# Iris Amp series

## Technical Manual

for software version 1.6.0

Updated on 10/02/2026

# Contents

## 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 1.6.0.

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  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. 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 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:
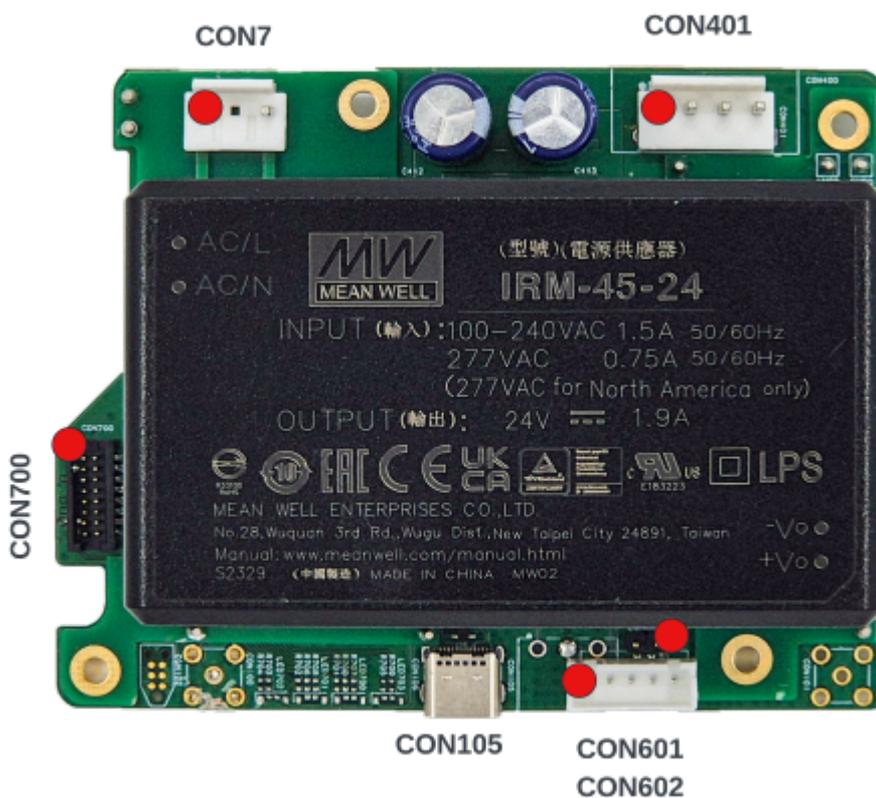


| | |
|---|---|
| **CON7** | Mains power connector. The pcb-side is a JST B2P3-VH connector. |
| **CON105** | USB connector for configuration & firmware updates. |
| **CON401** | The Loudspeakers connector, with pin configuration detailed in the table below |

| 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.
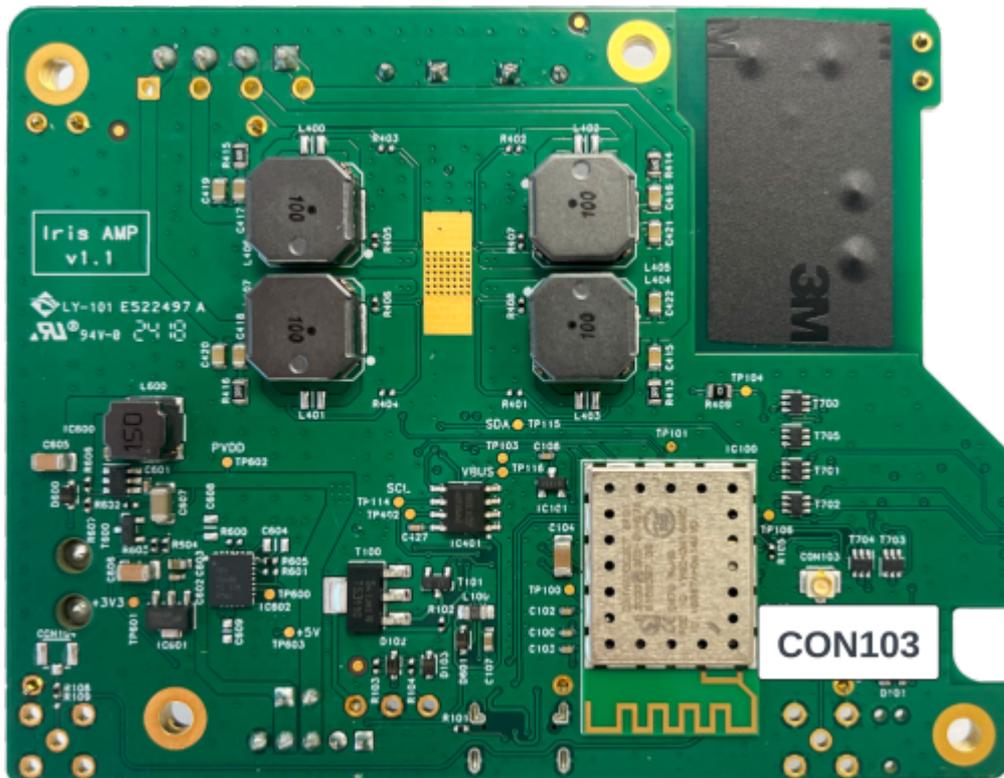
## 2.3 Connecting the Iris

### 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 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.

## 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).

Amplifier area
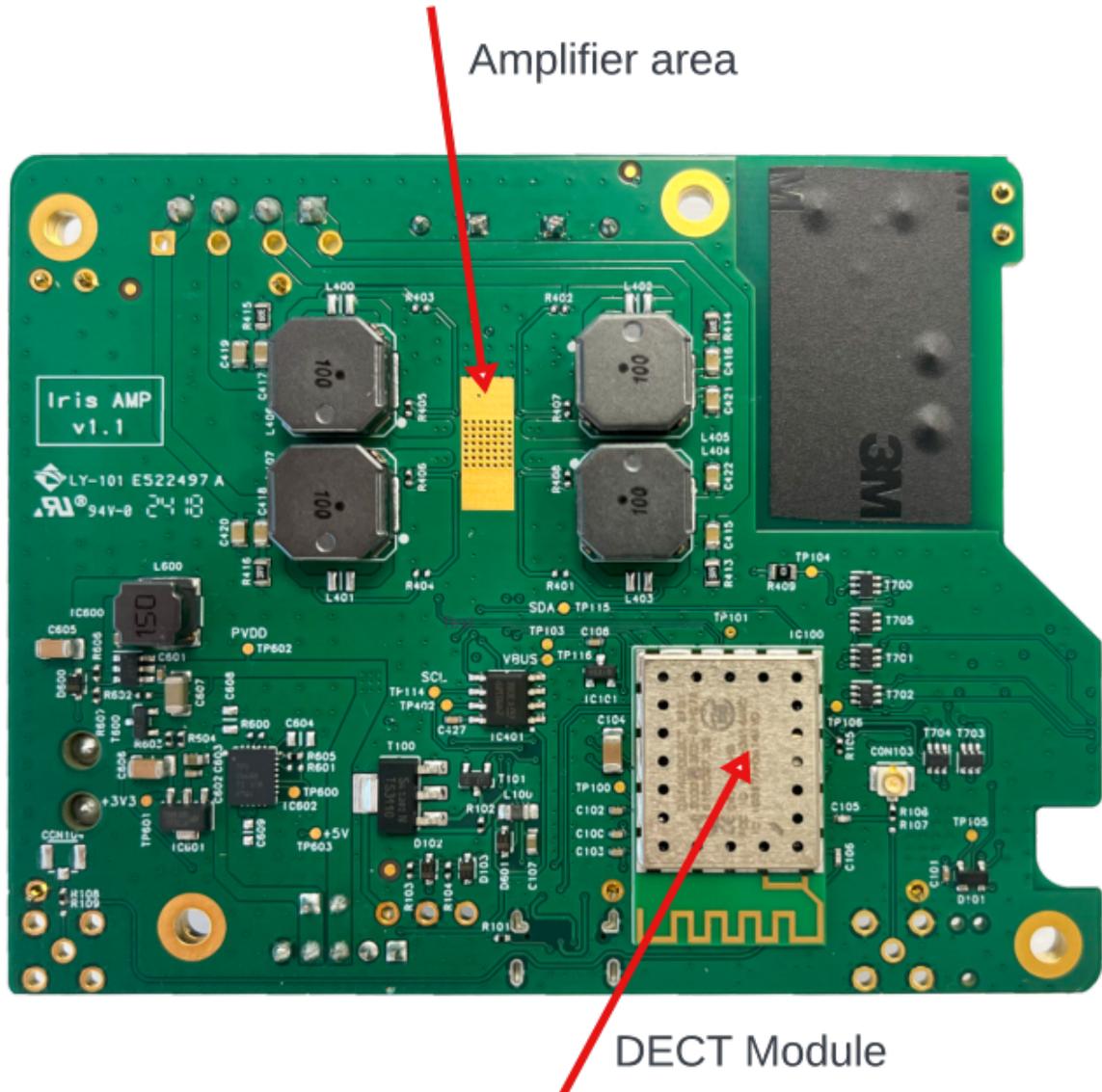
DECT Module

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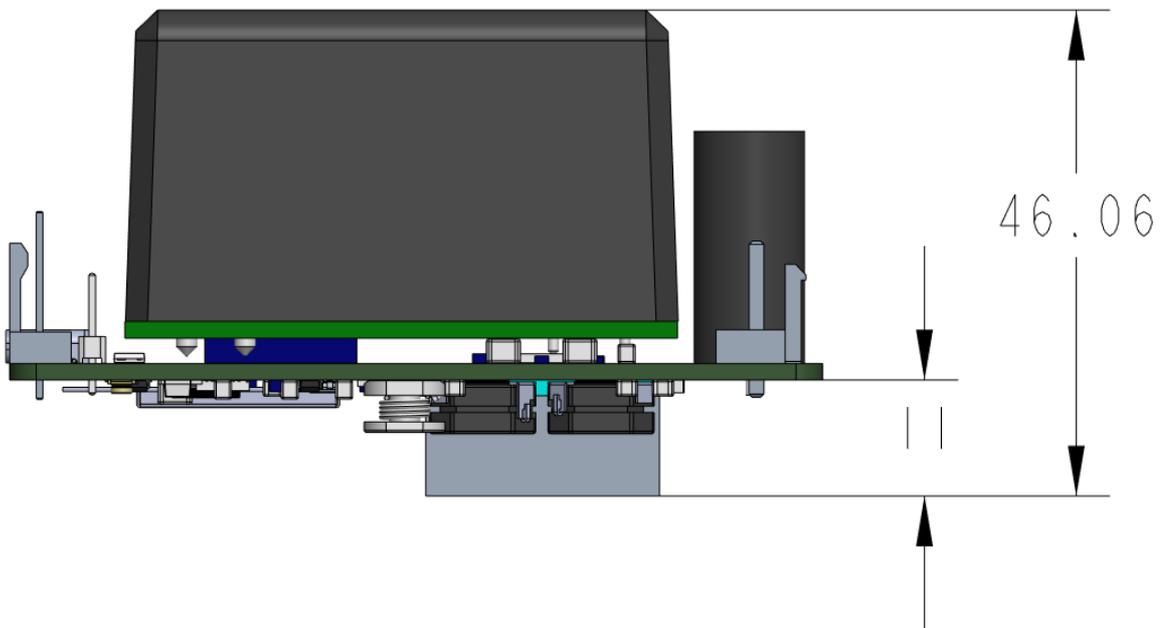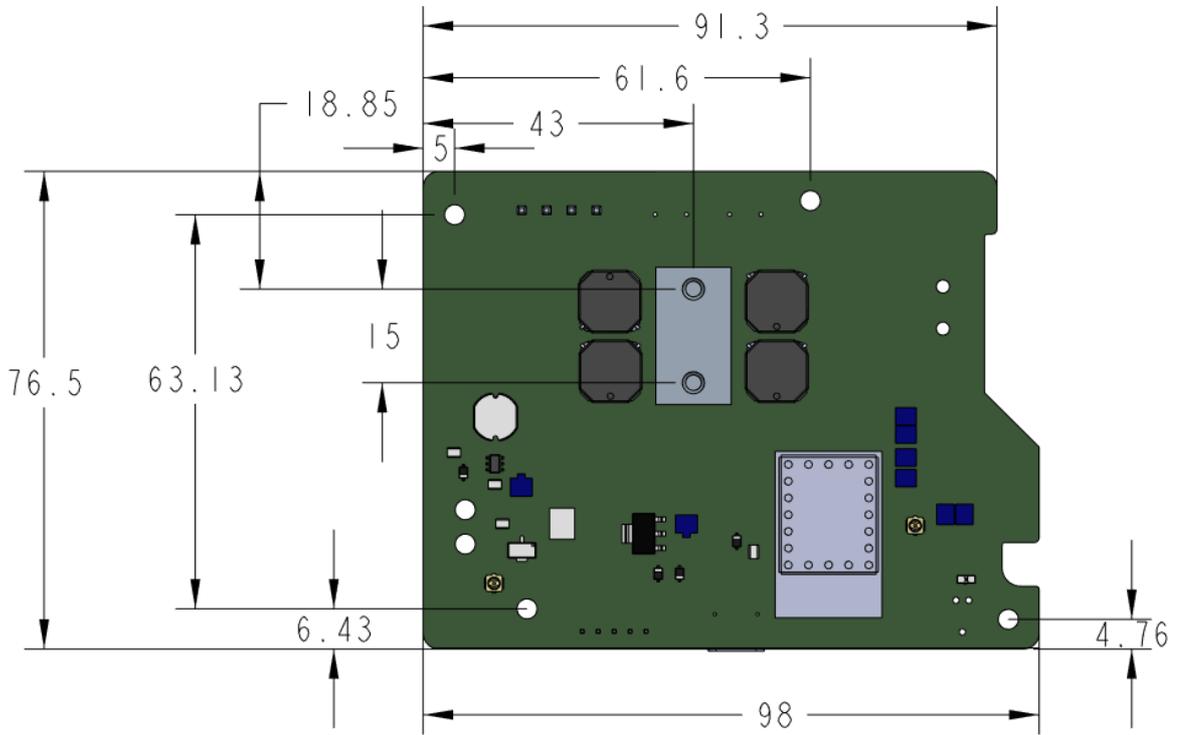
It is recommended to use all the holes for mounting the module to your casing.

# 4 Configuration

The configuration of your Iris audio networks 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 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<br>EN 50665<br>EN 301406<br>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

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.
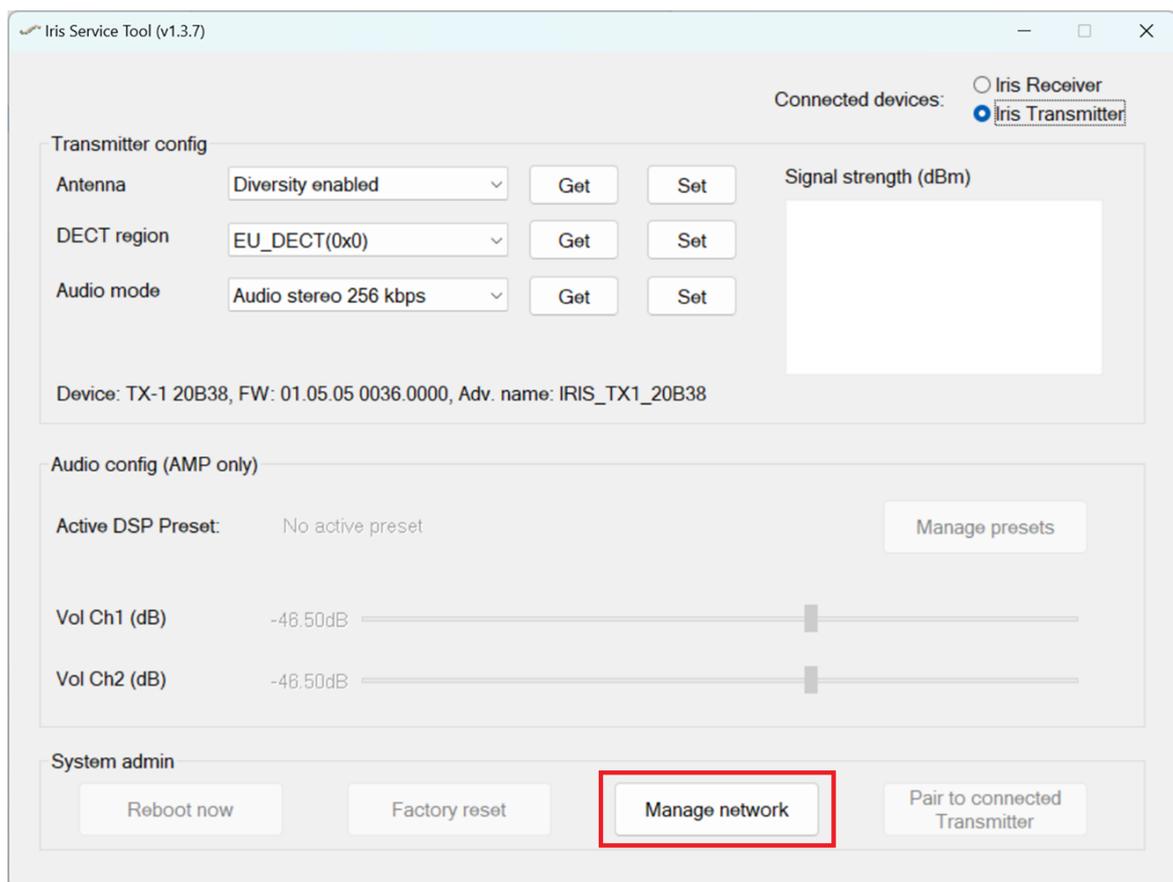
## 4.3    Relay control functionality

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 |
| ▩ | 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 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 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<br>Volume control / limiter<br>Dynamic range compressors<br>Multiband DRC<br>Dynamic EQ<br>Delay up to 1x20 ms or 2x10ms<br>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

# 8    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.

## 8.1    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.

## 8.2    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.

## 8.3    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

## 8.4    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.

## 8.5    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.

# 9    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.
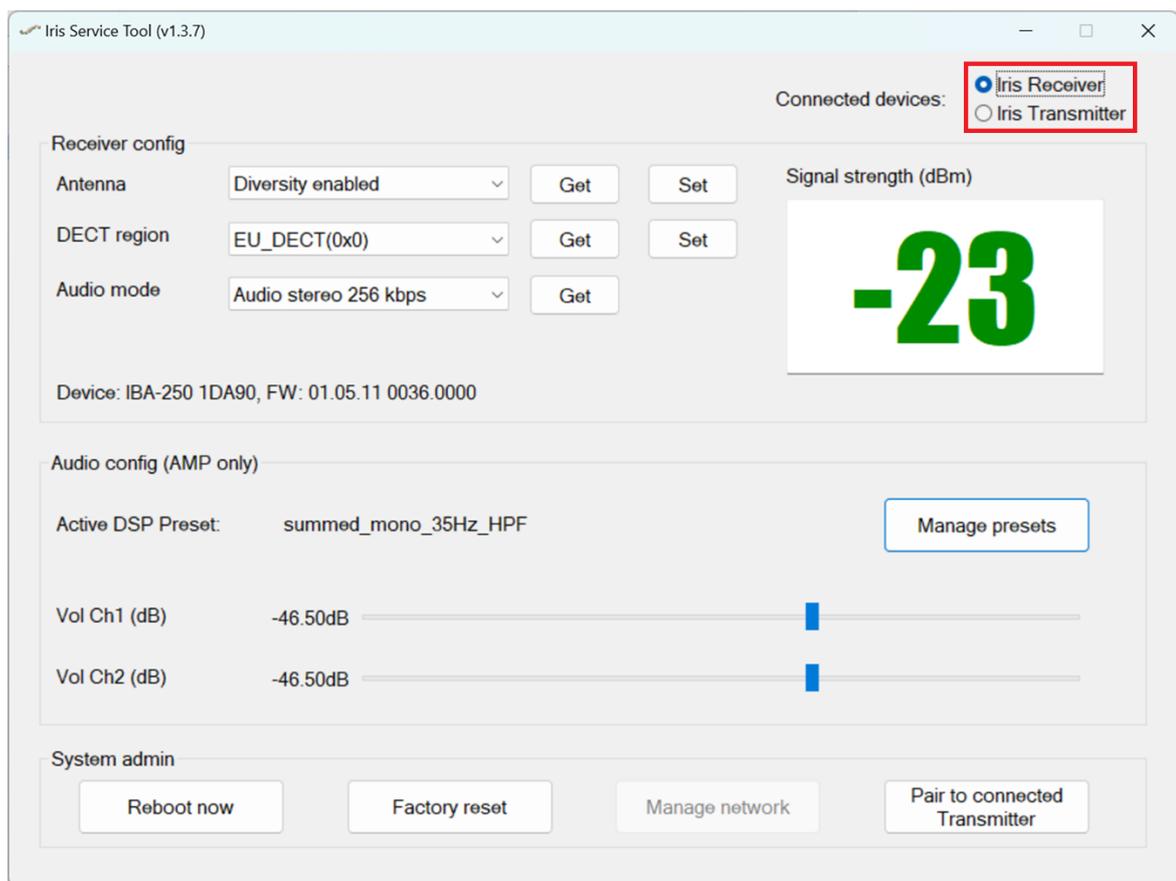


When a  RX-device is connected, it is possible to monitor the received signal strength and change the basic receiver configuration. When the RX-device is not paired (or out of range) the value -110dBm will be displayed.

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

# 10    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](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'
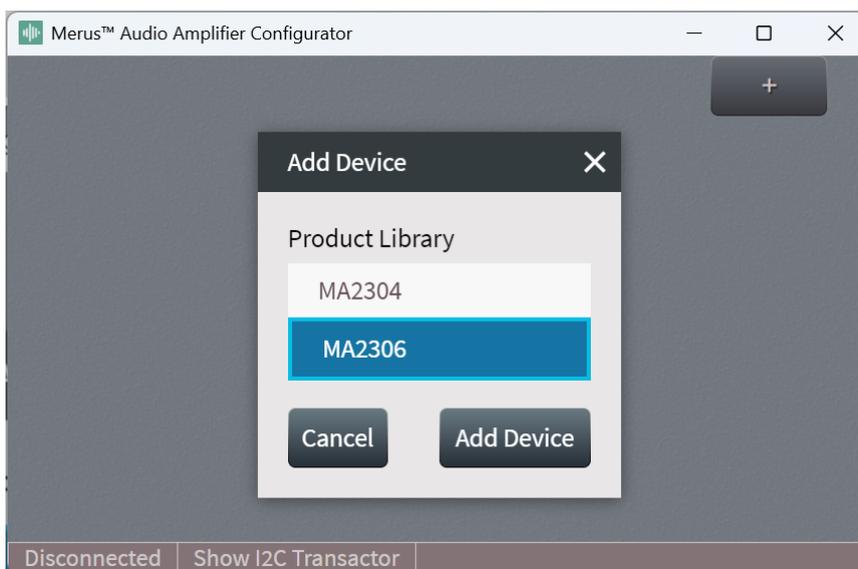


- Access the configuration interface for the MA2306 using ☰ and selecting Configuration

- 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.
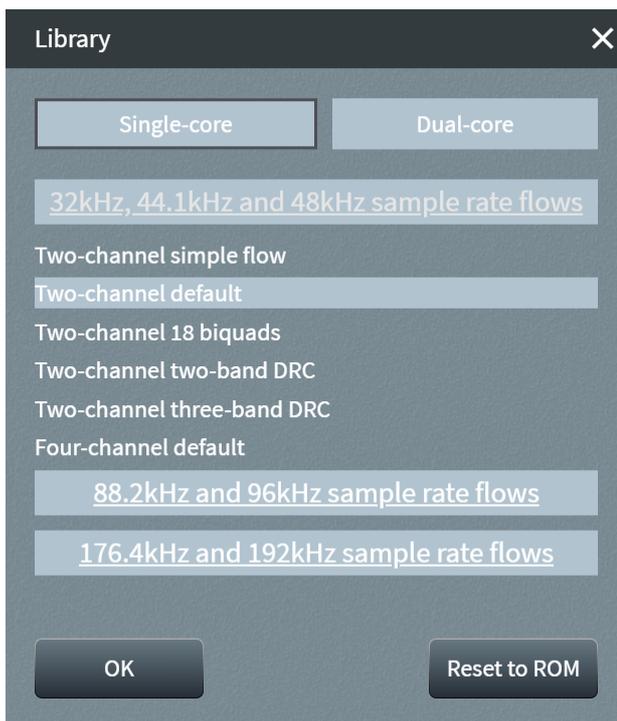


- Configure the DSP to your needs, eventually saving the DSP flow for later use (Save as/Save buttons at the bottom). and get back to the main application using the back-arrow tab.

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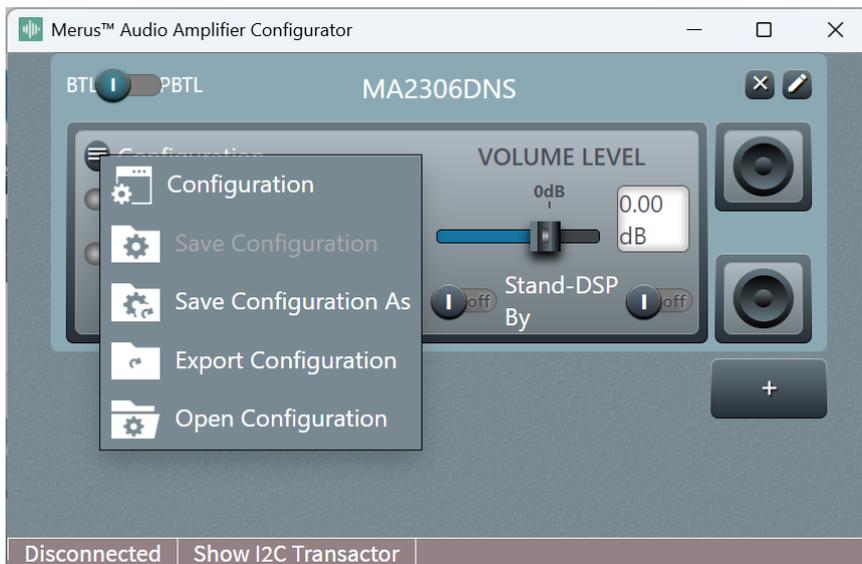
- Select a folder for the configuration to be saved, eventually creating a new one when needed.
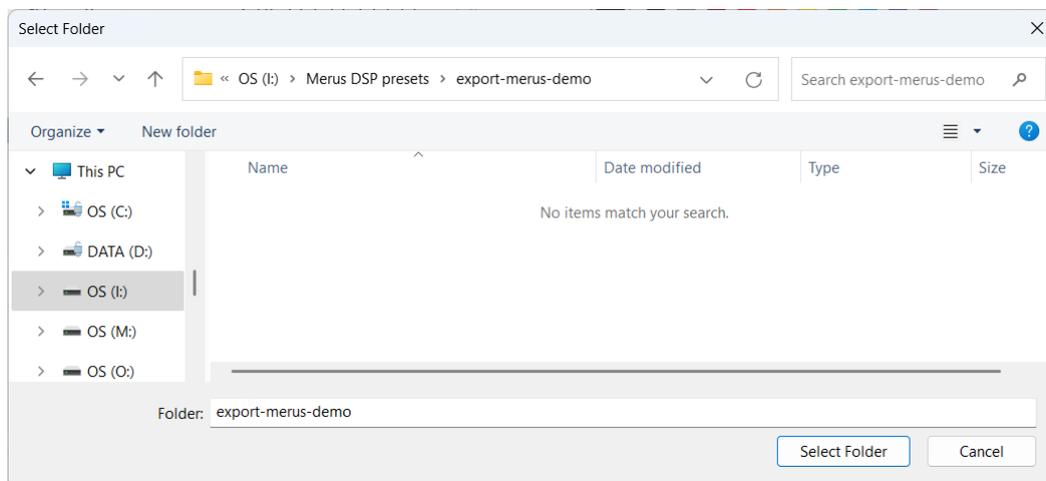


- On confirmation of the folder to save your output to, the DSP configuration gets exported in different formats with different files being generated. The file we are interested in for using as a DSP preset for our AMP-device is the one named 'output' (without an extension). Give this file a logical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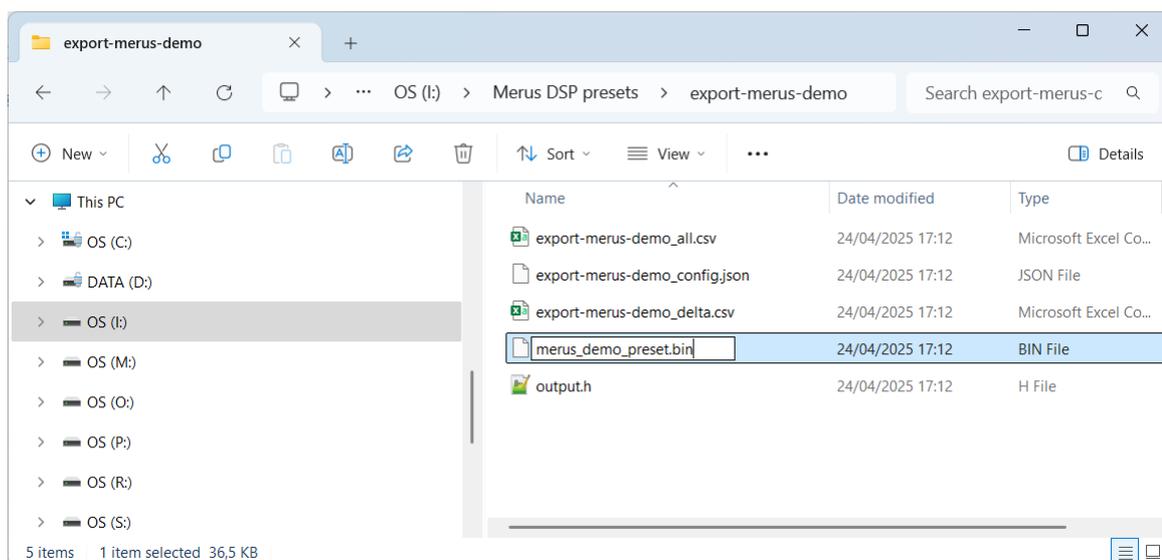


We can upload and activate our preset using the Iris Service Tool . When an AMP-device is connected, the DSP configuration pane (for audio and presets) will be enabled. Use 'Manage presets' to upload/remove and activate/deactivate presets.

| | 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 | - | | | | | |

# 11    Troubleshooting

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

## 11.1    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.

## 11.2    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.

## 11.3    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 procdedure 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.

# 12    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

# 13    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.