



A4M SCiO Series

**2 or 4 channel amplifier modules
with DSP and remote control**

User Manual • Version 1.1 (English)

A4M SCiO series amplifier modules are pre-fitted in these AUDIOFOCUS self-powered loudspeakers:

- Carys C15LSa
- Cyris C210Sa
- Ares 12a
- Ares 8a
- S 21a
- B 18a
- MTSUB 218a
- FRX 12a
- FRX 15a

A4M SCiO 1504
A4M SCiO 3004





IMPORTANT SAFETY INSTRUCTIONS

CAUTION: to reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of an uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the equipment.

INSTRUCTIONS

Before installing or operating the equipment, read all safety instructions, warnings and operating instructions.

Heed all warnings. Follow all instructions. Keep all safety, installation and operating instructions for future reference.

INSTALLING AND OPERATION LOCATION

Do not use this apparatus near water. Do not expose this apparatus to drips or splashes. Do not place any objects filled with liquids, such as vases, on the apparatus.

Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. No naked flames, such as lighted candles, should be placed on the apparatus.

Do not install the apparatus in a confined space such as a book case or similar unit. Do not block any ventilation openings.

Ensure that foreign objects and liquids cannot get into the equipment.

Install in accordance with the manufacturer's instructions. Only use attachments/accessories specified by the manufacturer.

Use only with the cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



The apparatus should be located close enough to the AC outlet so that you can easily grasp the power cord plug at any time.

The mains plug, the appliance coupler or the mains switch is used as the disconnect device. Either de-

vice shall remain readily operable when the apparatus is installed or used.

POWER SOURCE AND GROUNDING

This product should be operated only from the power source indicated on the apparatus or in the operating instructions. If you are not sure of the type of power supply to the premises where the equipment is to be used, consult your product dealer or local power company.

Do not defeat the safety purpose of the polarised or grounding-type plug. A polarised plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Connect Class I construction apparatus to an AC outlet with a protective grounding connection.

Do not overload wall outlets, extension cords or integral convenience receptacles, as this can result in a risk of fire or electric shock.

Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus. Unplug this apparatus during lightning storms or when unused for long periods of time.

POWER SUPPLY AND POWER CORD REQUIREMENTS:

Power supply class I grounding requirements:

For protection from fault currents, the equipment shall be connected to a grounding terminal. Plug the system power cord into an AC outlet that provides a ground connection.

Substitute cords may not provide adequate fault protection. Only use the power cord supplied with this product or an authorized/equivalent replacement.

Safety notices:

Denmark:

Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.

Finland:

Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.

Norway:

Apparatet må tilkoples jordet stikkontakt.

Sweden:

Apparaten skall anslutas till jordat uttag.

CLEANING, MAINTENANCE AND SERVICING

Unplug the apparatus from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personal.

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

INTENDED USE

The equipment may only be used for the purpose described in the operation instructions. Never carry out any work on the equipment other than as specified in the operating manual.

Never push objects of any kind into this product through openings, as they may touch dangerous voltage points or short-cut parts, which could result in a fire or electric shock.

Children should never use the apparatus without close adult supervision.



WARNING: excessive sound pressure levels can cause hearing loss.

ENVIRONMENTAL PRECAUTION

Electrical and electronic equipment may contain hazardous substances for humans and their environment.



The "crossed out wheellie bin" symbol present on the device and represented above is there to remind one of the obligation of selective collection of waste. This label is applied to various products to indicate that the product is not to be thrown away as unsorted municipal waste. At the end of life, dispose of this product by returning it to the point of sale or to your local municipal collection point for recycling of electric and electronic devices.

Customer participation is important to minimize the potential affects on the environment and human health that can result from hazardous substances that may be contained in this product.



Please, dispose of this product and its packaging in accordance with local and national disposal regulations including those governing the recovery and recycling of waste electrical and electronic equipment. Contact your local waste administration, waste collection company or dealer.

SERIAL NUMBER OF THIS PRODUCT:

N° :

For any support related questions please contact:

info@audiofocus.eu

Keep this manual. Please keep a record of the product serial number for future reference.

This document has been put together with as much care as possible.

The information within is complete and correct on the date of publication. However, updates on the specifications, functionality or software may have occurred since publication.

To obtain the latest version of both manual and software, please visit the <https://www.AUDIOFOCUS.be/downloads>

© 1999 - 2022 AUDIOFOCUS
All rights reserved.

This manual may not be reproduced or transmitted, either in part or as a whole, by any means, be they mechanical or electronic, without the express written permission of AUDIOFOCUS BVBA



TABLE OF CONTENTS

Important safety instructions	2 -3
Introduction	6
Product highlights	6
Foreword	6
Before you get started	7
About this manual	7
Inspection and unpacking	7
Operating environment	7
Power requirements	7
Installation	7
Panel description	8
Signal Flow	9 - 12
User	9
Group	10
Speaker	11
Presets	12
Back panel operation	13 - 20
Home screen menu	13
Settings menu	14
Audio menu	14
Mixer	15
Audio menu gain	16
Audio menu delay	16
Audio menu Signal generator	16
Presets menu	17
Hotspot menu	18
Cloud menu	18
Network menu	19
Notes on network	19 - 20
About menu	20
AUDIOFOCUS SCiO Software	21 - 46
Home page menu	21
User gain menu	22
User delay menu	22
User PEQ menu	23 - 25
User X-over menu	26 - 27
User Limiter menu	28 - 29
Speaker preset menu	30

Group menu	31 - 32
Group gain menu	33
Group delay menu	33
Group EQ menu	34
Settings menu	35 - 38

Firmware update	39 - 41
------------------------	----------------

Specifications	43 - 45
-----------------------	----------------

INTRODUCTION

Dear customer,

Thank you for choosing an AUDIOFOCUS loudspeaker fitted with our A4M SCiO amplifier module for your sound reinforcement needs.

The A4M SCiO is a professional amplifier module featuring built-in DSP and secure remote control over the cloud, allowing you to log in to the AUDIOFOCUS Cloud and manage your amplifier settings remotely.

PRODUCT HIGHLIGHTS

- Remote management over the AUDIOFOCUS Cloud
- WebUI with built-in Wi-Fi Hotspot
- Internal streaming source supporting Spotify and Apple AirPlay
- Daylight viewable colour OLED display
- analog input and network options
- On board 64bit DSP with freely configurable signal path. IIR+FIR filter capability.
- User processing DSP facilities:
- Gain adjustment and phase inversion
- Delay 250 ms (combined with group delay)
- 12-band parametric filtering, with choice of 16 filter types
- Peak/RMS limiter
- Speaker processing DSP facilities
- Delay (30 ms Max.)
- 12-band parametric filtering, with choice of 16 filter types
- High-pass and low-pass crossover filtering with choice of filter types
- FIR/IIR filter implementation
- Peak/RMS limiter
- Group processing DSP facilities
- Group Delay (combined with user delay)
- Group 12-band parametric filtering, with choice of 16 filter types
- Group gain
- Internal Global and speaker preset library
- Class D, DC coupled amplifiers (2 x 750w / 4x 750w)
- Our proprietary control loop provides a load independent frequency response and low harmonic and intermodulation distortion.
- Power supply with worldwide operation from 100-240Vac. Its active power factor correction circuitry ensures efficient use of the mains power system
- Low idle loss (heat) through the use of a proprietary control loop which relaxes the output stage's dead time.

FOREWORD

AUDIOFOCUS A4M SCiO series professional amplifier modules feature built-in DSP and secure remote control over the cloud. Easily connect the amplifier to the SCiO WebUI on any HTML5 capable browser (MAC, PC, IOS, Android) with the built-in WiFi hotspot, or to a local area network via cat5 cable. The unique internal streaming source option makes it possible to playback Spotify or Apple AirPlay sources straight from your mobile device without the need for external hardware.

Multiple amplifiers can be controlled through the same WebUI using the trusted and comprehensive work-flow of our SCiO software package.

Featuring high-end studio-grade analogue circuit designs, the AUDIOFOCUS A4M SCiO series sets a new benchmark in powered system management and speaker processing design. The proprietary Class-D amplifier control loop delivers exceptionally low intermodulation figures, resulting in wide stereo imaging.

A4M SCiO DSP and amplifier circuits are fully integrated for outstanding performance. DC coupling is employed throughout the signal path, dramatically reducing the time offsets and distortion associated with AC coupling. The result: crisper, punchier bass and brighter, more natural high frequencies, delivering superb intelligibility and higher perceived volume.

Spotify and Spotify logos are trademarks of the Spotify Group. Apple, the Apple logo, AirPlay, iPad, iPhone, iPod, iPod nano, iPod touch, iTunes, Mac, and OS X are trademarks of Apple Inc., registered in the U.S. and other countries

BEFORE YOU GET STARTED

ABOUT THIS MANUAL

Carefully read all instructions and warnings before operating this device. Keep this manual in a safe place so that it can be referred to when required.

The latest manual revision can be downloaded from the download section of the AUDIOFOCUS website:

<http://www.audiofocus.eu>

This manual describes use of the A4M SCiO Series amplifier module.

INSPECTION AND UNPACKING

This appliance has been carefully packed in the factory and the packaging was designed to withstand rough handling. Should the unit appear to have been damaged in transit, do not discard any of the packing material and notify the carrier immediately as they will be responsible.

Save all the packing materials for future use if you ever need to ship the unit again.

Please check the list below against the contents of the packaging. If any items are missing or damaged, contact the AUDIOFOCUS dealer or distributor where you purchased the unit.

- AUDIOFOCUS A4M SCiO amplifier module (generally supplied pre-fitted within an AUDIOFOCUS self-powered loudspeaker)
- AC power cable Europe
- Network cable ("straight" type)

OPERATING ENVIRONMENT

The A4M SCiO Series is designed to operate in most normal climates, at a temperature between 0 °C and 50 °C (32 - 122 °F), with relative humidity between 10% and 60%.

POWER REQUIREMENTS

BEFORE you connect any unit to the mains, please make sure that the voltage of your local AC supply is within the acceptable range of the unit.

AUDIOFOCUS A4M SCiO series modules are designed to work from an AC supply between 100 V and 240 V, at a frequency between 50 and 60 Hz. No AC voltage selector is provided as the device automatically adjusts to the incoming AC voltage.

Precautions should be taken so that the appliance is properly grounded at all times. This unit must be earthed.

INSTALLATION

If the unit is brought into a warm room from a cold environment, internal condensation may occur. Ensure that the unit has been allowed to reach ambient temperature before switching it on. We recommend one hour.

PANEL DESCRIPTION



RJ-45 Ethernet connectors for optional Dante digital audio network card with two network ports; a primary and a secondary.

When the device is connected to an active network, the yellow LINK LED illuminates above the connector in use.

Data activity on the network is indicated by illumination of the green ACT LED. It is normal for the ACT LED to flicker either sporadically or continuously.

The switched 100/1000 Base-T network connections auto-sense whether standard or crossover Cat-5e cables are in use. The green ACT LED illuminates (flashes) to show network activity, and when a 100 Mbps connection is present; the orange LED illuminates (static) to indicate a 1000 Mbps connection.

The secondary network port on the A4M SCIO devices can be configured for redundancy of the primary network port. If a parallel network is created, any single cable or switch failure is overcome without loss of audio.

By default, the secondary ports are configured in dual redundancy mode to support a second redundant network.

The alternate configuration for the two ports is a switch mode which allows daisy-chaining of devices in a single network. Daisy chain mode is not recommended for more than a few devices.

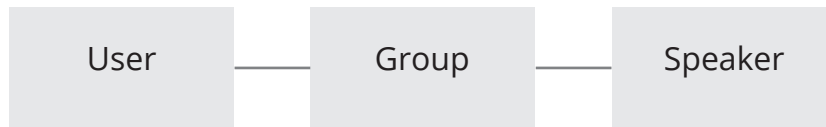
Pre-made cables with moulded RJ45 plugs are recommended. If it is necessary to make up custom Cat-5e network cables, use pinout described below.

RJ45 Wiring and Pin Out Description

Pin No.	Color
1	Brown
2	Brown + White
3	Green
4	Blue + White
5	Blue
6	Green + White
7	Orange
8	Orange + White

SIGNAL FLOW

The figure below depicts the audio signal flow for a A4M SCiO series device. The signal flow can be divided in three main blocks, each with its own functionality and processing. These blocks are : input source, group and speaker blocks.



USER



The User block contains the following controls:

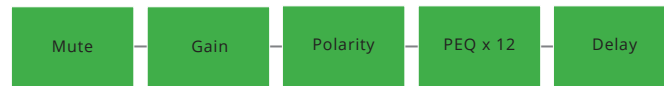
- | | |
|-----------------------|--|
| Input selector | selection for primary and secondary input, analog or digital. (Note digital is not possible as a secondary input when analog is primary) |
| Mute | Mute selector |
| Gain | Input gain control for each source. Range from -80dB to 15dB |
| Polarity | Polarity selector +/- |
| IIR HPF | Infinite impulse response HPF |
| IIR LPF | infinite impulse response LPF |
| PEQ x 12 | 12 x EQ for each source with a choice of 16 EQ types |
| Delay User | Delay option up to 250 ms |
| RMS Limiter | Adjustable RMS limiter |
| Peak Limiter | Adjustable peak limiter |

Note: RMS and peak limiter are processed after the group processing Block !

GROUP

Groups provide powerful control over all channels in a system. Amplifiers can be assigned to up to 6 different Groups. Adjusting group parameters will affect all amplifier channels across the network assigned to that group. Multiple Groups can be used to logically partition a large-scale system.

For instance, an amplifier can be assigned to the “frontfill group” and also to the “All group”. A master Group can be created to enable a system-wide interface for EQ and Levels, allowing instant adjustments to all amplifier channels on the network.



The Group block contains the following controls:

Mute	Mute selector will mute all members of the group.
Gain	Input gain control for each group. Range from -80dB to 15dB
Polarity	Polarity selector for each group +/-
PEQ x 12	12 x EQ for each group with a choice of 16 EQ types
Delay	Delay option up to 250 ms for each group

SPEAKER PRESETS

The amplifier has been pre-loaded with the correct presets for optimal performance with the AUDIOFOCUS loudspeaker in which it has been supplied.



Speaker presets contain the following controls:

Gain	Output gain control for each speaker. Range from -60dB to 15dB
Polarity	Polarity selector for each speaker +/-
Delay	Delay option up to 30 ms for each speaker
IIR HPF	Infinite impulse response HPF
IIR LPF	infinite impulse response LPF
FIR	Each speaker preset can contain a 1024 tabs FIR filter
PEQ x 12	12 x EQ for each source with a choice of 16 EQ types
RMS Limiter	Adjustable RMS limiter for each input
Peak Limiter	Adjustable peak limiter for each input

PRESETS

The A4M SCiO series amplifier module has two types of preset libraries, device and speaker presets.

- A Global audio preset file contains all audio DSP settings of the four channels of the amplifier; User, Group and speaker parameters.
- A speaker preset file contains one channel audio settings information which can be recalled on a amplifier channel.

These speaker presets are created in OEM locked by AUDIOFOCUS.

Please note that only audio related settings are stored in the Global audio and speaker preset file.

BACK PANEL OPERATION



The back panel gives the user access to the status of the amplifier and also gives the user the ability to set IP parameters and basic audio settings.

A single encoder is used to modify various parameters via the menu. When a menu item is selected that permits adjustment of parameter values, the menu's icon illuminates. Turn the encoder clockwise to increase the selected parameter, or counter-clockwise to decrease the value. Pressing the encoder inwards will perform an enter operation.



Any updates from the display will update the SCiO WebUI, any updates to the SCiO WebUI will not update the display if the same settings screen is being displayed in both. After adjustments have been made to the website the display should be manually updated.



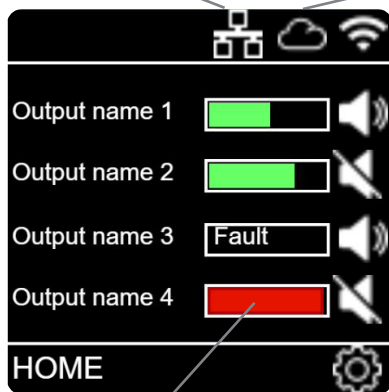
HOME SCREEN

The home screen will indicate output level, IP status, cloud connection status, current preset or output name for each output channel and global preset loaded.

The network symbol turns green when a wired network is connected.

The cloud symbol turns green when a cloud connection is established.

The Hotspot symbol lights up green when active.



An inwards button click on the encoder toggles between mute and unmute.

A click on the settings wheel symbol will launch the setting menu.

The level, limit and fault indicators are always visible in the home screen.



SETTINGS MENU

The settings menu gives access to the setting sub menu icons. A right or left turn with the encoder will highlight the selected sub-menu.



Pressing the encoder inwards will activate the selected settings submenu.

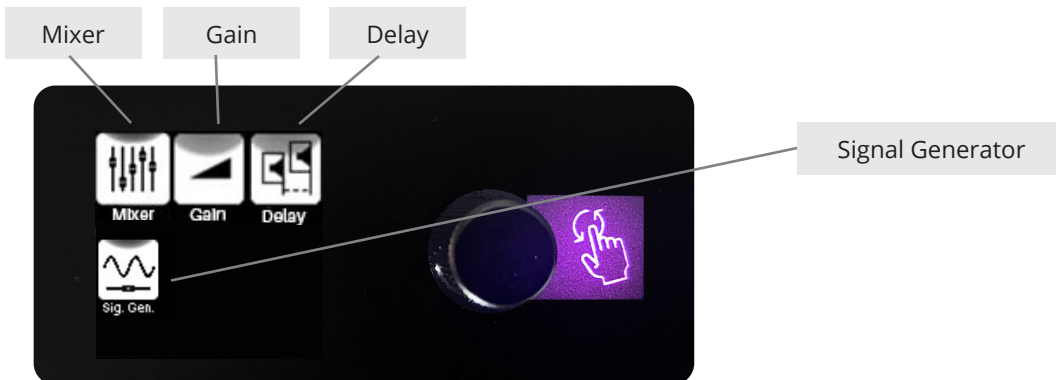


Pressing "Return" will always return the menu up one level from every menu or sub menu.



AUDIO MENU

The Audio Menu is where the basic audio parameters and settings can be adjusted. The top page of the Audio Menu offers six sub-menus on the first page.





MIXER

An 1 : -0.2 dB	Nw 1 : OFF	Str L : OFF
	Nw 2 : OFF	Str R : OFF
	Nw 3 : OFF	Sine : OFF
	Nw 4 : OFF	Pink : OFF
CH 1 - Mixer		

From this sub menu, all nine input gains for each source can be set independently.

The home screen will indicate output level, IP status, cloud connection status, current preset or output name for each output channel and global preset loaded.



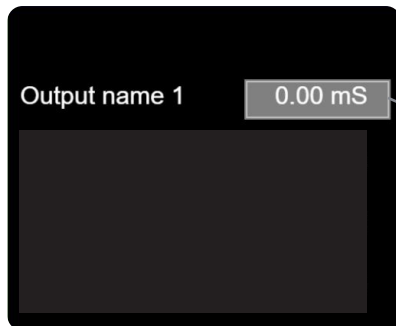
AUDIO MENU/GAIN



From this menu, the gain can be adjusted for the input stage of the selected Input analog source . The default gain setting is 0 dB, but can be set to any value from -80 dB to +15 dB, in 0.1 dB increments.



AUDIO MENU/DELAY

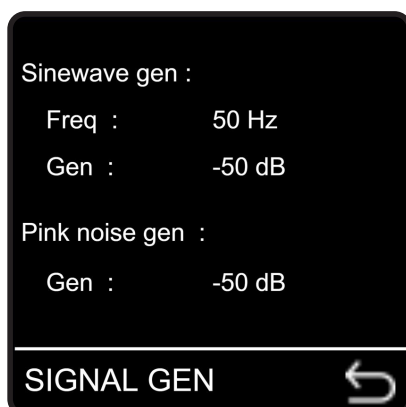


Each source of the A4M SCiO series may have up to 250 ms of delay inserted.

Note: The total amount of delay per channel is 250 ms shared between the channel and the groups that are assigned from that channel.



AUDIO MENU/SIGNAL GENERATOR



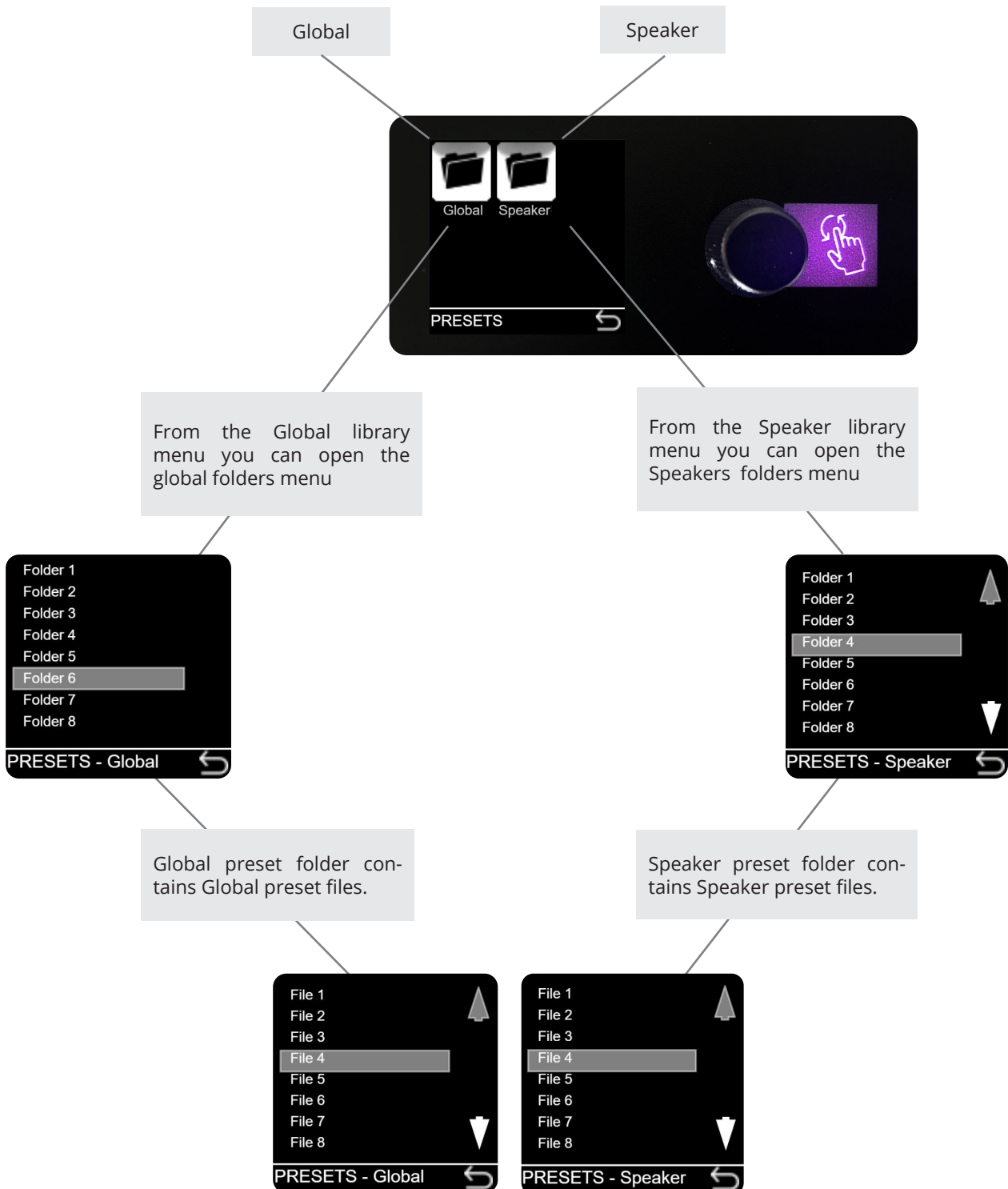
Every A4M SCiO module has a built in signal generator. There is a choice between pink noise or a sine wave generator with eight selectable frequencies: 50, 100, 200, 500, 1000, 2000, 5000 or 10000 Hz. The level for both sources is adjustable from -50 to 0 dB. The default value is -50 dB for safety reasons. The level also has to be set from the mixer page as an extra safety feature.



PRESETS MENU

The A4M SCiO amplifier module has two types of preset libraries: global and speaker presets. A global preset file contains all audio DSP settings of the amplifier (User, group and preset OEM settings). A speaker preset file contains the OEM speaker loudspeaker settings information which can be recalled on the amplifier.

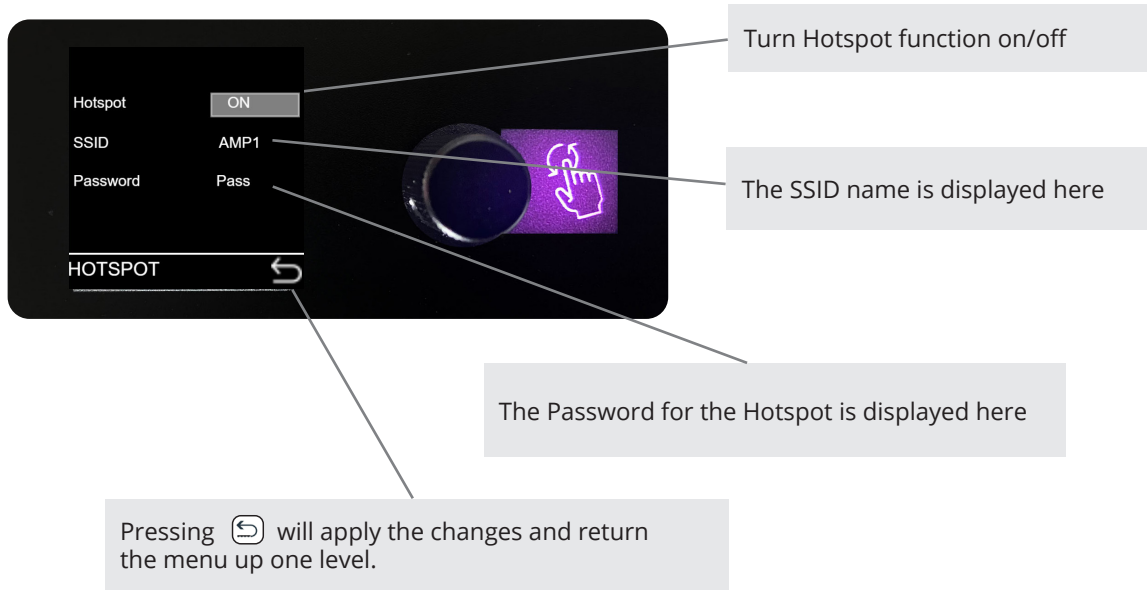
These speaker presets are created by AUDIOFOCUS and are preloaded in the preset folder.





HOTSPOT MENU

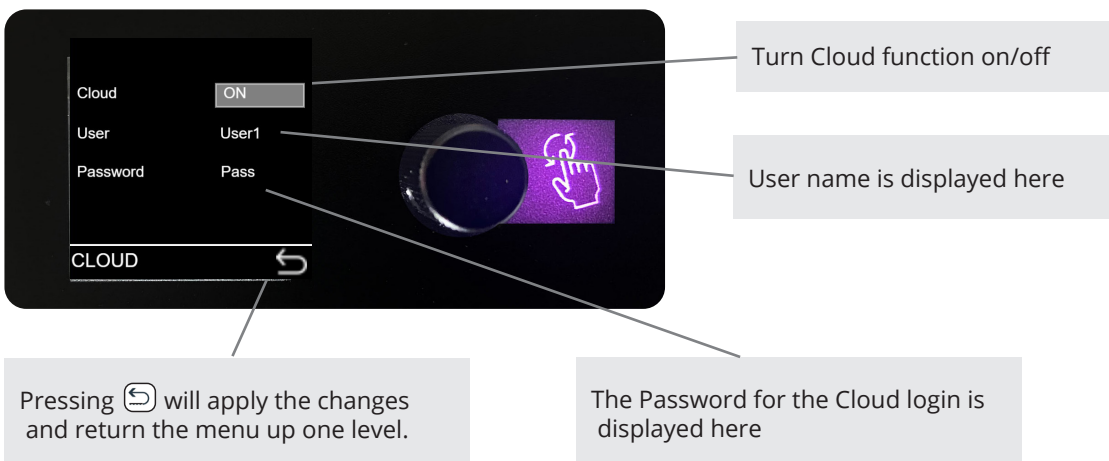
Every A4M SCiO series amplifier module has a Hotspot option. This allows the user to control the amplifier with any mobile device (smartphone, tablet or laptop). The software of the A4M SCiO series is web based, so there is no need for a software installation. From the panel, turn the Hotspot option on and search for the amp in your device wifi networks. Connect to the Hotspot and enter the IP address **172.24.0.1** in your browser and the SCiO software will open on your device automatically.



CLOUD MENU

Every A4M SCiO amplifier module has a unique Cloud option. This allows the user to control the amplifier from a remote location over the internet. The Remote connector must be connected to a router with internet connection. Using a secure connection allows the user to communicate with the amplifier(s) from any place in the world. Just open your browser on your device and enter: <http://amplifier1.apexconnect.me>, and SCiO will open from the connected A4M SCiO amplifier module (where amplifier1 refers to the amplifier's name given from the settings menu see page 35 for more details). The amp will ask for a login and password, both are by default "admin" and can be changed in the settings menu.

Note: amplifier1 refers to the custom amplifier name entered in SCiO, AUDIOFOCUS cloud connect settings menu.





NETWORK MENU

The A4M SCiO series amplifier module can also be controlled in a wired network application. Connect the A4M SCiO Series device's Ethernet remote connector together with your PC to a router. The use of a router is mandatory in DHCP mode to obtain IP addresses.

After a connection is established with the router, the A4M SCiO Series device will receive an IP address that will be displayed in the network menu. Enter this address in your device's browser and the SCiO software will open on your device.

The SCiO software is web based, so there is no need for a software installation. This software is necessary to get access to all the functionality of the A4M SCiO series device.

DHCP or Static IP address.
The use of a router is mandatory in DHCP mode in order to obtain an IP address.

When DHCP mode is set, an IP address will be displayed automatically when connection is established with the router. In static mode, an IP address has to be dialled in.

Pressing (←) will apply the changes and return the menu up one level.

When DHCP mode is set, the Subnet will be displayed automatically, when the connection is established. In static mode, the Subnet mask must be dialled in manually.

NOTES ON NETWORKING

Providing that the network is properly configured, SCiO is capable of automatically detecting and controlling any A4M SCiO series device connected to the network. Please refer to the SCiO documentation for more details on controlling the A4M SCiO series remotely.

Quick set up tip :

- Connect your PC together with the A4M SCiO series device(s) to a wired or wireless router.
- Set all connected devices and your PC to DHCP.
- Open your browser and enter the IP address that is displayed on the network submenu of any of the connected devices.
- The SCiO software will open automatically on your control device. The default login and password = **admin**

Configuring simple IP networks is something that most system engineers would be aware of. Explaining the details of IP networking is therefore outside the scope of this manual, however we believe some salient points do require further clarification.

IP Addresses

All computers, whether they are Windows, Linux or Mac OS based, and most network-based devices such as the A4M SCiO modules, obtain an IP address by the following means:

- If a static IP address has been assigned to the computer or device, then that IP address must always be used. Static IP addresses are fixed and do not change. This is useful when installing A4M SCiO series devices into fixed installations whereby all networked audio equipment has been assigned a unique and unchanging IP address. This is very useful for network management.
- If the device or computer is set to automatic mode (whereby no static IP address has been defined) then a unique IP address will be used; however this address may vary every time the device is connected to the network. If a DHCP server is available on the network then the A4M SCiO Series device will use the IP address provided by it.

Further information

In most applications, communication between the A4M SCiO series and SCiO software will not require any configuration and will effectively work 'out of the box'. However, when the A4M SCiO series is used in more network critical environments (e.g., broadcast or AV installations) some additional network settings may be required and the information provided below may be of interest.

The communication protocol used by the A4M SCiO module is UDP/IP based. It is based on Unicast communications (point-to-point) for the remote control of properties (e.g., modifying an input gain or the frequency of a filter) and Multicast (point-to-multipoint) for auto-discovery of devices and property changes (such as driving meters within SCiO). Multicasting is preferred over broadcasting as it is more suited for network bandwidth control.

Ethernet cables

Nowadays, computers and network devices automatically detect the type of connection (irrespective of whether straight or crossover Ethernet cabling is used). The A4M SCiO series operates in the same manner, hence there is no need to worry about cable wiring when out in the field.

Remember that there are limits to Ethernet cable length between two devices and this is 95 meters. Any connection will add about 10m.

Going wireless

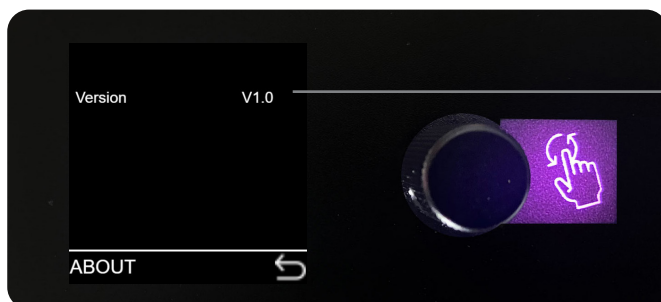
Using wireless networks may be challenging, but the key to success is to use good quality rugged wireless access points and configure them correctly.

Configuring an access or router point is not that difficult. There is no requirement to install any software as the computer's web browser is sufficient (all access points have a built-in web-server). Just type in the IP address of your access point into your web browser and you'll be able to configure the device.

In some applications, there may be a requirement to boost the signal level of both the access point and computer (outdoor stadium shows for example). External boosters are available but these will require that the original antenna of the access point or computer be removed (this has a bearing on the type of access point chosen). Note: always check local regulations concerning maximum permitted wireless signal power before up-rating your equipment.



ABOUT MENU



The about menu is a read only menu. It will show the current firmware version;

AUDIOFOCUS SCiO SOFTWARE

As described in the back panel section, the back panel control allows only basic sound operations for the user in the field. To explore all the functionality of the A4M SCiO amplifier, there is a additional off and online software solution: "AUDIOFOCUS SCiO".

Connecting a computer or mobile device to a A4M SCiO device via a network (wired or wireless) or hotspot and dialling in the IP address 172.24.0.1 will put the SCiO software automatically on your screen. Since the SCiO uses web-based software there is no need for any software installation, regardless of what operating system you are using (MAC, PC, IOS, Android) (See section Network and hotspot settings section).

The SCiO software provides a unified interface for the A4M SCiO series, optimized for a wireless touchscreen, tablet or mobile device. The interface mirrors the powerful, but intuitive design of the hardware, whereby operation is predominantly icon driven. SCiO also provides data management facilities, allowing complex configurations to be configured, presented and stored in a more efficient and intuitive way.

This manual describes the functionality of the SCiO Controller software suite.



HOME PAGE MENU

Once your device is connected to the A4M SCiO module the home screen will be displayed. Please note that on smartphones and tablets the software will only work in landscape mode. Your device will display a warning when you hold it in portrait mode.

Metering and mute function for the amplifier together with the selected source are always on top of the screen regardless of the chosen menu.

The Home Page will open in the Input Mixer screen.

The status of the connectivity is displayed here. The icons turn blue when connected.



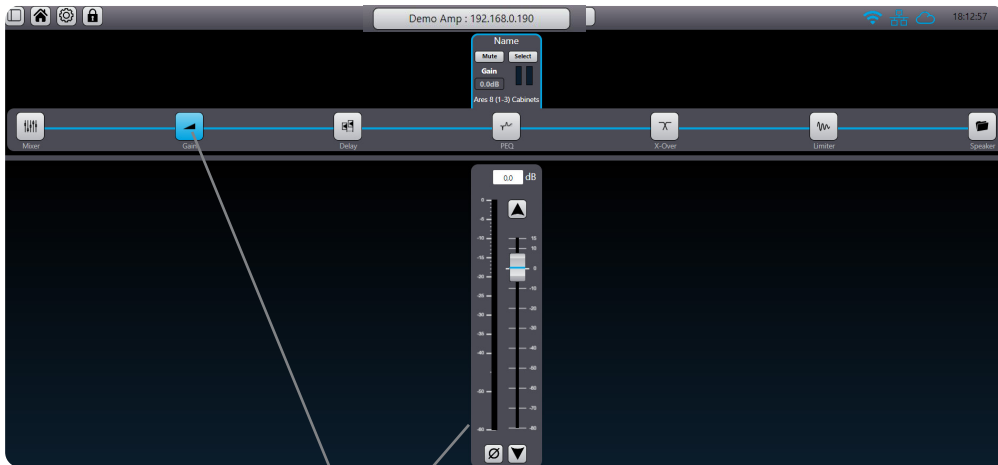
Every Amplifier channel can have a mix from 9 input sources. There is a choice of four local analog inputs, left and right internal stream sources, four digital network inputs from the optional Dante network card and two signal generator inputs.

The name of the current active loaded preset will be displayed here.

For fail-safe redundancy reasons for the network inputs, an analog backup input can be chosen here.



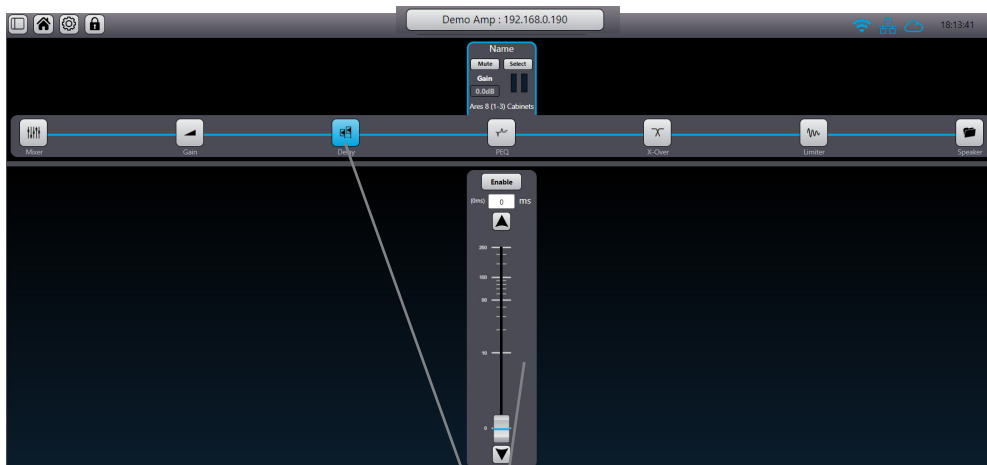
USER GAIN MENU



Gain: opens a window where you can set gain and phase.
Gain can be set with the fader, keyboard arrows or by dialling in the desired level.
A double click on the fader will reset the gain to 0 dB.



USER DELAY MENU

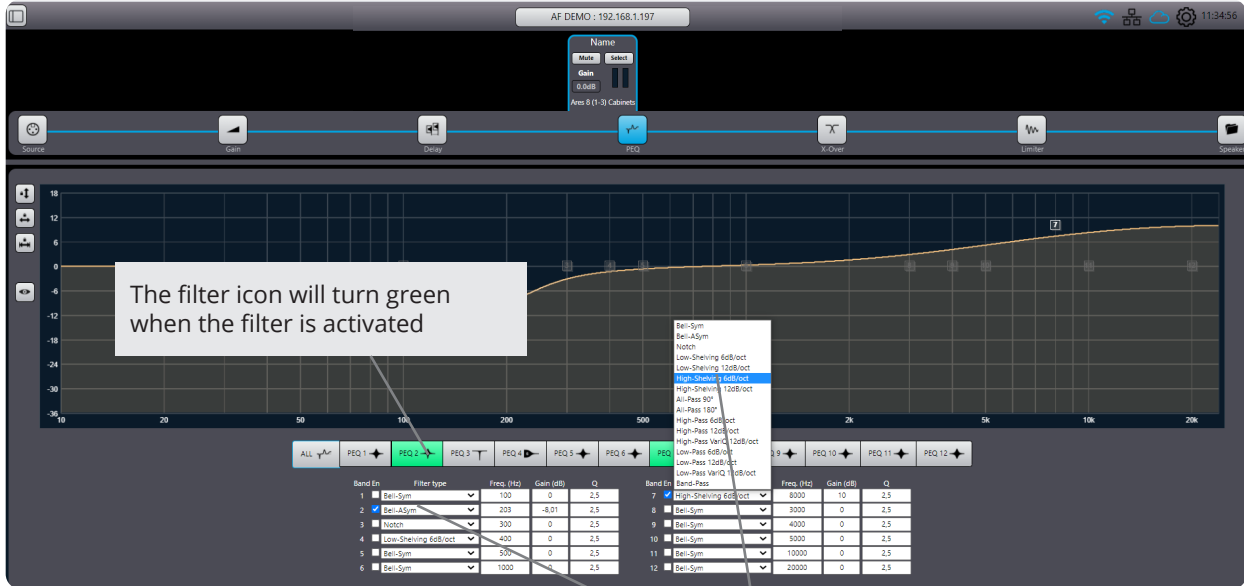


Delay: opens a window where you can set the delay in ms. Values can be set with the fader, keyboard arrows or by dialling in the desired level.
Delays can be toggled between enable and disable for A-B comparison.

*Note: The maximum combined user delay time (User and group) for each amp is 250 ms.
A double click on a fader will reset the delay value to zero ms.*

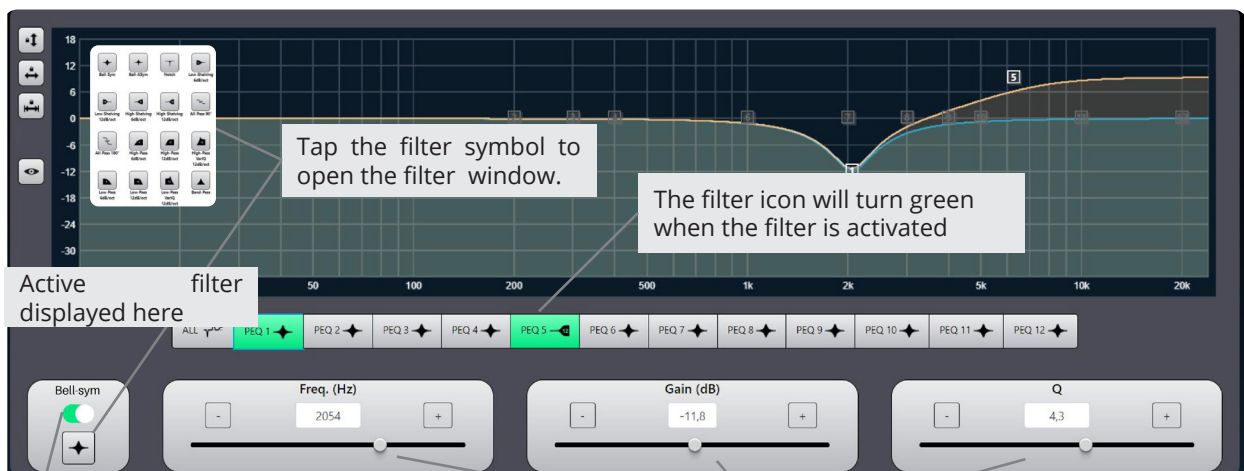


USER EQ MENU



From the Home page tap the PEQ tab to access the EQ main page. From this page you can dial in numeric values for the 12 EQ filters. Each EQ can be set to a choice of 16 filter types: Bell-Sym, Bell-Asym, Notch, Low-Shelf 6dB or 12dB, High-Shelf 6dB or 12dB, All-Pass 90° or 180°, High-Pass 6dB or 12dB, High-Pass Vari-Q 12dB, Low-Pass 6dB or 12dB, Low-Pass Vari-Q 12dB, Band-Pass.

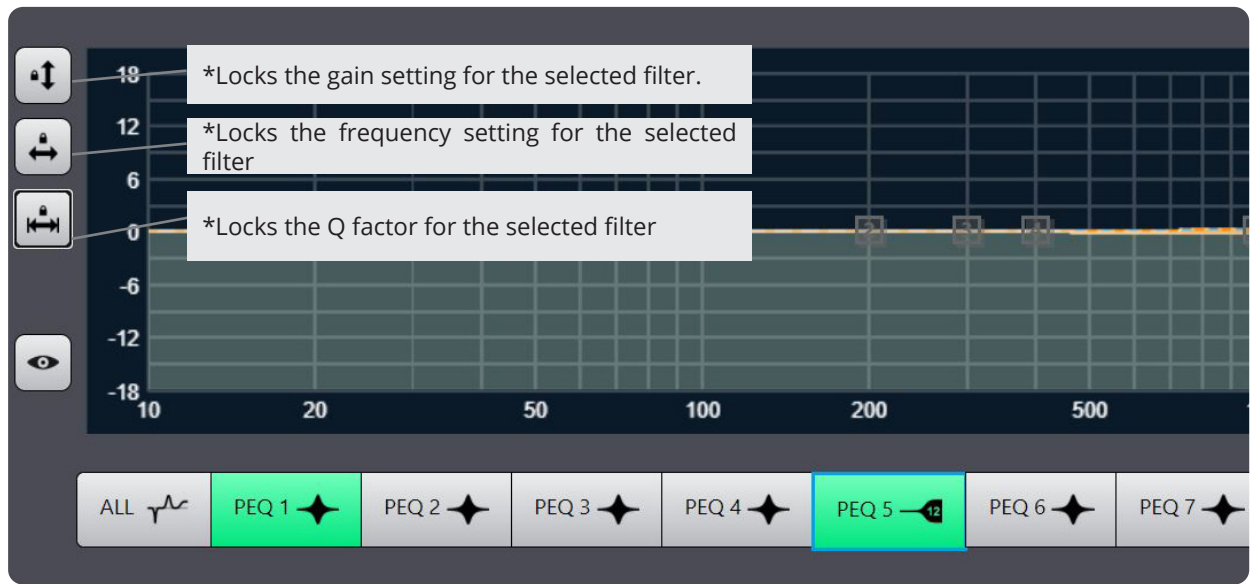
When using (pen)tablets or mobile devices the following method could be more intuitive



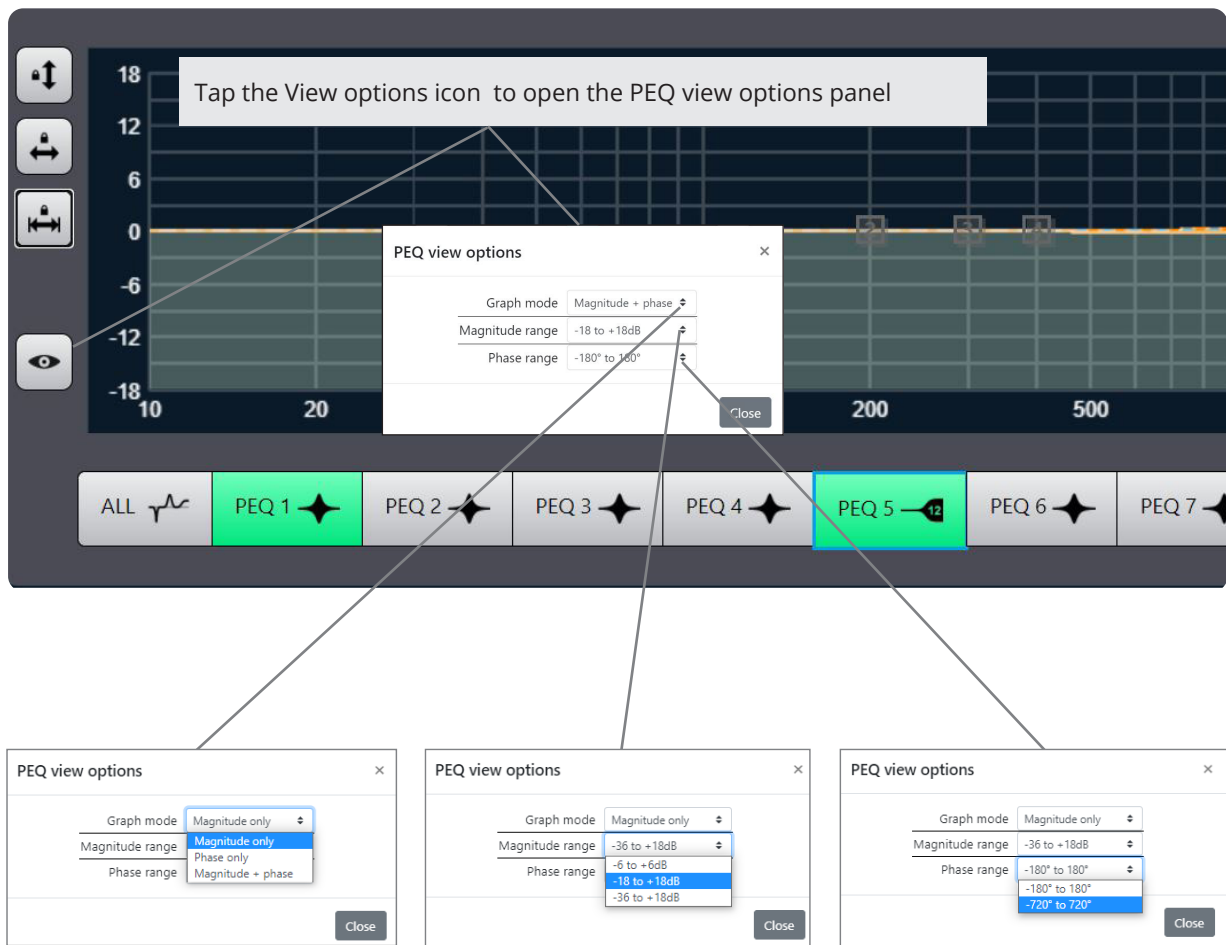
Swiping the on switch will activate the selected filter and display the curve on the overview screen

Adjusting the filter parameters can be done in multiple ways: use the sliders and tap the +/- buttons for fine adjustments or use the on screen drag function with mouse, pen or finger gestures.

To avoid accidental gesture operations in touch mode, there are three "Drag Locking" options.

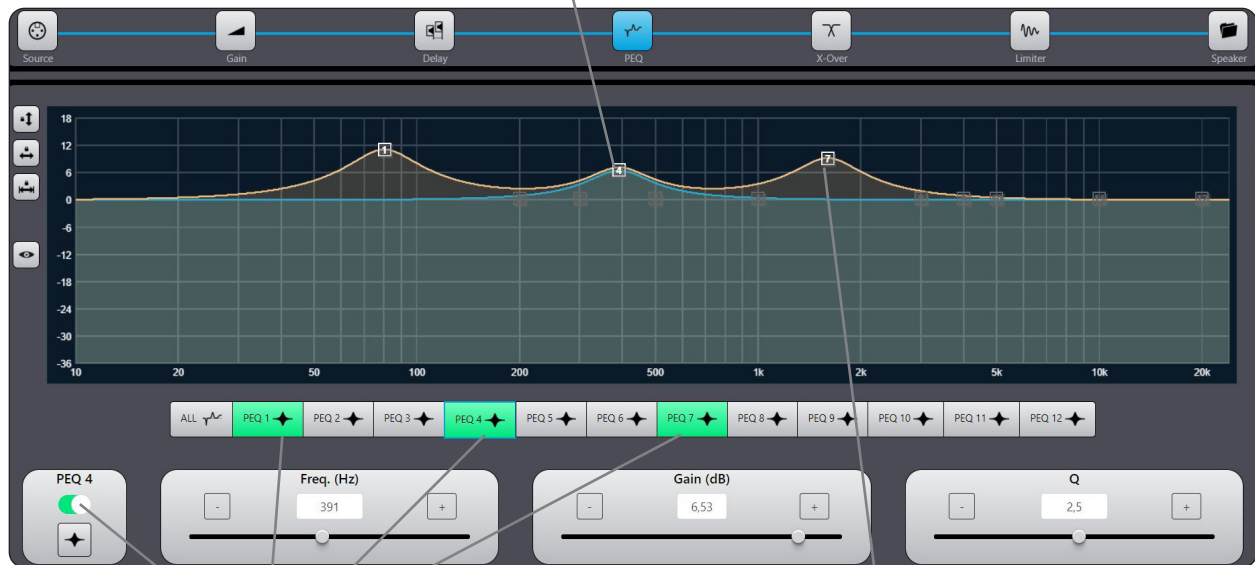


The overview screen has different view options in the PEQ window



The PEQ view window uses different line and colours to indicate in an intuitive way what filters are active and which filter is in edit mode. In this case, that is PEQ4

The blue line indicates the active EQ curve of the PEQ Filter that is in edit mode. In this case, that is PEQ4



Whenever a PEQ filter is activated, it will get a green tab.

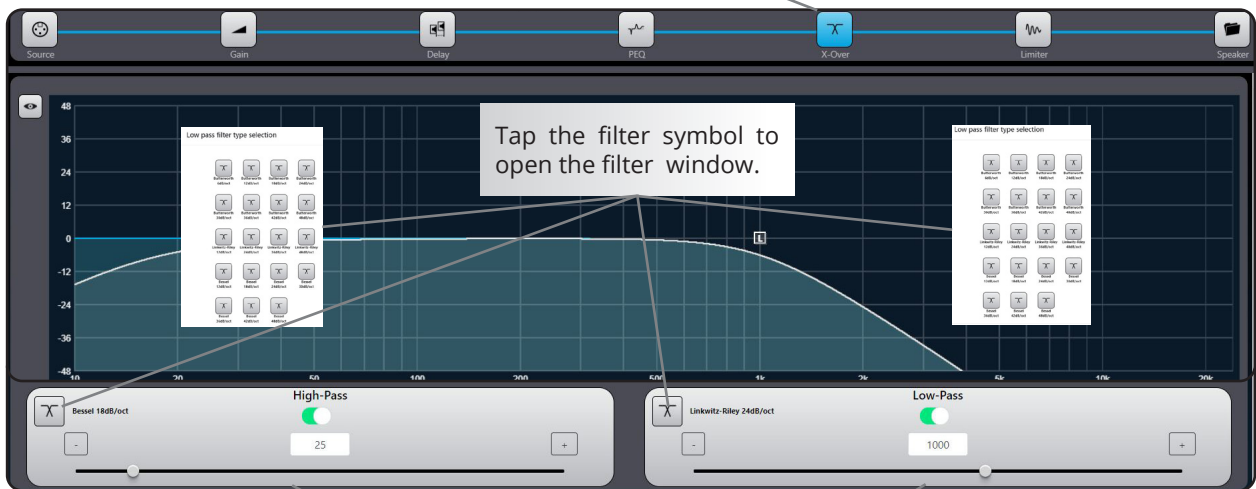
The brown line indicates the total active EQ curve of the selected amplifier channel. In this graph, that is the total EQ curve of PEQ1, PEQ4 and PEQ7.



USER X-OVER MENU

The A4M SCiO amplifier module offers 19 different types of classic X-over filters :Bessel , Butterworth and Linkwitz Riley with slopes from 6 to 48 dB/oct in the user block.

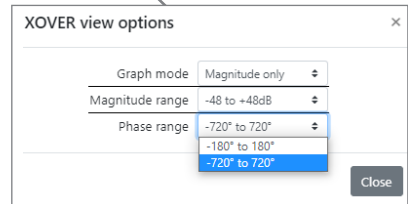
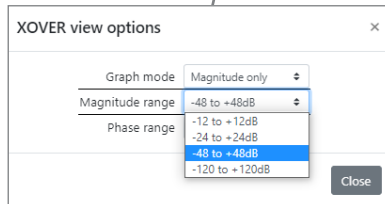
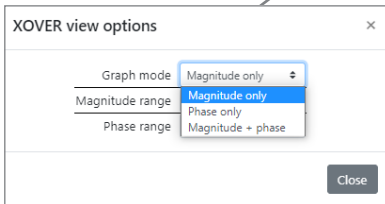
From the Home page tap the X-Over tab to access the X-Over main page.



Adjusting the Filter parameters can be done in multiple ways: use the sliders and tap the +/- buttons for fine adjustments or use the on screen drag function with mouse, pen or finger gestures. Both filters can be set from 10 Hz to 22 kHz

The overview screen has different view options in the X-Over window

Tap the View options icon to open the PEQ view options panel



The X-over view window uses different lines and colours to indicate in an intuitive way what filters are active and which filter is in edit mode.



The blue line indicates the response of the HP or LP filter that is being edited.

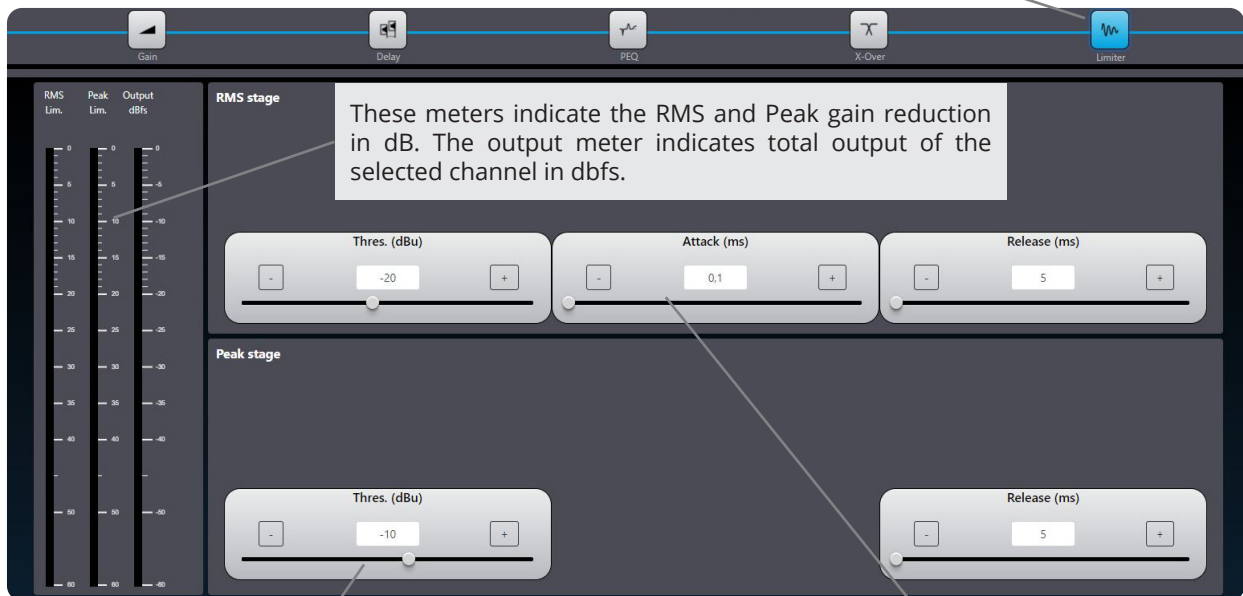
The white line reproduces the total response of the amplifier channel including all PEQ, High and Low-Pass filter.

The brown line indicates the total response of the High and Low-Pass filters of the selected amplifier channel.



USER LIMITER MENU

Limiters: opens a window where you can adjust the additional limiter parameters when desired for some productions where you would like some extra protection of your system. To fully protect loudspeakers from damage, each output is provided with a two-stage limiter. One stage responds to the RMS level of the signal, the other is a very fast-acting limiter responding to signal peaks. The thresholds may be set independently for each stage, but note that the Peak threshold must always be higher than the RMS threshold.



Peak Threshold – this is set in an identical manner to RMS threshold. Note: the threshold of the limiter peak stage should always be set above the threshold of the RMS stage. Otherwise the RMS limiter will never be activated.

Attack – the attack time of the Peak Limiter is fixed (and very fast).

Release – this sets how long it takes the gain reduction applied by the RMS limiter to be removed after the signal level has dropped below the relevant threshold. The default value is 5 ms, and release can be set in the range 5 ms to 500 ms.

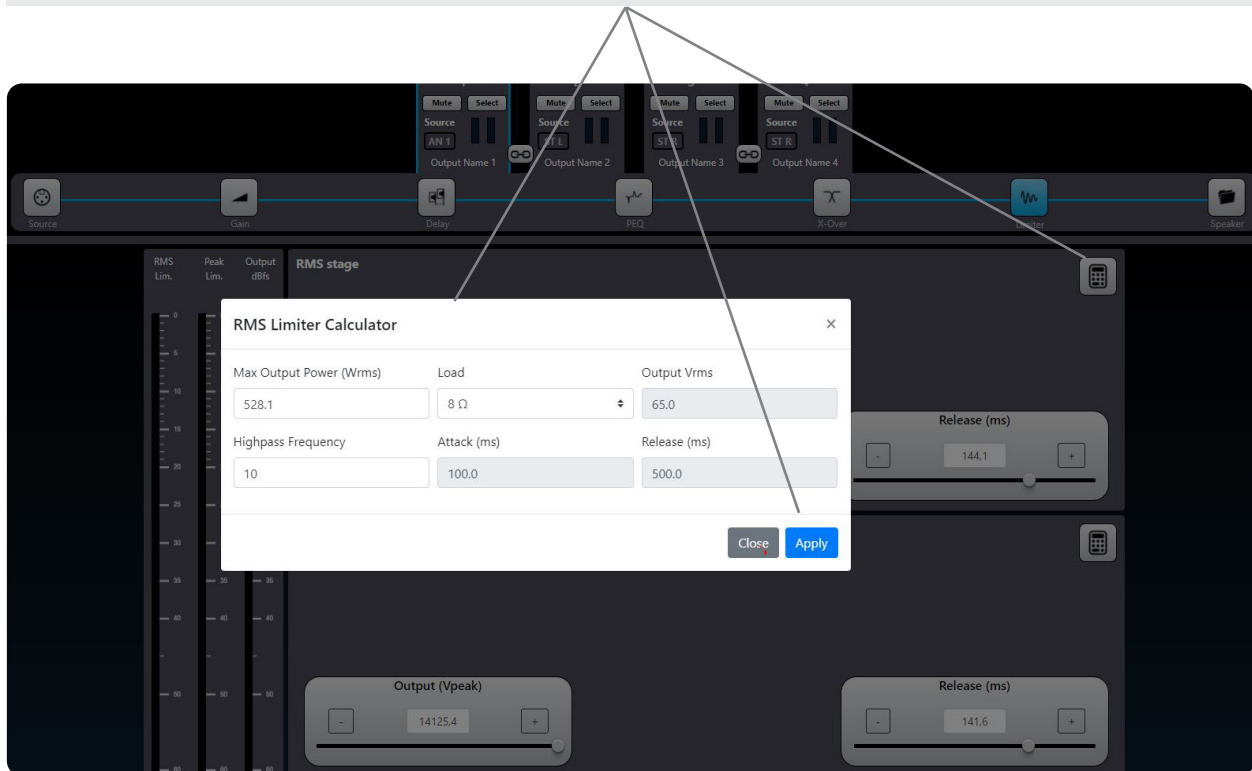
RMS Threshold – this is the RMS signal level above which limiting is applied. The threshold may be set from -56dBu to +24 dBu

Attack – this sets how rapidly the RMS limiter acts when the programme level exceeds the RMS threshold. The default value is 0.5 ms, and attack can be set in the range 0.1 ms to 100 ms.

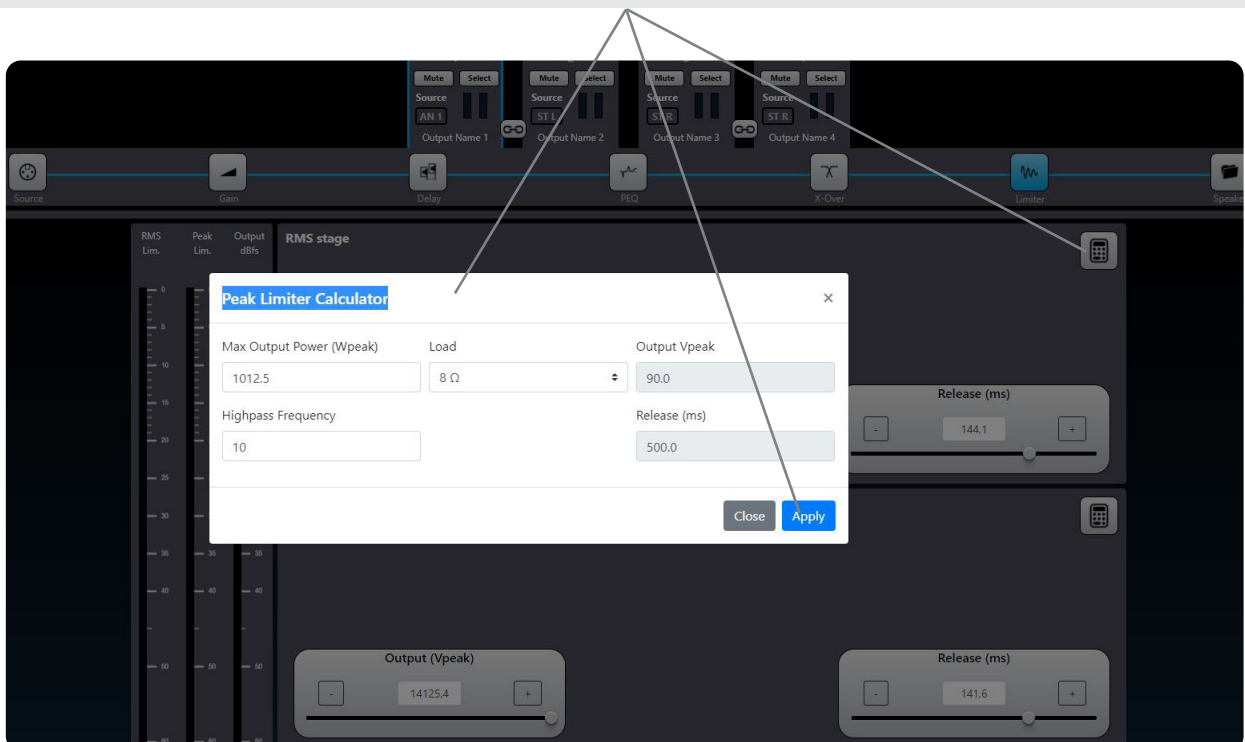
Release – this sets how long it takes the gain reduction applied by the RMS limiter to be removed after the signal level has dropped below the relevant threshold. The default value is 5 ms, and release can be set in the range 5 ms to 500 ms.

The calculator icon in the RMS limiter section opens a window where you can dial in values from the connected speakers. The calculator will calculate start values for the RMS limiter. Click the apply button to copy the calculated values to the RMS limiter.

Note: every AUDIOFOCUS preset already has limiters set for protection. These limiters are on top when desired for certain applications.



The calculator icon in the Peak limiter section opens a window where you can dial in values from the connected speakers. The calculator will calculate start values for the Peak limiter. Click the apply button to copy the calculated values to the Peak limiter.





SPEAKER PRESETS MENU

From the speaker preset page you can recall all the AUDIOFOCUS OEM protected speaker preset files that are available for the speaker cabinet.

The current speaker preset running on the channel will be displayed with the following icon around it "< >"

When the desired preset file is selected, and after pressing the Load button, a pop up will appear to avoid accidental preset loading. You can also select if you would like to overwrite the amp label with the preset recall.

A speaker folder can contain a group of speaker files. For example this folder holds all the presets for MTSUB 218a. You can create an unlimited number of folders and files for custom presets.

Load Speaker Preset

Are you sure to load speaker file : MTSUB 218 V1.0,1 MTSUB218-Xo60 on channel **1 MTSUB218-Xo60** ?

Overwrite channel label with preset name

Close Load



GROUP MENU

Groups provide powerful control over all amps in a system. Amplifiers can be assigned to multiple groups, and each amplifier channel can be a member of up to six different groups. Adjusting group parameters will affect all amplifier channels across the network assigned to that group.

Multiple Groups can be used to logically partition a large-scale system. For instance, amplifier channels powering a large system can be grouped to create a Main PA or Outfills, or sub-master. A master Group can be created to enable a system-wide interface for EQ and Levels, allowing instant adjustments to all amplifier channels on the network.

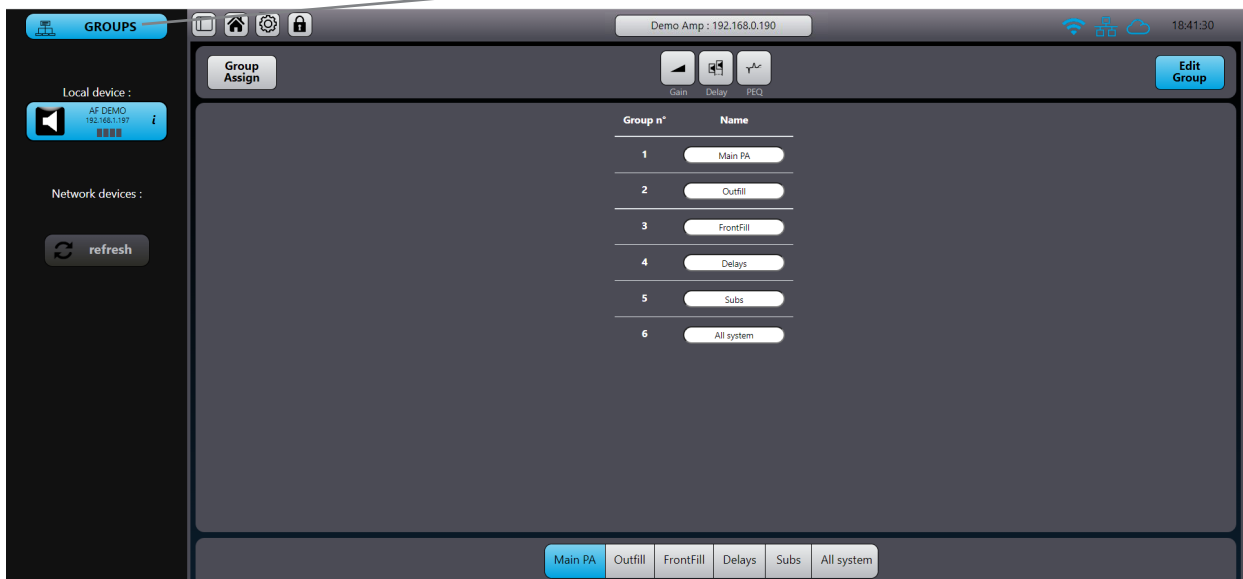
Tap the Side bar icon to access the Group functions.

Tap the Home Icon to return to the home screen of the highlighted device.

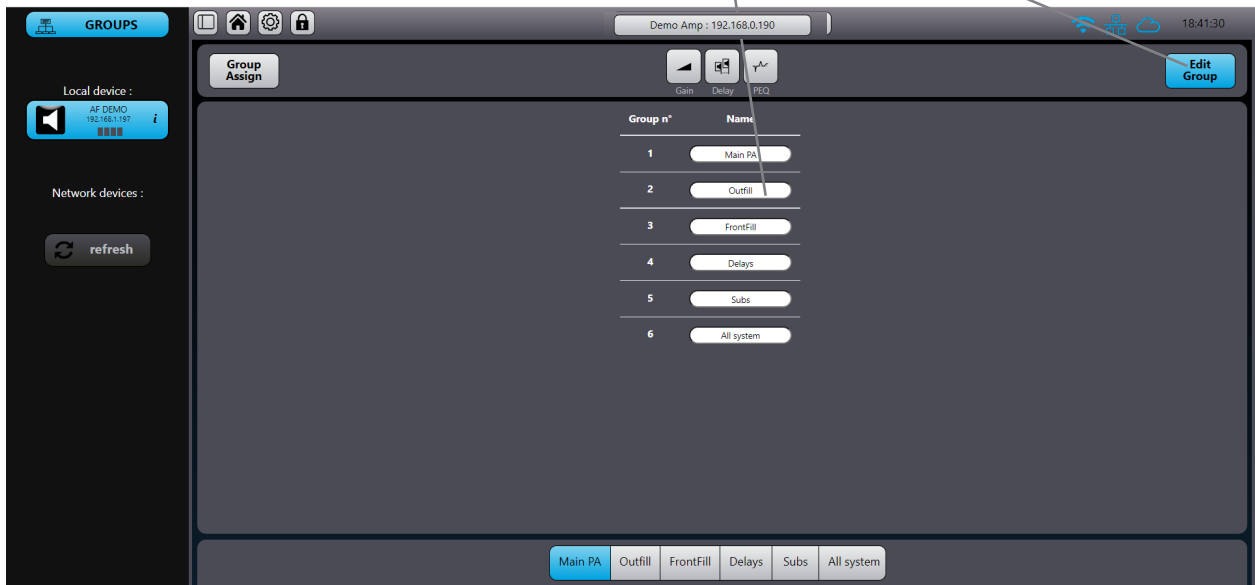


The side bar displays the Local connected device (if any) together with all the connected devices found on the network.

Tap the Group icon to open the Group editor main window.



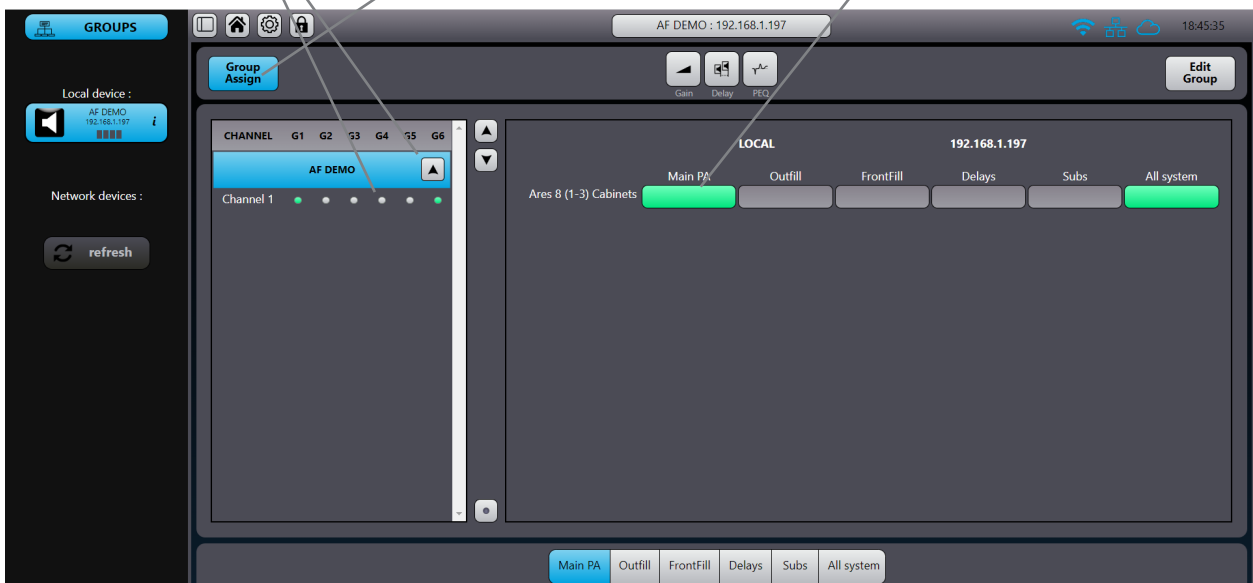
Tap the edit Group tab to edit names for the six groups.



Selecting the Assign Group tab will open or close the Assign Group window.

Toggle the arrow to open or close the group assign view for one or all amps in the network.

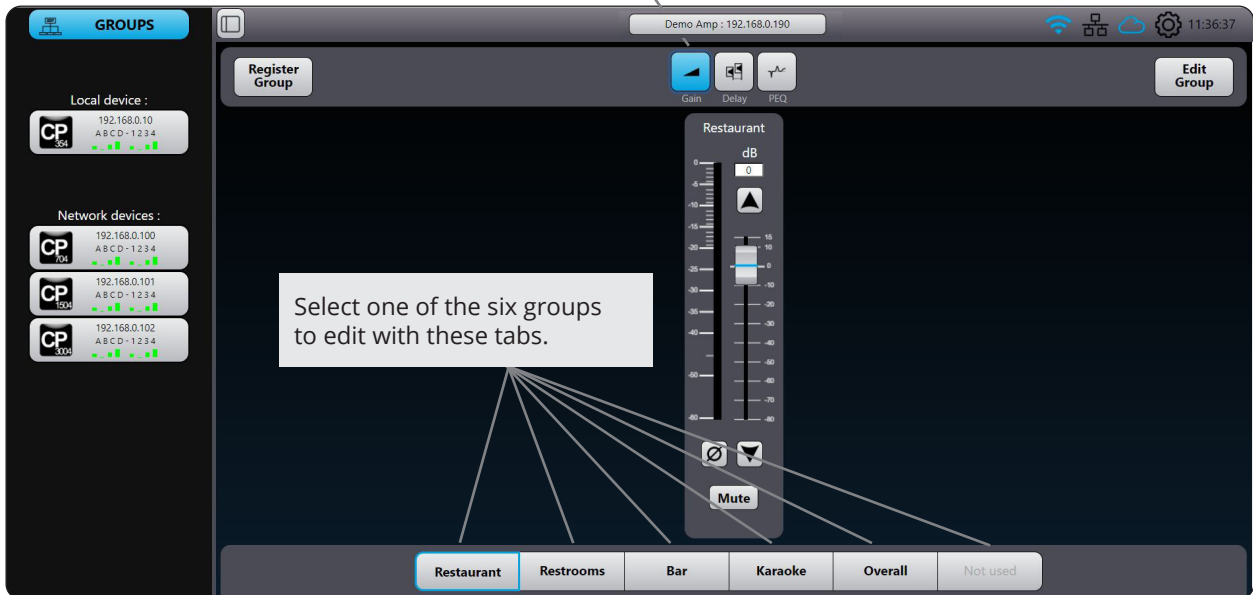
Select tabs to assign amps to one or more groups.





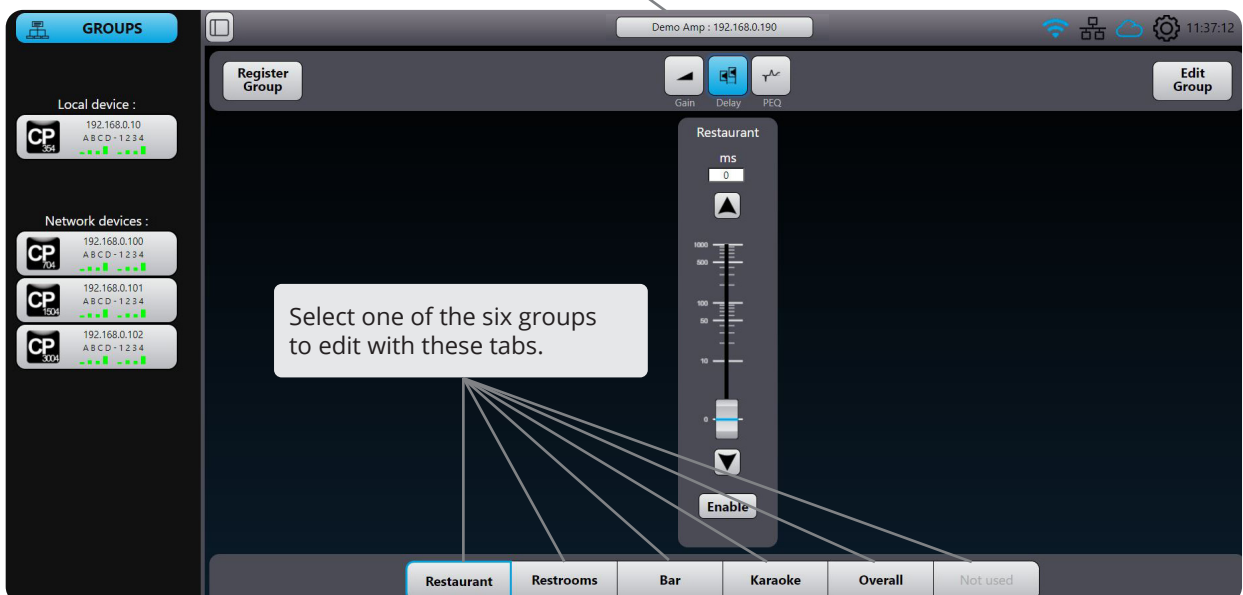
GROUP GAIN MENU

Gain: opens a window where you can set gain and phase for the selected group. Values can be set with the fader, keyboard arrows or by dialling in the desired level. Gain range can be set from -80 to +15 dB. Group gain is a relative value that will add or detract gain from the amplifier channel that is part of the group.



GROUP DELAY MENU

Delay: opens a window where you can set the delay in ms of the selected group. Values can be set with the fader, keyboard arrows or by dialling in the desired level. Delays can be toggled between enable and disable for A-B comparison. Note: The maximum combined group delay time (User and group) for each channel is 250 ms.





GROUP EQ MENU

PEQ: opens a window where you can select twelve PEQ filters, for each of the selected groups, with the same functionality as for the User PEQ menu (See section User EQ Menu on page 28). The group PEQ filters are on top of the User PEQ.



Controlling multiple devices, from the same web interface, please ensure all devices have the same login credentials.

Select one of the six groups to edit with these tabs.



SETTINGS MENU

A tab on the settings wheel icon will bring you to all the available settings for the selected device.

The Global Device Audio Preset menu gives access to the global preset folders and files.

A Global audio preset file contains all audio DSP settings of the amplifier; user, group and speaker parameters. It does not contain network, hotspot, cloud or streaming settings.

Global Device Audio Preset | Output | Device Name | Status | Network | Stream Services | Firmware Update | About

Global Device Audio Preset

Preset Folder

- Folder 1

Preset File

- File 1
- File 2

Buttons: Create Folder, Rename Folder, Delete Folder, Load Preset, Save Preset, Save As Preset, Delete Preset

Preset can be recalled, saved, renamed or deleted from here.

You can create, rename or delete an unlimited number of preset folders. Each preset folder can contain an unlimited number of preset files.

From this menu a personal device name can be dialled in. Pressing save will make this name also pop-up in the side bar

GROUPS

Local device :

- CP 192.168.1.41 Bar Area L + R

Network devices :

- CP 192.168.0.235 0242-CE8561B4

Global Device Audio Preset | Output | Device Name | Status | Network | Stream Services | Firmware Update | About

Device Name

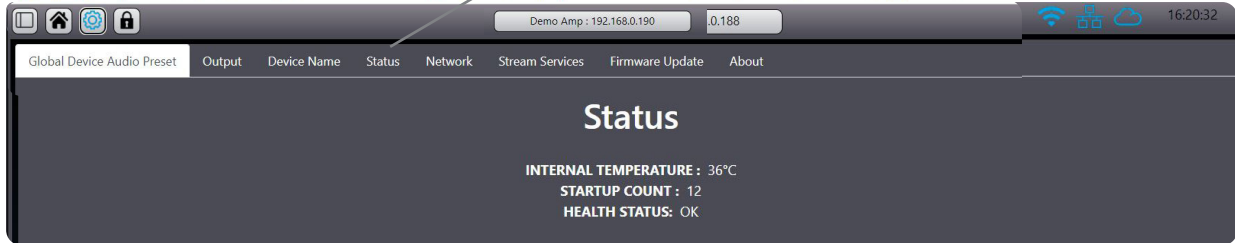
Bar Area L + R

Save

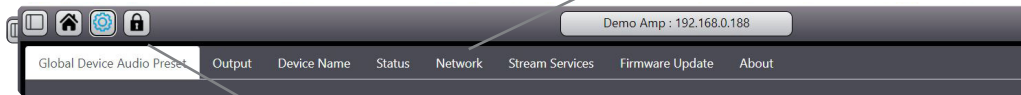


Controlling multiple devices, from the same web interface, please ensure all devices have the same login credentials.

The Status sub menu gives some technical information about the status of the amplifier.

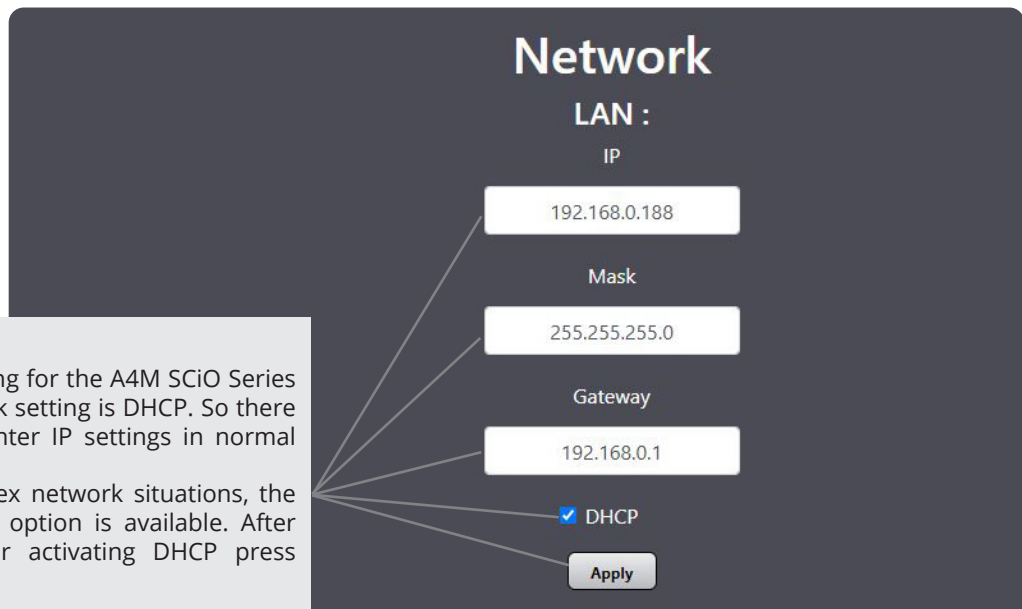


All the network settings are concentrated in this window. The A4M SCiO Series can be accessed in three different ways as described in the front panel section on pages 20 and 21.



A click on the lock icon will log the user out from the amplifier.

The default setting for the A4M SCiO Series amplifier network setting is DHCP. So there is no need to enter IP settings in normal operation. For more complex network situations, the manual static IP option is available. After entering data or activating DHCP press Apply to confirm.



Note: After a connection is made with the SCiO software, a security login window will appear on your device. The default settings are admin for both login and password, these settings can be personalized in the network window under the AUDIOFOCUS Cloud Connect menu.

After a connection is established to the hotspot, dial in the IP address "172.24.0.1" in your browser and the login page of the SCiO will pop up. The default login and password is "admin".

HOTSPOT :

SSID

Password

ENABLE

Every A4M SCiO Series device has its own Hotspot. In this menu you can give the device its own unique Hotspot name, along with a password. You can disable or enable the Hotspot for security reasons or to reduce WiFi activity. Press Apply to confirm.

AUDIOFOCUS CLOUD CONNECT

Cloud Name

Login

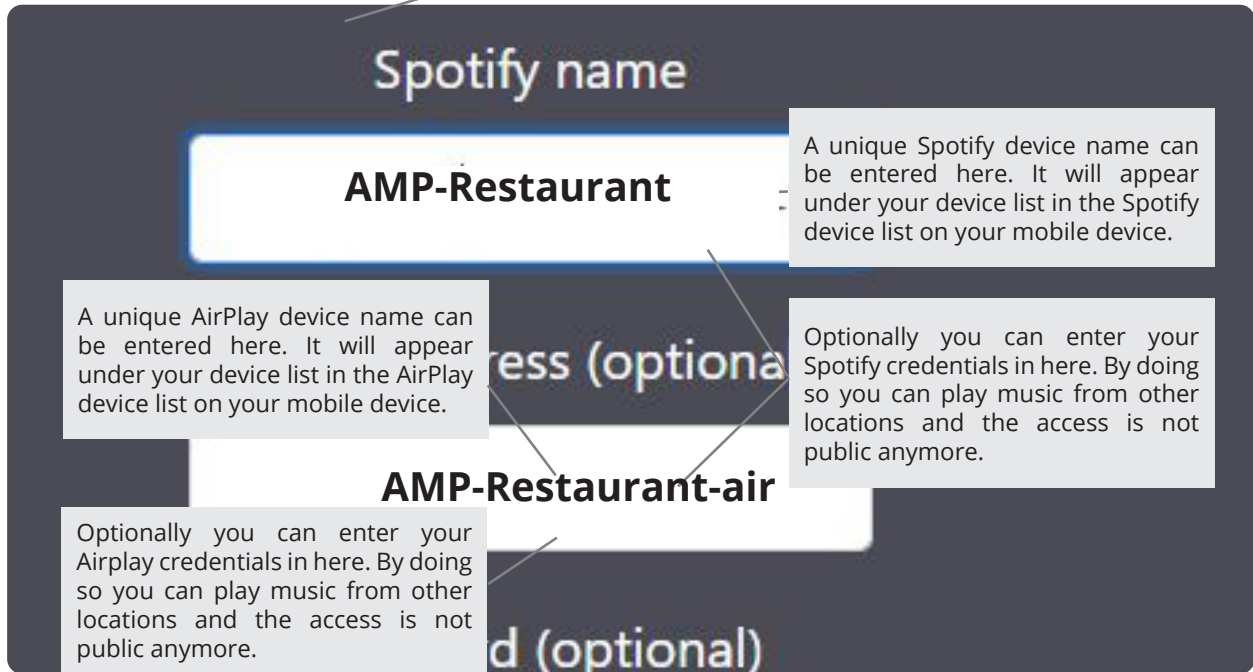
Password

ENABLE

A single A4M SCiO Series amplifier module or a complete network of A4M SCiO Series devices can be accessed and controlled from any place in the world as long as both the A4M SCiO Series and the PC or mobile device are connected to the internet. Just dial in a unique name and enable the function. To access the amplifier, dial in the name of the amplifier followed by the extension ".apexconnect.me" in your browser. In this example this would be: amplifier4.apexconnect.me Press Apply to confirm.

Note: After a connection is made with the SCiO software, a security login window will appear on your device. The default settings are admin for both the login and password, these settings can be personalized in the network window under the AUDIOFOCUS Cloud Connect menu.

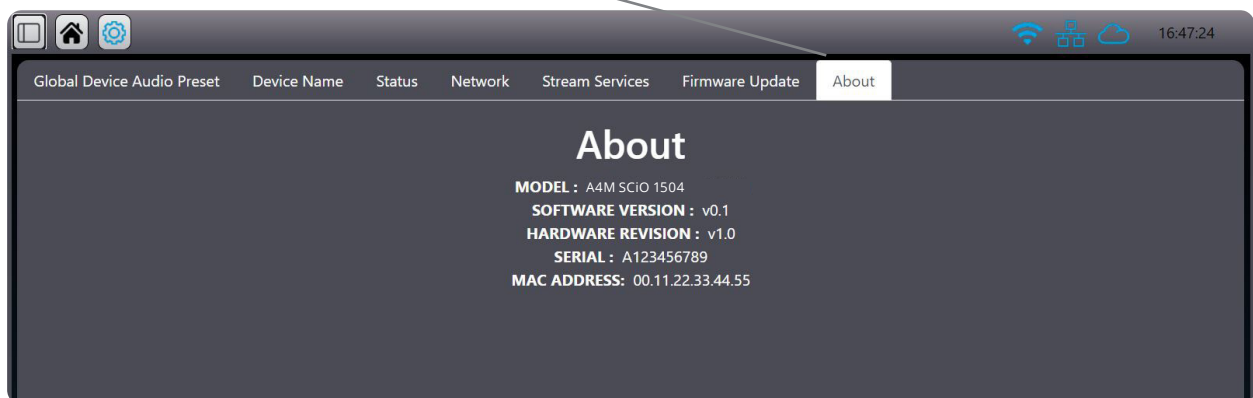
From this menu Spotify and AirPlay streaming services can be activated and personalized. Make sure that your mobile device is on the same network as your A4M SCiO series device.



Please note that you have to enable this function and Save any changes before they become active. Also it is not possible to stream Spotify and AirPlay simultaneously.

Note : Spotify and Spotify logos are trademarks of the Spotify Group. Apple, the Apple logo, AirPlay, iPad, iPhone, iPod, iPod nano, iPod touch, iTunes, Mac, and OS X are trademarks of Apple Inc., registered in the U.S. and other countries

The About menu only displays technical information about the device.



FIRMWARE UPDATE

Requirements:

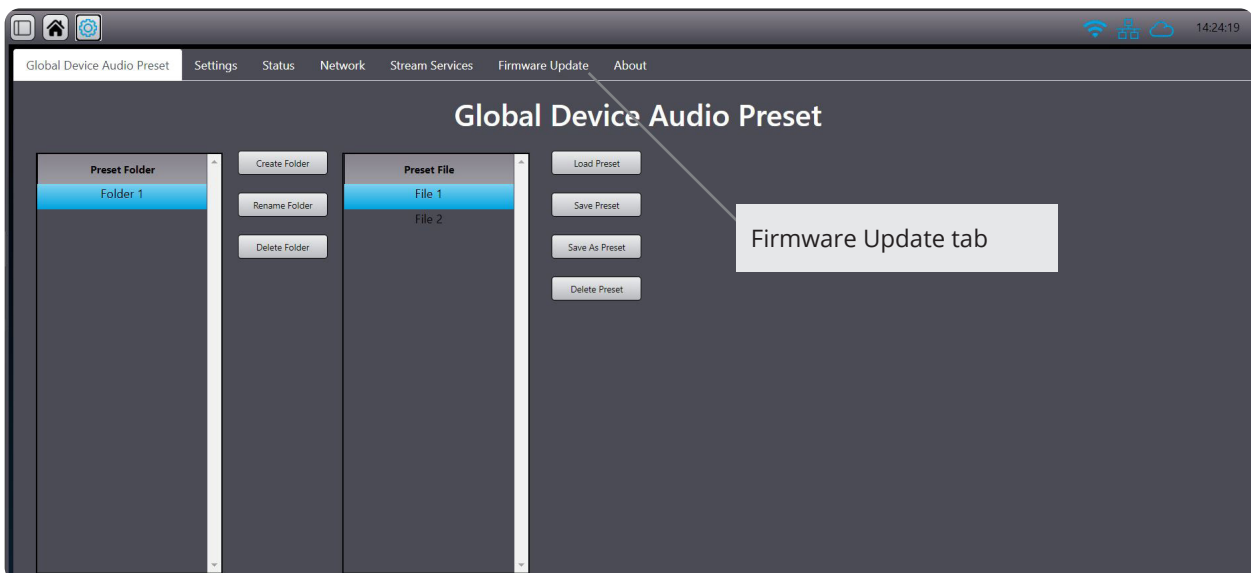
- AUDIOFOCUS A4M SciO series amplifier module
- Download the A4M SciO Series_vX.X.zip file
- Direct access to the amplifier
- Computer must be on the same network as the amplifier

Download the zip file :

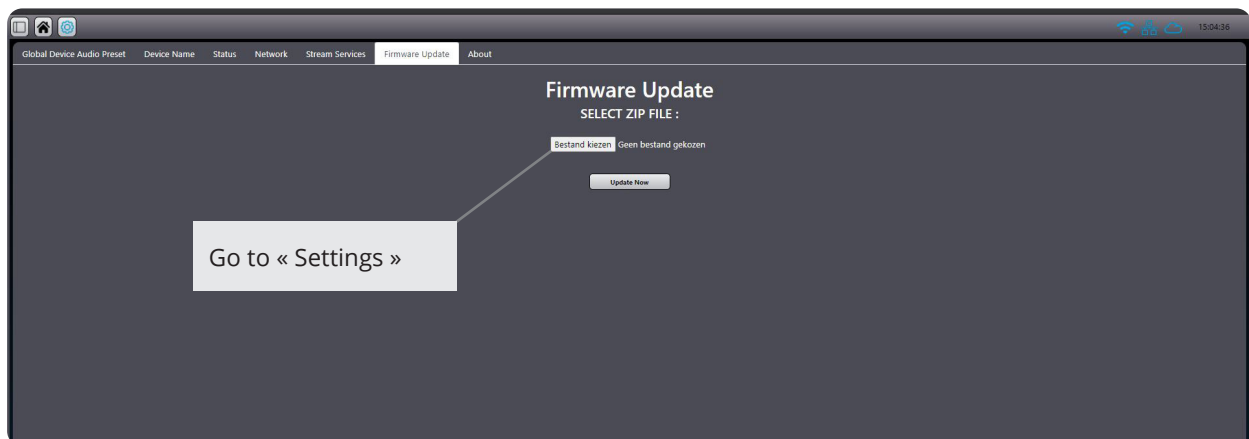
1. Turn « On » the amplifier
2. Disconnect all speaker cables
3. Open your browser to the A4M SciO Series UI interface :
4. Go to « Settings »



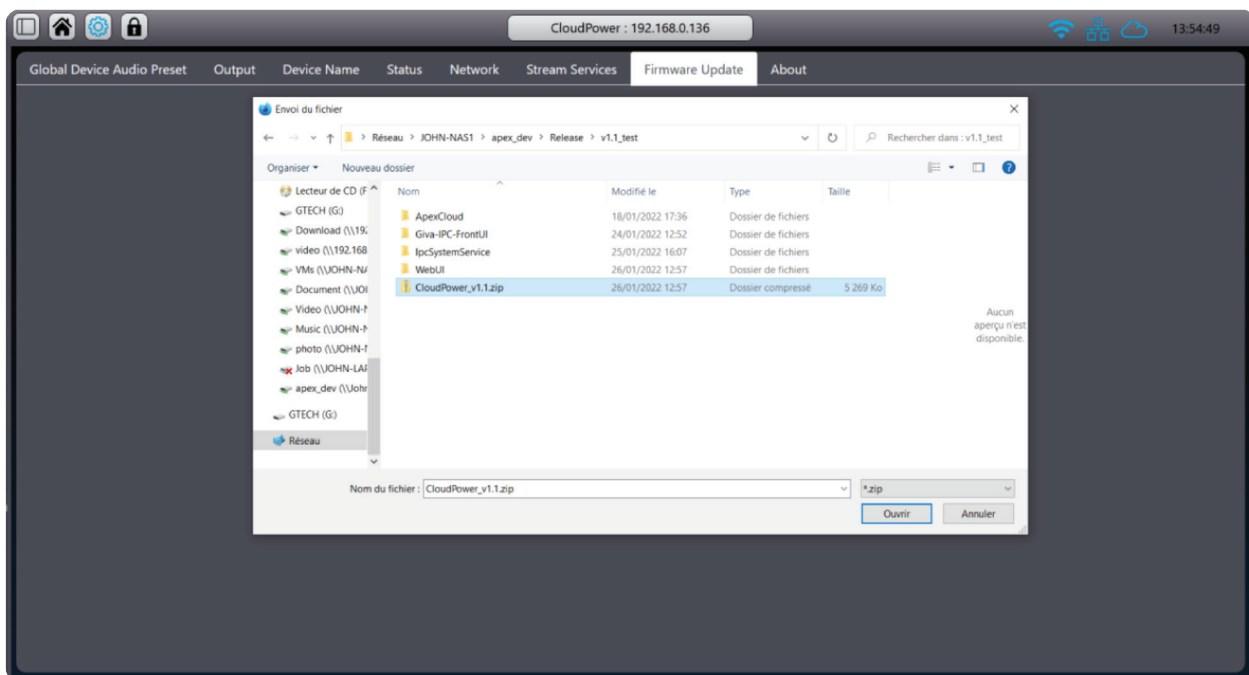
5. Select « Firmware Update » tab



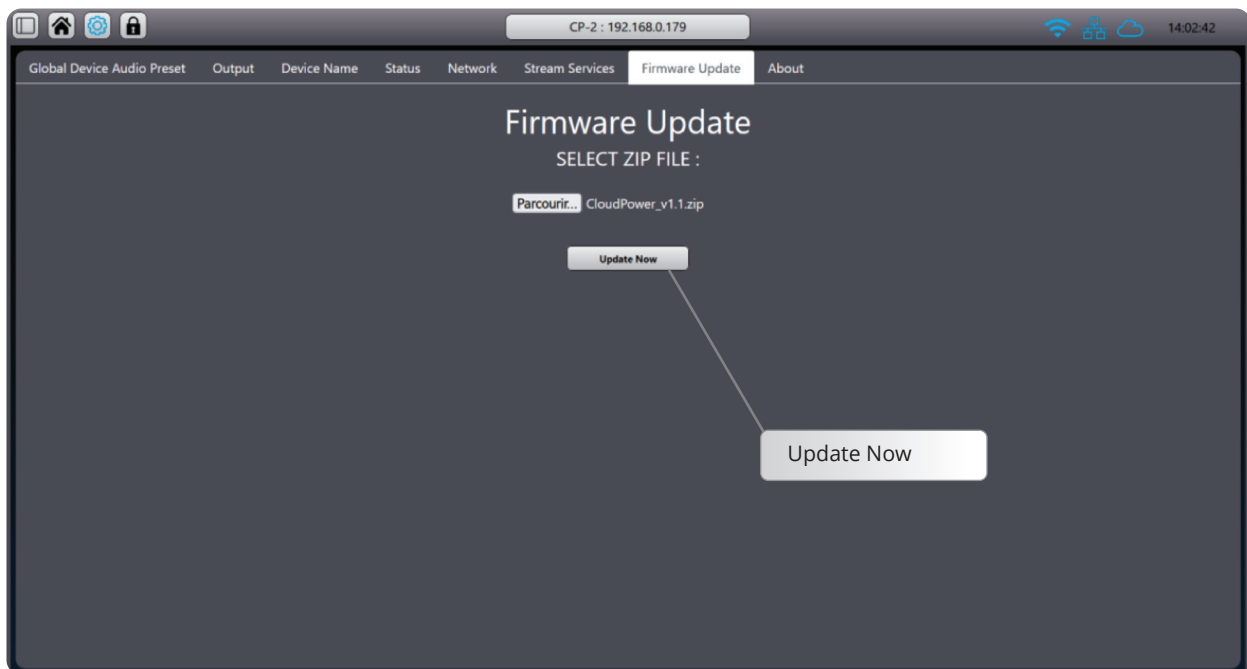
6. Click « Browse » to select the downloaded zip file (A4M SCiO Series_v1.1.zip)



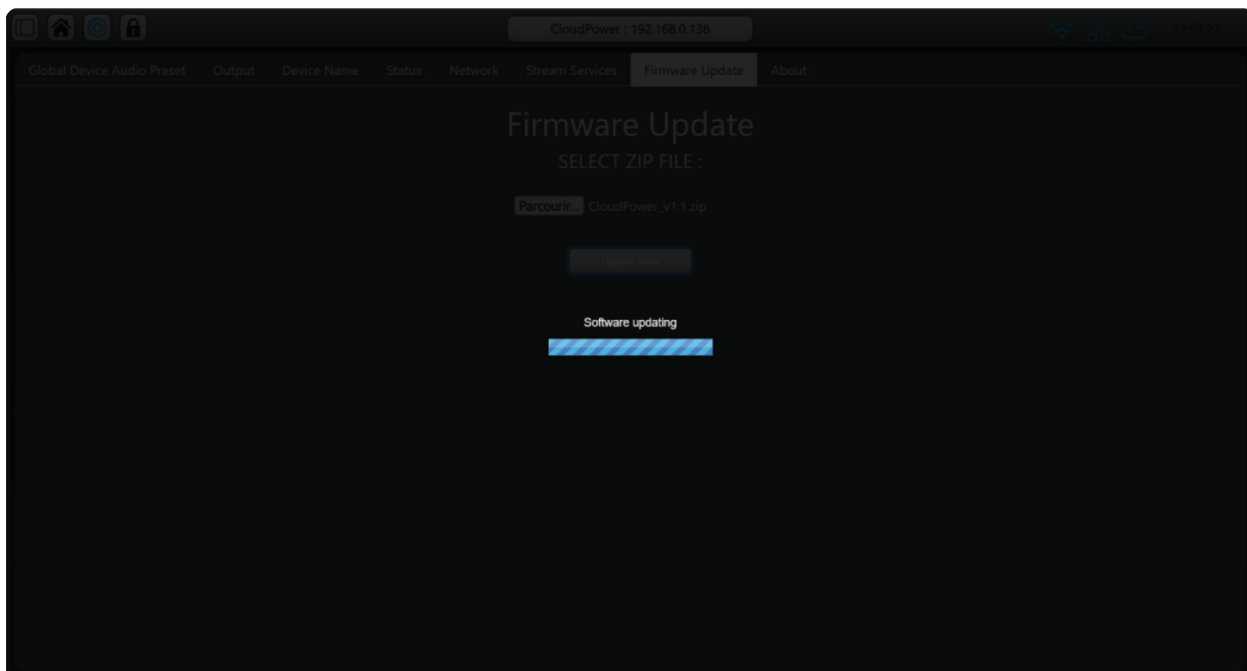
7. Select « Firmware Update » tab



8. Press « Update Now » button



9. Update procedure is running



10. After a few seconds, the front panel screen of the amplifier will become black - the update is running in the background. After a few minutes, the screen will go back to normal. At this point, you can manually restart your amplifier.

11. Your amplifier is now updated

SPECIFICATIONS

Operating conditions	
Temperature	0° to 50° C, 10 to 60 % non-condensing
Storage temperature	-20° to 70° C
Safety / Compliance	CB Certificate
Amplification and power supply	
Amplification class	Class D technology
Power supply model	Universal switch mode power supply's with active PFC
Power Factor	> 0,9 above 1/2 P
Mains Rating	100-240V @ 50-60 Hz
Operating Voltage	90-260V
AC Mains connector	Powercon TRUE1 TOP 16A EU / 20A US
Audio Specifications	
Frequency response	1Hz-22kHz
Distortion THD+N	0,05% @ P/2 , 20Hz- 20 kHz, 22 kHz BW
Noise level (20 Hz - 20 kHz 8 ohm, A-weighted)	
Latency analog input	1,5 ms
Amplifier gain	26 dB
Phase response	±10 deg 20Hz - 20kHz
DSP	
Digital Signal Processor	64 bit fix point
I/O Routing	Flexible Routing matrix
User processing functions per channel	
Gain:	-80 to +15dB, 0,1dB steps
Polarity:	normal / inverted
Delay:	0 to 250 ms (Shared between User and Group settings)
PEQ:	12 x PEQ.Each PEQ can be set to a choice of 16 filtertypes (1)
HP/LP filters:	Bessel , Butterworth and Linkwitz Riley with slopes from 6 to 48 dB/oct
Limiter:	Peak voltage, RMS voltage
Group processing functions	
Six global processing groups overlays which can link any amplifier channel in the network	
Gain:	-80 to +15dB, 0,1dB steps
Polarity:	normal / inverted
Delay:	0 to 250 ms (Shared between User and Group settings)
PEQ:	12 x PEQ.Each PEQ can be set to a choice of 16 filtertypes (1)
Speaker processing functions	
Gain:	-80 to +15dB, 0,1dB steps
Polarity:	normal / inverted
Delay:	0 to 250 ms (Shared between User and Group settings)
PEQ:	12 x PEQ.Each PEQ can be set to a choice of 16 filtertypes (1)
HP/LP filters:	Bessel , Butterworth and Linkwitz Riley with slopes from 6 to 48 dB/oct
Limiter:	Peak voltage, RMS voltage
FIR filters:	768 taps per channel

(1) Filter types:

Bell-Sym, Bell-Asym, Notch, Low-Shelf 6dB or 12dB, High-Shelf 6dB or 12dB
All-Pass 90° or 180°, High-Pass 6dB, or 12dB, High-Pass VariQ 12dB,
Low-Pass 6dB or 12dB, Low-Pass Vari-Q 12dB, Band-Pass

Circuit protection	
Mains and power supply	under, over voltage, over current protection
Power outputs	DC, Overtemp, Overcurrent limiter, VHF
Load monitoring	Realtime load monitoring and internal pilot tone
Cooling	Cooling fans with temperature control speed
Inputs	
Analog	4 balanced analog line inputs 4x 3-pin Phoenix
A/D conversion	32 bit - 1.5 ms latency
Input impedance	10 kOhm
Max. input level	21 dBu
Optional redundant Dante network card	
Network topology / redundancy	Supports daisy-chained and Dual redundant networks
Sample rate / transport	48,96 kHz / Uni + Multicast
Internal Streaming source	Two channel internal streaming source supporting Spotify and AirPlay
Remote control and monitoring	
Network connection	Single port Ethernet Gigabit interface
AUDIOFOCUS remote control software	SCiO- Web based
Back panel indicators	
Daylight viewable colour OLED display	Real time level , limit and fault indicators

Amplifier Model	A4M SCiO 1504	A4M SCiO 3004
Total burst power (all channels driven)	1500	3000
2 ohms(per channel)	750	750
4 ohms (per channel)	750	750
8 ohms(per channel)	500	500
16 ohms(per channel)	250	250
Max Output Power bridged mode		
Idle Power	30W	30W
Idle Current Draw	0.3A	0.3A
Idle Thermal loss	102 BTU/h	102 BTU/h
1/8 Power @ 4 Ohm Power	185W	375W
1/8 Power @ 4 Ohm Current Draw	1.6A	3.3A
1/8 Power @ 4 Ohm Thermal loss	341 BTU/h	682 BTU/h
Power and Thermal 230 V		
Idle Power	30W	30W
Idle Current Draw	0.15A	0.15A
Idle Thermal loss	102 BTU/h	102 BTU/h
1/8 Power @ 4 Ohm Power	185W	375W
1/8 Power @ 4 Ohm Current Draw	0.8A	1.65A
1/8 Power @ 4 Ohm Thermal loss	320 BTU/h	640 BTU/h

