# DABIP-800
# DAB/DAB+/FM/internet Radio into IP Radio multicast

## Operation instructions

# Table of contents

## ⚠ WARNING

➔ Observe the safety instructions supplied with the device! They are also available at the following Internet address: https://download.axing.com/BAs/Sicherheitshinweise_9sprachig.pdf

➔ Use the device only as described in these operating instructions and in particular in accordance with the state of the art. If the device is used for other purposes, no warranty will be assumed!

CE

Hereby AXING AG declares that the CE marked products comply with the valid EU guidelines.

Hereby AXING AG declares that the device is additionally in compliance with Directive 2014/53/EU. The complete EU declaration of conformity is available at: https://axing.com/en/downloads/ce/.

WEEE Nr. DE26869279 | Electrical and electronic components must not be disposed of as residual waste, it must be disposed of separately.

# 1. Product description

## 1.1. General

DABIP-800 IP Radio Streamer

Transmodulates analogue FM programmes, digital DAB/DAB+ programmes and Internet radio into SPTS (Single Program Transport Streams). Includes 8 independent tuners each for either analogue FM stereo reception or digital DAB/DAB+ reception and 8 output ports for IP radio

**Features:**

- GbE-interfaces with max. 800 Mbps
- Web-based configuration, remote maintenance (SMARTPortal)
- Class A according to EN 50083-2
- 19" housing, 1RU
- Single power supply

## 1.2. Scope of delivery

1 × IP Streamer

1 × AC power cord

1 × Quick start guide

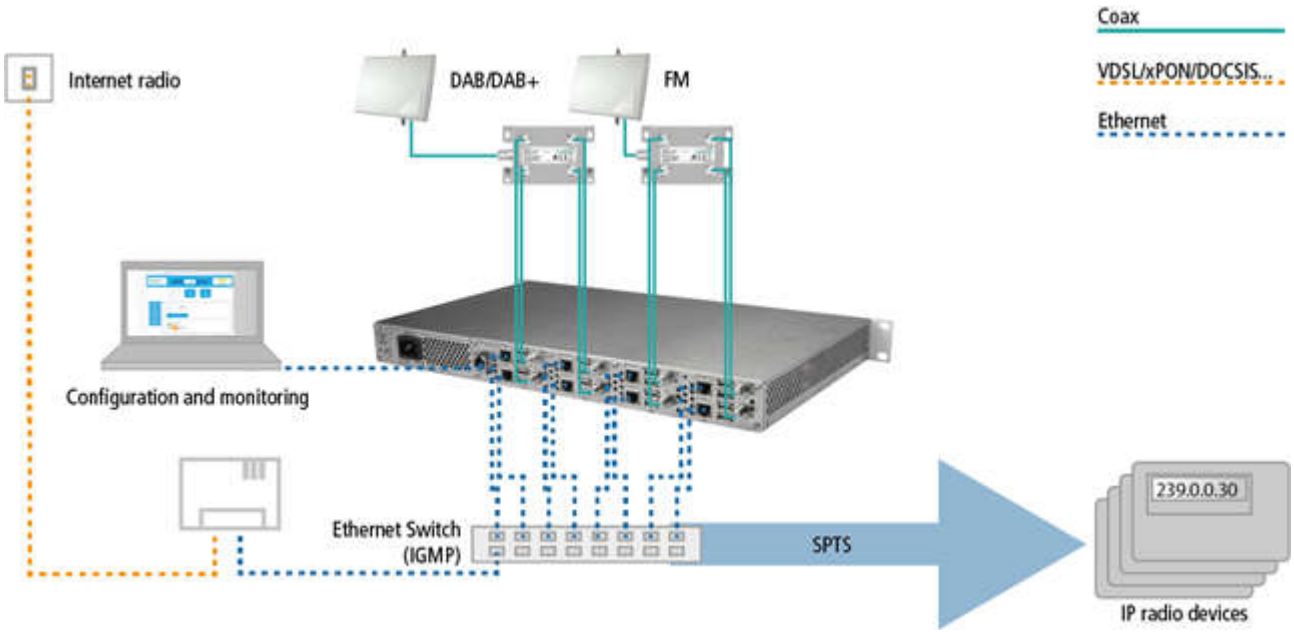
1 × Safety instructions

## 1.3. Product description

### 1.3.1. FM, DAB/DAB+ and Internet radio into SPTS

The unit has eight independent input tuners. Each tuner can receive an FM or a DAB (+) station. An FM transmitter contains only one programme. A DAB/DAB+ transmitter consists of a multiplex of several programmes. With a DAB/DAB+ transmitter, one programme must therefore be selected from the multiplex.

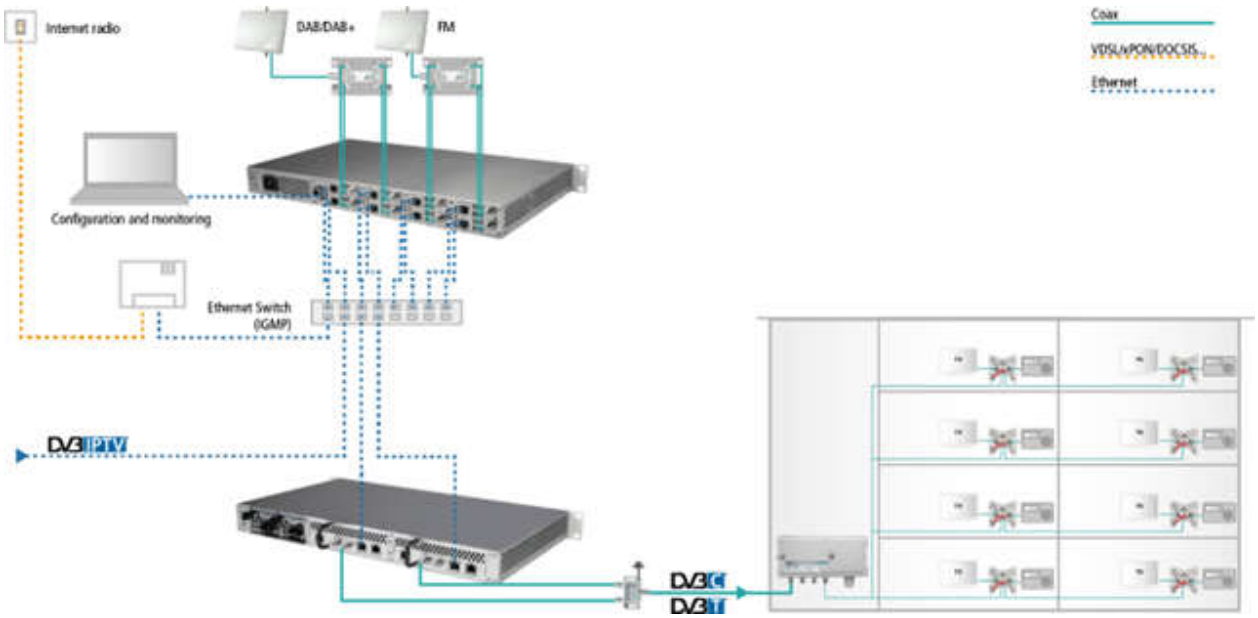
In addition, Internet radio can be received; for this, the AIP 8-00 must be permanently connected to the Internet.




The FM, DAB/DAB+ and Internet radio programmes are then converted into eight Single Program Transport Streams (SPTS) and can be distributed via Ethernet using suitable switches.

### 1.3.2. FM, DAB/DAB+ and Internet radio into DVB-C or -T

The DABIP-800 can also be part of a larger application. In this use case, the IP radio streamer receives FM, DAB/DAB+ and Internet radio and converts them to SPTS. A post-connected EdgeQAM system converts the IP radio and IPTV signals to DVB-C or -T. For example, IPTV/IP radio can be received where no Internet is desired/permitted.



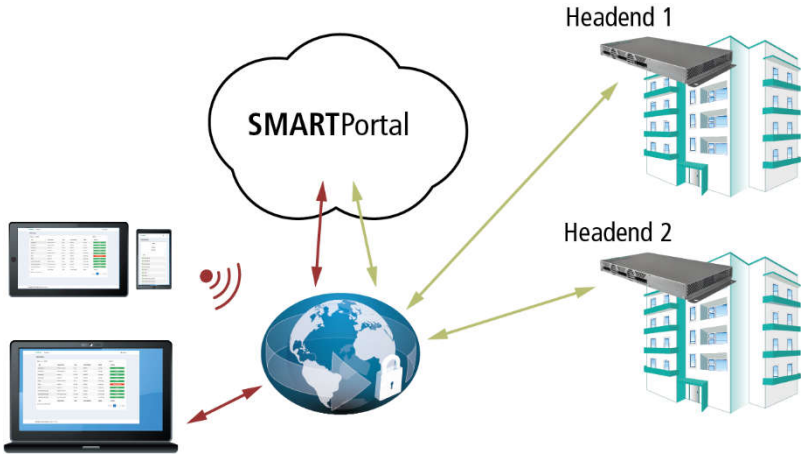
### 1.3.3. Graphical user interface

The settings can be changed via the user interface of the integrated web interface. To access the user interface and thus configure the devices, you need a standard PC/laptop with a network interface and the actual version of the installed web browser.

The configuration interface is "mobile ready" and can therefore also be used from the smartphone or tablet.

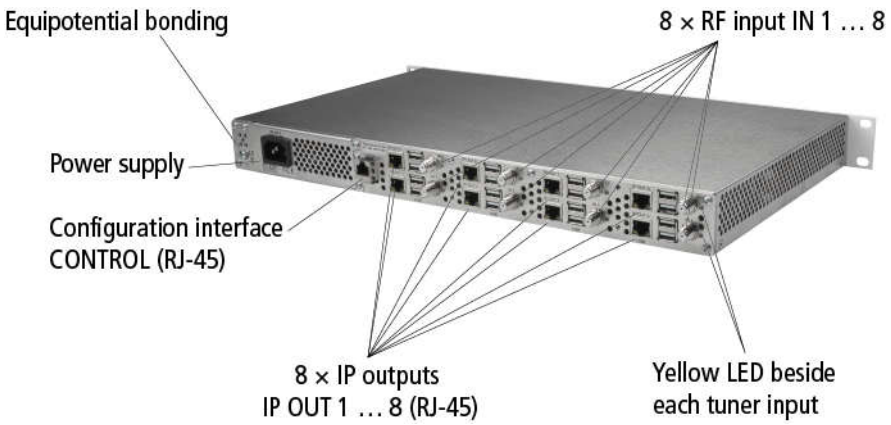
### 1.3.4. SMARTPortal

The AXING SMARTPortal connects each RF-Tuote headend device with a cloud-based portal and thus provides worldwide access to the devices. The connection is password-saved and scrambled. The only requirement on site is an internet connection of the device e. g. via LAN, EoC, EoC-WLAN-Bridge, 3G/LTE-Router.




With AXING's SMARTPortal a worldwide configuration of all settings or software updates can be ensured. On customer request AXING can provide the necessary support.

## 1.4. Display elements and connectors




The yellow LED lights up when the tuner is locked.
The 8 USB ports are not used.

# 2. Mounting and Installation

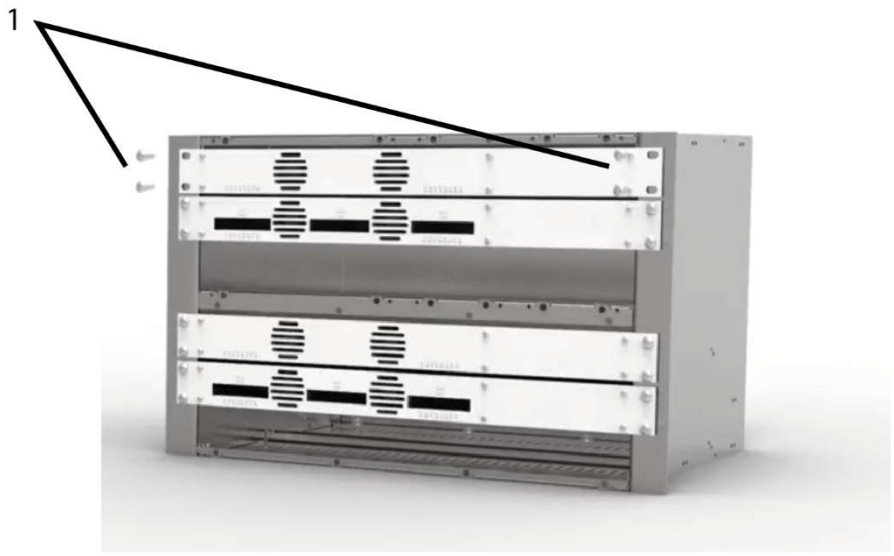
➔ Installation must be performed by authorized and skilled electricians only.

➔ Before mounting and installation, pull the mains plug (1)!

➔ The antenna system must be installed and grounded according to the EN 60728-11 standard.

## 2.1. Mounting in a 19“rack

**Note:** For 19-inch rack mounting, there must be at least 5 cm clearance in front of and behind the unit.




➔ Slide the device into the 19 "rack.

➔ Screw the device with four screws (1).

➔ Observe the standard EN 60728-11.

## 2.2. Equipotential bonding

The device must be connected to the equipotential bonding according to EN 60728-11.

➔ Use the equipotential bonding connection at the device.

➔ To connect the outer conductor of the coaxial cable to the equipotential bonding, use e.g. QEW earthing angles or CFA earth connection blocks at the inputs and output (see 2.4 on page 7).

## 2.3. Power supply

The headend has a built-in power supply unit.

➔ Connect the headend to a mains socket using the enclosed mains cable.

## 2.4. RF Installation

The DABIP-800 has eight F sockets. Connect them to the DAB/DAB+/FM antennas. Use high-shielded coaxial cables with F connectors.

# 3. Configuration

To access the user interface, you need a standard PC/laptop with a network interface and the actual version of the installed web browser. To connect the network interface of the device to the computer, you need a commercially available network cable. The HTTP protocol is used for communication allowing a worldwide remote maintenance of the systems at various locations via the Internet. Access protection is implemented by means of the password prompt.

| | |
|---|---|
| IP address: | 192.168.0.160 |
| Subnet mask: | 255.255.255.0. |

The computer and the device must be in the same subnetwork. The network part of the IP address of the computer must be set to 192.168.0.xxx and the subnet mask must be set to 255.255.255.0.

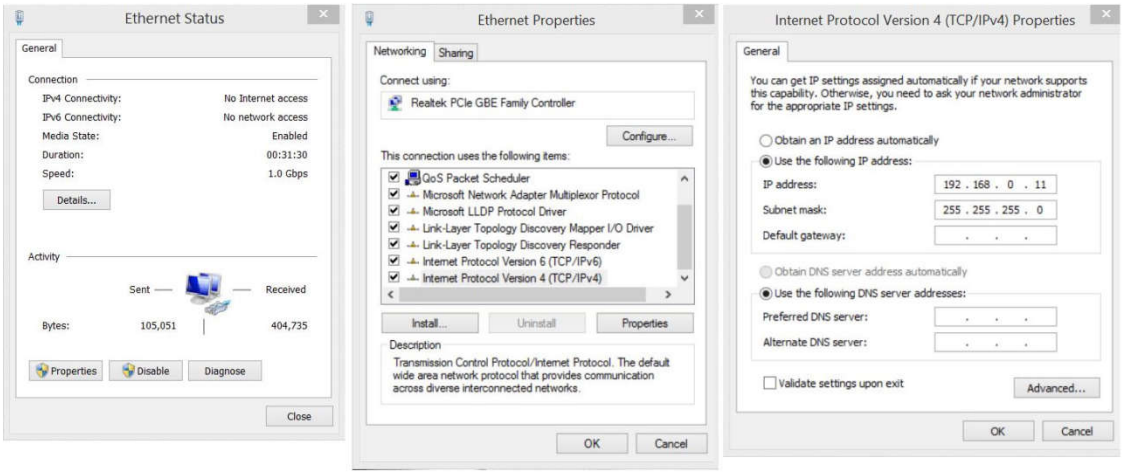
The host part of the network address is required for the identification of the devices and can be assigned in the subnetwork only once. You can allocate to the computer any not allocated host address between 0 and 255.

**Hint:**

Change the IP address and the subnet mask of your computer accordingly.

(e.g.: IP address:192.168.0.11 and subnet mask: 255.255.255.0)

*Control panel > Network connections > LAN connection >Properties > Internet protocol version 4 TCP/IPv4 > Properties > Use the following IP address:*




➔ Click OK to save.

➔ Start your web browser and enter the IP address of the device: **192.168.0.160**.

## 3.1. Login and logout

The web-based user interface is protected against unauthorized access. When accessing the user interface, the first thing is the password request.

➔ Enter the default username: *admin*

➔ Enter the default password: *Ramsen8262*

➔ Click **LOGIN.**

**Changing the password:**

➔ Please change the password immediately after the first commissioning and choose a sufficiently safe password. Keep this password at a safe place.

➔ Menu item: **MAINTENANCE** > **PASSWORD**.

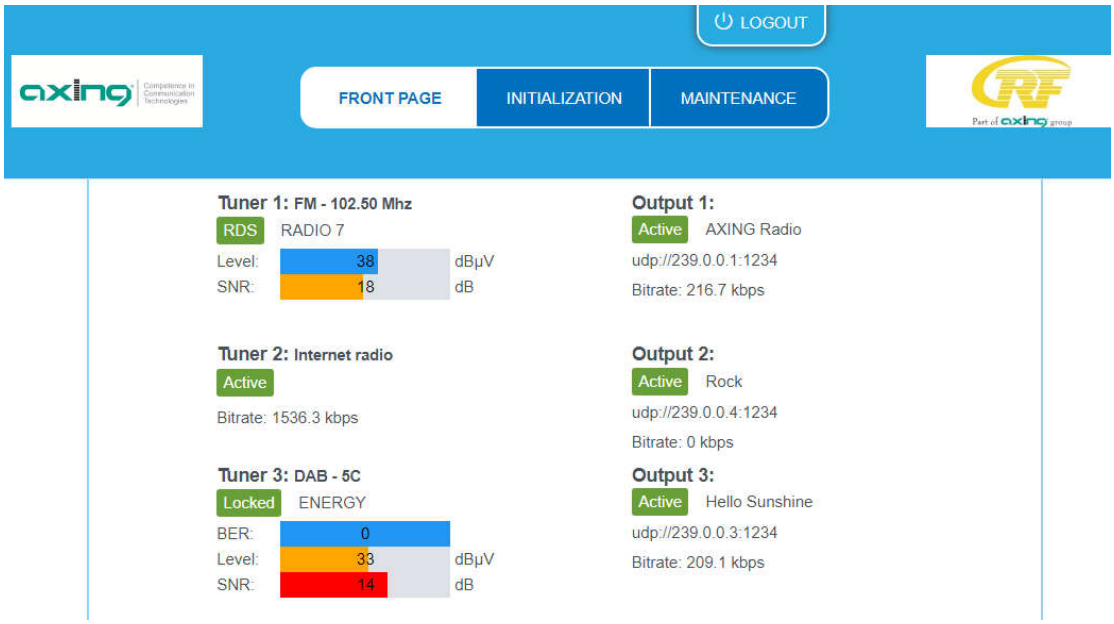
**Changing the IP address:**

If needed, the devices can be integrated in a network. For this application, some changes must be applied to the network configuration.

➔ Menu item **MAINTENANCE** > **IP ADRESS**.

## 3.2. Front page

The relevant information required for the function of the system are shown on the front page. The decisive thing is the quality of the signals at the input and the utilization of the output.




### 3.2.1. Input DAB/DAB+

The Tuner number the reception band and the DAB Channel are shown (5A - 13F)

The status and the service name are displayed underneath.

Possible tuner status for DAB:

- Locked Tuner locked to DAB multiplex and one service selected.
- Select service Tuner locked to DAB multiplex but no service selected.
- Missing service Tuner locked to DAB multiplex but selected service missing in multiplex.
- Unlocked Tuner unlocked.
- No connection Encoder is down (also shown shortly during encoder reboot)

If the tuner is locked the bit error rate **BER**, the input **Level** and the **SNR** are shown.

### 3.2.2. Input FM

The Tuner number the reception band and the input **Frequency** (87.5 … 108 MHz) and the service name from RDS are shown.

Possible tuner status for FM:

- RDS Tuner locked to FM frequency containing station with RDS info.
- Unlocked Tuner unlocked.
- No connection Encoder is down (also shown shortly during encoder reboot)

If the tuner is locked the input **Level** and the **SNR** are shown.

### 3.2.3. Outputs

The Status of the output is shown.

- Active Tuner locked to DAB multiplex and one service selected.
- No connection Encoder is down (also shown shortly during encoder reboot)
- Disabled Output is disabled by in Phase 3

The **service name**, the **IP address** and the **Bitrate** and are also shown.

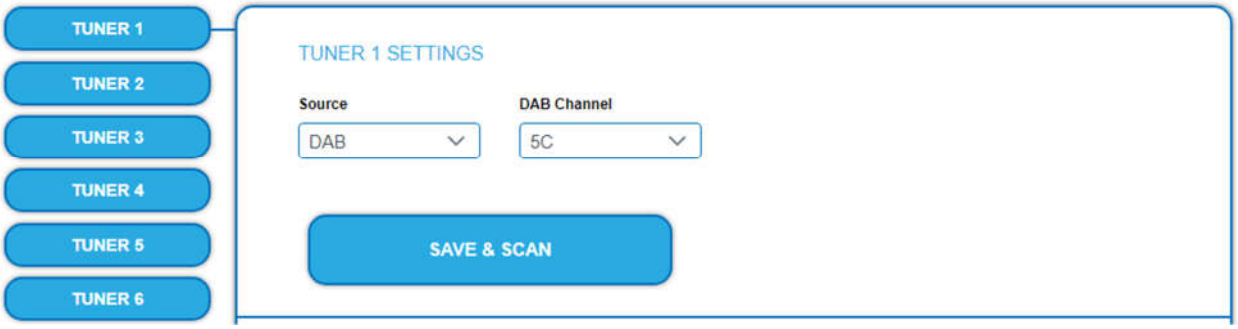
# 4. Initialization

➔ Choose **INITIALIZATION** from the main menu.


## 4.1. Phase 1 – Tuners


➔ On the left, select the Tuner you want to configure.

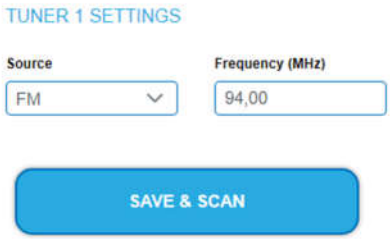
➔ In the field **Source**, select whether the tuner should receive FM, DAB or Internet radio.




### 4.1.1. FM

➔ Select **FM** in the **Source** field.

➔ Enter the **Frequency** in MHz.

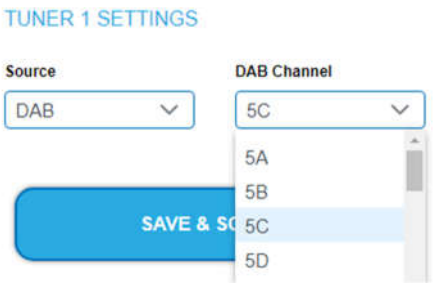



➔ Click **SAVE & SCAN**.

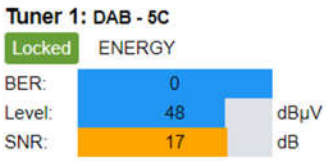
### 4.1.2. DAB/DAB+

➔ Select **DAB** in the **Source** field.

➔ Choose an input channel in the **DAB Channel** field.




➔ Click **SAVE CHANGES**.
The tuner searches for stations in the specified FM frequency or DAB channel.
When a transmitter is found, the status goes to Locked and BER (DAB/DAB+ only), Level and SNR are displayed.

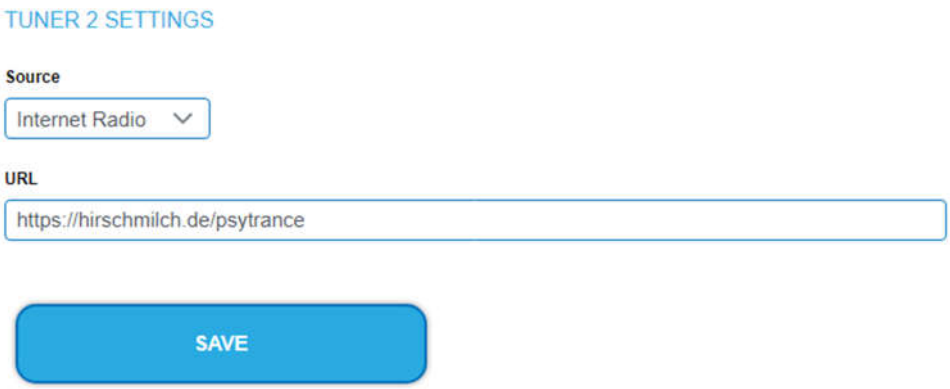



➔ If it is a DAB channel, under **FOUND DAB SERVICES** the Programs in this channel are shown.

### 4.1.3. Internet radio

➔ Select **Internet Radio** in the **Source** field.

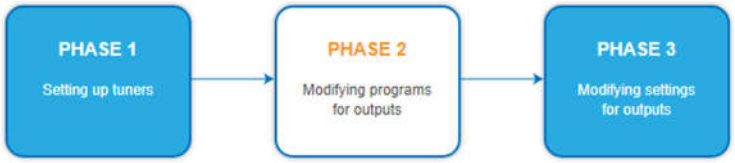
➔ Edit the URL of the Internet radio program.

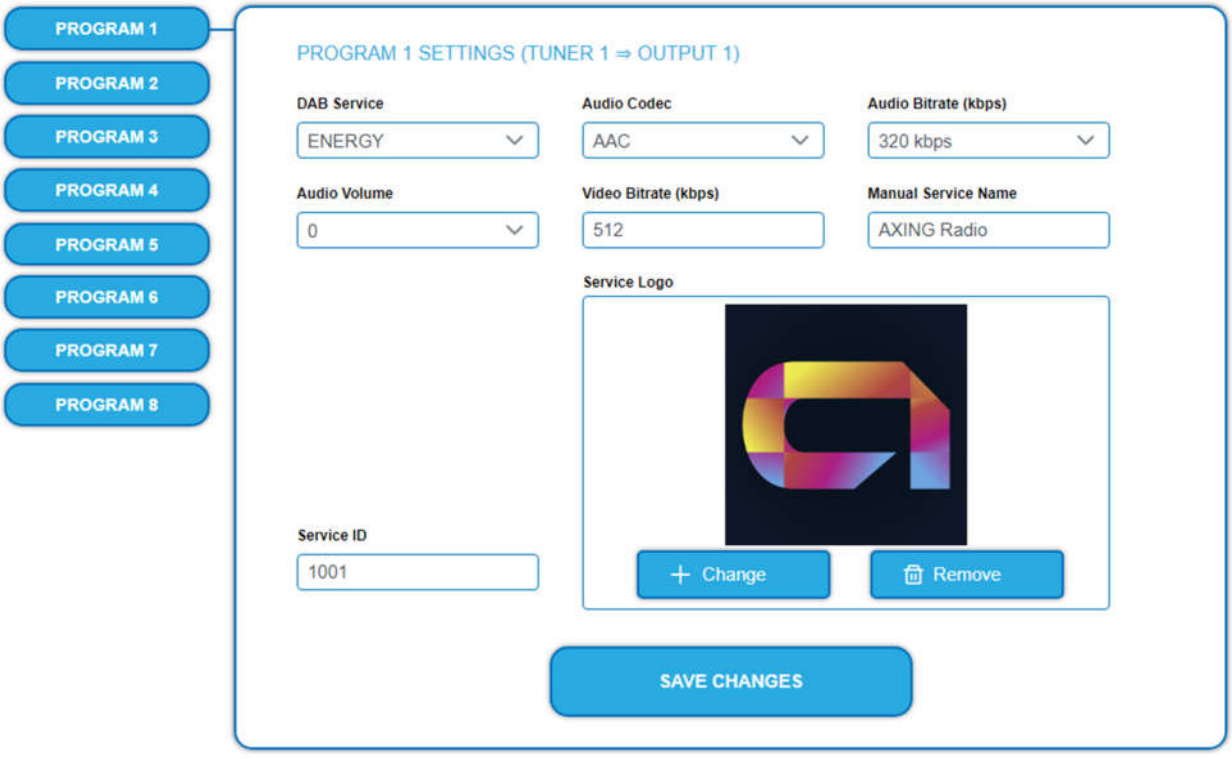



**Note:** Only Internet radio stations for which no access data are required can be received.

## 4.2. Phase 2 – Programs for outputs

➔ Choose **PHASE 2** in the INITIALIZATION.



➔ If the input is a DAB channel you must choose the program in the **DAB Service** field.
If the input is an FM program the **FM Service** is fixed.

➔ In the **Audio Codec** field, you can choose between AAC, MPEG and MP3.

➔ In the **Audio Bitrate** field, you can choose between 128 … 320 kbps.

➔ The basic volume of the transmitter can be defined in the **Volume** field. 20 is the highest volume, -20 is the lowest volume.

➔ In the **Video Bitrate** field, enter the bitrate in kbps.

➔ Enter a Service Name for the program in the field **Manual Service Name**.

➔ In The field **Service ID**, you can edit the Service ID.

**Not provided modifications will cause problems!**

Changes of the SID are only necessary for STBs using fix preset IDs. These STBs are used of some providers to suppress reception for external devices. Modifications should only be done after consulting the provider.

**Service Logo**

You can add a service logo, which is shown e. g. in the playlist of the radio.

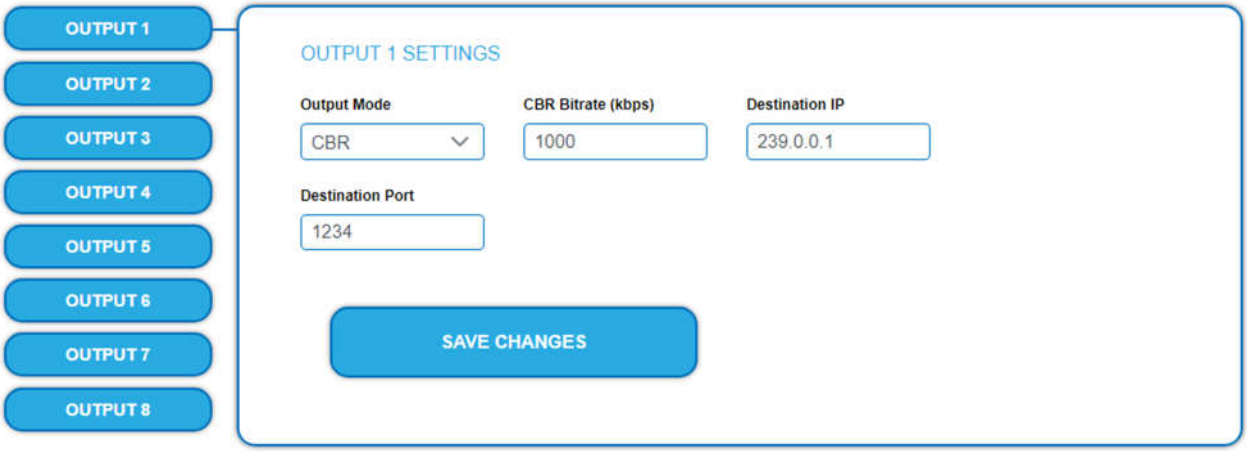
➔ Click on **+ ADD LOGO** and choose a file from your PC/Notebook. jpg and png files are supported.
The file will be uploaded and shown in the Service Logo field.

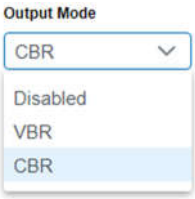
➔ Click + **CHANCE**, to change a logo or **REMOVE** to remove it.

➔ Click **SAVE CHANGES** to store the settings.

## 4.3. Phase 3 – Settings for Outputs

➔ Choose **PHASE 3** in the INITIALIZATION.


➔ Choose the output mode Enter the **URL** of the transport stream in the URL field.
Supported output modes: VBR (Variable Bitrate) and CBR (Constant Bitrate)
In case CBR selected, CBR bitrate must entered: 150 … 2500 kbps.

➔ Edit a **Destination IP** and a **Destination port** for the Output.

➔ Click **SAVE CHANGES** to store the settings.

# 5. Maintenance

➔ Choose **MAINTENANCE** from the main menu.


In the menu item MAINTENANCE, status information of the head-end can be viewed, and the technical conditions can be configured.

## 5.1. About (Device information)

➔ Click **MAINTENANCE** > **ABOUT**.

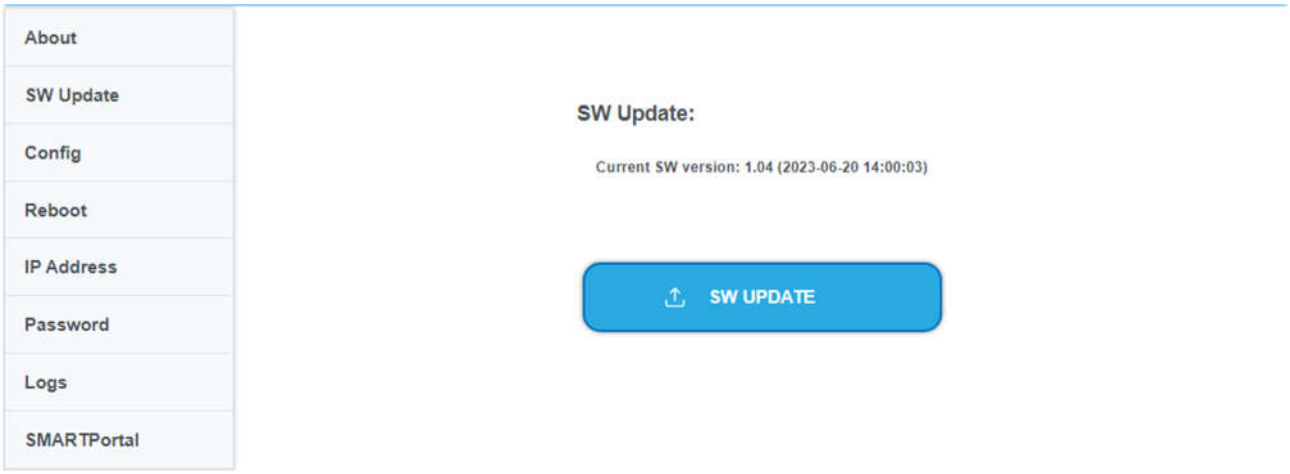

Under Device information, you will find the following information:

- Serial number of the device
- Software version of the controller
- Software version of each encoder

## 5.2. Updating the Software

**Note:** The device consists of a controller and 8 encoders. Each unit must be updated separately.

➔ Click **MAINTENANCE** > **SW UPDATE**.




**Download**

You can find software updates by entering the article in the search field at www.axing.com.
➔ Download the update file to your computer.
➔ **Unpack it.**

**Update**

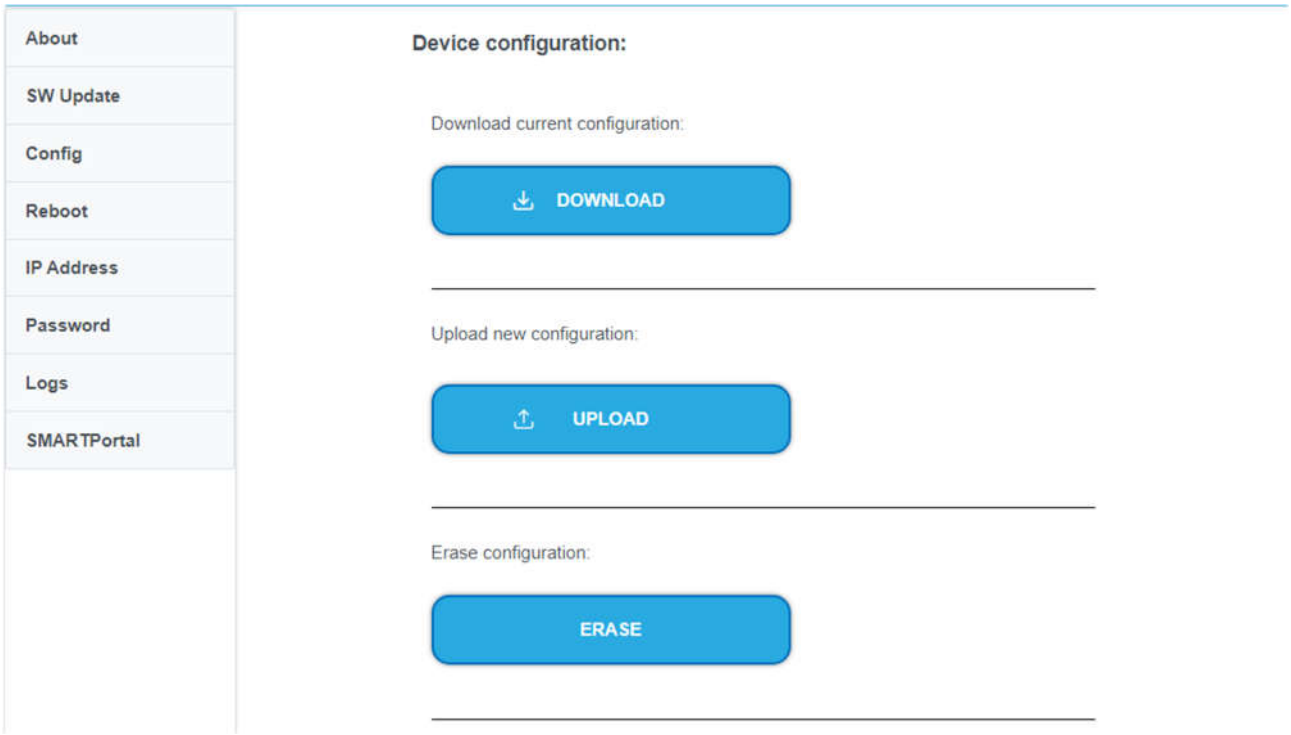
➔
➔ Click SW Update
➔ Browse for the file **aip_vX.xx.ssu** on your computer.
➔ Click on **Upload**.

The file will be uploaded to the device. After this the update of the device begins automatically.
➔ Do **not turn off** the power during the update. Do **not close** the browser and do **not refresh** the page in the browser.

The device will be automatically rebooted.
➔ After this, log in again.

## 5.3. Down- or upload of a configuration to the device

➔ Click **MAINTENANCE** > **CONFIG**.



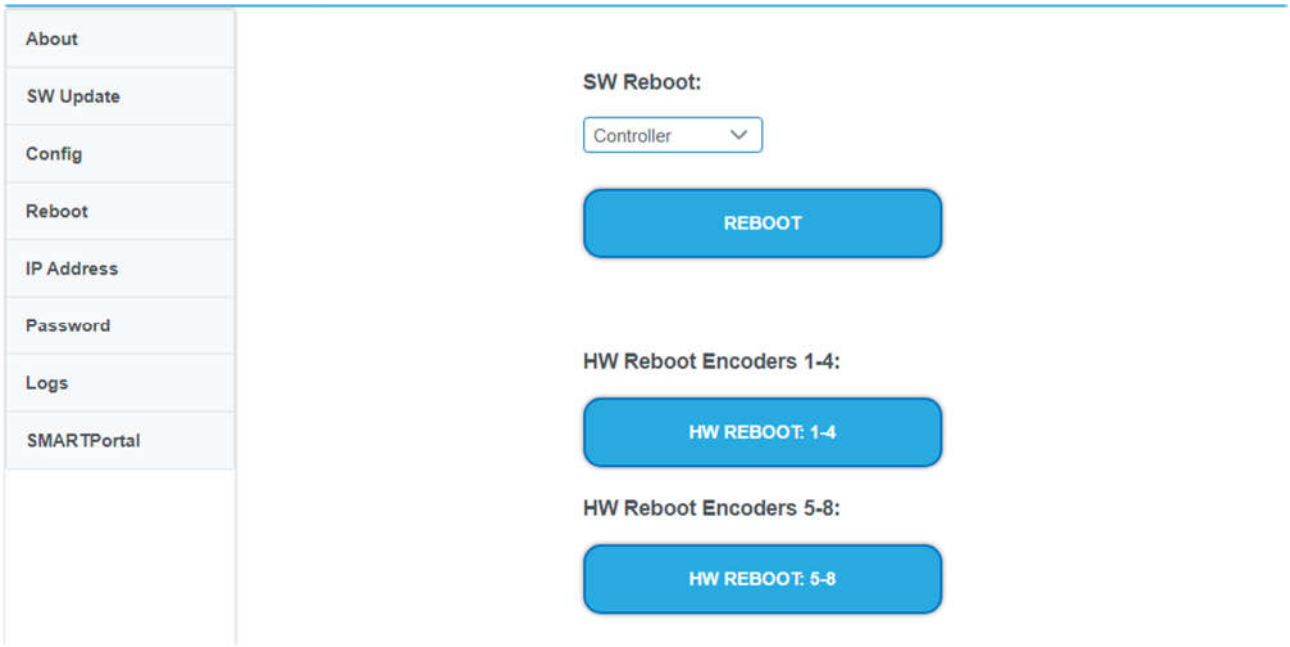

In the **CONFIG** area, you can download the device configuration to your computer, upload a device configuration or delete the device configuration.

By deleting the configuration, the unit is reset to the delivery status.

## 5.4. Rebooting Hard- or Software

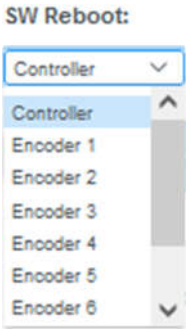
➔ Click **MAINTENANCE** > **REBOOT**.

Under **REBOOT** the software or the hardware of the device can be rebooted.




**Software Reboot**

➔ In the **SW Reboot** field, select the controller or one of the encoders you want to reboot.




➔ Then click on **REBOOT**.
The software of the controller or an encoder is rebooted.

**Hardware Reboot**

➔ Click on **HW REBOOT 1-4** or **HW REBOOT 5-8**.
A hardware reset for the corresponding encoders is done.

## 5.5. Editing the IP addresses

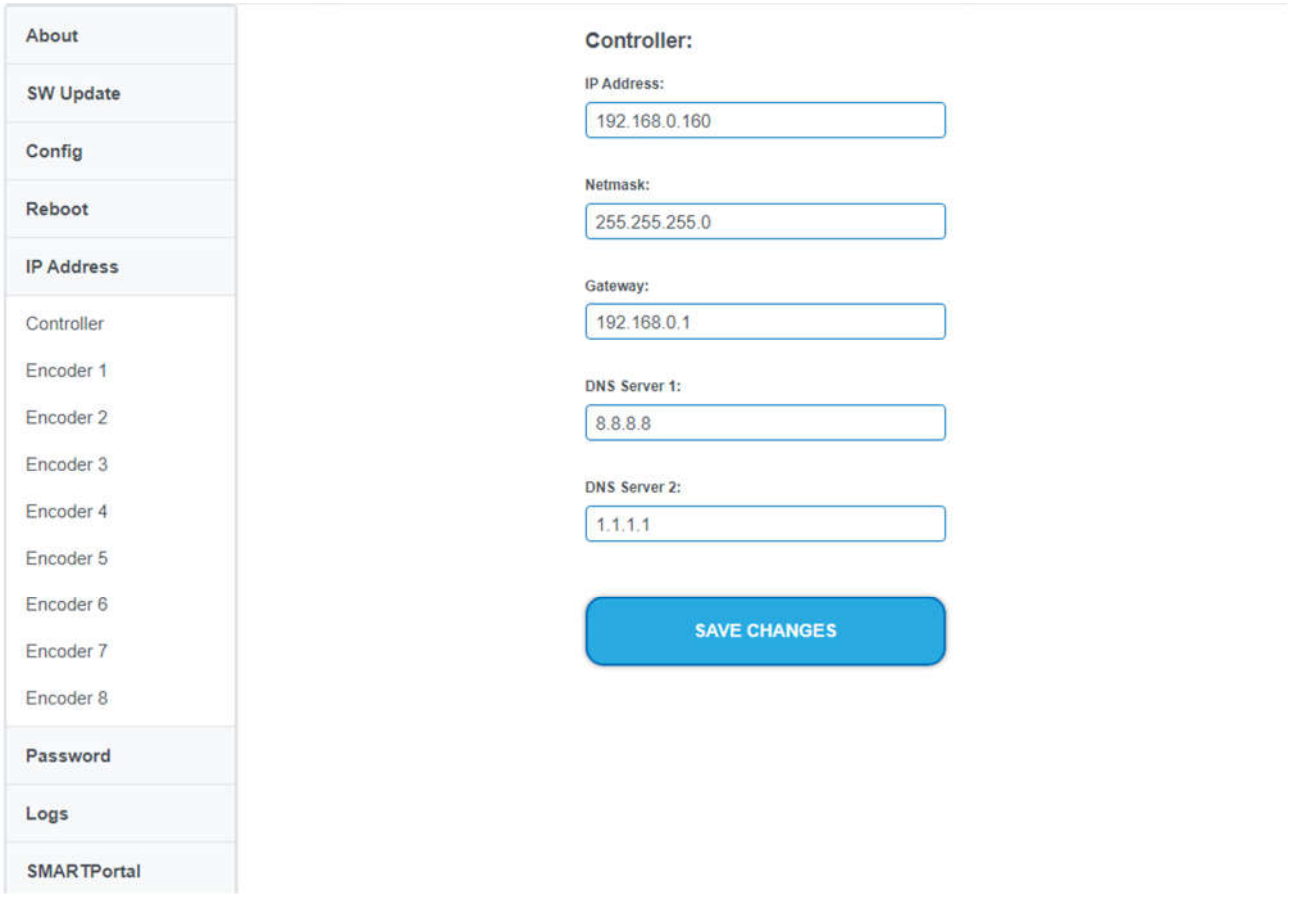
➔ Click **MAINTENANCE** > **IP ADRESS**.

The network options are configured under the menu item **IP Address**.

The IP address data can be configured for the controller and for each encoder.

The default IP addresses are:

- 192.168.0.160 for the controller
- 192.168.0.161 … 168 for the encoders.



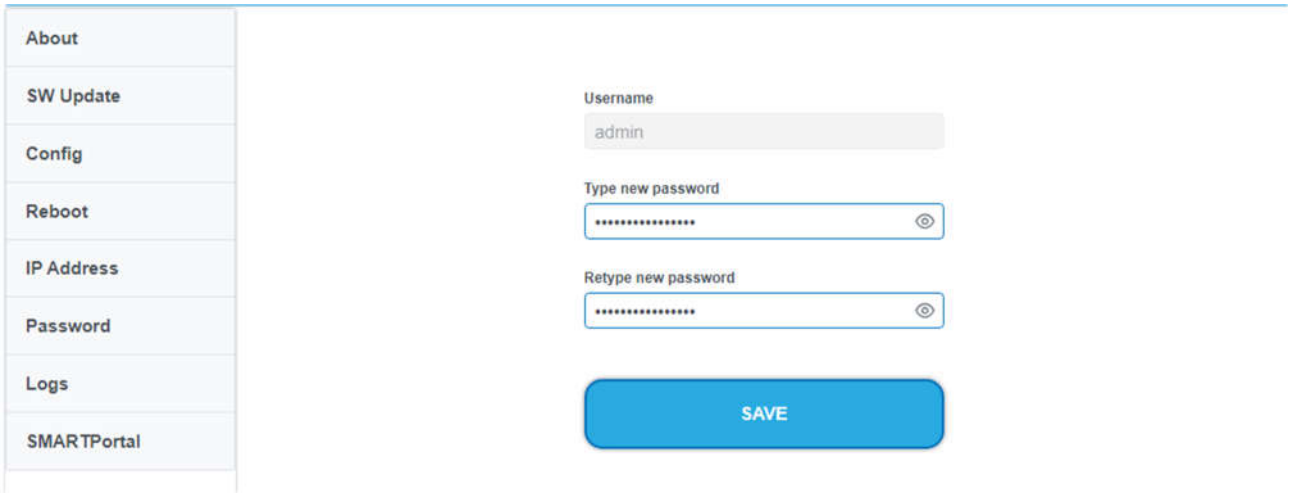

➔ After changing address data, click **SAVE CHANGES**.
The data is stored.

## 5.6. Password

➔ Click **MAINTENANCE** > **PASSWORD**.

The default password is: *Ramsen8262*.

The default password should be changed right after commissioning the device.




➔ Type a new password with 8 … 32 characters.

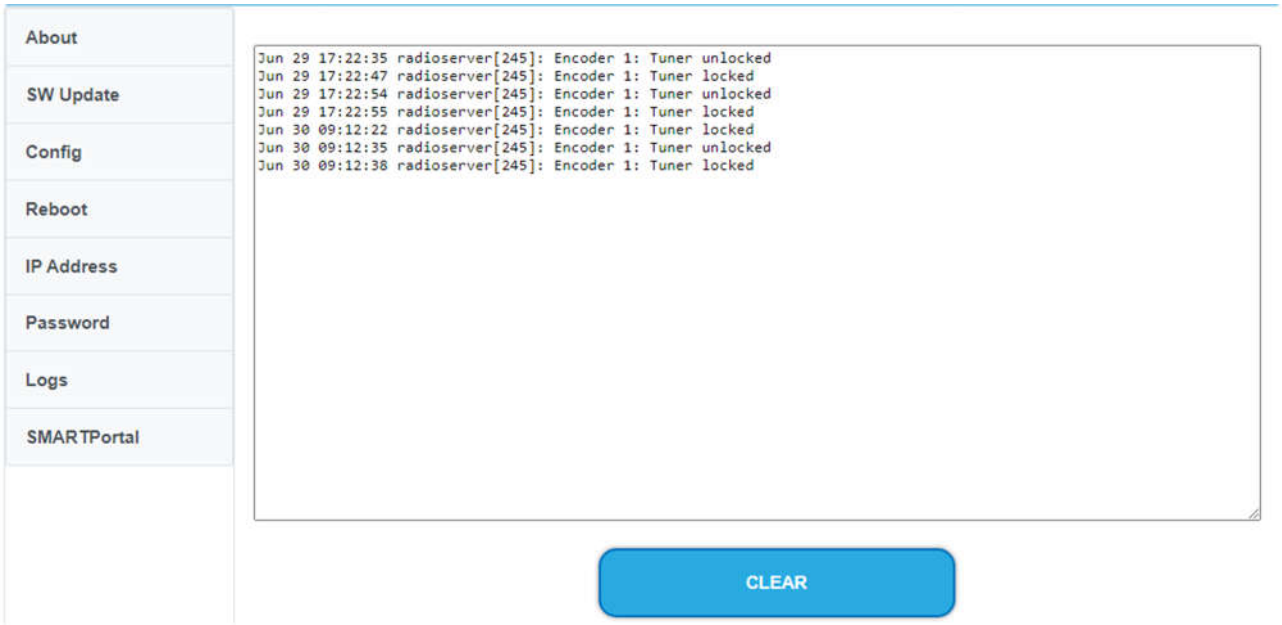
➔ Retype the new password.

➔ Click **SAVE** to confirm and save the changes.

## 5.7. View the log entries

➔ Click **MAINTENANCE** > **LOGS**.

Under **LOGS** you can see the log entries of the device.



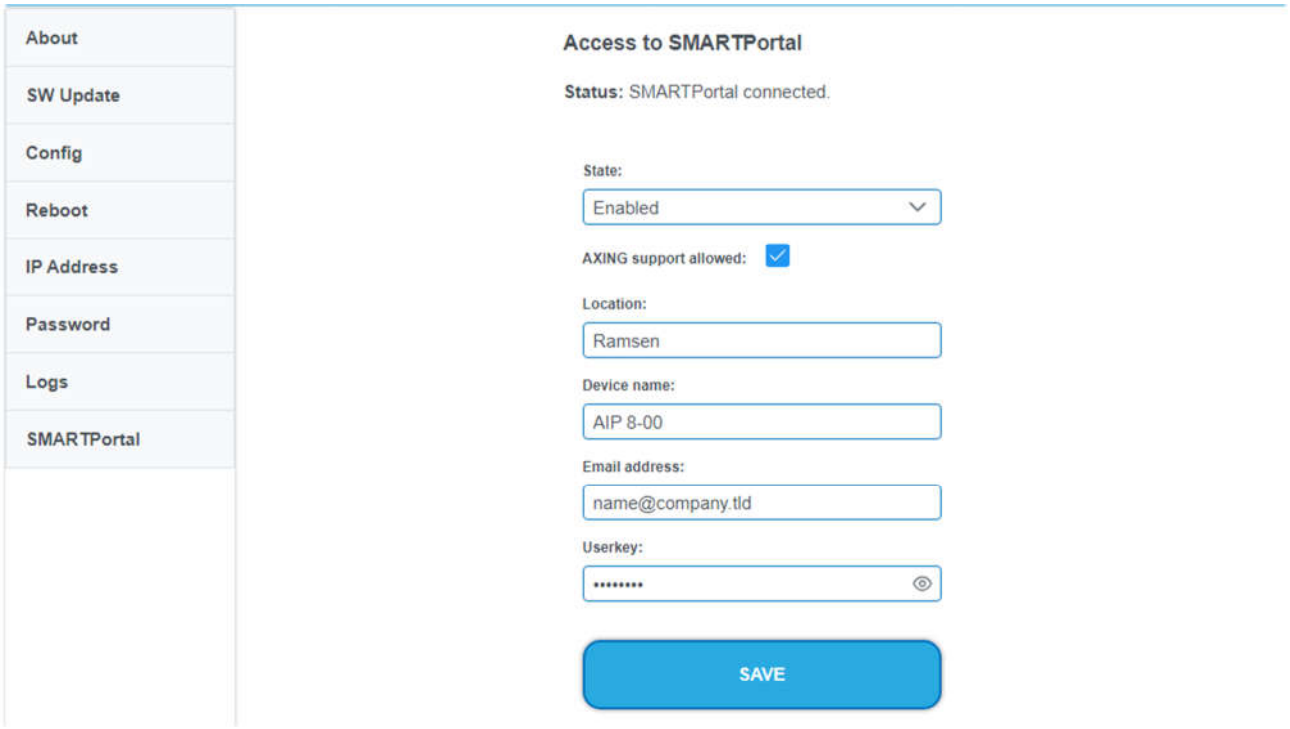

➔ Click **CLEAR** to delete all entries.

## 5.8. SMARTPortal

➔ Click **MAINTENANCE** > **SMARTPORTAL**.

If you are a registered user of the SMARTPortal, then you can remotely control the device via the SMARTPortal and, if necessary, receive support from AXING (see also https://axing.com/en/produkte/smartportal/).

**Prerequisite is an internet connection for the device.**




➔ In the **State** field, select **Enabled**.

➔ Activate, if required, the option **AXING support allowed**.

➔ In the field **Location**, enter a name for the location of the device. This name will appear later in the SMARTPortal to help you identify the device.

➔ In the field **Device name**, enter a name of the device.

➔ In the field **Email address**, enter the e-mail address with which you are registered at SMARTPortal.

➔ In the field **User key**, enter the user key that you received when registering at SMARTPortal.

➔ Click on **SAVE**. The data is saved, the device is rebooted and the connection to the SMARTPortal is established.

# 6. Technical specifications

| | |
|---|---|
| Type | DABIP-800 |
| Inputs | |
| Number of tuners | 8 × DAB/DAB+/FM |
| Connector | 8 × F-female |
| Frequency range | 87.5 … 239.2 MHz<br>87.5 … 108 MHz @ FM<br>5A … 13F @ DAB/DAB+ |
| Input level | 48 ... 78 dBµV |
| IP output | |
| Transportstreams | 8 × SPTS |
| Total net data rate | 816 kbit/s |
| Data rate per tuner | 102 kbit/s |
| Supported transport protocols | UDP |
| Audio codecs | MPEG-1 \| AAC-LC, 102 kbit/s \| MP3 |
| Audio sample rate | 48 kHz |
| Interfaces | |
| Ethernet connectors (LAN) | 9 × RJ-45 |
| Ethernet standards | IEEE 802.3, 100 Base-T @ CONTROL<br>IEEE 802.3, 1000 Base-T / 1 GbE @ IP OUT 1 … 8 |
| Supported configuration protocols | HTTP (local), HTTPS (remote via AXING SMARTPortal*) |
| General | |
| Operating voltage | 100 … 240 VAC / 50 … 60 Hz |
| Power consumption | 24 W |
| Operating temperature range<br>(acc. to EN 60065) | −10 °C … +50 °C |
| Dimensions (W × H × D) appr. | 480 × 47 × 253 mm |
| Weight | 3.50 kg |
| Comments | * encrypted, cloud-based application for configuration, monitoring and remote maintenance |