# Iris Transmitter/Receiver

## User Manual

for software version 1.1.0

Updated on 13/07/2023

# Contents

## EU Declaration of Conformity

CE This product carries the CE-Mark in accordance with the related European Directives. CE marking is the responsibility of Streamit B.V. The Netherlands.

## Disclaimer

This manual has been validated and reviewed for accuracy. The instructions and descriptions it contains are accurate for the Streamit Iris devices at the time of this manual's production. However, later Iris devices and manuals are subject to change without notice. Streamit assumes no liability for damages incurred directly or indirectly from errors, omissions or discrepancies between Iris device and the manual.

## Understanding of Instructions

⚠ **WARNING:** These are instructions which can cause harm to people or damage to the device if not followed properly. It is important to read and follow these instructions carefully.

❗ **IMPORTANT:** These instructions are important in order to understand the correct behavior of the device.

## Notices about trademarks

- The Iris family of devices is a registered trademark of Streamit
- Streamit is a registered trademark
- All other trade names that are used in this manual are owned by their respective owners

# 1    Getting started

This is the consolidated user manual for the 'Iris Transmitter' and the 'Iris Receiver' devices running software version 1.1.0.

We strongly recommend reading this manual thoroughly before you start installing and using the device for the first time.

## 1.1    Introduction

Our Iris devices connect high-quality audio systems wirelessly. Employing DECT technology and a highly versatile audio codec you can move full-band audio unfailingly and securely with minimal latency. Connect media players and audio mixers with your active speakers reliably when wired connections are expensive or impractical.

The Iris Transmitter ( TX-device) can be broadcast high quality audio to one or more Iris Receivers (RX-device).

With the built-in relay control functionality, digital input pin changes on the transmitter get broadcasted to the digital output pins of all connected receivers, to control speakers and amplifiers and save energy.

Based on the application requirements, many Iris devices can be paired (wirelessly connected) to form wireless audio networks. Pairing devices is easily done using the Iris configurator app.

For more information on Streamit products and technologies, we invite you to visit our website https://www.streamit.eu.

## 1.2    Important safety instructions

Use the following safety guidelines to help ensure your own personal safety and to help protect your equipment and working environment from potential damage.

1.  Read these instructions.

2.  Keep these instructions.

3.  Follow all instructions.

4.  Keep your equipment away from extremely hot or cold temperatures to ensure that it is used within the specified operating range:

    Operating temperature:  -20°C to 50°C

    Humidity: 30% to 90%, RHL non-condensing

5.  Install in accordance with the manufacturer's instructions.

6.  Only use accessories specified by the manufacturer.

7.  Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the product, the product has been exposed to rain or moisture, does not operate normally, or has been dropped.

8.  The power supply and power cord for this product is intended for indoor use only.

9.  Use only the supplied power adapter.

## 1.3    Iris product range

The Iris technology can be used as the base for a number of products. The scope of this manual are the products currently on offer:

-   Iris Transmitter

-   Iris Receiver

For special requirements or product ideas, please do not hesitate to contact us (https://www.streamit.eu/contact/)

**The Iris Transmitter**

The Iris Transmitter also referred to as the TX-device, is connected at the audio source and it is the center point of your audio network. You can connect up to 1000 RX-devices in the same audio network.

Looking at the hardware, on the front side we find:

-   Two LEDs used to communicate status information

-   The external antenna connector
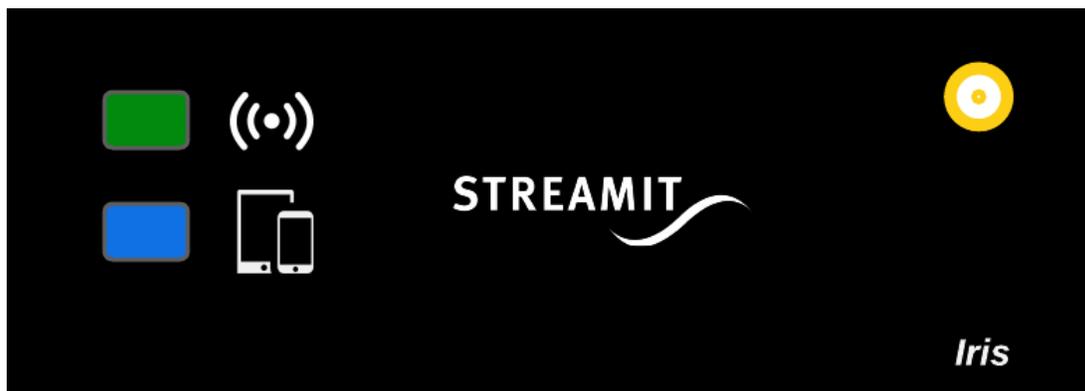


On the back side we find:

- The RCA audio input connector

- A Phoenix Contact plug for the relay control

- The USB-C power connector.



**!** The current firmware only supports a single audio channel. Only the LEFT channel input will be used.

**!** In the current firmware, the digital contacts are used exclusively to implement relay control functionality.

## The Iris Receiver

The Iris Receiver also referred to as the RX-device, is connected at the playout location, very close to, or mounted on the speaker.

When it comes to the appearance, one will not be able to distinguish between the  RX-device and the TX-device.

On the front, you will notice the same two LEDs used to communicate status information, as well as the external antenna connector.

On the back side as well, the only differences with the TX-device are functional.

The RCA connector on the RX is for the audio output, and you have to use the output contact for the relay control functionality.



! The current firmware only supports a single audio channel. The same audio will be available for both channels on the RX-device.

! In the current firmware, the digital contacts are used exclusively to implement relay control functionality.

## 1.4    Applications

The Iris devices have been developed for many types of applications that require highly reliable transport of high quality audio, without cables.

Any of the following applications is possible at any location (site):

- A single one-to-one audio network

- A single one-to-many audio network, with hundreds of receivers

- Up to 10 one-to-many audio networks, with hundreds of receivers each

Although the Iris features an internal antenna which should be good enough for many application, the default configuration requires connecting the external antenna. This increases reliability and extends the range significantly.

We are currently busy with, and would be happy to discuss other applications and product ideas. Feel free to get in touch for more information.

# 2 Installation

This section of the manual covers the installation of your Iris audio networking devices, and includes some general installation notes.

## 2.1 Unpacking your device

Carefully unpack the device and the supplied materials. Make sure that all of the following components are included:

- 1x Iris device

- 1x External antenna

- 1x USB-C power supply

- 3x Power plug adapters for EU (Type C), UK (Type G) and US (Type A)

## 2.2 Connecting the Iris

### Connecting the USB-C power supply

Select the correct power plug adapter for your mains socket and mount this to the base of the power adapter. Plug the power adapter to the mains outlet and plug the other side in the Iris. In the process we ask that you play careful attention to the following instructions:

⚠ Never use wet hands when plugging the power adapter in the mains and never remove the power adapter from the mains with wet hands.

⚠ Do not cut or damage the cord of the power adapter; do not place heavy objects on the cord. This can cause short-circuit, resulting in electrical shocks or even fire.

⚠ Pulling the cord can also damage the wire and/or isolation causing electrical shocks or fire.

⚠ Using power adapters other than the one recommended for your Iris, can result in overheating and damage you device. This can cause fire, electrical shocks and other hazards. Only use the supplied power adapter.

⚠ Applying your Iris to situations with rapid changing temperatures can result in condensation (small amount of water) on the inner and outer surface of your device. To ensure a long lifetime of your device, this should be prevented. In case of such a scenario, wait until you device is 'dry' before you use it again.

## Connecting the audio input on the TX-device

The analogue audio source is connected to the audio input of the TX-device. The required cable has an RCA connector (2x tulp male) for the Iris side, while the other end depends on the type of connector on the source device. No audio cables are included with the Iris.

❗ The current firmware features MONO only support. Please make sure that the input from the mono source is connected on the LEFT (black) connector.

## Connecting the audio output on the RX-device

The audio output of the RX-device will be connected to the line input of the audio installation, or speaker system. The required cable has an RCA connector for the Iris side, while the other end depends on the type of connector on your audio installation. No audio cables are included with the Iris.

## 2.3    General installation notes

Whether you are dealing with a one-to-one or a one-to-many audio network, a proper placing of the devices is imperative.

Attention needs to be paid to the following:

- Always try to have the TX-device placed in the "middle" of the installation.

- Make sure to connect the external antenna, to improve range and stability.

- Try to place the products as high as possible and prevent moving obstacles between the devices.

Thanks to the stability of the solution, it is possible to install thousands of devices at a single site. For such large installations, the following is important:

- There can be a maximum of 1000 RX-devices in one audio network.

- There can be a maximum of 10 audio networks at one site.

- The volume of the TX-device can be adjusted, affecting the complete network.

- The volume of each RX-device can be adjusted individually.

# 3    Configuration

The configuration of your Iris audio networks is done using the  Iris configurator , a companion mobile app available for free. For more information and download location see §The Iris configurator app or visit the Streamit website.

❗ The default advertising name is printed on the sticker on the bottom of the device.

## 3.1    Setting up an audio network

Setting up an audio network is an easy task.

- Start the Iris configurator app and press 'Administrator login'

- (First time only) Create admin password and store/remember the chosen password

- Login using the administrator password (you just created)
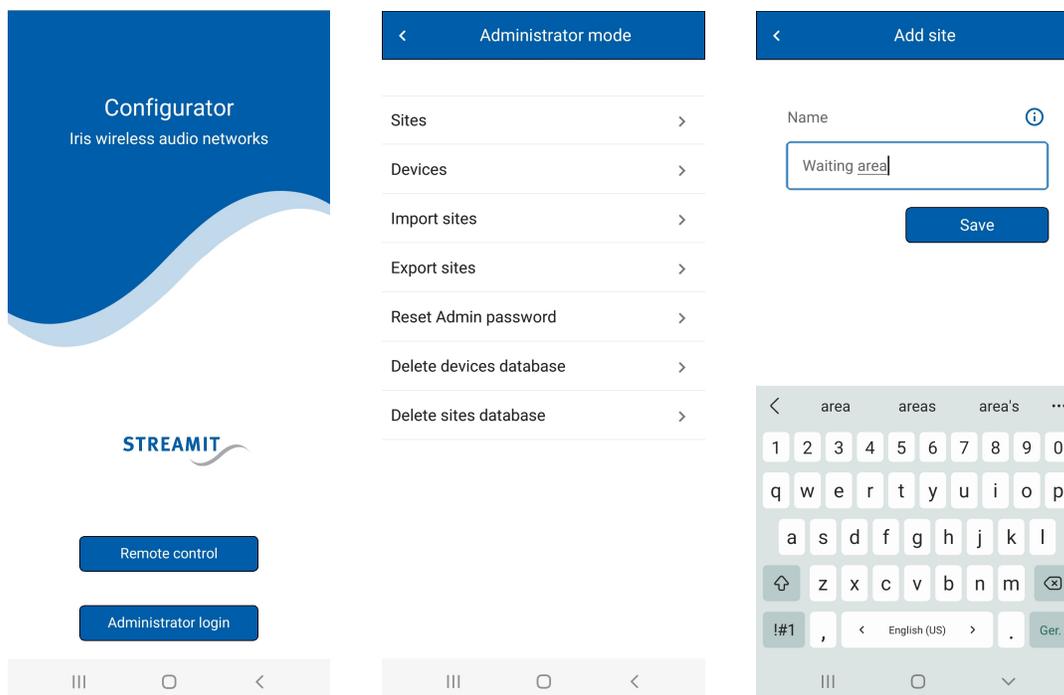


- From the admin home, select 'Sites' and eventually create a new site for your audio network

- From the home page of the site you just created, select 'Add audio network'
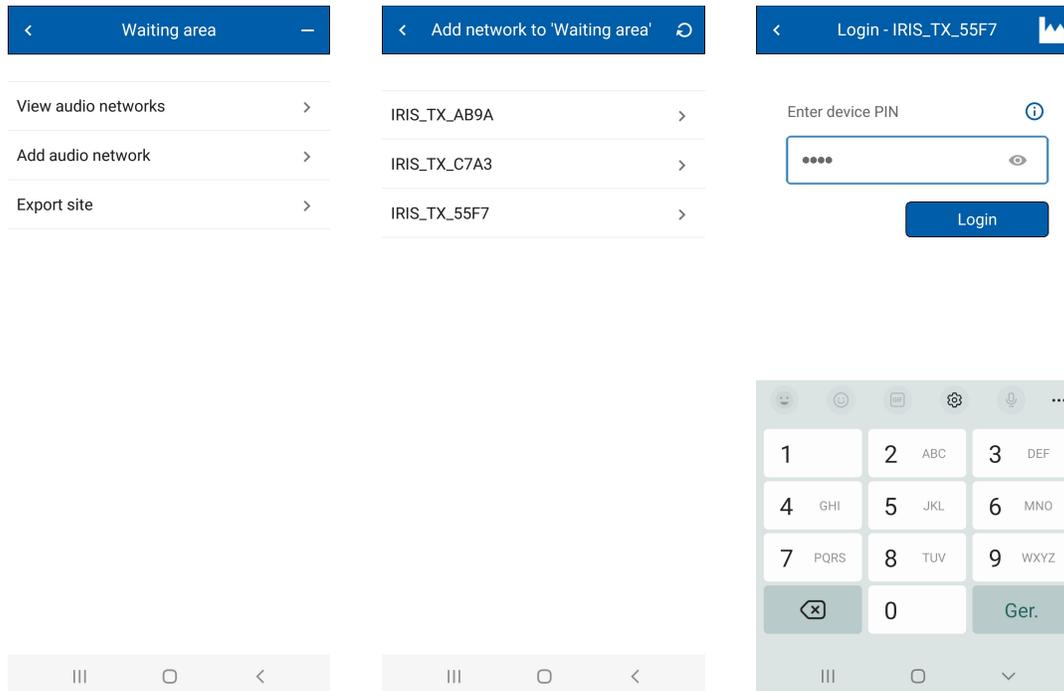
- Make sure you are close to the TX-device, otherwise walk towards it until the device shows in the list.

- Select your TX-device and, when asked for, enter the PIN code of the specific device (see § Find the PIN code).

- Tap on the TX-device that was just added to the site to access the audio network properties page

- Start the pairing procedure, tapping the pairing icon at the top-right corner of the page

- Follow the instructions, and when asked, walk towards the RX-device you would like to pair with. Select the device when this shows in the list, and when asked for, enter the PIN code of the specific device (see § Find the PIN code).

**IRIS_TX_55F7**

Site            Waiting area

Paired devices    -

TX-device ready for pairing

Go to the RX-device and press 'OK' when in proximity!

OK    Cancel

**Pair with IRIS_TX_55F7**

IRIS_RX_BC92    >

IRIS_RX_6AA8    >

IRIS_RX_C364    >

**IRIS_TX_55F7**

Site            Waiting area

Paired devices    IRIS_RX_BC92

Pairing successful

Do you want to pair another RX-device?

Yes    No
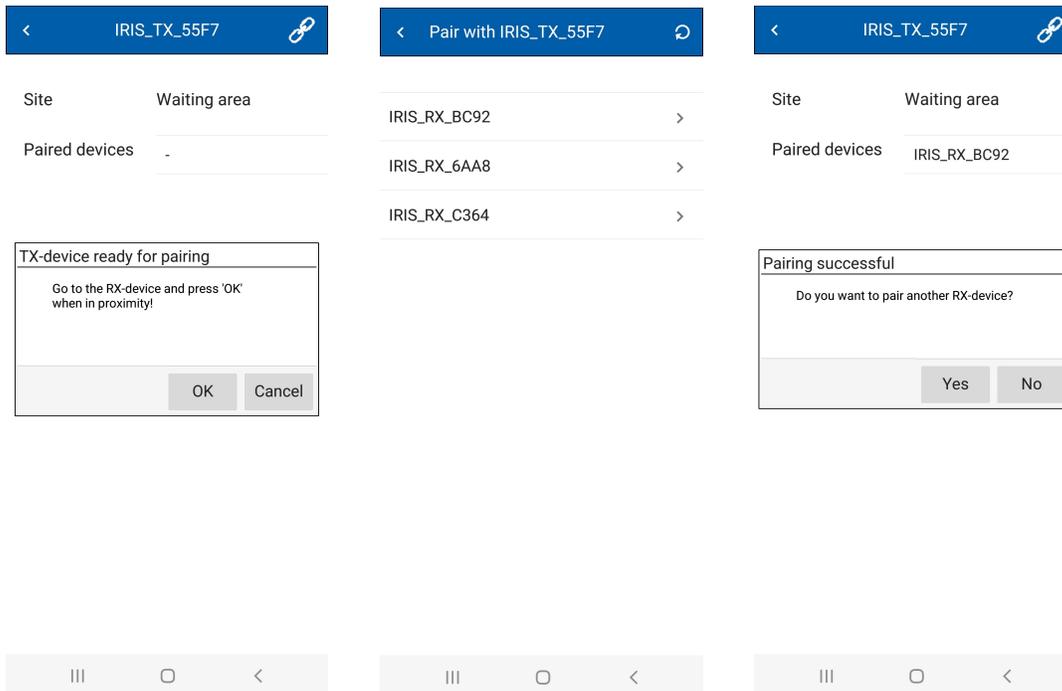
- On a successful pairing audio will come out of the speaker installation.

- You will be asked whether you want to add other audio receivers to the network. For a one-to-many audio network, you can simply proceed with the next RX-device, and so on.

Once all RX-devices have been connected, it is recommended to stop the pairing mode on the  TX-device

- From the admin home, select 'Devices' to get a listing of all the devices in your proximity

- Walk towards the  TX-device until the device shows in the list, and select it

- Access the system menu of the device, tapping the gear icon at the top-right corner of the page

- Select 'Stop pairing mode' (see also §The Iris configurator app)

## 3.2     Relay control functionality

The Iris has been designed to facilitate switching of equipment such as amplifiers or active speakers whenever audio is not required.
With the relay control functionality, digital input pin changes on the transmitter are transparently communicated to the digital output pins of all receivers in the audio network. This is default behavior and requires no configuration.

To close a circuit connected on the receiver side to the Output and Ground and power on your equipment, you short the Input pin to Ground on the TX-device.
Releasing the Input on the transmitter will break the circuit on the receiver side and the connected equipment will turn off.

The relay circuit is out of scope for this manual. Please check the electrical details in § Technical specifications.

# 4    LED status information

The Iris features two LEDs which are used to communicate the status of the device (bottom to top)":

- The app status LED (BLE connection status with Iris configurator)

This LED can light up: fuchsia, blue, or red.

- The DECT status LED (Status of the audio link and pairing)

This LED can light up: green, orange, or red.

Each of the status LEDs can be switched **off** or light up as follows: **solid**, **slow blink** (▨), **fast blink**(▨).

Both LEDs must never be off while the Iris is powered up, except for the time required for the system to start up.

## LED: App status

| | |
|---|---|
| ▨ | **TX/RX**: Iris is discoverable, no active BLE connections |
| ▨ | **TX/RX**: App has connected, but authentication (using device's PIN) is required |
| ▨ | **TX/RX**: BLE connection is active, and user (app) has authenticated |
| ▨ | **TX/RX**: There is an issue with the BLE interface |

## LED: DECT status

| | |
|---|---|
| ▨ | **RX**: Paired to a TX-device and audio channel is active (connected to TX-device) |
| | **TX**: Paired to at least one RX-device and audio channel is active (there is at least one RX-device connected) |
| ▨ | **RX**: Paired, but TX-device is not reachable (audio channel inactive) |
| | **TX**: Paired to at least one RX-device, but no RX-devices connected |

| | |
|---|---|
| | **RX**: Paired and locked to a TX-device, but audio channel inactive (should not happen in practice) |
| | **TX**: Paired and locked to at least one RX-device, but audio channel inactive |
| | **RX**: Not paired |
| | **TX**: Not paired |
| | **RX**: Pairing mode active |
| | **TX**: Pairing mode active |
| | **RX**: There is an issue with the hardware or DECT interface |
| | **TX**: There is an issue with the hardware or DECT interface |

# 5    Technical specifications

Being based on the same hardware platform and to be used together, TX-devices and RX-devices share most of the technical specs.

| | |
|---|---|
| Audio frequency range | 20 Hz to 20 kHz |
| DECT version | 1.9GHz (version 6.0) |
| DECT frequency range | 1880-1939 MHz |
| Signal reception indoors | 50m |
| Signal reception outdoors | 300m |
| Latency from transmitter | 16,5ms |
| Discrepancy between receivers | 0.15ms |
| Audio input channels | 1, LEFT channel only |
| Audio output channels | 1, same signal on both LEFT and RIGHT connectors |
| Power supply | 5V DC, 1A |
| Power connector | USB-C |
| USB bus-powered | Yes |
| Power consumption | Transmitter: 5V DC, 125mA<br><br>Receiver: 5V DC, 100mA |
| Peak current | Transmitter: 1000mA<br><br>Receiver: 5V DC, 100mA |
| Max. signal levels | Transmitter (input): 2dBu<br><br>Receiver (output): 2dBu |
| Audio connector | Transmitter (input): RCA-cinch female (2x)<br><br>Receiver (output): RCA-cinch female (2x) |
| Relay control specs (transmitter) | Logical low: <= 0.8V<br><br>Logical high: >= 2.5V |

| | |
|---|---|
| | Internal pull-up resistance: 10 kΩ |
| | Maximum input voltage: 3.3V |
| Relay control specs (receiver) | Max. switching voltage: 42V |
| | Max. output current: 1.4A |
| Operating temperature | -20°C to 50°C |
| Humidity | 30% to 90%, RHL non-condensing |
| Safety regulatory compliance | CE |
| Environmental regulatory compliance | WEEE |

# 6    The Iris configurator app

The Iris configurator is the companion mobile app for the Iris. It enables you to configure audio networks and can be used as a remote control by the end user. The Iris configurator is available for free and currently only available for Android.

Detailed information about the functionality available in the Iris configurator is out of scope for this manual. Given the fact that the app is essential in setting up your Iris audio networks, we will include some general information here.

For downloading location and other instructions visit the Streamit website (https://www.streamit.eu/iris-configurator)

The app can be used as an administrator, to configure the different audio networks at specific sites and for advanced features. When the app is made available to the end user, they can adjust the volume for individual devices and reboot a specific device.

! At the time of this manual, the app is still under development. The focus for the UI/UX has been mainly functional and certain incomplete or debug functionality is shown on screenshots.

Some screenshots when accessing as user:

- When the user selects 'Remote control' all players in the proximity will be listed

- When the user selects a player (and enters the PIN code), the properties page of the device will be shown containing core information on the device and firmware.

- On the properties page, the user can adjust the volume and access the system page (gear icon on top-right side)

- From the system page the user is able to reboot the device (should not be required).
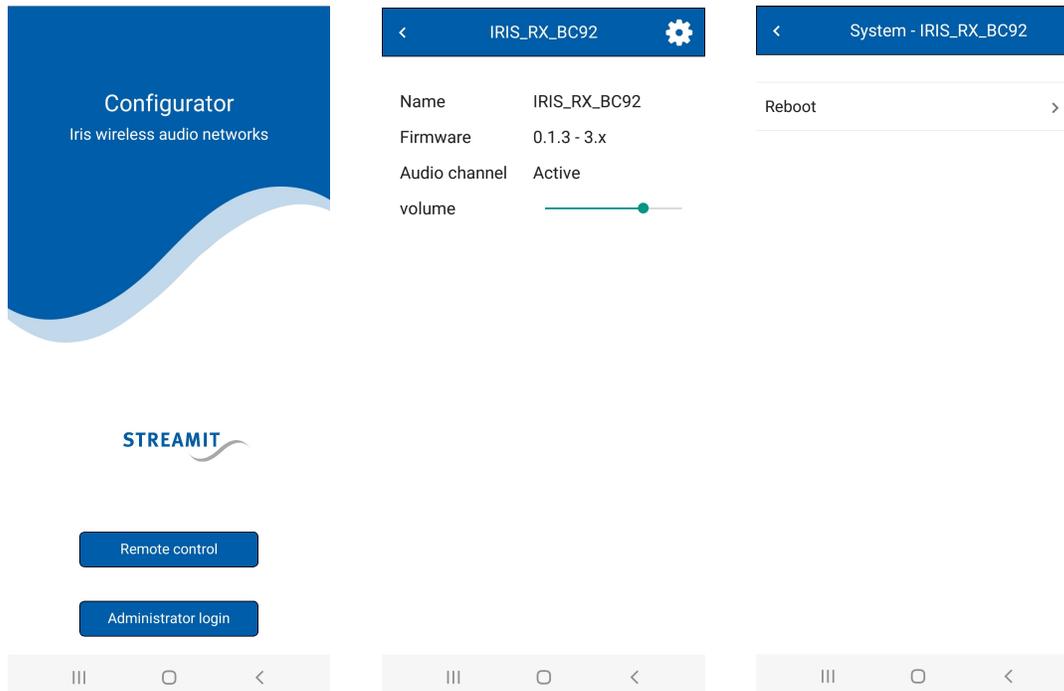
Some screenshots when accessing as administrator are shown below. When selecting 'Administrator login' (and entering the admin password) you will be shown the admin home page. Some functions on this page are currently under development or have been enabled for debug purposes.

- The 'Sites' menu enables you to set up and organize you audio networks and pairing the devices that make each audio network

- When selecting 'Devices' all players in the proximity will be listed

- Selecting a specific device will access its properties page, containing more information than the remote control access

- The system page (access via gear icon on top-right corner) in admin mode lists a number of system functions

  o **Stop pairing mode** (TX-device only) - Does what the name says and is only shown when pairing mode was enabled on the TX-device

  o **Unpair** (RX-device only) - Break the connection with and discards pairing information for the respective TX-device. Option is only shown when there is an active connection to the TX-device.

  o **Reboot** - Reboots the device, shortly interrupting the audio connection. When rebooting a TX-device, audio will be interrupted on all RX-devices connected at the given moment.

  o **Change PIN** - Changes the PIN code for the specific device

- o **Factory reset** - Loads the settings of your device with default values and discards all pairing information. This option requires the <u>factory reset password</u>, which is not documented.

- Import sites - under development

- Export sites - under development

- Reset Admin password - debug/under development

- Delete site database - debug

- Delete site database - debug

| Administrator mode | |
|---|---|
| Sites | > |
| Devices | > |
| Import sites | > |
| Export sites | > |
| Reset Admin password | > |
| Delete devices database | > |
| Delete sites database | > |

| IRIS_TX_55F7 | |
|---|---|
| Name | IRIS_TX_55F7 |
| Firmware | 0.1.3 - 3.x |
| Audio channel | Active |
| volume | |
| site | Waiting area |
| paired with: | IRIS_RX_BC92 |

| System - IRIS_TX_55F7 | |
|---|---|
| Stop pairing mode | > |
| Reboot | > |
| Change PIN | > |
| Factory reset | > |
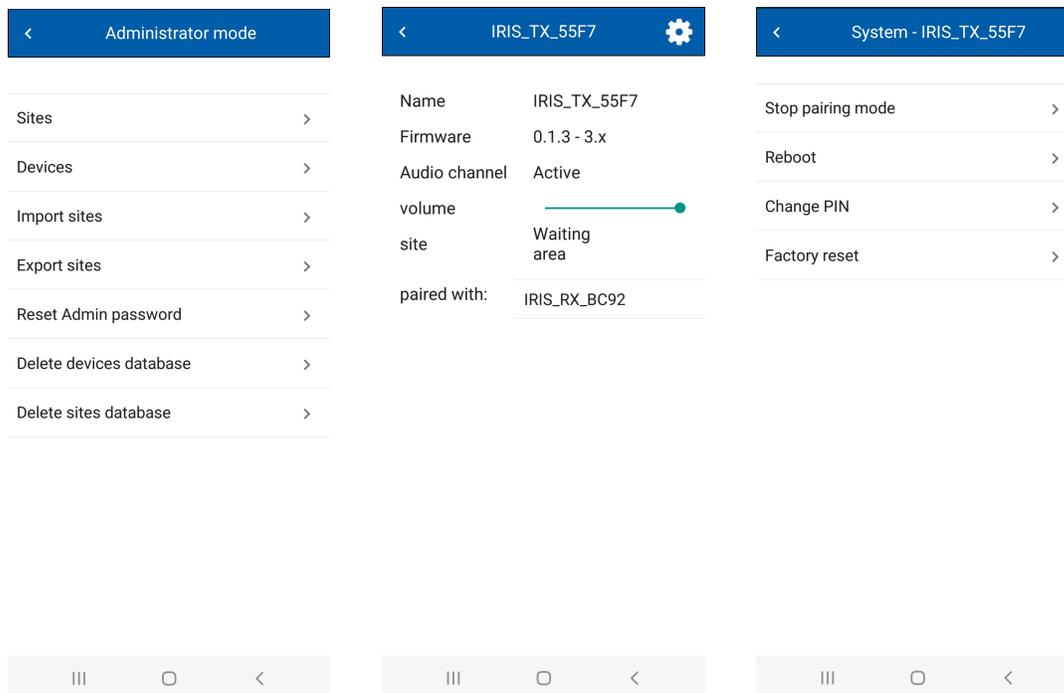
# 7 Troubleshooting

In this section several tools and options for troubleshooting are described. Please consider these options before contacting support, this might save you time.

## 7.1 Find the advertising name

The name of an Iris device as shown in the Iris configurator is called the advertising name. The default advertising name is printed on the label found on the bottom side of the device (e.g. IRIS_TX_123A).

## 7.2 Find the PIN code

In order for an instance of the Iris configurator to be authorized to connect to an Iris, the device PIN needs to be entered. Unless the PIN was already changed, the default PIN should be used.

The default PIN is **'0000'** (without quotes).

Should the PIN have been changed but you no longer remember it, you will need to reset the device.

## 7.3 Reset to default settings

Resetting a device will apply factory default values for all settings and can be executed using the Iris configurator.

This action requires using the factory reset PIN which is intentionally not documented. For help, please contact Streamit support.

❗ When you reset a device, all pairing information will be lost.

# 8     More information

In addition to this manual, the following sources are available for your reference:

- Support page: https://www.streamit.eu/support

- Streamit site with additional manuals: https://www.streamit.eu

# 9    Support

For technical support regarding the Iris devices, software tools or technical documentation, please contact your dealer first. In case you are a direct customer of Streamit, please visit the support page (https://www.streamit.eu/support) where you will find an option to submit a support ticket.