 2       | Low Logic Voltage  | The Logic Voltage is lower than 4.6V       |
| 3       | High Logic Voltage | The Logic Voltage is higher than 5.5V      |
| 4       | Low Current        | No supply current is detected              |
| 5       | High Current       | The input Current is higher than 4A        |
| 6       | Low Temp           | The module temperature is lower than 0°C   |
| 7       | High Temp          | The Module temperature is higher than 85°C |
| 8       | Emergency Stop     | Message, if in use                         |
| 9       | <Form C Alarm>     | Additional Alarm (from Pin 3-4)            |
| 10      | <Single Alarm>     | Additional Alarm (from Pin 2)              |
| 15      | HCS Communication  | No communication with the module           |

## 6.7 Module – HCS4.PSA Power Supply



This module is used to supply 24VDC to the DIN Rail. The input of this Module is AC Power. For redundant Systems 2 of this modules will be used.

### 6.7.1 Status

#### Supply Voltage [V]:

Input voltage for the HCS4-PSA supplied by internal power supply. Nominal 24 V.

#### Supply Current [A]:

present current load of the supply voltage.

#### Logic Voltage [V]:

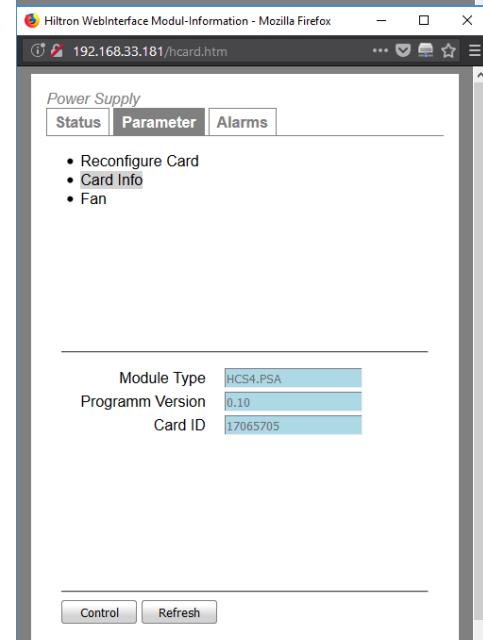
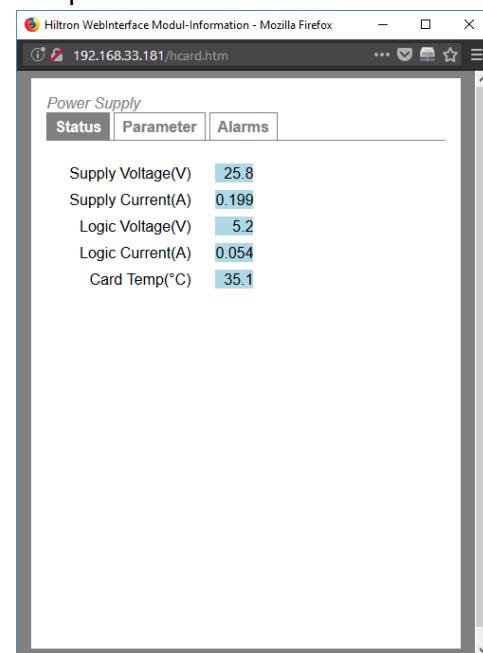
Internal voltage for the HCS4. Nominal 5 V.

#### Logic Current [A]:

present current load of the logic voltage.

#### Card Temperature [°C]:

The measured temperature of the PSA Card



### 6.7.2 Parameter / Alarms

In the Parameter TAB all important settings are editable. In the upper area you can select a group of parameters, in the lower area the editable settings and their actual values are shown. By clicking the **Control** Button, depending on the user level, editable fields are displayed with a grey background.

After changing the values the **Save** Button activates the new parameter on the unit. See the table below showing all parameters.

#### 6.7.2.1 List of HCS4-PSA Card Module Parameters

| Parameter          | Format  | Range                        | UserLevel | Comment  |
|--------------------|---------|------------------------------|-----------|--|
| Name               |         |                              |           |  |
| Name               | Text    |                              | 5         | Name of the Module   |
| Module Info        |         |                              |           |  |
| Firmware Version   | xx.xx   |                              | R/O       | Version of the core  |
| Software Version   | xx.xx   |                              | R/O       | Version of the Application   |
| Card ID            | nnnnnn  |                              | R/O       | Hardware ID of the Module  |
| Fan                |         |                              |           | Internal fan control   |
| Current Temp       | xx.x °C |                              | R/O       | Same as on the Status  |
| Current Speed      | Text    | Off, slow, normal, fast, max | R/O       | Current fan speed  |
| <n> Temp Threshold | xx.x °C | 20 to 60                     | 5         | If the temperature rises above the threshold the fan speed, shown in the next row, is selected |
| <n> Fan Speed      |         | Off .. max                   | 5         |  |

#### 6.7.2.2 List of HCS4-PSA Card Module Alarms

| Alarm # | Display            | Comment                                    |
|---------|--------------------|--|
| 0       | Low Input Voltage  | The DC Input Voltage is lower than 20V     |
| 1       | High Input Voltage | The DC Input Voltage is higher than 26V    |
| 2       | Low Logic Voltage  | The Logic Voltage is lower than 4.6V       |
| 3       | High Logic Voltage | The Logic Voltage is higher than 5.5V      |
| 4       | Low Current        | No supply current is detected              |
| 5       | High Current       | The input Current is higher than 4A        |
| 6       | Low Temp           | The module temperature is lower than 0°C   |
| 7       | High Temp          | The Module temperature is higher than 85°C |
| 15      | HCS Communication  | No communication with the module           |

## 6.8 Module – Redundancy

Software Module that manages one Redundancy.

### 6.8.1 Status

**Position:**

Position of the Redundancy: Main, Pos A or Pos <N>

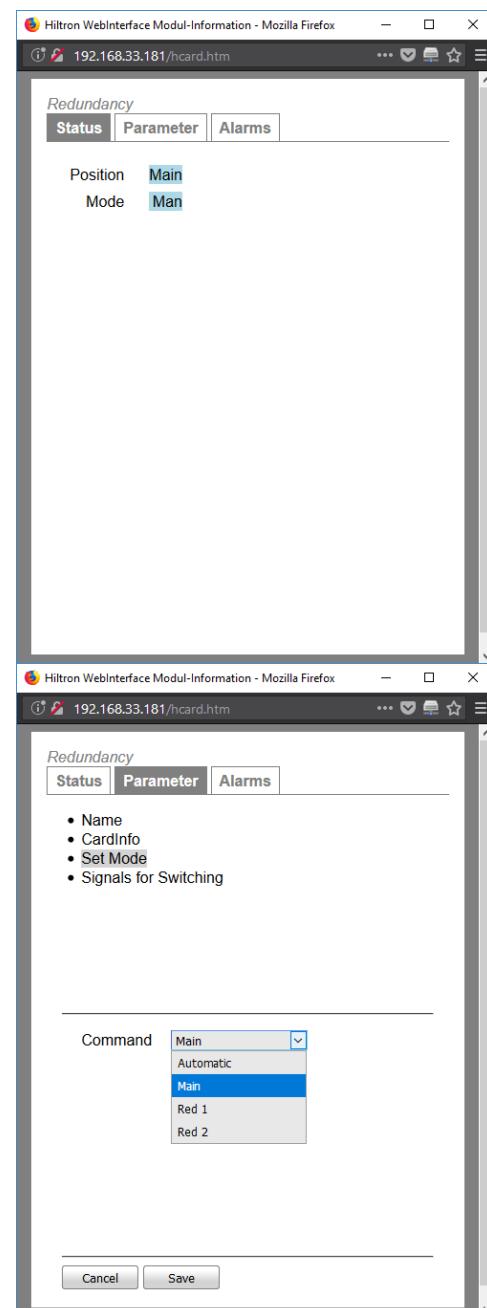
**Mode:**

Automatic or Manual Mode of the Redundancy.

### 6.8.2 Parameter / Alarms

In the Parameter TAB all important settings are editable. In the upper area you can select a group of parameters, in the lower area the editable settings and their actual values are shown. By clicking the **Control** Button, depending on the user level, editable fields are displayed with a grey background.

After changing the values the **Save** Button activates the new parameter on the unit. See the table below showing all parameters.





#### 6.8.2.1 List of Module Parameters

| Parameter                | Format | Range                                     | UserLevel | Comment   |
|--------------------------|--------|---|-----------|---|
| Name                     |        |   |           |   |
| Name                     | Text   |   | 5         | Name of the Module  |
| Module Info              |        |   |           |   |
| Firmware Version         | xx.xx  |   | R/O       | Version of the core   |
| Software Version         | xx.xx  |   | R/O       | Version of the Application  |
| Card ID                  | nnnnnn |   | R/O       | Hardware ID of the Module<br>the Redundancy is used               |
| Set Mode                 |        |   |           | Mode Selecting  |
| Command                  |        | Automatic<br>Main /<br>Pos A /<br>Pos <N> | 1         |   |
| Signals for<br>Switching |        |   |           |   |
| Delay Time               | x.x    |   | 8         | Deleay form the rise of an<br>Alarm to the automatic<br>Switching |

#### 6.8.2.2 List of Module Alarms

| Alarm # | Display           | Comment                          |
|---------|-------------------|----------------------------------|
| 15      | HCS Communication | No communication with the module |

## 6.9 Module – System, SNMP & Security

Config: System  
generic LNB supply

Software Module for managing the Configuration of the device.

Clicking the “Config: System” button opens the interface for monitoring and control of system parameters, SNMP and security parameter settings.

### 6.9.1 Parameter

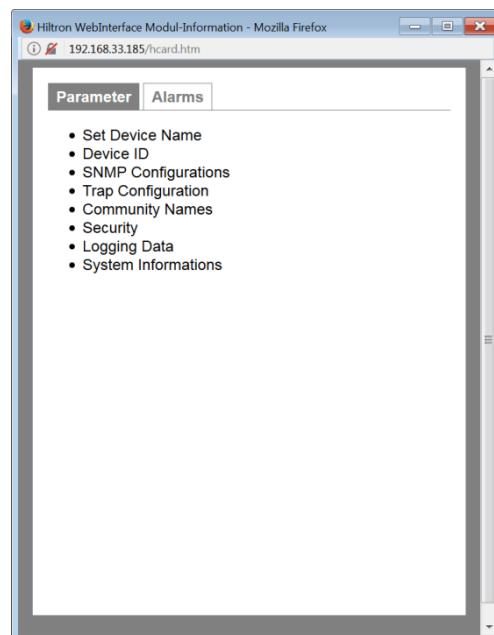
After clicking the “active Headline” button a window with 2 tabs (Parameter and Alarms) appears.

In the parameter tab you can set and edit SNMP and Security related parameters and set the geographical coordinates for antenna position calculation.

The parameters are filed in parameter groups.

**Please note:**

The parameter group can consist of at least one or more parameters. The system is protected against unauthorized parameter changes. When the operator wants to change a parameter he will be asked for user name and a password.



#### 6.9.1.1 Set Device Name

When **Set Device Name** is selected the name of the antenna control Unit ACU is displayed.

The name can be changed by overwriting. **Control** enables editing, ‘Save’ activates the changes. This “name” is shown in the main GUI as a substitute of ACU **xxxxx** of the headline (see Fig. Above)

Furthermore it is the general name of the system windows.



This parameter “Device Name” is used for SNMP communication under the node name **sysName** with OID (.1.3.6.1.2.1.1.5.0).

When traps are sent this name will be included in the trap message

### 6.9.1.2 Device ID

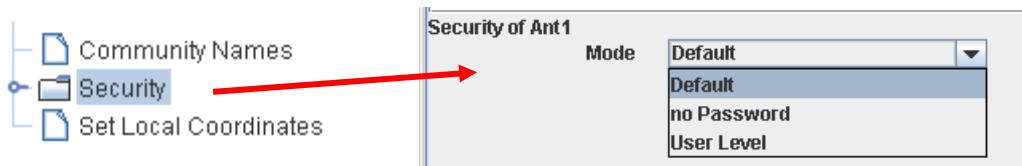
The parameter (group) **Device ID** informs about the unique equipment ID.



This parameter cannot be changed by the operator

### 6.9.1.3 Security

The parameter group “Security” allows to set different user access rights.



With the parameter **mode** the operator can choose between three different access options.

#### Default:

When “Default” is selected and set the operator has to enter the default setting

User: **HCS**

Password: **hilton**

when he wants to change any parameter.



#### No Password:

When “no password” is selected there is no registration necessary, if the operator want to change any setting of parameters. Everybody is allowed to change parameters without restrictions.

#### User Level:

When “User Level” is selected the administrator can assign the user rights in three categories.

- User,
- Supervisor,
- Administrator

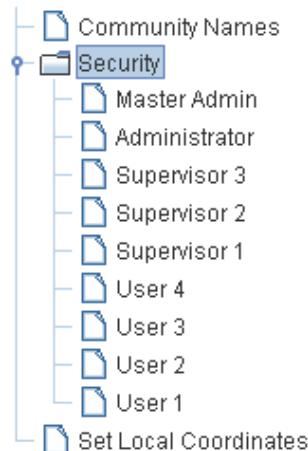
#### 6.9.1.4 User Level Management

Clicking on the “Security” folder further



parameter groups for the definition of access rights are opened.

- To change any user rights the operator should have administrator rights or
- if restricted changes in user rights are required the user should have at least rights which are higher in level than the level he wants to change.



#### Types of User

##### User:

The category “user” allows the user only operational activities, e.g. to configure a switch, switch on or off.

##### Supervisor:

The category “Supervisor” allows the user to edit parameter limits.

##### Administrator:

The category “administrator” allows the operator high level work, e.g. to configure modules.

##### Master Admin:

The category “administrator” allows the operator high level work, e.g. to configure modules

## Overview on different security levels

According to the hierarchical structure of the user rights the user 4 possesses more rights than user 3, e.g. the user 4 can change the passwords of user 3, 2 and 1 but not vice versa.

### How to set a User Level?

Security of System Name

Mode

- User Level
- Default
- no Password
- User Level

Select the parameter group “Security” and choose “User Level”.

Administrator of System Name

User Maintanance

Password \*\*\*\*\*

Choose below the parameter group **Security** the group with the required access level. e.g. **Administrator**.

Put in the user (name) and the password.  
 The access right is now configured. The user is logged in at the administrator level.

Supervisor 1 of System Name

User Control

Password \*\*\*\*\*

Choose below the parameter group **Security** the group with the required access level. e.g. **Supervisor**.

Put in the user (name) and the password.  
 The access is right now configured. The user is logged in at the supervisor level.

User 1 of System Name

User User

Password \*\*\*\*

Choose below the parameter group **Security** the group with the required access level. e.g. **User**.

Put in the user (name) and the password.  
 The access right is now configured. The user is logged in at the user level.

### How to log in?

User 1 of System Name

User User

Password \*\*\*\*

Choose below the parameter group **Security** the group with the required access level. e.g. **User**.

Put in the user (name) and the password.  
 The user is logged in at the user level.

## Contingency Solution

In case the passwords are lost / forgotten or generally there is no access to manage the controller, a master password can be generated with the help of the ID of the module. Please contact Hilttron GmbH and send the Serial Number.

### Logging Data

In order to synchronize the event logger's database a Network Time Protocol NTP is used. The information for the time stamp can be obtained via the connected network either from a NTP Server (from Web) or a locally connected computer using its internal time reference.

|                      |               |          |
|----------------------|---------------|----------|
| Logging Data of HACU | NTP Server IP | hilttron |
|----------------------|---------------|----------|

Put in the NTP Server IP using either an external network address or the IP address of a computer or NTP Server.

## 6.10 Setup SNMP

### 6.10.1 Register SNMP

The SNMP is an additional feature for monitoring and control of the HCS4.

This feature must be activated by a key generated of the serial number of the device.

This parameter is only available, when the SNMP is not registered.

Normally for all HCS4 controllers the SNMP is active by default.

Please contact **Hilttron GmbH** to receiving the SNMP key.

|                       |          |          |
|-----------------------|----------|----------|
| register SNMP of HACU | Card ID  | 15069417 |
|                       | SNMP Key | 0        |

### 6.10.2 SNMP Configuration

When the SNMP is active there are the Parameters "SNMP Configuration", "Trap Configuration" and "Community Names".

In the parameter group "SNMP Configuration" additional information like system description, location and contact address are managed. These parameters are sent in the trap message in case of a malfunction or change of setting. Therefore they are important.

Example:

|                             |                   |
|-----------------------------|-------------------|
| SNMP Configurations of Ant1 |                   |
| System Description          | Antennensteuerung |
| Location                    | Deutschland       |
| Contact                     | Hilttron GmbH     |

Explanation of parameters

| Parameter          | Description   |
|--------------------|---|
| System Description | Input for system information and is present under the node name <b>sysDesc</b> with the OID (.1.3.6.1.2.1.1.0) and is sent in every SNMP trap |

|          |   |
|----------|---|
| Location | Input for information on location of the equipment and is present under the node name <b>sysLocation</b> with the OID (.1.3.6.1.2.1.1.6.0). The information is sent in every SNMP trap.               |
| Contact  | Input for contact information (address). e.g. in case of malfunctions It is located in the SNMP Node <b>sysContact</b> with the OID (.1.3.6.1.2.1.1.4.0). The information is sent in every SNMP trap. |

#### 6.10.2.1 Trap Configuration

Clicking on the parameter group folder the top parameter setting becomes visible.



##### Trap Version:

The sending of traps can be disabled. With the selection of the SNMP-version the traps management is enabled.

There are three settings: disable, SNMPv1 and SNMPv2

##### Authentication Traps:

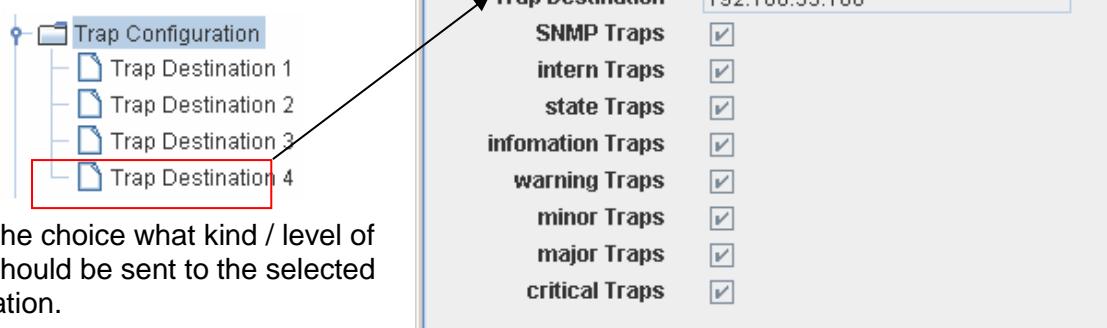
When **Authentication Traps** function is enabled an additional warning trap message is generated when a wrong community name is set.

#### 6.10.2.2 Trap Configuration / Destinations

Opening the “Trap Configuration” folder up to four groups “Trap Destination 1 to 4” are visible. Four different trap destinations, with IP-address and filter settings, can be configured in the submenus.



##### Example for trap destination 4



Make the choice what kind / level of traps should be sent to the selected destination.

| Trap / Type      | Description  |
|------------------|--|
| Trap Destination | IP Address of the trap receiver  |
| SNMP Traps       | Enable / disable the sending of traps  |
| Intern traps     | Internal traps are enabled or disabled   |
| State traps      | Any change of state in the control parameters will be sent by a trap           |
| Information trap | Any "alarm" message with the lowest level "information" will be sent by a trap |
| Warning trap     | Alarms with the level "warning" will be sent by a trap                         |
| Minor trap       | Alarms with the level "minor" will be sent by a trap                           |
| Major trap       | Alarms with the level "major" will be sent by a trap                           |
| Critical trap    | Alarms with the level "critical" will be sent by a trap                        |

### 6.10.2.3 Community Names

|                         |          |
|-------------------------|----------|
| Community Names of Ant1 |          |
| Write Community         | private  |
| Read Community          | public   |
| Trap Community          | hilttron |

The parameter group "Community Names" enables the setting of community names for different SNMP user.

#### Explanation of parameters

| Parameter       | Description  |
|-----------------|--|
| Write Community | Definition of the community for setting of parameters. |
| Read Community  | Definition of the community for getting of parameters. |
| Trap Community  | The Trap Community will only sent by the traps.        |

The Community names should fit exactly to the names used in the system. Please mind capital and small letters.