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Information about change in corporate legal status**

Zum 1. April 2019 geht das Geschäftsfeld „Terrestrial & Satellite Reception“ der KATHREIN SE (vormals KATHREIN-Werke KG) auf die KATHREIN Digital Systems GmbH über.

Die neuen Firmendaten lauten ab 01.04.2019 wie folgt:

KATHREIN Digital Systems GmbH
Anton-Kathrein-Str. 1-3
83022 Rosenheim, Deutschland
Steuer-Nr.: 156/117/31083
UST-Ident-Nr.: DE311049363
Registergericht: Traunstein, HRB 25841

As of 1 April 2019, KATHREIN SE's (formerly KATHREIN-WERKE KG) "Terrestrial & Satellite Reception" business unit will be transferred to KATHREIN Digital Systems GmbH (limited liability company).

From 1 April 2019, the new company data are:

KATHREIN Digital Systems GmbH
Anton-Kathrein-Str. 1-3
83022 Rosenheim, Germany
Tax ID No.: 156/117/31083
VAT Reg. No.: DE311049363
Commercial Register: Traunstein, HRB 25841

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1 About This Guide

This document describes how to use the web user interface and the user interface of the EXIP 4124.



In the explanation of the web user interface for the EXIP 4124 we assume that the EXIP 4124 has been connected correctly in accordance with the instructions for use included with it.

If you do not know the configuration of your satellite reception system, we recommend that you first test the EXIP 4124 with the default settings. If regulated operation is not possible, contact your specialist dealer to set up the EXIP 4124.

2 Explanation of Symbols and Signal Words

1.1 Symbols



	Risk of material damage or malfunction
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1.2 Signal Words

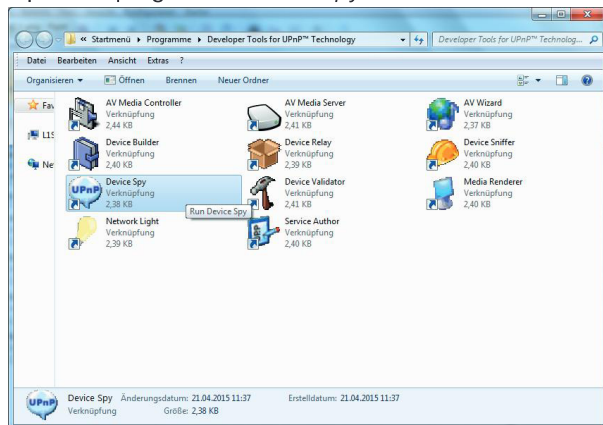
Tip

	This signal word indicates useful tips and recommendations.
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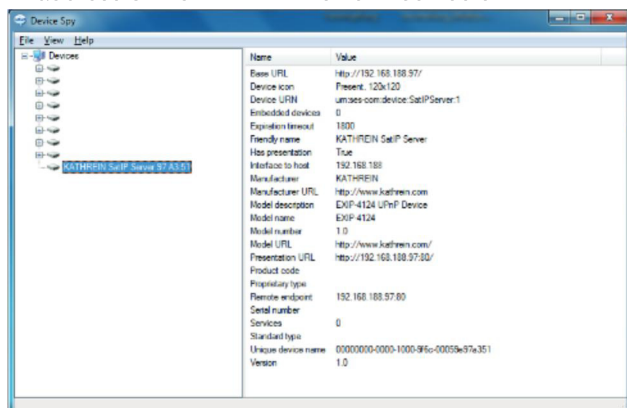
3 Determining the IP address of the EXIP 4124

You can see the IP address that has been assigned to the EXIP 4124 by the router in the menu of your router. If you do not have access to your router, you can also determine the IP address of your EXIP 4124 by means of a special software. To do so:

1. Download and install the *Developer Tools for UPnP™ Technologies* software. You can find the software at <http://www.meshcommander.com/upnptools>.
2. Open the programme *DeviceSpy.exe*:



3. Write down the IP address shown for the EXIP 4124. In the example shown below, the IP address of the EXIP 4124 is 192.168.188.97:



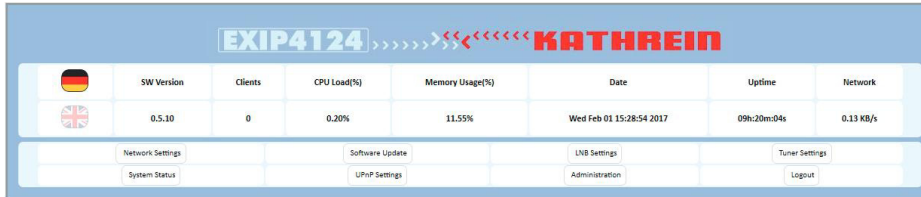
4 Logging into the Web Interface



By entering the IP address of the EXIP 4124 and **Port 9527**, e.g. 192.168.188.97:**9527** in a browser, you can go to the login page of the EXIP 4124. The access is only possible once the password has been entered correctly. The default password is

exip



1. Enter the password *exip*.
 2. Click on *Log in*.
- ⇒ After a successful login you can see the main page of the EXIP 4124:



	SW Version	Clients	CPU Load(%)	Memory Usage(%)	Date	Uptime	Network
 	0.5.10	0	0.20%	11.55%	Wed Feb 01 15:28:54 2017	09h:20m:04s	0.13 KB/s
Network Settings	Software Update	LNB Settings	Tuner Settings	System Status	UPnP Settings	Administration	Logout

⇒ You can see the following information on the main page:

Software version	Current software version of the EXIP 4124
Clients	Number of active users
CPU load	Current loading of the CPU
Memory Usage	Currently used memory
Date	Current time and date
Uptime	Server operation time

5 Network Settings

5.1 Network Interface

The EXIP 4124 is installed in the Ethernet environment.

5.2 IP Settings

You can choose between *automatic* and *static*. *Automatic* is selected by default. In order to allow the IP address to be assigned automatically to the EXIP 4124, it is necessary to connect it to a router or a switch with DHCP functionality. No further settings are required in the *automatic* mode.

The use of the *static* mode is only recommended for professional users. In this case, the user must be familiar with specific information concerning his network settings such as IP, net mask, gateway and DNS and be able to set them manually.

1.3 Performing a Time Correction

This setting is only necessary for the display in the web interface. It has no influence on the device operation.

- ▶ Select the time zone from the drop-down menu.

The screenshot displays the web interface for the EXIP4124 device. At the top, there is a header with the device name 'EXIP4124' and the 'KATHREIN' logo. Below the header is a navigation bar with various menu items: 'Network Settings' (highlighted with a red box), 'Software Update', 'LNB Settings', 'Tuner Settings', 'System Status', 'UPnP Settings', 'Administration', and 'Logout'. The main content area is titled 'Network Settings' and contains several sections:

- MAC Address:** A field showing the MAC address as '00:09:55:23:0F:F3'.
- IP Settings:** A section with radio buttons for 'Automatic' (selected) and 'Static'. Below this are input fields for IP Address (192.168.188.41), Netmask (255.255.255.0), Gateway (192.168.188.1), and DNS (192.168.188.1). There are 'Apply' and 'Cancel' buttons at the bottom of this section.
- Time Correction:** A section with a label 'Correct time from SNTP server' and a dropdown menu currently set to '(GMT+01:00) Amsterdam, Berlin, Bonn, Rome'.

6 Performing a Software Update



- Save the settings before a software update because it resets the device to its factory settings after the update; see *Exporting Settings*, p. 19.

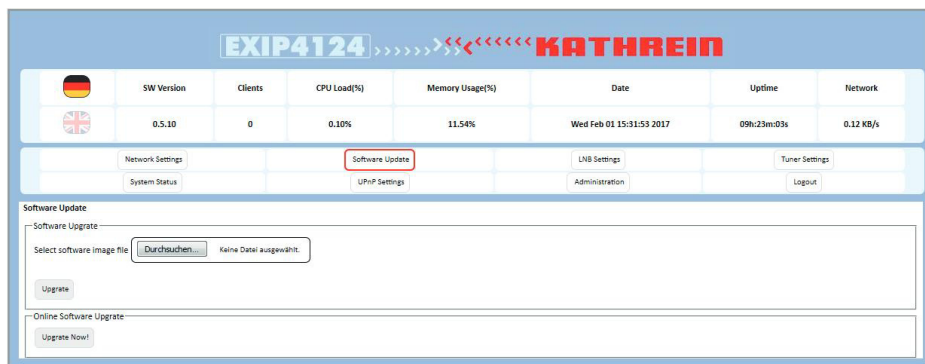
It is possible to carry out a software update for the EXIP 4124 via the web user interface or the internet.

1.4 Performing a Software Update via the Web User Interface

1. Select a software image file from your local hard disk.
2. Click on the **Update** button to transfer the software image file to the EXIP 4124.
3. After the update, refresh the page in the browser. To do so, either press **CTRL + F5** or **CTRL + SHIFT + R** or click on the bent arrow next to the address bar.

1.5 Performing a Software Update via the Internet

1. Click on the **Update** button to transfer the latest software to the EXIP 4124 via the internet.



2. Follow the instructions in the web browser.
 - ⇒ As soon as the software has been successfully installed, the system will restart automatically. Possibly, it is necessary to call up the web user interface anew or to reconnect it.
3. After the update, refresh the page in the browser. To do so, either press **CTRL + F5** or **CTRL + SHIFT + R** or click on the bent arrow next to the address bar.

7 LNB Settings



► Follow the documentation enclosed with your LNB or consult a specialist.

The EXIP 4124 supports wideband and OneCable LNBs as well as all types of single-cable multi-switches.

A direct connection to a Quad LNB (universal) or a standard multi-switch is not possible.

To change LNB settings:

1. Determine which system the EXIP 4124 is connected to. To do so, the following information is necessary:

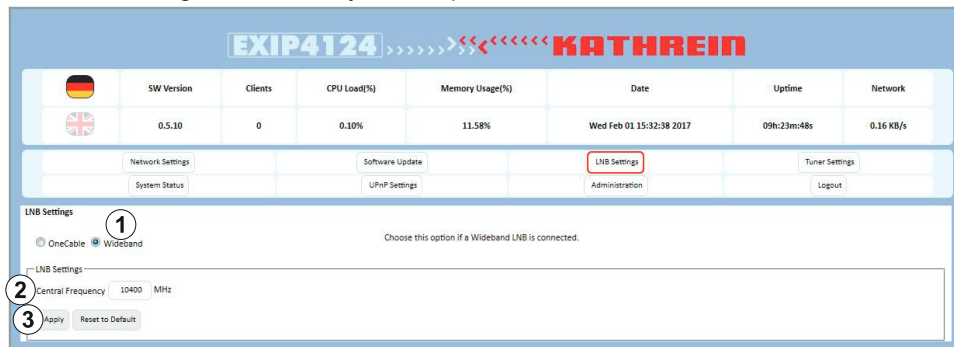
Wideband LNB	frequency in which the LNB operates; see <i>Wideband Mode</i> , p. 9	
Single-cable multi-switch / single-cable LNB (<i>OneCable</i>)	Is it a Kathrein model?	<p>yes ► Write down the model; see <i>The used single-cable multi-switch or single-cable LNB is a Kathrein model</i>, p. 9.</p> <hr/> <p>no</p> <ol style="list-style-type: none"> 1. Check which single-cable standard (EN 50494 and/or EN 50607) is supported; see also <i>The used single-cable multi-switch or single-cable LNB is not a Kathrein model</i>, p. 9. For this information, refer to the device or the instructions for use. 2. If only the EN 50494 is supported, write down the available user band frequencies; see <i>Multi-switch/LNB (EN 50494)</i>, p. 11.

2. Enable or disable user bands.

In a single-cable system, several devices can be connected which already occupy user bands. These user bands cannot be used by the EXIP 4124. In each set-up menu, there is an area called **UB Control** in which it is possible to disable the user bands which are already occupied, see *UB Control (Lower Area in the LNB Settings)*, p. 15.

7.1 Wideband Mode

If the EXIP 4124 is connected to a wideband LNB directly, it is necessary to make sure that the oscillator frequency is correct and the two coaxial cables are connected correctly. No further settings are necessary in this operation mode.



1. Click on *Wideband* (①).
2. Check the *Central Frequency* (②). If necessary, enter the correct frequency. Refer to the information in the instructions for use of the connected LNB.
3. Click on *Apply* (③).
 - ⇒ The device is ready for use. No further settings are necessary.

7.2 OneCable Mode

The used single-cable multi-switch or single-cable LNB is a Kathrein model

EXR 1541, 2542, 1581, 2581, 1942, 2942, 1981, 2981	▶ See <i>EXR</i> , p. 14.
EXE 156, 256, 159, 259, 1512, 2512 or EXD 1532, 2532, 1524, 2524	▶ See <i>Multi-switch/LNB (EN 50607)</i> , p. 12.
UAS 481	▶ See <i>UAS 481</i> , p. 13.

The used single-cable multi-switch or single-cable LNB is not a Kathrein model

The multi-switch/LNB supports the EN 50607 standard	▶ See <i>Multi-switch/LNB (EN 50607)</i> , p. 12.
The multi-switch/LNB supports the EN 50494 standard	▶ See <i>Multi-switch/LNB (EN 50494)</i> , p. 11.

1.5.1 Setting User Bands

If the EXIP 4124 is connected to a single-cable LNB or a single-cable multi-switch, it is necessary to set the so-called user bands.

Each user band (UB slot) is allocated a frequency. Depending on the installed single-cable system, further adjustments are necessary.

The frequencies of the LNBs can differ in certain regions or countries. If that applies in your case, it is possible to modify the frequencies in the lines *LO for High Band* and *LO for Low Band* in accordance with the configuration of your LNB.

Tip

EN 50494: This standard supports up to 8 user bands and 2 satellite positions maximum.

EN 50607: This standard can operate up to 32 user bands at 64 satellite positions. Furthermore, this standard is a 2-way system, i.e. the EXIP 4124 can communicate with the multi-switch/LNB. This way, the multi-switch can communicate which user bands are available or are currently active.

1.5.2 Multi-switch/LNB (EN 50494)

In this mode, it is necessary to enter the corresponding frequency for each user band.

1. Click on *Multi-switch/LNB (EN 50494)* (①).
2. At ②, enter the frequencies which you have previously written down for each user band. For frequencies, refer to the instructions for use of your multi-switch or LNB.
3. Click on *Apply* (③).
4. Enable or disable user bands, see *UB Control (Lower Area in the LNB Settings)*, p. 15.

1.5.3 Multi-switch/LNB (EN 50607)

This option is used if the multi-switch/LNB supports the EN 50607 standard (up to 32 user bands), e.g. the Kathrein EXE or EXD series.

1. Click on *Multi-switch/LNB (EN 50607)* (1).
2. Click on *Apply* (2).
 - ⇒ The following message appears: *LNB mode is being changed. Please wait until the LNB mode has been changed.*
3. Click *OK*.
 - ⇒ The EXIP 4124 communicates with the multi-switch and reads out the number of the user bands as well as their frequencies.
4. Enable or disable user bands, see *UB Control (Lower Area in the LNB Settings)*, p. 15.

1.5.4 UAS 481

This option is specifically adapted to the Kathrein UAS 481 feed system. No further settings are necessary.

The screenshot shows the Kathrein EXIP4124 web interface. At the top, there's a status bar with 'EXIP4124' and 'KATHREIN' logos. Below that is a dashboard with various system metrics: SW Version (0.5.10), Clients (0), CPU Load(%) (0.30%), Memory Usage(%) (11.57%), Date (Wed Feb 01 15:35:40 2017), Uptime (09h:26m:50s), and Network (0.11 KB/s). A navigation menu includes Network Settings, Software Update, LNB Settings (highlighted with a red box), Tuner Settings, System Status, UPnP Settings, Administration, and Logout. The main content area is titled 'LNB Settings' and features a note: 'This option is adapted for the Kathrein LNB UAS 481. No more user inputs necessary.' Under 'OneCable' / 'Wideband', the 'UAS 481' radio button is selected (circled with a '1'). Below this, there are four slots with frequency settings: Slot#1 (1400 MHz, 11600 MHz), Slot#2 (1516 MHz, 10200 MHz), Slot#3 (1632 MHz, 10200 MHz), and Slot#4 (1748 MHz). At the bottom left, the 'Apply' button is circled with a '2'.

1. Click on **UAS 481** (①).
2. Click on **Apply** (②).
 - ⇒ The following message appears: *LNB mode is being changed. Please wait until the LNB mode has been changed.*
3. Click **OK**.
 - ⇒ LNB mode is being changed.
4. Enable or disable user bands, see *UB Control (Lower Area in the LNB Settings)*, p. 15.

1.5.5 EXR

Select this option if a multi-switch of the Kathrein EXR series is installed in your system. Here, all the user band frequencies of the series are preallocated and cannot be changed. No further settings are necessary.

The screenshot displays the Kathrein EXR web interface. At the top, the model number 'EXIP4124' and the 'KATHREIN' logo are visible. Below this is a status bar with various system metrics: SW Version (0.5.10), Clients (0), CPU Load(%) (0.10%), Memory Usage(%) (11.57%), Date (Wed Feb 01 15:36:25 2017), Uptime (09h:27m:36s), and Network (0.11 KB/s). A navigation menu includes Network Settings, System Status, Software Update, UPnP Settings, LNB Settings (highlighted with a red box), Administration, Tuner Settings, and Logout.

The 'LNB Settings' section is active, showing radio button options for 'OneCable', 'Wideband', 'Multiswitch/LNB(ENS0494)', 'Multiswitch/LNB(ENS0607)', 'UAS 481', and 'EXR' (selected and circled with a red circle and the number 1). A note states: 'This option is adapted for the Kathrein EXR Multiswitch/LNB series. No more user inputs necessary.' Below this, a table lists LNB slots and their frequencies:

Slot	UB	Frequency (MHz)	Notes
Slot#1	UB_1	1284	11700 MHz divides High band and Low band
Slot#2	UB_2	1400	
Slot#3	UB_3	1516	LO for High band
Slot#4	UB_4	1632	LO for Low band
Slot#5	UB_5	1748	9750 MHz
Slot#6	UB_6	1864	
Slot#7	UB_7	1980	
Slot#8	UB_8	2096	

Buttons for 'Apply' and 'Reset to Default' are present. The 'UB Control' section below allows enabling or disabling user bands (UB_1 to UB_8) with checkboxes. A note says: 'Choose only the user bands, which are available for the EXIP4124.' Buttons for 'Apply', 'Enable All', and 'Disable All' are also shown.

1. Select **EXR** (1).
2. Click on **Apply** (2).
3. Enable or disable user bands, see *UB Control (Lower Area in the LNB Settings)*, p. 15.



Make sure that each frequency available at the output of the single-cable multi-switch is only assigned once, otherwise the connected receivers and the EXIP 4124 will interfere with each other.

To set the transmission channels (**UB** – *user band*, also called **SCR** – *Satellite Channel Router* in some cases), refer to the documentation enclosed with your single-cable multi-switch. In the documentation you will find the assignment of the various UBs/SCRs and the respective transmission frequencies.

If other receivers have already been connected directly with the multi-switch, check which UBs/SCRs have been used.

1.6 UB Control (Lower Area in the LNB Settings)

In this area it is possible to enable or disable user bands for the EXIP 4124. If, for example, in addition to the EXIP 4124, a twin receiver is connected to the same single cable and the receiver is allocated the UB1 and UB2, it is recommended to disable these user bands. Only user bands which are available exclusively for the server can be enabled. Otherwise, image interferences might occur, because two devices require a programme on the same user band.

► Bear in mind that these settings are only active after the multi-switch/LNB has been selected.

1. Enable or disable user bands. To do so, check or uncheck the box next to the user band.
2. Click on **Apply** (③).



This area is reset after each change in the LNB settings!

8 Tuner Settings

The tuners of the EXIP 4124 support the two different modes, *Dynamic* or *Static*. The default setting is the *Dynamic* mode.

8.1 Dynamic Mode

In the *Dynamic* mode, the EXIP 4124 dynamically adjusts to the satellite transponder which has been requested by the client, e.g. a receiver. As a result, tuner resources are assigned dynamically to the EXIP 4124.

The screenshot displays the EXIP4124 web interface. At the top, there is a header with the device name 'EXIP4124' and the 'KATHREIN' logo. Below this is a status bar with various system metrics:

SW Version	Clients	CPU Load(%)	Memory Usage(%)	Date	Uptime	Network
0.5.10	0	0.10%	11.67%	Wed Feb 01 15:38:16 2017	09h:29m:27s	0.27 KB/s

Below the status bar is a navigation menu with options: Network Settings, Software Update, LNB Settings, Tuner Settings (highlighted), System Status, UPnP Settings, Administration, and Logout.

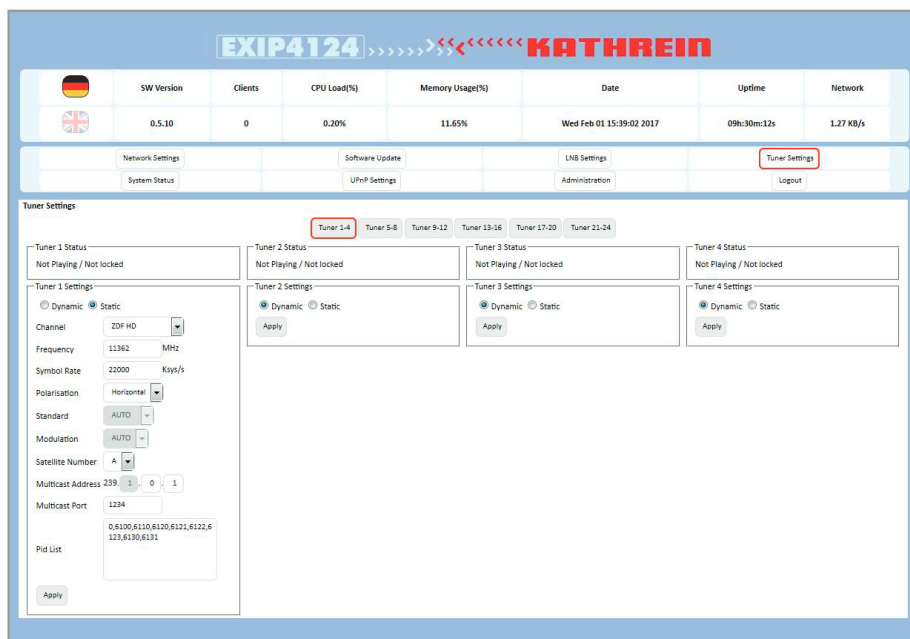
The main content area is titled 'Tuner Settings' and features a tabbed interface with tabs for Tuner 1-4, Tuner 5-8, Tuner 9-12, Tuner 13-16, Tuner 17-20, and Tuner 21-24. The 'Tuner 1-4' tab is selected, showing four tuner configuration panels:

- Tuner 1 Status:** Not Playing / Not locked
- Tuner 2 Status:** Not Playing / Not locked
- Tuner 3 Status:** Not Playing / Not locked
- Tuner 4 Status:** Not Playing / Not locked

Each panel has a 'Tuner Settings' section with radio buttons for 'Dynamic' (selected) and 'Static', and an 'Apply' button.

8.2 Static Mode

Static mode is only recommended for professional users or installation companies. In this mode, you require detailed information about the transponders, e.g. frequency, symbol rate etc. A programme is permanently assigned to each tuner. Any number of clients can receive this programme.



1. Make the settings for tuners 1 – 24 in the **Static** mode individually. Once you have selected **Static** mode, it is possible to enter the individual values for the transponder.

Frequency	Transponder frequency (MHz) that the EXIP 4124 is to receive
Symbol rate	Symbol rate (KSym/s) of the transponder
Polarisation	Polarisation of the transponder
Satellite position	Satellite number
Multicast address	IP address of the multicast stream
PID list	<ul style="list-style-type: none"> ▶ Enter PAT, PMT, Video PID, Audio PID, EIT, NIT and ETC. In order to see the programme, it is necessary to enter PAT, PMT, Video PID and Audio PID as a minimum.

2. Click on the **Apply** to confirm the settings.

Using the tuner status it is possible to find out whether the settings which have been made previously are correct or whether something has not been connected properly. Note that in the **Static** mode, it is necessary to assign the required PIDs.

9 System Status

All 24 tuners and the streaming status can be monitored with this function. In addition, the system status can help if there is a problem with the reception.

You can find the following information on this page:

- Which programme is to be received (frequency, polarisation, symbol rate, PIDs, modulation...)
- From which tuner (input) you will receive from (RF1, RF2, RF3 or RF4)
- To which device the relevant tuner is to be streamed (IP address)
- From which user band the signal comes

The screenshot displays the KATHREIN system status interface. At the top, it shows the system name 'EXIP4124' and the KATHREIN logo. Below this is a summary table with the following data:

SW Version	Clients	CPU Load(%)	Memory Usage(%)	Date	Uptime	Network
0.5.10	0	0.30%	11.66%	Wed Feb 01 15:39:37 2017	09h:30m:47s	1.15 KB/s

Below the summary table are navigation tabs: Network Settings, Software Update, LNB Settings, Tuner Settings, System Status (highlighted), UPnP Settings, Administration, and Logout.

The 'System Status' section is divided into tabs for Tuner 1-4, Tuner 5-8, Tuner 9-12, Tuner 13-16, Tuner 17-20, and Tuner 21-24. The 'Tuner 1-4' tab is selected, showing the status for four tuners. Each tuner's status is displayed in a grid with the following parameters:

- Tuner Mode: dynamic
- Playing: no
- Lock Status: No Lock
- UB Slot: Unused
- UB Frequency: 0
- Frequency: 0
- Symbol Rate: 0
- Signal Strength: 0
- Signal Quality: 0
- Polarisation: Horizontal
- Standard: None
- Modulation: None
- FEC: 1/2
- Satellite Position: A
- RF Selection: Unused
- Pid List: (empty)
- BER: 0
- Client IP address: (empty)

10 UPnP Settings

Here it is possible to change the displayed name of the EXIP 4124 in the network. This is primarily helpful if there is more than one server in the network.

The screenshot shows the KATHREIN EXIP4124 web interface. At the top, there is a status bar with the device name 'EXIP4124' and the KATHREIN logo. Below this is a table with system statistics:

SW Version	Clients	CPU Load(%)	Memory Usage(%)	Date	Uptime	Network
0.5.10	0	0.40%	11.67%	Wed Feb 01 15:40:13 2017	09h:31m:23s	0.78 KB/s

Below the table are several navigation tabs: Network Settings, Software Update, LNB Settings, Tuner Settings, System Status, UPnP Settings (highlighted in red), Administration, and Logout. The 'UPnP Settings' section is expanded, showing a 'Friendly Name' field with the value 'KATHREIN SatIP Server 23-01' and an 'Apply' button.

11 Administration

The screenshot shows the KATHREIN EXIP4124 web interface. At the top, there is a status bar with the device name 'EXIP4124' and the KATHREIN logo. Below this is a table with system statistics:

SW Version	Clients	CPU Load(%)	Memory Usage(%)	Date	Uptime	Network
0.5.10	0	0.20%	11.65%	Wed Feb 01 15:40:48 2017	09h:31m:58s	0.11 KB/s

Below the table are several navigation tabs: Network Settings, Software Update, LNB Settings, Tuner Settings, System Status, UPnP Settings, Administration (highlighted in red), and Logout. The 'Administration' section is expanded, showing several sub-sections:

- Export Settings:** An 'Export' button.
- Import Settings:** A 'Select File' field with a 'Durchsuchen...' button and the text 'Keine Datei ausgewählt.', followed by an 'Import' button.
- Change WebUI Password:** Three input fields for 'Old Password', 'New Password', and 'Repeat New Password', followed by an 'Apply' button.
- Reset Channel List:** A 'Reset Channel List' button.
- Misc:** A 'Reboot device' button.

1.7 Exporting Settings

Using this function, it is possible to save all the settings in the system. The name of the export file is *SATIP_Server_Settings.xml*.

1.8 Importing Settings

Using this function, it is possible to load the export file that has been saved earlier.

1. Click on the **Select file**.
⇒ A dialogue appears.
2. Look for the previously saved *SATIP_Server_Settings.xml* file.
3. Click on **Import**.
⇒ The settings are applied.

11.1 Changing Password

It is possible to change the default password.

1.9 Restarting the Device

- ▶ Click on the **Reboot device** button to restart the EXIP 4124.