

Iris series

User Manual

for software version 1.6.0

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EU Declaration of Conformity



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' running software version 1.6.0.

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

1.1 Introduction

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 or passive speakers reliably when wired connections are expensive or impractical.

The Iris Transmitter broadcasts high quality audio to the receiver devices that have joined its network through the pairing mechanism.

Any receiver device (RX-device), including the Iris wireless amplifiers, are compatible with and interoperable with all available transmitter variants.

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. Until the the mobile app '**Iris configurator**' becomes available, pairing devices is done using the [Iris Service Tool](#).

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 (if applicable).

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 components listed in the table below are included:

Product name	Iris Transmitter	Iris Receiver	Iris Starterkit
Article number	TX-1	RX-1	SX-1
USB-C 5V/1A power supply with cable 2m	1x	1x	2x
Set of EU/UK/USA mains plugs	1x	1x	2x
Iris Transmitter TX-1	1x		1x
Iris Receiver RX-1		1x	1x
External antenna	1x	1x	2x

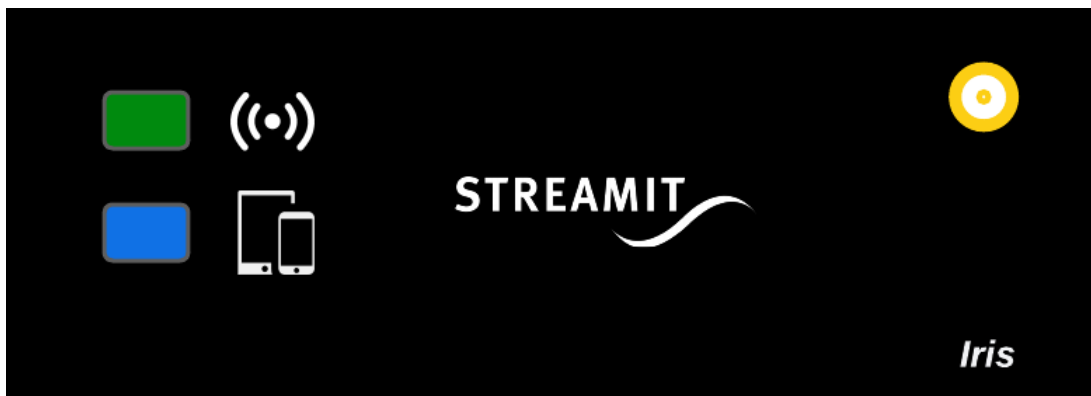
2.2 Device appearance and connections

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.

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 connector used for power, configuration and firmware updates.



! The digital contacts on the TX-device 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. You only will find it on the product sticker which is on the bottom side of the 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.



! On the RX-device, the digital contacts are used to implement relay control functionality as well as for [Factory reset](#).

2.3 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 pay careful attention to the following instructions:

! Always ensure your hands are dry before plugging in or unplugging the power adapter from the mains.

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


! Pulling on the power cord can damage the wire or insulation, potentially causing electrical shocks or fire.

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

 Exposing your Iris to rapidly changing temperatures can result in condensation (small amount of water) on the inner and outer surface of your device. To ensure a long lifespan for your device, this should be avoided. If condensation occurs, wait until your device is completely dry before using 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. Please note that audio cables are not included.

 In case a mono audio mode is used, make sure that the input from the mono source is connected on the LEFT (Ch1) 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. Please note that audio cables are not included.

 In case a mono audio mode is used, the same output will be present on both channels.

2.4 General installation notes

For optimal performance of the audio network, proper placement of the devices is essential.

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 fasten the external antenna tightly for improved range and stability.
- Try to place the products as high as possible and prevent moving obstacles between the devices.
- Use the Iris Service Tool to monitor the received signal strength of your RX-device, and calibrate the antenna orientation for best reception.

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

- There can be a maximum of 50 RX-devices in one audio network.
- There can be a maximum of 10 audio networks at one site.

3 Building your own wireless loudspeaker

The Iris Brick and Iris DSP Amplifier Module (AMP-devices), but also the Iris Receiver can all be integrated with your loudspeakers.

- The Iris Receiver is ideal for loudspeakers with an integrated amplifier.
- The AMP-devices are ideal for loudspeakers without integrated amplifiers.

4 Configuration

The configuration of your Iris audio networks will be done using the Iris configurator, a companion mobile app for Android and iOS. The mobile app is currently under development and not yet available to the user.

For as long as the mobile app is not available, the [Iris Service Tool](#) should be used. The Windows PC app initially designed for service purposes, has been updated to allow users to configure and monitor their Iris audio networks.

All receiver device types, including the Iris wireless amplifiers, the Pro and standard receivers are compatible with and interoperable with all available transmitter variants (standard and Pro).

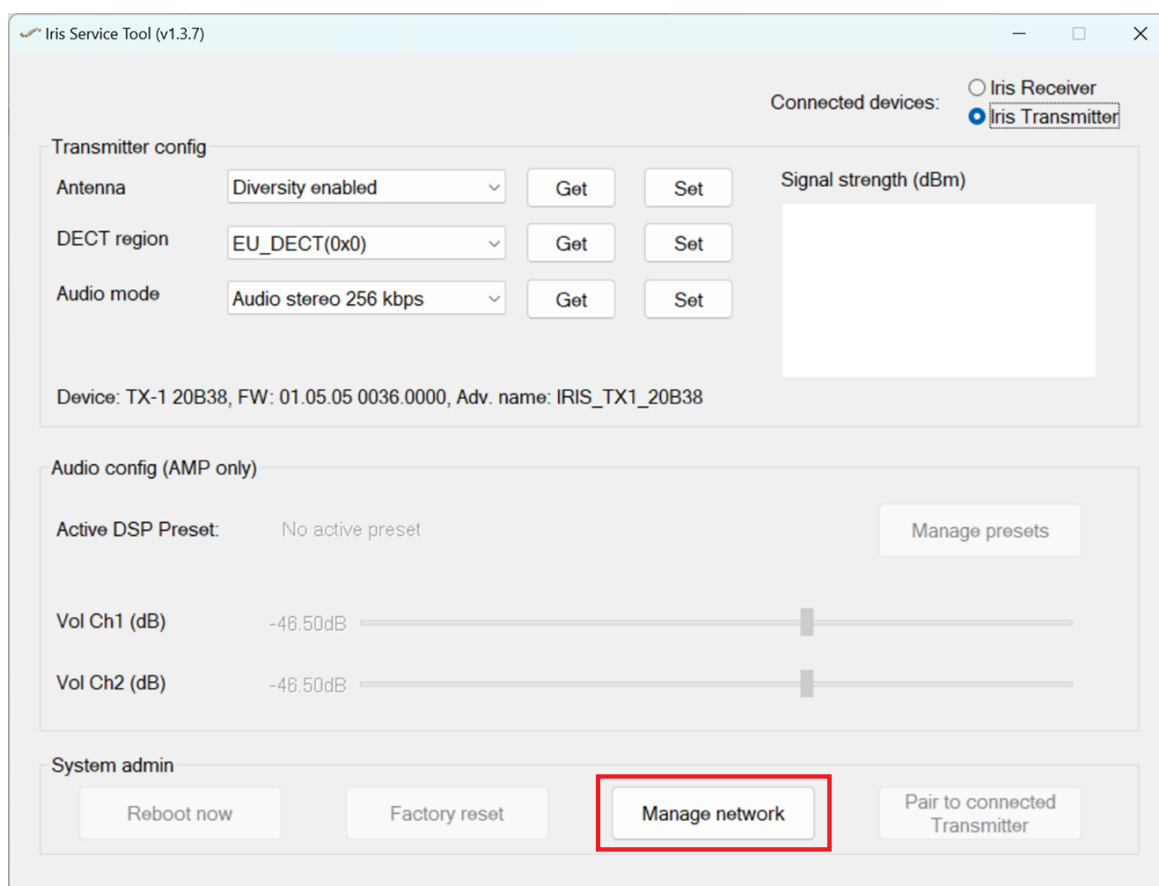
4.1 Setting up an audio network

You can configure the individual Iris devices as well as the audio network using the [Iris Service Tool](#).

To add a receiver device to the audio network, both the TX-device and the RX-device must be connected via USB to the PC where the tool is running.

- Start the [Iris Service Tool](#) and make sure both TX-device and RX-device are connected.
- Select the TX-device and make sure the transmitter configuration (the DECT region in particular) is correct. Unless you have a good reason to use a fixed antenna setting, the (default) diversity mode is likely the best option. The audio mode setting should align with your application's requirements. Higher bitrates enhance frequency response but may slightly reduce operating distance. When changing settings like the audio mode or the DECT mode, the TX-device requires a power cycle. Simply unplug the USB cable and then plug it back in.
- Select the RX-device and make sure the DECT region configuration matches that of the TX-device. When changing settings like the DECT mode, the RX-device requires a power cycle. Simply unplug the USB cable and then plug it back in.
- Press the button "Pair to connected Transmitter". Once pairing has completed, a dialog will inform you that the TX-device requires a power cycle. Make sure to follow this instruction.
- A couple of seconds after the power cycle the RX-device will be able to listen to the broadcast and the signal strength monitor will display a value other than -110dBm.
- Follow the same steps to add another RX-device

Each Iris audio network supports up to 50 receiver devices. Press the 'Manage network' button from the Transmitter configuration page to list the receivers or remove receivers off the network.



4.2 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](#).

5 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: **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



Iris is discoverable, no active BLE connections



Deprecated: see solid **green** (Iris is discoverable, no active BLE connections)



App has connected, but authentication is required



BLE connection is active, and user (app) has authenticated



There is an issue with the BLE hardware or 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

LED: DECT status	
	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

6 Updating your Iris

The complete software functionality of Iris technology has been implemented using either one or two embedded controllers. The main controller featured on all products implements all audio and networking functionality, driving the device's UI elements, which is sufficient for some products. Additionally, certain Iris products may include a secondary controller responsible for additional processing and remote-control connectivity, allowing users to manage and monitor audio networks.

The firmware update instructions including the release notes are available as a separate document on our website (<https://www.streamit.eu/downloads/firmware-update-instructions/>)

7 Technical specifications

	Iris Transmitter	Iris Receiver
Wireless		
Wireless technology	DECT 1.9GHz	
Reception Range	50m indoors to 300m outdoors	
Latency	16.5ms	
Synchronicity between receivers	0.15ms	
Internal antenna	yes	
External antenna	yes	
Analog audio		
Audio frequency range	20 Hz to 20 kHz	
Input channels	2	-
Output channels	-	2
Input level	2dBu(max)	-
Output level	-	2dBu(max)
Signal-to-noise ratio (SNR)	>90 dB	
THD+N(@1 kHz)	<0,01%	
Electrical		
Power supply	5V DC adapter, 1A	
Operating voltage	100~240VAC/50~60Hz	
Power consumption (AC)	Max 5W, <0,5W (idle)	
Power consumption (DC)	5V DC, 125mA	5V DC, 100mA
Peak current	500mA	
Digital input		
Logical low	<=0.8V	-

	Iris Transmitter	Iris Receiver
Logical high	$\geq 2.5V$	-
Internal pull-up resistance	10 k Ω	-
Maximum input voltage	3.3V	-

Digital output		
Maximum switching voltage	-	42V
Maximum output current	-	1.4A

Mechanical		
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SMA antenna connector female

Audio input connector	RCA	-
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Audio output connector - RCA

Power/service connector	USB-C
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Relay control input terminal block terminal block (*1)

Relay control output	terminal block (*2)	terminal block
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LEDs RGB (2x)

Dimensions (LxWxH)	75x85x34 mm
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Weight 70 gr

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Environmental and safety

Operating temperature	-20°C to 50°C
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Humidity 30% to 90%, RHL non-condensing

Regulatory compliance	CE, WEEE
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Radio Equipment Directive (RED) 2014/53/EU

	Iris Transmitter	Iris Receiver
RoHS	2011/65/EU & (EU) 2015/863	

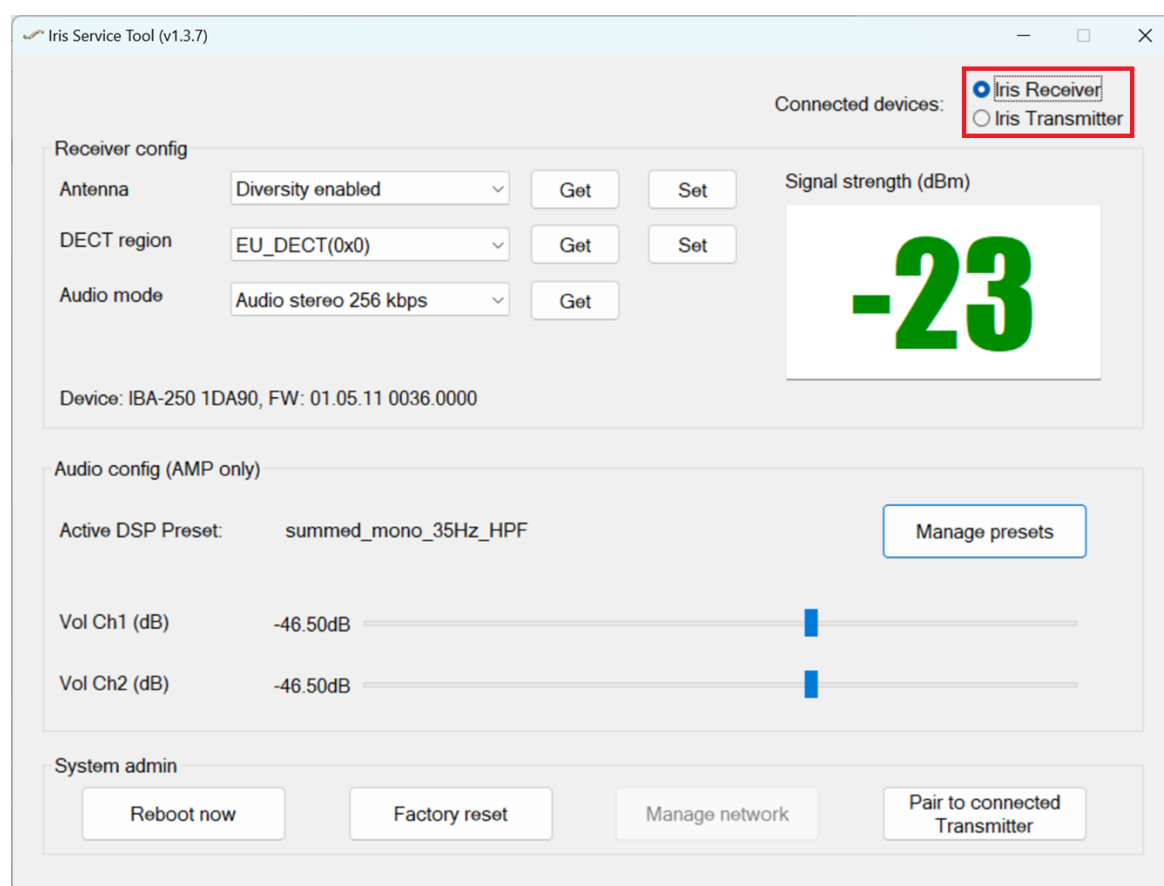
(*1) Can be used to [factory reset](#) a receiver device

(*2) No function yet

8 The Iris Service Tool

The Iris Service Tool is a Windows PC app initially designed for service purposes. The tool has been updated to allow users to configure and monitor their Iris audio networks, until the mobile app (Iris configurator) becomes available.

The Iris Service Tool communicates with Iris devices over USB. Simply run the executable and connect your device (TX, RX, or both) via USB to the PC running the tool. You can connect connect a maximum of one TX-device and one RX-device at a time. You can switch between the selected device using the radio button controls to the upper right corner. Based on the type of device and hardware capabilities, certain config options will be disabled.



When a RX-device is connected, it is possible to monitor the received signal strength and change the basic receiver configuration. When the RX-device is not paired (or out of range) the value -110dBm will be displayed.

When an AMP-device is connected, the DSP configuration pane (for audio and presets) will be enabled.

9 Troubleshooting

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

9.1 Audio disruptions

When the installation is done properly and the Iris devices are placed correctly as described in [§General installation notes](#), you will not experience any audio disruptions.

- Check and make sure the external antenna is fastened tightly.
- Check the received signal strength using the Iris Service Tool and select the antenna orientation that results in the strongest signal.
- Should the received signal be weak and not possible to improve, then evaluate the application requirements in the context of the audio mode setting. When 256kbps is used, you could experiment whether 128kbps results in less or no disruptions.

9.2 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](#).

9.3 Factory reset

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](#).

Receiver devices running firmware 1.6 or newer can also be reset using the relay control input. This will require making a simple reset dongle using a terminal block connector, and connecting a wire between input and ground.

- Disconnect the power
- Plug the reset dongle in the RX-device
- Connect back the power with the dongle still attached
- Remove the reset dongle within 10 seconds of startup
- When the above procedure was followed, a factory reset will be executed 10 seconds after startup.

! When you reset a device the pairing information will be lost, which in the case of a transmitter means the complete network.

10 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>

11 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 the option to submit a support ticket.

