STREAMIT

Iris Amp series

Technical Manual

for software version 1.8.0

Updated on 23/04/2026

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 technical manual for the Iris Brick and the Iris DSP Amplifier Module running software version 1.8.0.

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 broadcasts high quality audio to the receiver devices that have joined its network though 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 using the Iris Configurator app. Iris Configurator is the official companion app for the Iris series of wireless audio devices, to configure, manage, and monitor your networks quickly and effortlessly.

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 Brick Amplifier	Iris DSP Amplifier Module	Iris DSP Amplifier Module Starterkit
Article number	IBA-250	DAM-250	DAX-250
USB-A to USB-C cable 2m	1x	1x	1x
C7 mains cable with EU plug 2m	1x		
Iris Brick Amplifier IBA-250	1x		
Iris DSP Amplifier Module DAM-250		1x	1x
External antenna	1x	1x	1x
Mounting accessoires		1x	1x
Mains cable with a PowerCON connector			1x
Antenna mounting cable		1x	1x
DAM I/O demo board			1x
Speaker cable with 2 SpeakON connectors			1x

2.2 Device appearance and connections

The Iris Brick

The Iris Brick also referred to as the AMP-device, is connected at the playout location to one or more passive loudspeakers.

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

- The external antenna connector
- 2 LEDs used to communicate status information
- The USB-C connector used for configuration and firmware updates.
- The Phoenix Contact plug for the output relay control and factory reset.

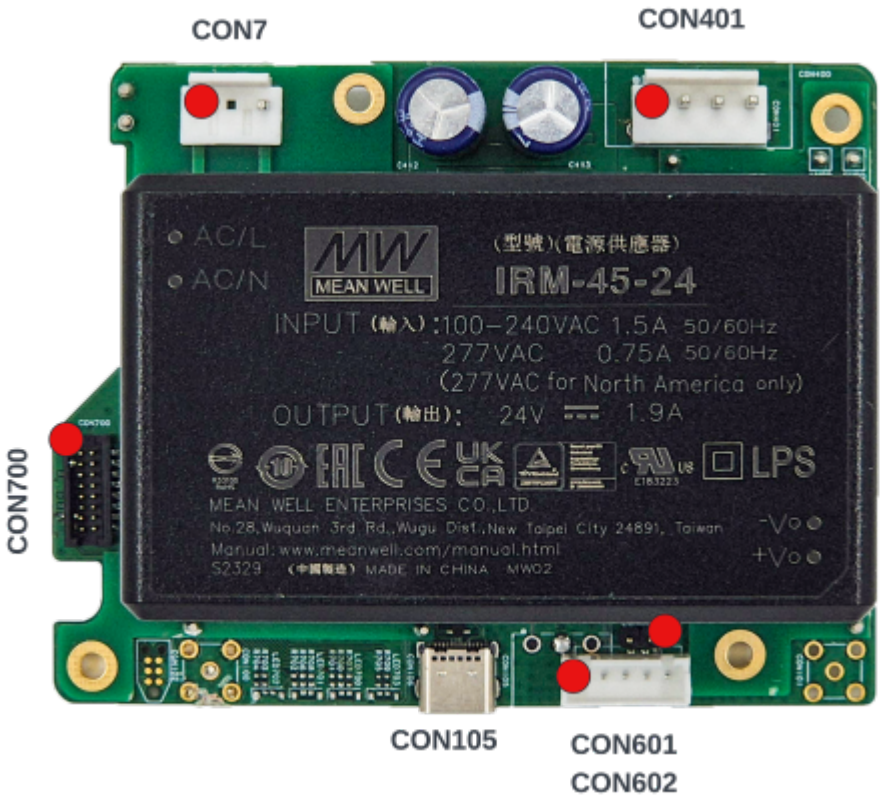
On the back side we find:

- The Phoenix Contact plug for connecting the output to the loudspeakers.
- The mains power connector.

The Iris DSP Amplifier Module

The Iris DSP Amplifier Module also referred to as the AMP-device is usually mounted on metal in a passive loudspeaker.

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



CON7	Mains power connector. The pcb-side is a JST B2P3-VH connector.
CON105	USB connector for configuration & firmware updates.
CON401	The Loudspeakers connector, with pin configuration detailed in the table below

CON401 - Loudspeakers connector (JST B4P-VH)			Description
Name	**Pin #**	**I/O**	
CH 2-	1	O	The GND signal of the channel 2 speaker.
CH 2+	2	O	Amplified speaker signal of channel 2.
CH 1-	3	O	The GND signal of the channel 1 speaker.
CH 1+	4	O	Amplified speaker signal of channel 1.

! Bridging the speakers is not allowed as it can cause damage to the amplifier.

CON601 The battery charging jumper

! Please remove the jumper when using the battery charger pcb (in development). This jumper connects PVDD with +24V.

CON602 The battery connector, with pin configuration detailed in the table below

CON602 - Battery connector; JST B5B-XH			Description
Name	**Pin #**	**I/O**	
CHARGER_EN	1	I	This pin enables the battery charger.
BAT_LOW_CHARGER	2	O	This is the digital battery low indicator.
PVDD	3	O	This is the supply voltage of the audio amplifier. The absolute maximum voltage is 26.0V; recommended is 24V.
+24V	4	I	This is the output of the power supply module.
GND	5	O	Power GND.

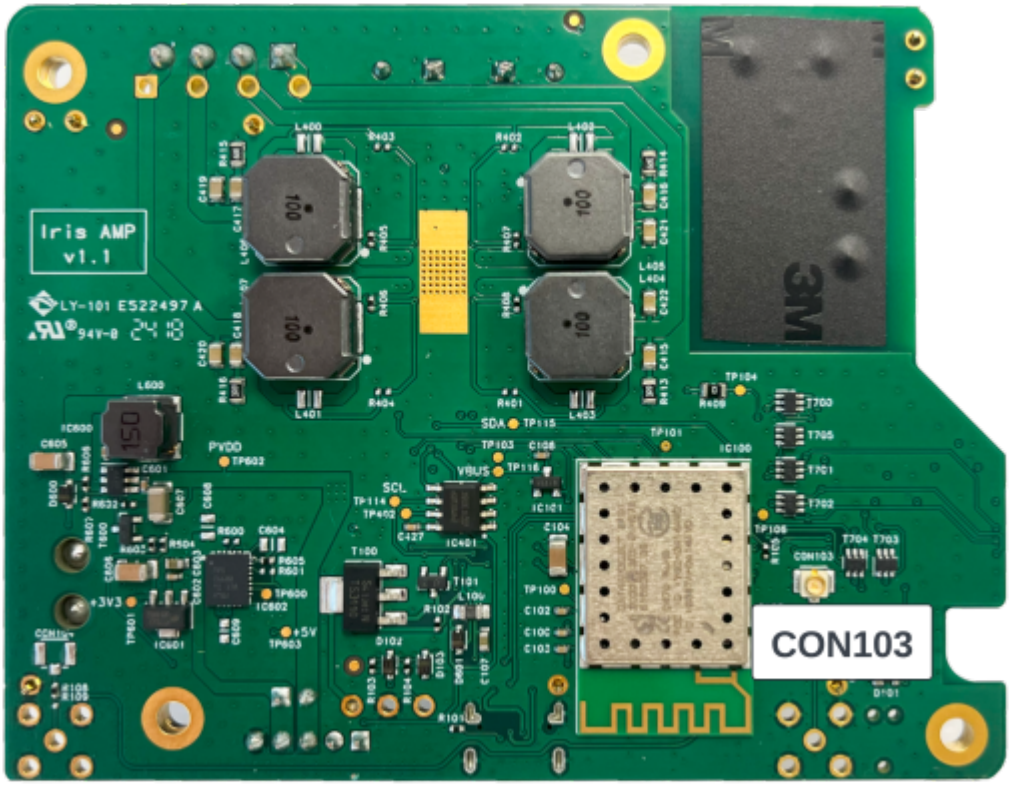
CON700 The I/O connector, with pin configuration detailed in the table below

CON700 - I/O connector; 16-pin 1.27 pitch			Description
Name	**Pin #**	**I/O**	
+3.3V	1	O	This pin is used to power the LEDs
RELAY_IO_OUT	2	O	An open-collector output. Max voltage on this pin is 42V. Max current is 1.4A.
LED-VU40	3	O	LED output
RELAY_IO_IN	4	I	A digital input with internal pull-up. Maximum input voltage is 3.3V.
LED-VU20	5	O	LED output
BAT_LOW_CHARGER	6	I	Can be connected to RELAY_IO_IN, in case battery charger module is used.
LED-VU10	7	O	LED output
LEDG	8	O	LED output
LED-VU_CLIP	9	O	LED output
LEDB	10	O	LED output
LED0A	11	O	LED output
LEDR	12	O	LED output
LED0B	13	O	LED output
LED1B	14	O	LED output
LED1A	15	O	LED output

CON700 - I/O connector; 16-pin 1.27 pitch			Description
GND	16	O	This pin is used for the GND of the Digital Input/Output.

On the bottom side we find:

CON103 U.FL antenna connector.



2.3 Connecting the Iris

Connecting the power

Plug the power cord in the the mains outlet. In the process we ask that you play careful attention to the following instructions:

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

⚠ Do not cut or damage the power cord 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 or cords 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 cord.

⚠ 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 you 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 speakers to the AMP-device

Make sure the used speakers are specified to handle the full output of the AMP device. Connect the speakers wire to the AMP-device, following the pin configuration instructions in Device appearance and connections for the Iris DSP Amplifier Module.

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 Configurator 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.

2.5 Interfacing to the AMP-device

The following paragraphs will provide guidelines to the electrical interfacing and application of the AMP-device

Powering the AMP-device

The AMP-device is a Class-II and is mains powered. So no earth connection is required.

The mains voltage should be between 85 and 265 VAC / 50-60 Hz.

Optionally in the Iris DSP Amplifier Module, the mains power supply can be replaced by a rechargeable battery. Please note this option is not available yet from Streamit.

In this case a battery interface pcb needs to be connected to CON602 and the jumper on CON601 needs to be removed.

In this setup, the battery can be charged through the internal power supply.

Please note that the maximum battery voltage should be below 26V.

Above 26V a PVDD over-voltage error will be generated.

The device will be damaged once the voltage comes above 28V.

Loudspeaker outputs

The AMP-device has 2 BTL loudspeaker outputs which cannot be bridged.

The impedance of the loudspeakers should be between 4 and 8 ohms.

The maximum output power is 2x 50 W.

The outputs are fully EMI protected, so it is not necessary to add extra filter components.

The loudspeaker outputs can be configured in several ways through the DSP:

1. Stereo
2. Dual mono (in case the wireless interface is set to mono, the input audio signal can be routed to both outputs).
3. X-over (so each output is fully controlled by the DSP, which is ideally for 2-way speakers).

LED outputs

The Iris Brick has two integrated LEDs, but the Iris DSP Amplifier Module potentially has much more options. See LED status information for more information.

Relay output

A great feature is the digital output for switching an external power source through a relay. This option is available through a Phoenix connector on the Iris Brick and the I/O connector on the Iris Brick.

Antenna input/output

The mono or stereo audio signal is received through the wireless interface. In the Configuration chapter is described how you configure the antennas.

We recommend to use the external antenna for a loudspeaker, to guarantee maximum reception. Please note in the Iris Brick only the external antenna can be used because of the metal casing.

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.

The AMP-device features a two-channel amplifier with integrated DSP, allowing you to create the crossover electronically for significantly improved audio performance.

3.1 Doing a Thermal and mechanical design

3.1.1 Acoustic air pressure

! It is of absolute importance that the circuit board is not being exposed to extreme vibration.

Therefore, in the case where the circuit board are placed directly in the acoustic volume of the loudspeakers it must be secured that the mechanics are sufficiently rigid and stiff to avoid excessive vibrational levels at the circuit boards or at single components mounted on the circuit board.e.

3.1.2 Water, humidity and dust

The AMP-device is not protected against water, rain, dust and extreme humidity in any way and should under no circumstances be exposed to such.

Proper design precautions must be taken to prevent dust and dirt from clogging up on the circuit board.

Dust and moisture are often the main cause for high voltage creepage and severe electric hazards.

3.1.3 Shock, bump and vibration

The products are designed to be built into loudspeakers and subwoofers and have been shock, bump and vibration tested according to IEC/EN62368.

It is important that proper design precautions are taken when designing the amplifier chassis and the loudspeaker cabinet to ensure that the circuit boards are not exposed to excessive shocks, bumps or vibrations. Proper design precautions should always be taken to protect the amplifier unit against such stress.

3.1.4 Suggested Thermal design

Traditionally thermal testing of amplifiers has been done with resistive loads since this is a known fixed load available in the amplifier designer's laboratory. Unfortunately, real world loudspeakers are not resistors but complex loads with impedance variations over frequency, voltage and current out of phase and increasing impedance with temperature.

Streamit amplifiers are very efficient with resistive loads but even more efficient with loudspeaker loads due to the high impedance peaks loading the amplifier with lower output current.

Less heat is thereby generated with loudspeaker loads compared to resistive loads and therefore a smaller heatsink is required. Actually, in many applications a heatsink is not even necessary!

Loading the amplifier with 1/8th of the total output power into the rated resistive load using a pink noise signal is a classical approach and a very common method used for specifying the amplifiers thermal performance. This is a good rule of thumb as a worse case thermal situation for stand-alone amplifiers where all channels play a full range signal.

The environment changes as soon as the amplifier is mounted as part of a two-way active loudspeaker:

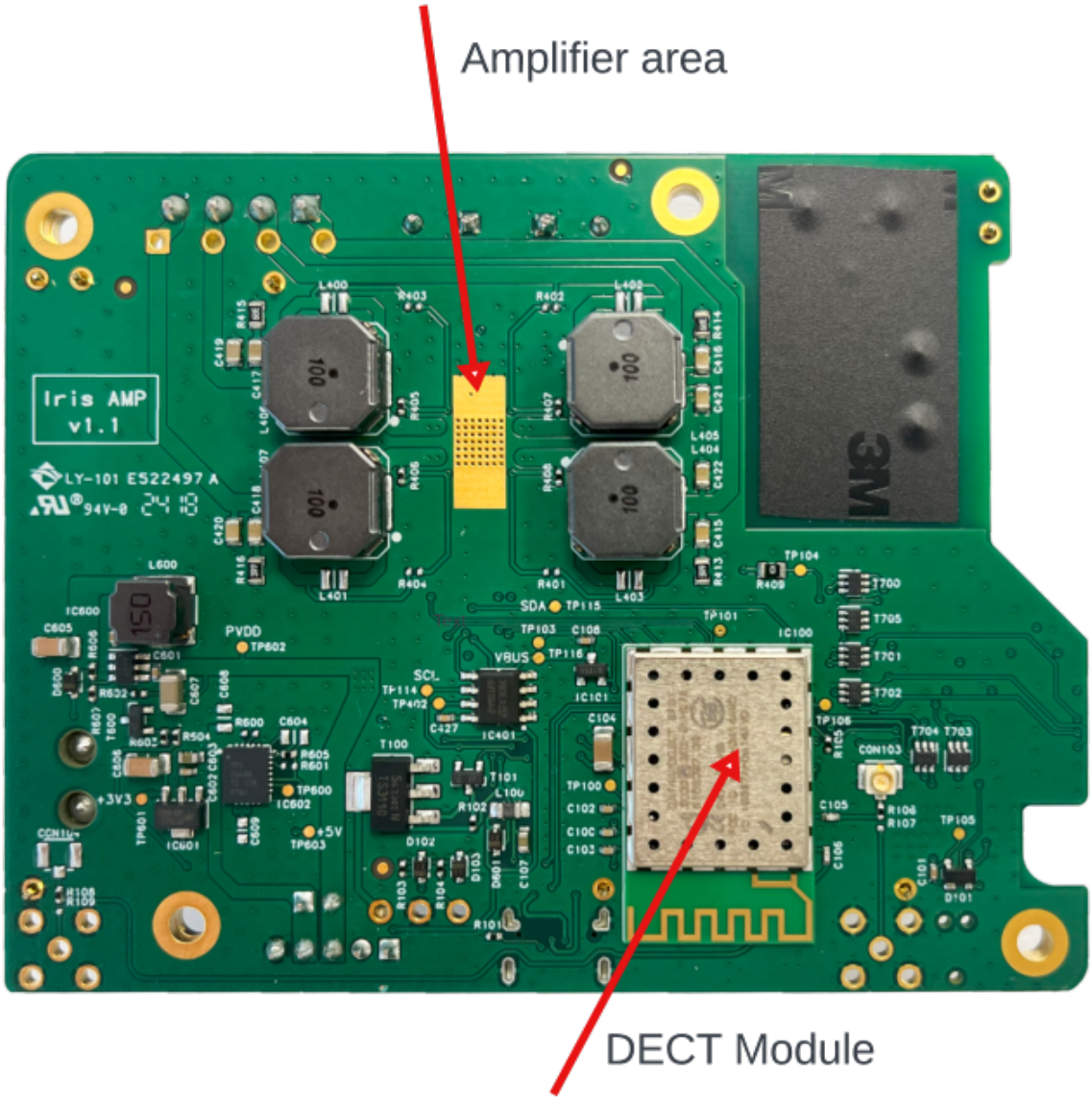
- The amplifiers or mechanics may be exposed to the air movement inside the loudspeaker thereby cooling the amplifier.
- The amplifier channels are loaded with different frequency content and different impedances.
- Typically, the woofers have low impedance and high RMS signal content where the high frequency drivers have high impedance and low RMS signal content.
- The DSP limiter is typically configured to avoid hard clipping and thermal overload of the individual drivers.

Due to the above listed reasons, the classical approach for thermal testing is not very useful and will only end up in bulky oversized mechanics.

The best way to get the right thermal design is to measure the temperatures in the real application with the DSP limiter set, mounted in the speaker etc.

For this reason, only a few suggestions are given:

1. It is important to create an airflow along the components which potentially become hot.
2. The hottest component is the audio amplifier ic. You cannot see this ic on the module because it is located between the pcb and power supply module. The heat is transferred to the pcb to the rectangular copper area between the 4 large coils. See below picture (Amplifier area).



3. The area which should remain coolest is the DECT module, as its maximum temperature rating is 80 °C.

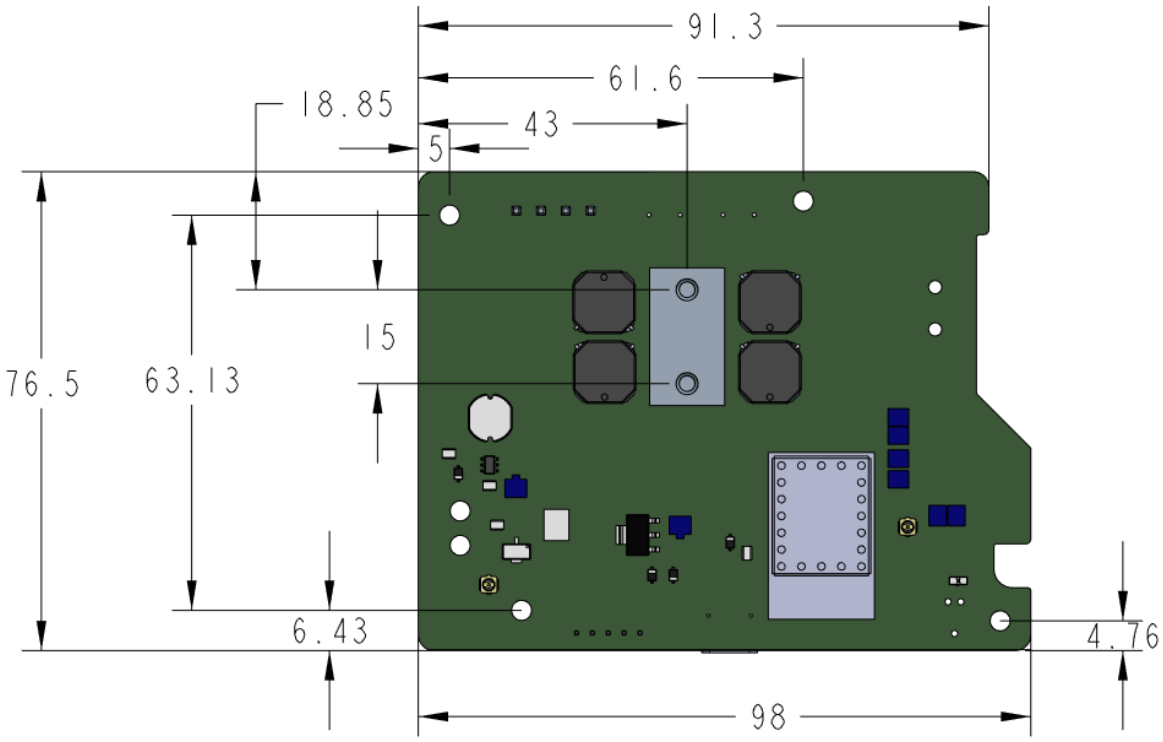
4. To achieve optimum thermal performance, an important physical phenomena should be used: heat always wants to go up. We have seen amazing temperature differences in loudspeaker casings with low airflow.

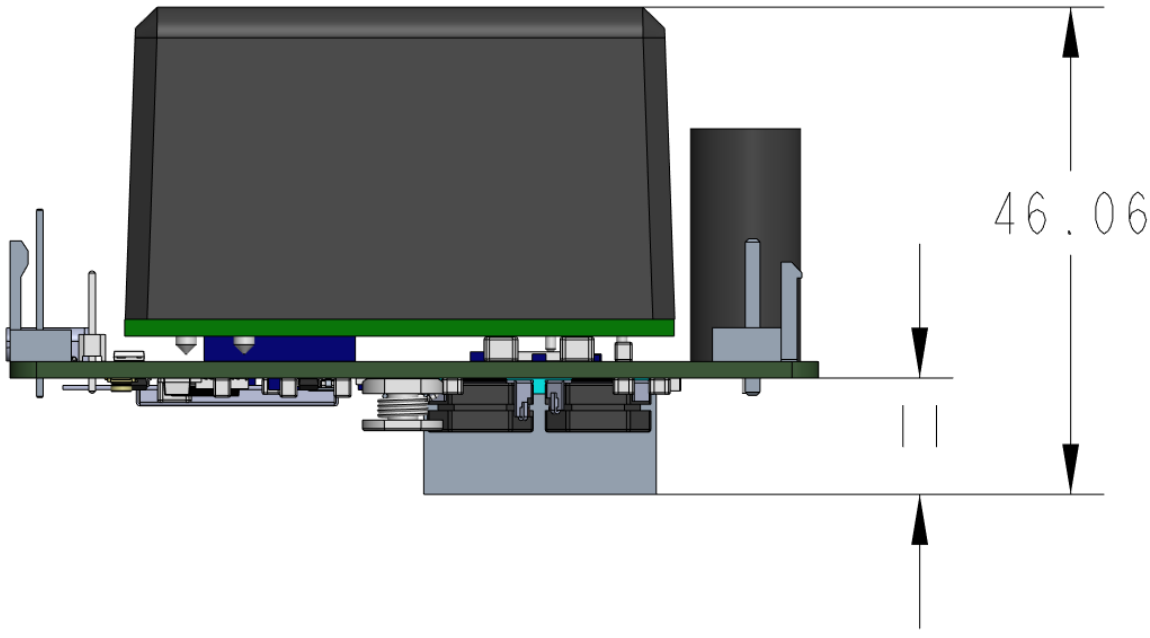
In general, it can be said that the lower the temperature the module runs at, the longer the lifetime.

Some components are more vulnerable to higher temperature than others, but it is always good design practice to ensure proper cooling of the module.

3.1.5 General mechanical mounting instructions

The Iris DSP Amplifier Module is supplied with a aluminium block and some heat transfer elements. These can be used to transfer the heat effectively from the pcb to the (aluminium) casing. See below pictures for the dimensions (in mm).





It is recommended to use all the holes for mounting the module to your casing.

4 Configuration

The configuration of your Iris audio networks is done using the Iris Configurator, the companion mobile app for Android and iOS.

Programming of DSP presets in your AMP-devices requires the use of the PC tool Iris Service Tool. On site, when presets were already saved on the device, the Iris Configurator can be used for configuring the active preset.

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 How to ensure CE compliance

The final product containing the AMP-device must comply with the relevant standards of the products category.

Note that it is the customer's responsibility to verify that the end-product complies with the required standards of the market for which the product will be commercialized in.

All AMP-devices have CE and WEEE approval.

They meet the requirements of the Radio Equipment Directive (RED): 2014/53/EU.

They also meet the RoHS standards according to the requirements of 2011/65/EU & (EU) 2015/863.

These requirements are covered in the followings standards:

Safety	EN 62368-1
CE-RED with notified body	EN IEC 62311 EN 50665 EN 301406 EN 301489-1/-6/-17
CE-EMC	EN 55032; EN 55035
CE-RoHS	IEC 62321

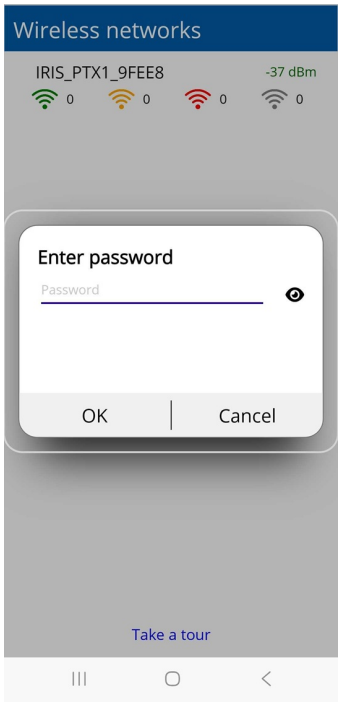
The certificates and reports can be supplied upon request.

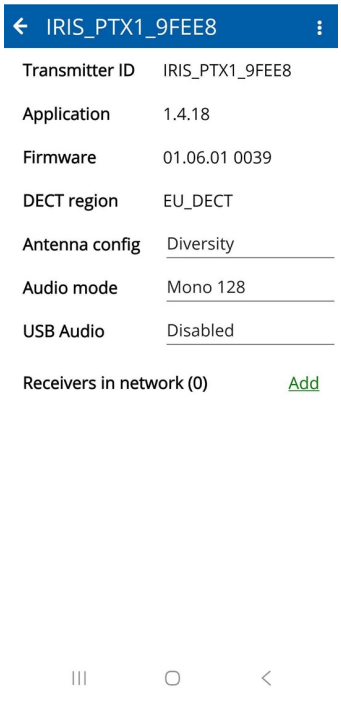
4.2 Setting up an audio network

Setting up an audio network has become even easier. All receiver devices that are not already part of an audio network will automatically join a network that enters pairing mode.

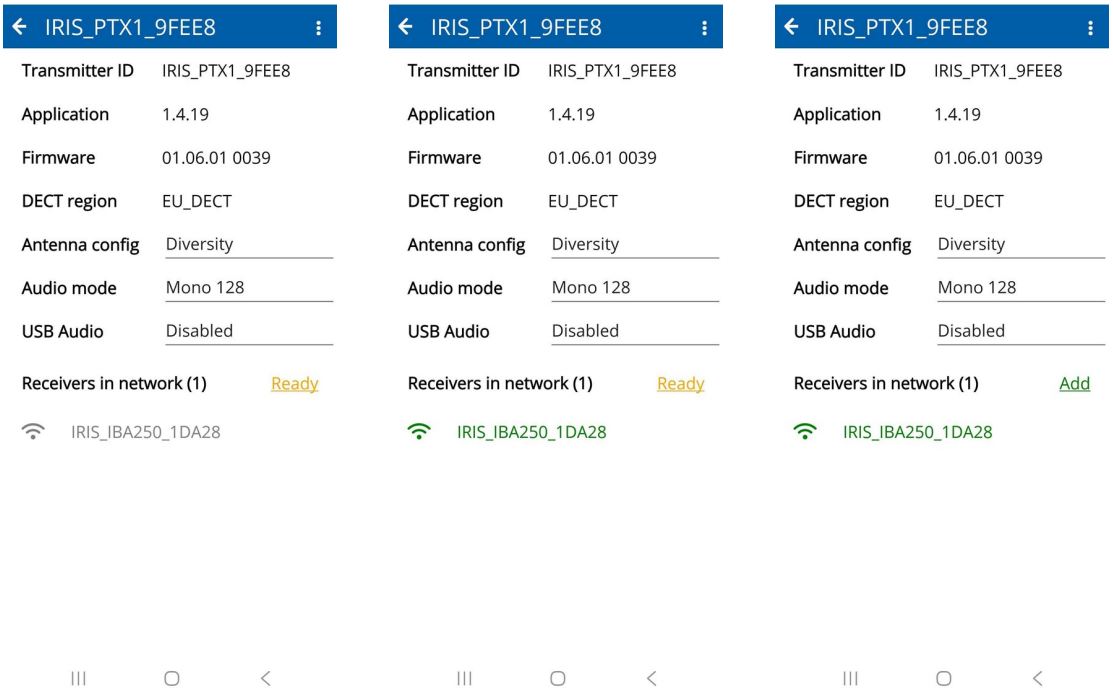
- Power up your TX-device and all the RX-devices you want to add to the network

- Start Iris Configurator on your mobile device
- Make sure you are in BLE proximity of the TX-device, otherwise walk towards it until the device shows on the networks overview page. Swipe down to start a new scan, required.





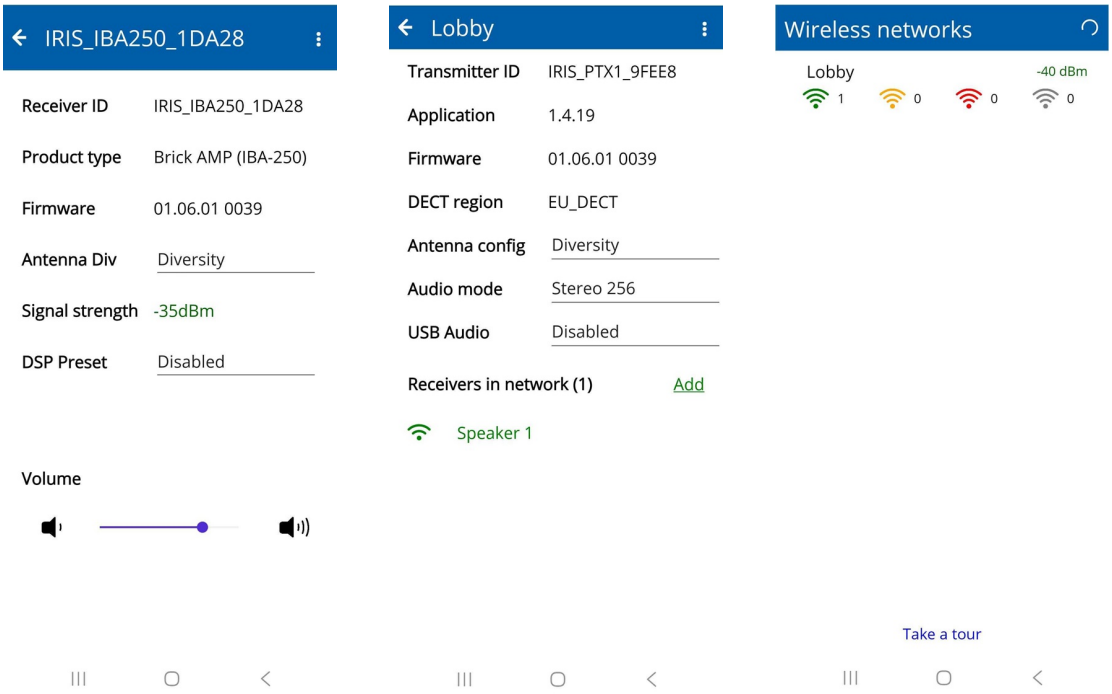
- Identify your TX-device and select it to connect (see advertising name).
- When asked, enter the password to access the network. See find the login password for the default password.
- On a successful login, the network's settings page will be shown. For a new network the list of receivers will be empty
- Tap the 'Add' link to set the transmitted in pairing mode and build your wireless network.



- Within a few seconds, all your receiver devices in DECT range (and not already belonging to a network) will join the network. The receiver's audio configuration will be done automatically and audio will come out of the speaker installation (when connected).
- Once all receivers have joined, tap the 'Ready' link to stop the pairing mode.

⋮

- Additional options are available from the menu accessible through the vertical ellipsis ( ).



- Modify the configuration to your needs, eventually assigning mode user-friendly names to the network and receivers and you are good to go.

4.3 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 Brick amplifier features two status LEDs.

A LED can be switched **off** or light up: **solid**, **slow blink (**  **)**, **fast blink(**  **).**

LED: Status	
	Paired to a TX-device and listening to the broacast (audio channel is active)
	Contains pairing information, but TX-device is not reachable (not listening to broadcast)
	Locked to a TX-device, but audio channel inactive (should not happen)
	Not paired to a TX-device - transitional state
	Pairing mode is active
	There is an issue with the DECT hardware or interface

LED: Signal (Not yet implemented)	
	Not listening to a broadcast
	Listening to broadcast and not muted -> RSSI above -65dBm
	Listening to broadcast and not muted -> RSSI between -65dBm and -85dBm
	Listening to broadcast -> RSSI below -85dBm
	Amplifier chip initialization/communication error
	Clipping

6 The Iris Configurator

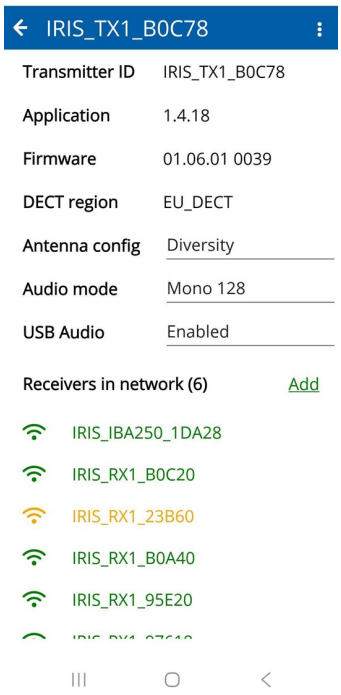
Iris Configurator is the companion mobile app for the Iris. It enables you to configure audio networks and can be used as a remote control by the end user. The app is available for free for both iOS (App Store) and Android (Google Play).

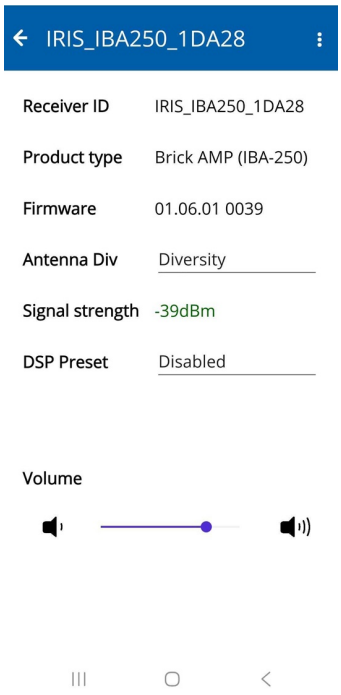
Using the Iris Configurator app is only possible when all device in your Iris audio network have been updated to the latest available firmware. The app lists all audio networks in BLE proximity, with the transmitter device being the gateway to the network. The default name of the network will be the advertising name of the transmitter device (composed using hardware type and unique identifier, information that can be found on the label of the device).

Once connected to the network, you can manage the configuration as well as the receivers in your network.

Screenshots of the main three pages of the app are shown below.

- The overview page shows all audio networks in BLE proximity, including connection quality information for all receivers in the network
- When selecting a network (password is required the first time), the properties page is shown including a listing of all receivers in the network. Additional options are available using the vertical ellipsis.
- When selecting a receiver, the properties page is shown including a slider for configuring the volume. Additional options are available using the vertical ellipsis.

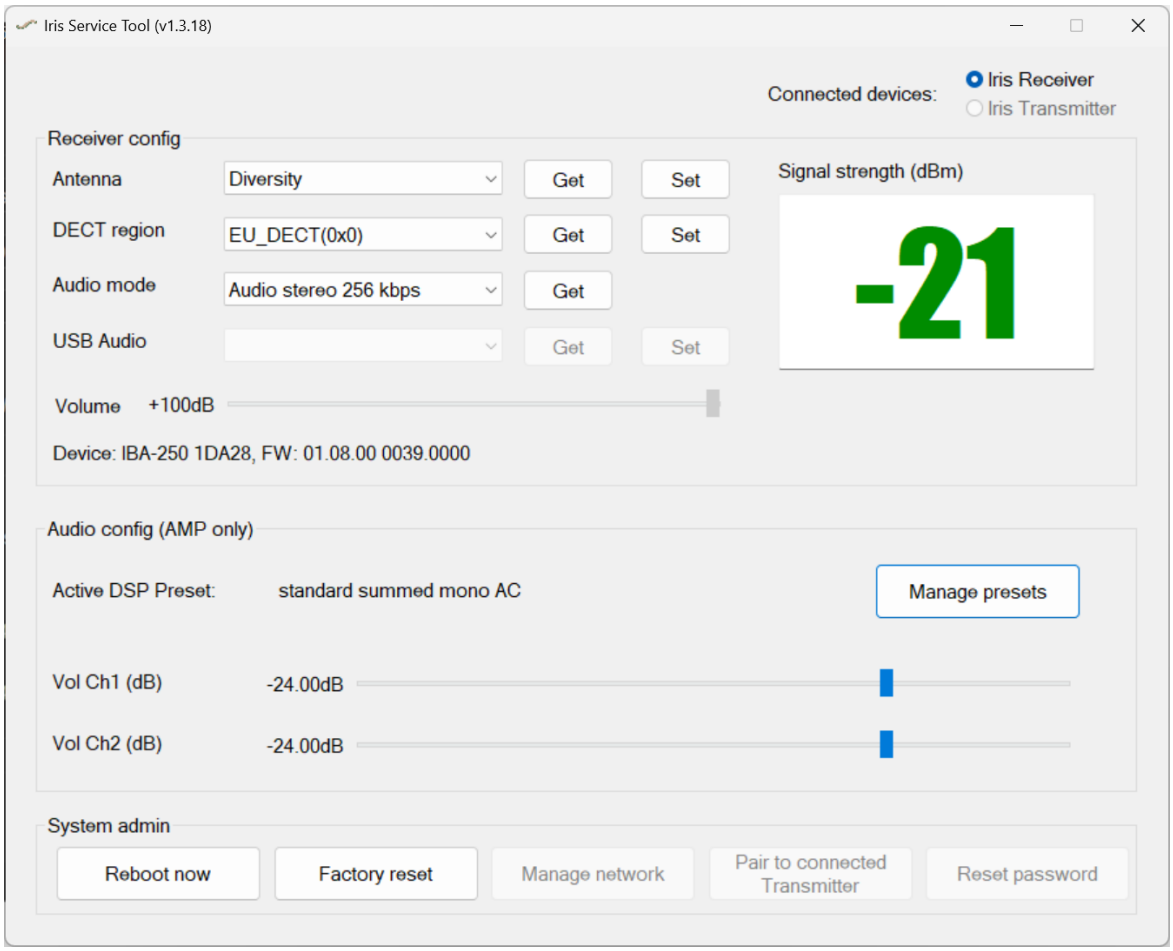




7 The Iris Service Tool

The Iris Service Tool is a Windows PC app initially designed for service purposes, to later be used as the configuration and monitoring tool, awaiting the mobile app release (Iris Configurator).

With the Iris Configurator now available, the main reason to use the Iris Service Tool would be for uploading DSP presets to your AMP devices.



When an AMP-device is connected, the DSP configuration pane (for audio and presets) will be enabled. Press "Manage presets" to upload and manage the DSP configuration.

8 Updating your Iris devices

The complete software functionality of the Iris technology is implemented over two embedded controllers. The main controller implements all audio (and networking) functionality and drives the device's UI elements, and is present on all Iris devices.

All transmitter devices feature a secondary controller. This controller is responsible for additional processing and the remote-control connectivity, enabling audio network monitoring and management via the mobile app.

The RX-1 receiver also features a secondary controller, which used to implement a considerable part of the functionality. Following a major update in April 2026, most functionality was migrated to the main controller. Once your RX-1 receiver is updated to this version, we expect secondary controller updates to become sporadic or even redundant.

Depending on the hardware, but also which version secondary controller firmware is running, updating might be required for either one or both controllers.

	TX-1	RX-1	PTX-1	PRX-1	IBA-250	DAM-250
Main controller	v	v	v	v	v	v
Secondary controller	v	v	v			

We highly recommend using the matching secondary controller firmware. The dependency information can be found in the release notes, and is also summarized in the table below:

	Main controller	Secondary controller
Release: April 2026	v1.8	V1.6
Beta: February 2026 (build 20260220)	v1.6.1	V1.4.15
Release: March 2025	v1.6	V1.4
Beta: March 2025 (build 20250317)	v1.5.13	v1.3.14
Beta: January 2025 (build 20250121)	v1.5.13	v1.3.14
Beta: February 2024 (build 20240229)	v1.5	v1.3
Release: September 2023	v1.4	v1.2
Release: February 2023	v1.0	v1.0

8.1 Updating the main controller

Download the distribution from the Streamit website (https://www.streamit.eu/downloads/iris-main-controller-update) and extract the content on your Windows PC.

Check and make sure that the executable file and the 'firmware' folder are present.

Name	Date modified	Type	Size
Firmware	25/03/2025 15:17	File folder	
IrisUSBFWUpdater.exe	21/01/2025 13:31	Application	2.774 KB

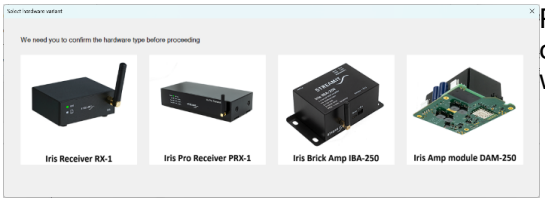
The firmware folder contains all files required for the different hardware types, organized in a specific structure. Please do not modify the given structure or rename any files/folders.

Start the executable 'IrisUSBFWUpdater.exe' and connect the Iris device to the PC using a USB cable.

The device will be automatically detected and the text on the upper right corner will communicate the Iris device is 'connected'.

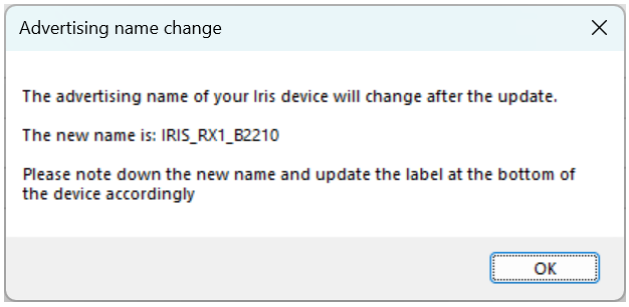
Press 'Start update' and wait for the update to be completed.

Due to a change in the device identification, when updating older Iris devices (running firmware older than 'build 20250121') you will be asked to select the correct hardware variant.



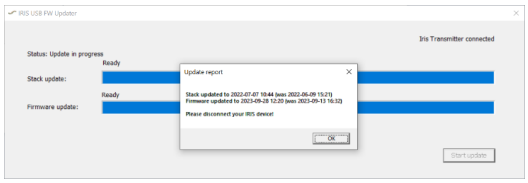
Please make sure to select the correct type, as this determines which functionality gets supported and well as the device identification.

The old format device id and advertising name (printed on the label of the device and displayed on the mobile app) will no longer be used. The updater will inform you about the change and will also communicate the new name.



The update will take a few seconds, up to over one minute depending on what exactly needs to be updated.

During the update process the device might restart, which will result in the connection state to shortly display that no Iris device is connected. Please, do not disconnect the USB cable until the update has been completed.



On completion, a summary of the update will be reported. Due to the nature of the firmware, no version numbers will be shown in the report. Instead, the date and time when the firmware was compiled will be displayed.

Your device is now (partially) updated and may be disconnected. For hardware that features a secondary controller, please follow below instruction to update the secondary controller firmware.

8.2 Updating the secondary controller

Updating the secondary controller requires using a Bluetooth-enabled mobile device and a third-party mobile application ‘nRF Connect for Mobile’.

The app is available for download from the Google Play as well as the App Store:

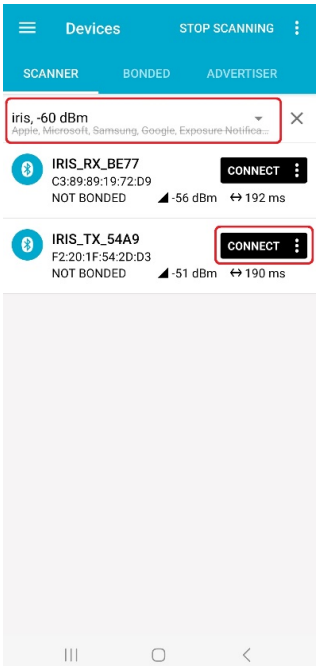
Android: https://play.google.com/store/apps/details?id=no.nordicsemi.android.mcp&hl=en&gl=US

iOS: https://apps.apple.com/gb/app/nrf-connect-for-mobile/id1054362403

Once you have installed ‘nRF Connect’ download the firmware from the Streamit website (https://www.streamit.eu/downloads/iris-secondary-controller-update). Extract the contents of the archive on your mobile device, and you should have two archives (ZIP files), one for the receiver and one for the transmitter device. These ZIP archives must not be extracted further. Moving these files to a dedicated folder might be useful when updating many devices.

Now, start the ‘nRF Connect’ app to proceed with updating your device.

Please allow the app location permission when asked for, normally on the first start.



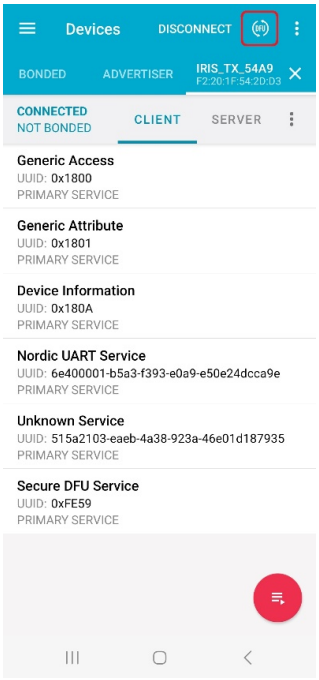
After starting the ‘nRF Connect’ app, scanning for devices will start automatically.

Many BLE-enabled devices in proximity to your mobile device will be displayed, and not only Iris devices.

You could restrict the scan results to only Iris devices by entering ‘iris’ in the filter field “Filter by name or address”. Additional filters are also possible.

Check the device name on the label at the bottom of your Iris device, then press the ‘CONNECT’ button next to it.

Should your device not be listed, make sure that your filters are not too strict and swipe down to start a new scan.

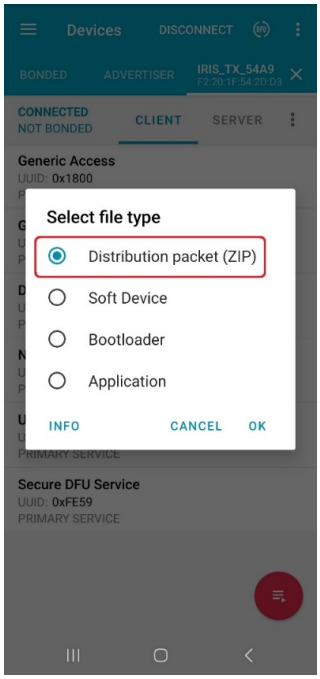


When you connect to your Iris device, the capabilities of the device will be discovered, and some information will be displayed. The specifics of this information are out of scope for this document.

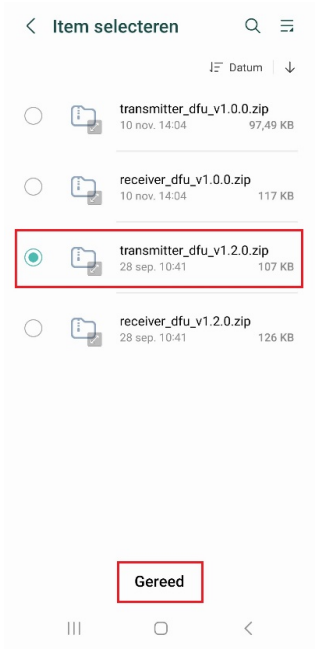
When the Iris device supports the firmware update functionality, an icon DFU will be shown at the upper right corner.

Except for a few initial samples and starter kits, all Iris devices support firmware update functionality.

When you have already downloaded the BLE firmware on your mobile device, press DFU to proceed.



Select the file type “Distribution packet (ZIP)”, and press ‘OK’ button to proceed.



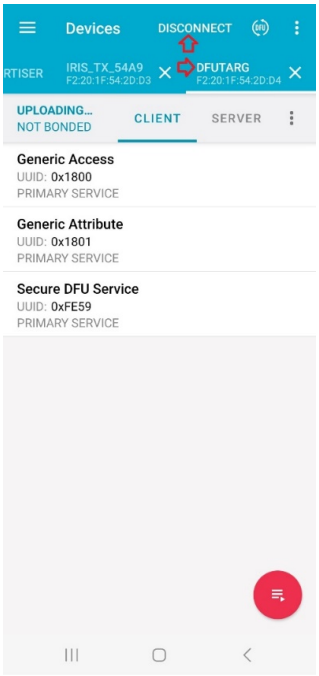
Navigate to the folder where the firmware was downloaded or moved to.

Make sure to select the correct firmware archive, paying special attention to whether you are dealing with a transmitter device or a receiver device.

❗ Loading transmitter firmware in a receiver device, or the other way around will result in the device no longer functioning properly.

Should you accidentally flash the wrong firmware, you can re-program the correct one by simply following the same steps again and selecting the correct firmware.

Press ‘Ready’ or similar (OS/language dependent, ‘Gereed’ in this screenshot) to start flashing the firmware.

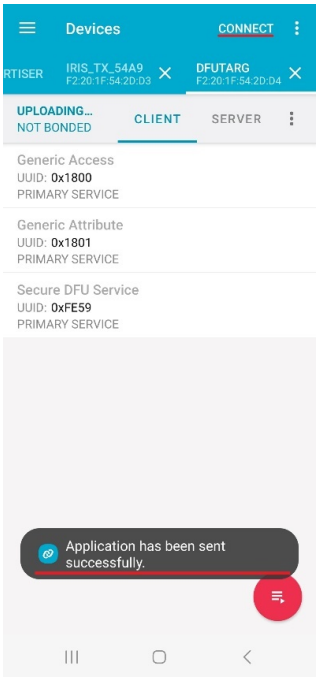


Once the update starts, a new tab called DFUTARG will be added; to the left of the DFU icon you will still read DISCONNECT.

The update should be complete within the minute, but the progress will not be clearly displayed in the app.

Depending on the OS, you might be shown the progress in the status bar/notification panel.

For as long as you read 'DISCONNECT', the update will be ongoing, and you simply wait.



When you keep focus on the 'nRF Connect' app, on completion, a notification will be shown informing 'Application has been sent successfully'.

Depending on the OS, a notification might also be shown in the status bar/notification panel, but this is not essential.

The DFU will no longer be shown, and the text on the upper right corner will read CONNECT.

At this point, you may conclude that the update is complete.

Close the 'nRF Connect' app and perform a power cycle of the Iris device.

9 Technical specifications

	Iris Brick	Iris DSP Amplifier Module
Wireless		
Wireless technology	DECT 1.9GHz	
Reception Range	50m indoors to 300m outdoors	
Latency	16.5ms	
Synchronicity between receivers	0.15ms	
Internal antenna	no	yes
External antenna	yes	
Analog audio		
Max Output Power @4-8Ω	2x50W	
Audio frequency range	20 Hz to 20 kHz	
Signal-to-noise ratio (SNR)	>90 dB	
THD+N(@1 kHz)	<0,1%	
Audio DSP	About 100 configurable biquads Volume control / limiter Dynamic range compressors Multiband DRC Dynamic EQ Delay up to 1x20 ms or 2x10ms X-over	
Electrical		
Power supply	Integrated	
Operating voltage	100~240VAC/50~60Hz	
Power consumption (AC)	Max 45W, <1W (idle)	

	Iris Brick	Iris DSP Amplifier Module
Digital input		
Logical low	-	<=0.8V
Logical high	-	>=2.5V
Internal pull-up resistance	-	10 kΩ
Maximum input voltage	-	3.3V
Digital output		
Maximum switching voltage	-	42V
Maximum output current	-	1.4A
Mechanical		
SMA antenna connector	female	U.FL
Audio output connector	terminal block	pinheader 0.1"
Power connector	C8	pinheader 0.2"
Service connector	USB-C	
Relay control input	terminal block (*1)	pinheader 0.025" (*1)
Relay control output	terminal block	pinheader 0.025"
LEDs	RGB (2x)	pinheader 0.025" (max 4 RGB leds)
Charger/battery connector	-	pinheader 0.05"
Dimensions (LxWxH)	150x100x52 mm	98x77x40 mm
Weight	590 gr	230 gr
Environmental and safety		

	Iris Brick	Iris DSP Amplifier Module
Operating temperature	-20°C to 50°C	
Humidity	30% to 90%, RHL non-condensing	
Regulatory compliance	CE, WEEE	
Radio Equipment Directive (RED)	2014/53/EU	
RoHS	2011/65/EU & (EU) 2015/863	

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

(*2) No function yet

10 Protective measures

The audio amplifier of the AMP-device contains a range of protection features to avoid damage to the amplifier itself or the attached speakers.

The integrated protection system monitors a range of parameters to check if min/max thresholds are exceeded.

Exceeding the thresholds will trigger internal error events, some of these errros also can be monitored in the app or with a LED.

The following errors and warnings can be reported:

- Low temperature warning
- PVDD Over/Under-voltage
- Over-temperature warning/error
- Output DC
- Over-Current
- Clipping

These events are described in detail in the following sections.

10.1 Output DC Protection

The amplifier output can detect if a DC voltage is present at the output terminals.

If the output voltage stays above the DCP threshold for too long, corresponding to a 1 Hz sinusoid then:

- The power stage will shut down.
- A DC error will be generated.
- The power stage will attempt to restart and resume operation.

Each output channel is monitored separately.

10.2 Over-Current Protection

Over-current events can be triggered by e.g. driving low impedance loads with high PVDD and shorting speaker terminals to each other or to ground.

The current flowing in each internal MOSFET in the output stage is monitored.

If the threshold is exceeded (current > 8A per channel) then:

- The power stage will shut down.

- An Over-Current Protection error will be reported.
- The power stage will attempt to restart and resume operation.

10.3 Over/Under-Temperature Protection

An internal temperature sensor efectively safeguards the device against a thermally induced failure due to overloading and/or insuficient cooling.

A high die temperature initially causes an Over Temperature Warning (OTW).

During an OTW event, the device will continue to operate normally but if the temperature rises further, the device will reach Over Temperature Error (OTE).

An OTE event will cause the device to stop all output switching activity in order to avoid permanent damage.

The device will resume switching when the temperature has dropped sufficiently.

When the temperature is rising:

Over-temperature warning trigger: 115°C
Over-temperature error trigger: 145°C

When the temperature is falling:

Over-temperature warning clear: 110°C
Over-temperature error clear: 140°C

10.4 PVDD Over/Under-Voltage Protection

PVDD features over-voltage (OVP) and under-voltage (UVP) protection as well as under-voltage lockout (UVLO).

Refer to table below for an overview of the voltage protection on PVDD.

PVDD voltage range	Functionality
Above absolute maximum	Device breakdown
OVP area	Output muted
Recommended operating conditions	Normal operation
UVP area	Output muted
UVLO area	Device in reset

When PVDD is rising:
UVLO clear: PVDD > 6.4V
OVP trigger: PVDD > 26.5V

When PVDD is falling:
OVP clear: PVDD < 26.25V
UVLO trigger: PVDD < 6.65V

OVP protects the MOSFETs in the output power stage against permanent damage due to over-voltage. If PVDD voltage rises above 26.5V the power stage will stop switching and the output will efectively be muted.

PVDD voltage must fall below 26.25V before the device exits muted state.

OVP will not protect the device against PVDD voltages rising above the absolute maximum value (which is 28V).

UVP behaves similarly and also mutes the output (without audio artifacts) by stopping all switching in the output power stage if PVDD voltage drops below the recommended operating conditions.

In UVP state it is still possible to communicate with the device but mute is sustained.

UVP should be considered a warning for low and/or unstable PVDD.

If PVDD is reduced further, falling below 6.65V, the device shuts down.

Power-on reset is applied when raising PVDD above the rising threshold again.

When shut down, the device is not functional.

10.5 Clipping

The NCLIP works as a clipping indicator and starts pulsing from high to low at higher levels and becomes constant low when near clipping.

A system microcontroller can use this pin as an indicator to decrease volume/gain if desired when clipping occurs. (not implemented yet)

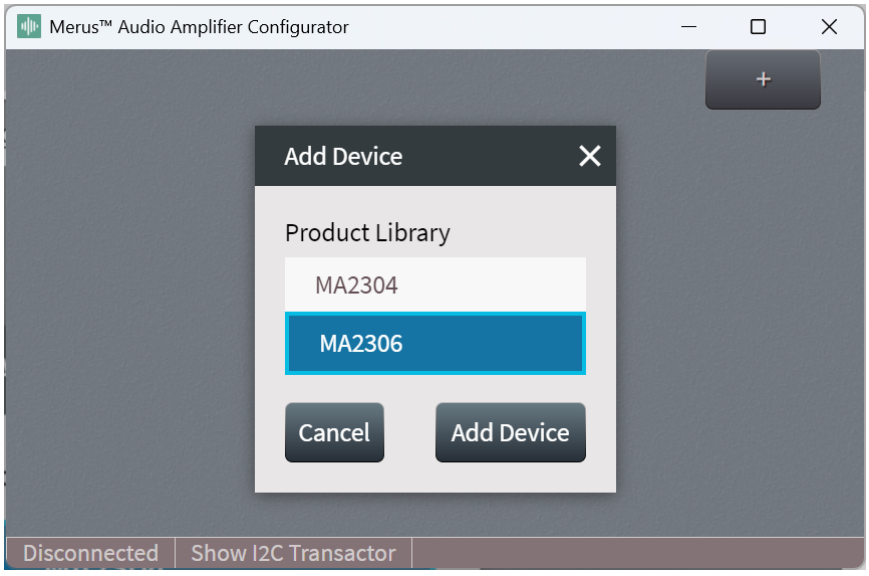
Alternatively, the integrated DSP features a configurable output limiter that can be used to prevent clipping.

11 DSP configuration

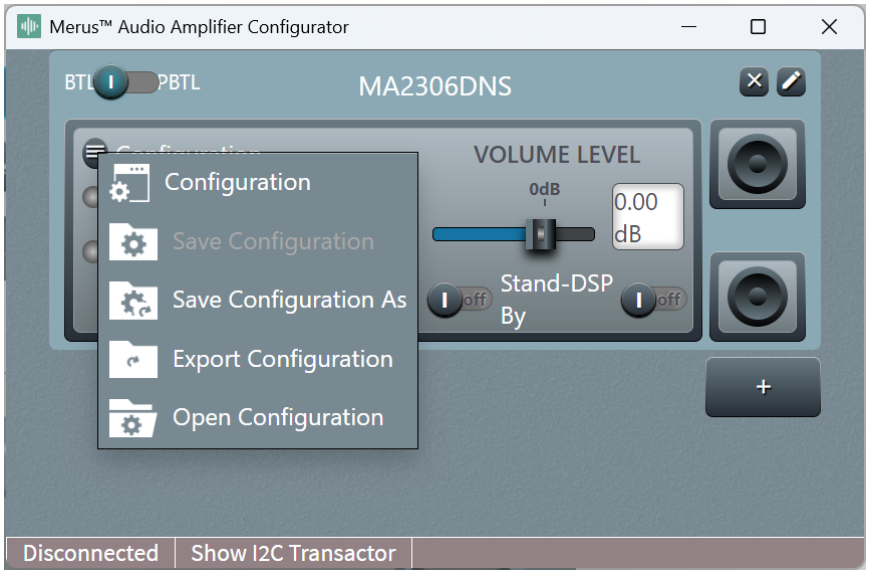
On-the-fly DSP configuration of Iris AMP devices is not possible. A configuration is first prepared using Infineon's 'MERUS Audio Amplifier Configurator', then exported as a preset compatible with AMP-devices.

Using the Iris Service Tool you can upload up to 6 DSP presets to your AMP-device, and select which preset to activate.

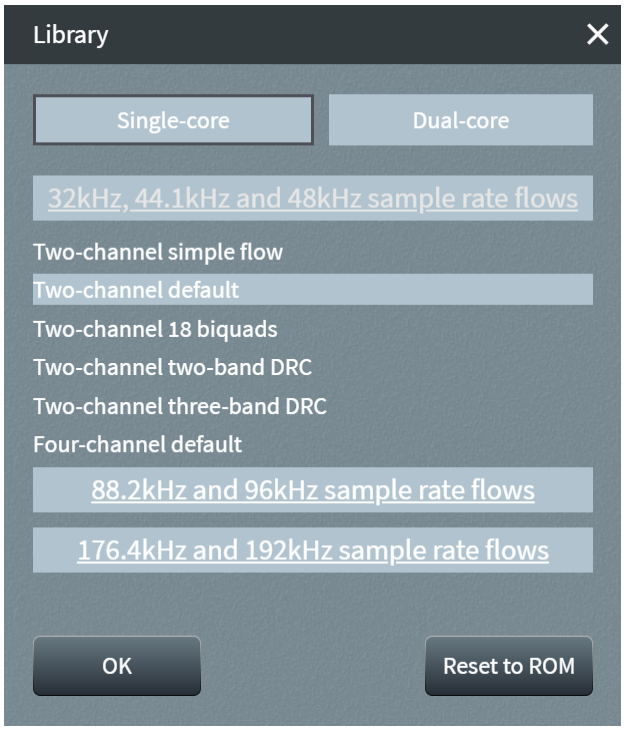
- Download and install the "MERUS Audio Amplifier Configurator" (https://streamit.eu/dl-content/temp/tools/merusaudioamplifierconfigurator_2.0.1.202402281050.zip)
- Start the tool and disregard the 'Disconnected' in the status bar, as the MERUS configurator does not connect directly to the Iris.
- To work in what is called the demo mode (without a device connected), we press the add button 
- Select the product option MA2306, then press 'Add Device'



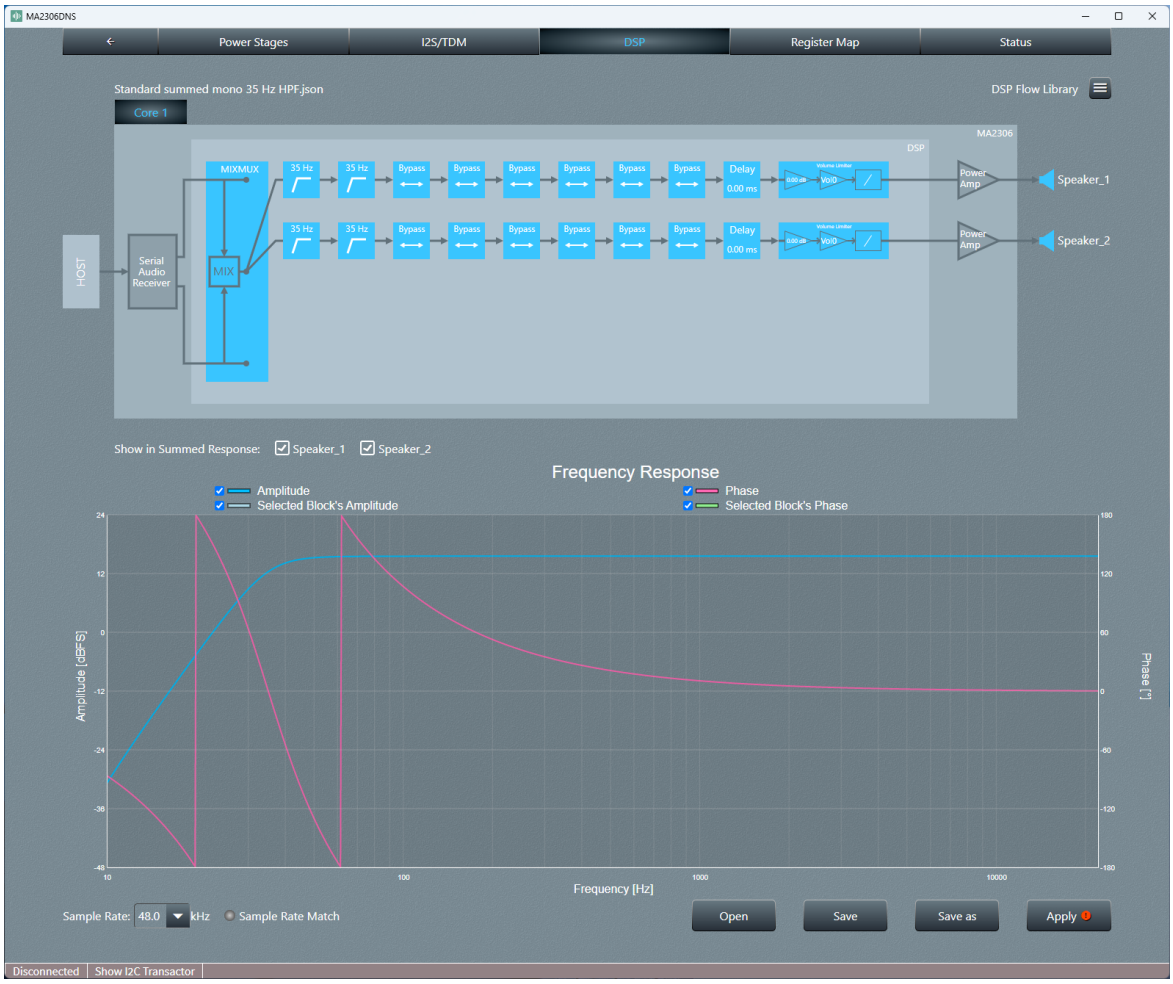
- Access the configuration interface for the MA2306 using  and selecting Configuration



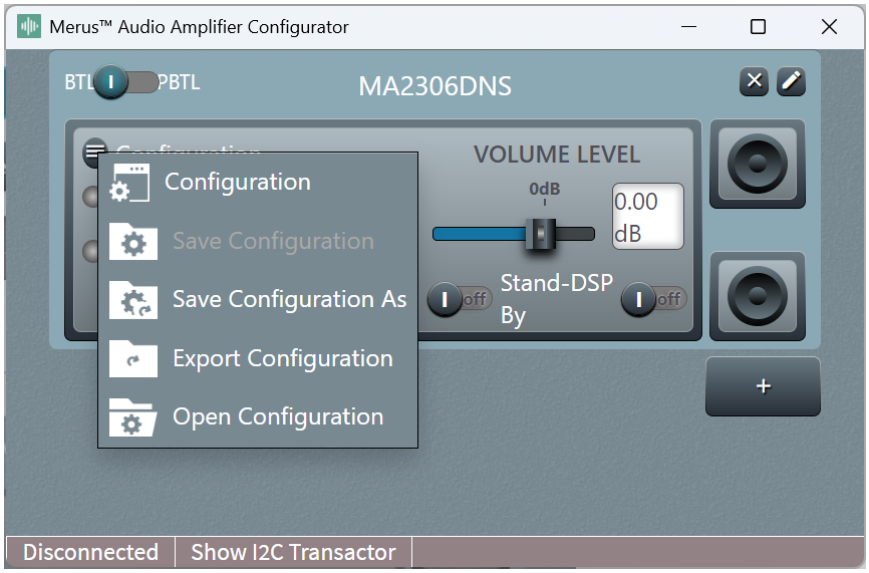
- Select the DSP tab, then access the DSP Flow Library and select the flow that best fits your needs, from the 48kHz section. It us also possible to open an already existing flow you might have saved earlier.



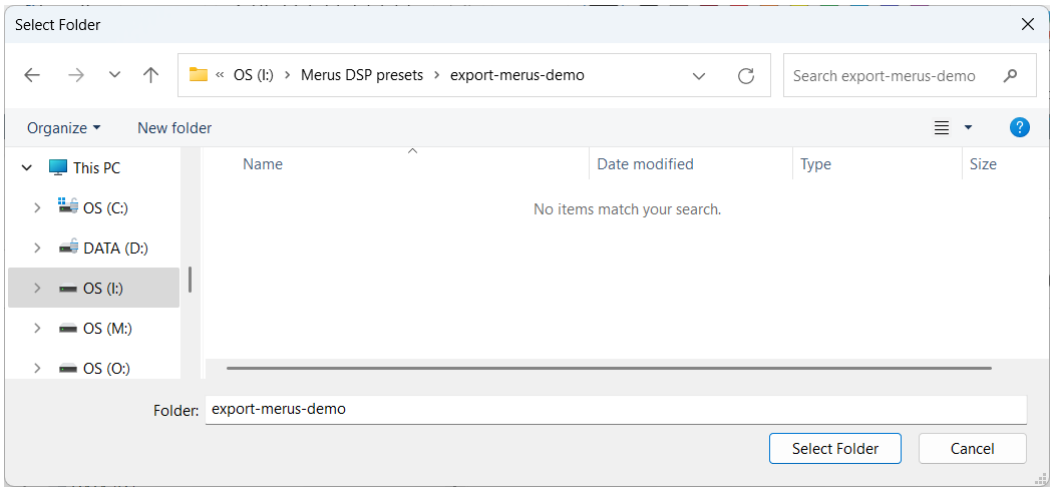
- Configure the DSP to your needs, eventually saving the DSP flow for later use (Save as/Save buttons at the bottom). and get back to the main application using the back-arrow tab.



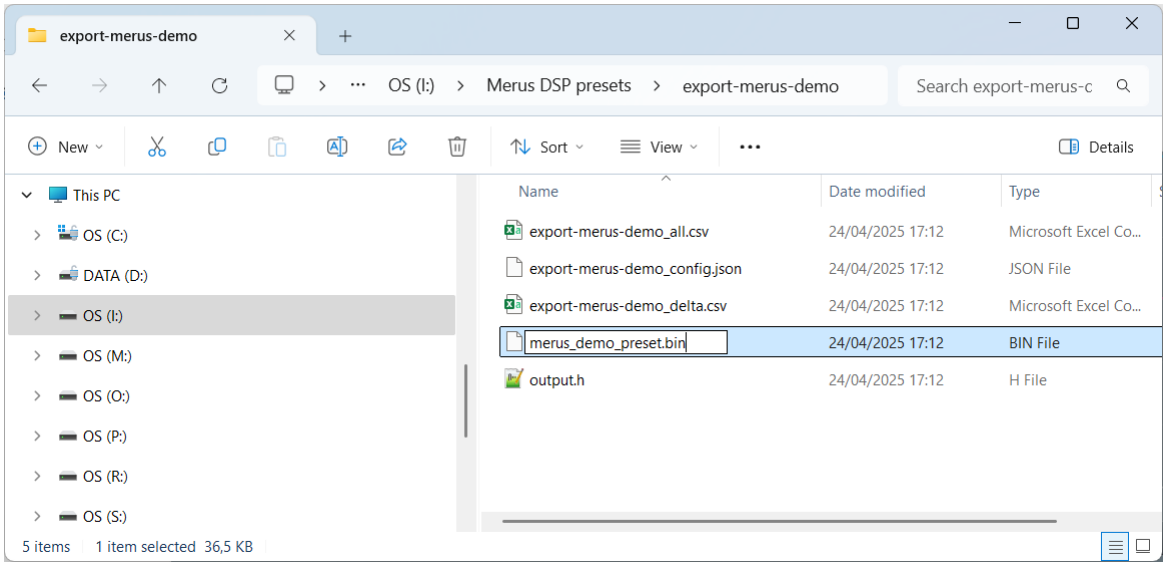
- From the main application screen we can export the DSP configuration we just created/updated, so it can be used as a preset for your Iris AMP-device. Open the configuration menu using  and select the option "Export Configuration"



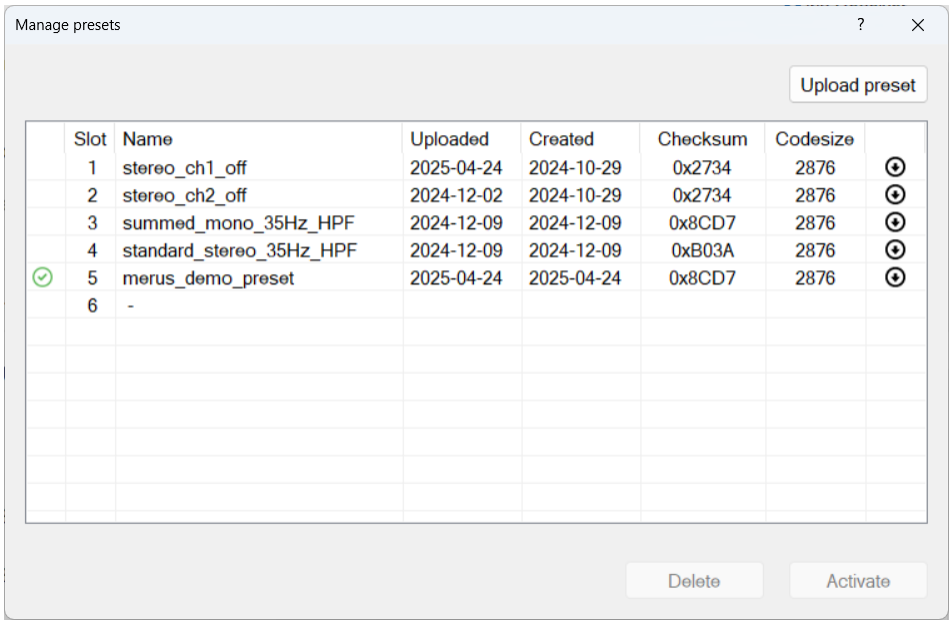
- Select a folder for the configuration to be saved, eventually creating a new one when needed.



- On confirmation of the folder to save your output to, the DSP configuration gets exported in different formats with different files being generated. The file we are interested in for using as a DSP preset for our AMP-device is the one named ‘output’ (without an extension). Give this file a logical name describing the preset and rename it making sure the ‘.bin’ extension is added.



We can upload and activate our preset using the Iris Service Tool . When an AMP-device is connected, the DSP configuration pane (for audio and presets) will be enabled. Use ‘Manage presets’ to upload/remove and activate/deactivate presets.


Manage presets
Upload preset
Slot Name Uploaded Created Checksum Codesize
1 stereo_ch1_off 2025-04-24 2024-10-29 0x2734 2876
2 stereo_ch2_off 2024-12-02 2024-10-29 0x2734 2876
3 summed_mono_35Hz_HPF 2024-12-09 2024-12-09 0x8CD7 2876
4 standard_stereo_35Hz_HPF 2024-12-09 2024-12-09 0xB03A 2876
5 merus_demo_preset 2025-04-24 2025-04-24 0x8CD7 2876
6 -
Delete
Activate

12 Troubleshooting

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

12.1 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 Configurator 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.

12.2 Finding the advertising name

The name of an Iris device as shown in the Iris Configurator is called the advertising name. It always starts with "IRIS" and is composed by appending the hardware type and the unique identifier. This information is printed on the label found on the bottom side of the device (e.g. for a PTX-1 device with id 1234A, the advertising name would be IRIS_PTX1_1234A).

Iris devices running outdated firmware have a different name format (e.g. IRIS_RX_ABCD), which has been deprecated. When updating older devices, the advertising name will change to the new format and you will be asked to note down the new name. It is highly recommended to note down the new name, and update the information on the label as well. Should you fail to do so, you can always find the advertising name by connecting your device to the Iris Service Tool.

12.3 Find the login password

In order for an instance of the Iris Configurator to be authorized to connect to the audio network, a password needs to be entered.

The default password is '**streamit**' (without quotes). It is highly recommended to change the password as one of the first steps in setting up your network, so that only those authorized can access the network.

Should you no longer remember which password was used for a specific network, you can reset the password using the Iris Service Tool.

12.4 Password reset

Resetting the password of your Iris audio network is only possible though the Iris Service Tool:

- Connect the TX-device via USB to the PC where the tool is running
- Start the Iris Service Tool
- Make sure the TX-device is selected
- Press 'Reset password' button and accept to proceed with the reset

Use the Iris Configurator to connect to to your network with the default login password, and change the password right away.

12.5 Factory reset

Resetting a device will apply default values for all important settings.

A factory reset for a transmitter device is only possible through the Iris Configurator, after having signed in. See password reset, in case you no longer remember the password.

Receiver devices can be reset through the Iris Configurator, by accessing the network it belongs to. Another option is to reset a receiver device is 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.

The steps to reset a receiver using a reset dongle:

- 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

13 Release notes

Version: 1.8.0
Release date: 2025-04-23

New Features:

- Added support for configuring and monitoring receivers over DECT through the transmitter
- Significantly extended and updated the BLE API to support working with the new Iris Configurator app
- Added the VU meter functionality for the Iris Pro transmitter
- Added USB audio input support for transmitter devices
- Added support for mono audio encoding at 256kbps
- Added the basics for implementing range extension functionality, but the functionality remains disabled in this version
- Replaced the login PIN with login password
- Added password reset through the Iris Service Tool

Improvements:

- Major improvements made to the BLE connection configuration, BLE data exchange mechanisms, API commands, and memory management.
- Receiver devices will automatically enter pairing mode when not belonging to an audio network
- Simplified the unpairing mechanism and added option to forget receiver devices not in range
- Changed the USB driver name to "Streamit Iris TX device" or “Streamit Iris RX device’
- Disabled the BLE control interface of RX-1 receiver devices
- Factory reset is no longer possible without being logged in

Bug Fixes:

- Fixed: There was a 1dB difference between the output signal on the receiver and the input signal.
- Fixed: Volume changes did not always persist correctly

Dependencies:

- Compiled with DECT stack v0039_STREAMIT.
- Compatible with v1.6 firmware for the secondary controller.

Version: 1.6.0
Release date: 2025-03-25

New Features:

- Added support for the Iris Pro hardware and most of the hardware-specific functionality.
- Added support for the Iris Amp hardware and most of the hardware-specific functionality.
- Added support for configuration via the Iris Service Tool.
- Added stereo support and audio mode configuration for the following options: mono 128kbps, stereo 128kbps, stereo 256kbps.

- Added OTA data exchange mechanism for configuring and monitoring receivers through the transmitter.
- Added audio mode configuration of receivers through the TX-device.
- Added support for (SPDIF) digital audio input on the Pro transmitter.

Improvements:

- Changed the product identification and name format to make use the unique ID of the main controller.
- Changed the BLE advertisement name to match the new product name format.
- Changed the 'App' (Config) status LED to solid green when the device is discoverable (no active BLE connections).
- Changed the default antenna setting to enable diversity.
- Changed the BLE communication speed to 1Mbps (LE 1M PHY).
- The factory default for the DECT region is now configurable.
- Receiver devices automatically enter pairing mode when not already paired.
- It is now possible to factory reset an RX-device using the relay control input pin.
- Extended and adapted the production tests to accommodate the Pro and Amp products.

Bug Fixes:

- Fixed: Antenna diversity functionality was not working reliably.
- Fixed: The TX volume was set to -5dB instead of maximum when executing a factory reset.

Dependencies:

- Compiled with DECT stack v0036_STREAMIT.
- Compatible with v1.4 firmware for the secondary controller.

Known issues:

- The output signal on the receiver will be 1dB higher than the input (maximum gain configuration on RX).

Version: 1.4.0
Release date: 2023-09-28

New Features:

- Significantly reduced the latency to just 16.5ms (was 23.5ms).

Improvements:

- Decreased the minimum BLE connection interval to allow sending data as fast as possible.
- Increased the size of the message queue for safe communication between sub-systems.
- Extended the tests for validating the status LEDs hardware.

Bug Fixes:

- Fixed: Issue with incorrect response to host when setting the volume on a TX-device.

Dependencies:

- Compiled with DECT stack v0034.
- Compatible with v1.2 firmware for the secondary controller.

Version: 1.0.0
Release date: 2023-02-16

First firmware version released for production.

Dependencies:

- Compiled with DECT stack v0034.
- Compatible with v1.0 firmware for the secondary controller.

14 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

15 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.

Published: 20260423