

1200 Series

SmartPanels 2.0

User Manual



This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s) and complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) L'appareil ne doit pas produire de brouillage.

(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with FCC and ISCED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISCED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Ce transmetteur ne doit pas être placé au même endroit ou utilisé simultanément avec un autre transmetteur ou antenne.

Changes or modifications made to this equipment not expressly approved by Riedel may void the FCC authorization to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device is granted pursuant to the Japanese Radio Law (電波法) and the Japanese Telecommunications Business Law (電気通信事業法).

This device should not be modified (otherwise the granted designation number will become invalid).



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SmartPanels 2.0 User Manual

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- Standards**
- EN 50581:2012
 - EN 55032: 2015
 - EN 55035-2:2017
 - EN 61000-3-2:2014, EN 61000-3-3:2013
 - EN 61000-4-2:2009, EN 61000-4-3:2006+A1:2008+A2:2010, EN 61000-4-4:2012, EN 61000-4-5:2014, EN 61000-4-6:2014, EN 61000-4-8:2010, EN 61000-4-11:2004
 - IEC/EN 60950-1:2005+A1:2009+A2:2013
 - IEC/EN 62368-1:2014, UL/CSA 62368-1:2014

- Industry Canada**
- 8706A-DSP1216HL (1200 series SmartPanel DSP-1216HL)
 - 8706A-RSP1216HL (1200 series SmartPanel RSP-1216HL)
 - 8706A-RSP1232HL (1200 series SmartPanel RSP-1232HL)

CE

The device conforms to the following EU guidelines as attested by the CE mark.

- EMC 2014/30/EU
- LVD 2014/35/EU
- RoHS 2011/65/EU

FCC

YFJDSP1216HL (1200 series SmartPanel DSP-1216HL)
YFJRSP1216HL (1200 series SmartPanel RSP-1216HL)
YFJRSP1232HL (1200 series SmartPanel RSP-1232HL)

ETL

R 202-SMI051 (1200 series SmartPanel RSP-1216HL)
T D 20-0017 202

R 202-SMH033 (1200 series SmartPanel RSP-1232HL)
T D 19-0015 202

RSP-1232HL
Audio Monitoring App

Audio Monitoring App

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1 Preface

Thank you for choosing a Riedel product.

This PDF document provides detailed information about the Riedel 1200 Series SmartPanels, pin outs, mechanical and electrical data.

For further information, please refer to the [Riedel Website](#) or contact your local distributor or the Riedel headquarters in Wuppertal.

NOTICE

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1.1 Information

Symbols

The following tables are used to indicate hazards and provide cautionary information in relation to the handling and use of the equipment.

Danger	
	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	The highlighted line indicates the activity to prevent the danger.

Warning	
	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	The highlighted line indicates the activity to prevent the danger.

Caution	
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
	The highlighted line indicates the activity to prevent the danger.

	This text is for generally information. It indicates the activity for ease of work or for better understanding.
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Service

- All service has to be undertaken ONLY by qualified service personnel.
- There are no user serviceable parts inside the devices.
- Do not plug in, turn in or attempt to operate an obviously damaged device.
- Never attempt to modify the equipment components for any reason.

Caution	
	All adjustments have been done at the factory before the shipment of the devices. No maintenance is required and no user serviceable parts are inside the module.

Ventilation

- Do not place the devices next to a hot source like a radiator.
- The ventilation openings of the devices must never be blocked.

Environment

- Never place the devices in an area of high dust particles or humidity.
- Never place containers with any liquids on top of the devices.
- If the devices have been exposed to a cold environment and transferred to a warm environment, condensation may form inside the housing. Wait at least 6 hours before applying any power to the devices.

Voltage

- The power cable should only be connected to a correctly grounded source.
- Do not use any adapters.
- Never bypass a ground contact.
- The mains plugs is used as a disconnect device. It is imperative that access to the mains plugs and the associated mains socket/outlet is never obstructed.

Danger	
	• To reduce the risk of electric shock do not remove cover or expose the products to rain or moisture. • The DSP-1216HL may only be used in buildings that are fully protected by a residual current device. Operation with individual RCDs is not permitted!

Warning	
	• Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan. • Apparatet må tilkoples jordet stikkontakt. • Apparatens skall anslutas till jordat uttag. • Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.

Laser Safety

1200 series SmartPanels can be equipped with optical fiber modules (FOM) for the data transmission over a fiber.

Observe the following guidelines and warnings:

- Because invisible radiation might be emitted from the aperture of SFPs when no fiber cable is connected, avoid exposure to radiation and do not stare into open apertures.
- Do not look at fibers that connect to unknown sources.
- Do not examine unterminated optical ports with optical instruments.
- Avoid direct exposure to the beam.



The laser transceivers are considered as a class 1 laser product per EN 60825-1, FDA 21 CFR1040.10 and 1040.11 requirements.

Caution	
	The accessible laser radiation is harmless under reasonably foreseeable conditions. Note: The reasonably foreseeable conditions are met during normal operation.
	The limit value of the accessible radiation of DIN EN 60825-1:2001-11 in the wavelength range from 400 nm to 1,400 nm for the classification of a laser is the same between 100 s and 30,000 s. Therefore, nuisances cannot be ruled out in the case of long-term effects.

Disposal

Disposal of old Electrical & Electric Equipment (Applicable throughout the European Union and other European countries with separate collection programs).

	This symbol, found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of this product please contact your local city office.
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1.2 Change History

New in 2.0 This user manual contains following changes:

► New SmartPanel DSP-1216HL

The fully integrated 1200 Series Desktop SmartPanel 1216HL is a space-saving, multifunctional user interface that brings the power and flexibility of Riedel's software-defined SmartPanel ecosystem to the desktop. The SmartPanel concept decouples the panel's capabilities from its hardware and turns it into a generic device on which customers can install different apps to enable a wide range of workflows. With a Riedel SmartPanel, you not only get what it is capable of today - but also what it will be capable of in the future.

⇒ [DSP-1216HL SmartPanel](#)

1.3 Firmware Version

This Manual refers to the 1200 series SmartPanels with the firmware version: **2.0.x**
The “x” in the firmware version indicates the bugfix version that is described in the related release notes.
The firmware version can be checked in the SmartPanel and in the web interface:

SmartPanel

- Touch the  gear icon in the info display.
- Navigate to the menu: 'Service' > 'Device-Info'.

The second line in the info display shows the firmware and bugfix version of the SmartPanel.



figure 1: firmware version (SmartPanel)

Web Interface

Enter the IP address of the web interface of the SmartPanel in the web browser of a PC on the same network.

To determine the IP address of the web interface, the interface of the SmartPanel (MEDIA 1/2, MGNT) via which the web interface can be reached must first be determined in [Settings Menu > Applications: Web UI](#). After that, the IP address of this interface can be retrieved in [Settings Menu > Network](#).

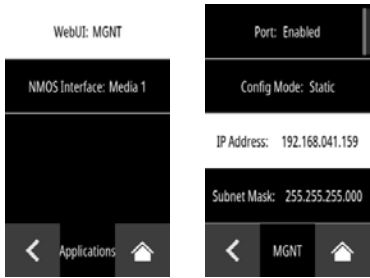


figure 2: Interface of 'WebUI'

figure 3: IP address of the 'WebUI'

Open the web interface of the SmartPanel:

- Enter the IP address in the web browser (e.g. 192.168.41.159).

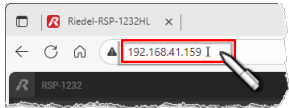


figure 4: web interface of the SmartPanel

The web interface opens.

- Select the **FW Manager** tab.

For a password-protected web interface, you must first log in by clicking on the gray login icon in the upper right corner.

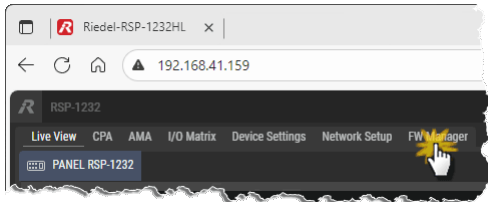


figure 5: FW Manager

The blue dot marks the SmartPanel whose web interface is displayed. The firmware version of the SmartPanel is displayed next to its IP address.

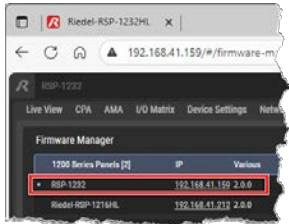


figure 6:firmware version (web interface)

1.4 About 1200 Series SmartPanels

Riedel's next-generation SmartPanels open new perspectives into multifunctional user interfaces.

Building upon the technology that powers Riedel's SmartPanel app-driven user interfaces, the new 1200 Series SmartPanels represent a quantum leap forward in workflow flexibility, power, and connectivity. Featuring multiple full-color multi-touchscreen displays, innovative hybrid lever keys, the ability to leverage apps for multifunctionality, and the ability to easily adapt to the various workflows in use today, these new panels are poised to allow you to work the way you always have while opening up entirely new workflow possibilities.

Completely new from the ground up, the 1200 Series SmartPanels are Riedel's smartest panels yet! The SmartPanel concept decouples the panel's capabilities from its hardware and turns it into a generic device on which customers can install different apps to enable different capabilities. With a Riedel SmartPanel, you not only get what the panel is capable of today – but also what it will be capable of in the future.

The 1200 Series **Intercom App** supports multiple workflows. Some comms users prefer a “Talk/Listen” workflow where the user chooses what to listen to from an initially silent panel. Other users prefer a “Talk/Mute” workflow that starts with a panel that broadcasts everything, with the users selecting which signals to turn off. Users can decide which mode they prefer on a per-panel basis. New features that further enhance the panel's ease of use include Riedel's new Logical Groups concept. Logical Groups allow users to choose custom colors for the key labels or the LED rings around the keys. Each key label has an 8-character main label, a 16-character sub label, and user-defined icons. Other icons provide information about the state of each key at any point in time. The “open mic”, “muted key”, “incoming beep”, or “port busy” prompts are easy to read and understandable at a glance. Users can get as much or as little information about any given key as needed.

Connectivity is king at Riedel. The new panels take advantage of the AES3 digital connectivity that Riedel has always used along with SMPTE 2110-30 (AES67) connectivity. AES67 connection is provided via fiber SFPs or RJ45 connections, creating a variety of daisy-chaining and redundancy options to realize extraordinary cabling flexibility and resilience. Stereo speakers optimized for high speech intelligibility and audio fidelity maintain a balanced sound even at high volume levels. Other features include front-panel mic mute and sidetone adjustments, front/rear USB ports, Bluetooth and NFC connectivity, GPIO and 4-wire ports, and a light sensor for the autocalibration of screen brightness in changing ambient light environments.

With the new **Control Panel App**, third-party control, monitoring, and automation systems can be adapted to the SmartPanel's easy-to-use and highly intuitive user interface. Its feature set is surprisingly simple but incredibly powerful. Users can trigger actions in third party systems with the panel's keys, rotaries, and touchscreens, and get visual feedback on configuration status and changes via colors, labels, and symbols on touchscreens and LEDs. The Control Panel App is built on open NMOS standards for easy interoperability and scalability. Key to this is the NMOS IS-07 standard which allows the exchange of event/state information (e.g. the press of a button or the color of an LED) across systems of different vendors.

The **Audio Monitoring App** enables users to keep track of their audio quality while managing a production via the Intercom App. The app directly connects to any SMPTE-2110-30 (AES67) stream available within the network, which makes selecting and managing monitoring sources incredibly flexible and surprisingly simple. Users may monitor up to 16 stereo/mono AES67 channels in parallel from a total of 256 channels which they can swiftly manage within the app's intuitive browser-based configuration tool. As all SmartPanel apps run simultaneously, users will never miss an important call: Intercom calls will automatically dim the monitoring volume and also be indicated within the panel's info display.

Uniting powerful intercom, control and audio monitoring functionalities in a single keypanel, the 1200 Series SmartPanels deliver a truly unique combination of capabilities that empowers users while saving valuable rack or desk space. The software-defined SmartPanels are set to keep up with new technologies and workflows in the dynamic environments of broadcast, event production, and Pro AV, as their capabilities continue to evolve with industry demands.

2 DSP-1216HL SmartPanel

New in 2.0 The fully integrated 1200 Series Desktop SmartPanel 1216HL is a space-saving, multifunctional user interface that brings the power and flexibility of Riedel's software-defined SmartPanel ecosystem to the desktop. The SmartPanel concept decouples the panel's capabilities from its hardware and turns it into a generic device on which customers can install different apps to enable a wide range of workflows. With a Riedel SmartPanel, you not only get what it is capable of today - but also what it will be capable of in the future.



Features

The DSP-1216HL features 16 innovative hybrid lever keys for Talk-Mute and Talk-Listen workflows with an integrated rotary encoder that provides control over variable parameters in the same location as the key itself. Each key also has an LED ring which allows for easy grouping of keys based on colors. Two high-resolution, full-color multitouch displays ensure excellent visibility in a large range of conditions. Key Banks are user-definable layers of keys that are accessed by the simple press of a button on the screen. The panel's high-quality, 2.1 speaker system not only enhances intercom workflows with crystal-clear intelligibility in headset-free scenarios, but also enables users to confidently use it as an audio monitoring solution. The space-saving footprint and VESA mounting option make it even more versatile, allowing users to maximize space and flexibility. Designed for seamless integration with the Riedel Artist Intercom ecosystem, the DSP-1216HL comes with extensive connectivity options and a clear focus on open IP standards. It can be connected to Artist-1024 via AES67 (SMPTE ST2110-30) or to Artist-32/64/128 via AES3 and supports Intercom, Audio Monitoring and Control Panel Apps.

2.1 Operating Elements



figure 7: front view (DSP-1216HL)

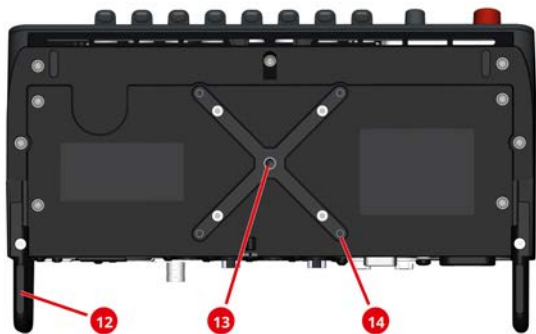


figure 8: bottom view (DSP-1216HL)



figure 9: rear view (DSP-1216HL)

1	Microphone Connector (6.3 mm jack)	1×
2	Key Display (multi-touch color)	1×
3	Panel Microphone	1×
4	Info Display (multi-touch color)	1×
5	DSP-controlled Speakers (right)	1×
6	Light Sensor	1×
7	DSP-controlled Speakers (left)	1×
8	Hybrid Lever Keys with Rotary Encoders	16×
9	NFC / Bluetooth Connection (future use)	1× / 1×
10	Rotary Encoder (gray, Sidetone Control & Menu Navigation) with push functionality	1×
11	Rotary Encoder (red, Volume Control) with push functionality	1×
12	Handle bars & Cable bend protections (right, left)	2×
13	1/4" - 20 Threads	1×
14	VESA mount	4×
A	Fan (temperature controlled)	1×
B	Ethernet Connectors ETH1/ETH2 (EtherCON, RJ45)	2×
C	Micro SD Card Slot	1×
D	DSP-controlled Speakers (top)	1×
E	Matrix Connectors (AES3, BNC/RJ45)	2×
F	USB Connector (Type-C)	1×
G	Management Connector MGNT (RJ45)	1×
H	Mains Power Connector (mains input)	1×
I	GPI Inputs/Outputs GP-IN/OUT (D-Sub-9, female/male)	3× / 3×
J	Analog Audio A/B Inputs/ Outputs (XLR3, female/male)	2× / 2×
K	SFP Slots ETH3/ETH4	2×
L	Headset Connectors (XLR4: exchangeable)	2×
M	Headset Connectors (/USB-C)	2×
N	Displayport DP (future use)	1×

All Ports and Pinouts can be found in chapter [Ports / Pinouts](#).

2.2 Status LEDs



figure 10: DSP-1216HL (front status LED positions)

The meaning of the Status LEDs in normal operation is listed in the following table:

1	Microphone Status LED	white	Panel microphone active, Headset deactivated
		off	Headset active, Panel microphone deactivated
2	LED Ring (top)	RGB	Depending on operation mode: • Group color • Signalization
3	LED Ring (bottom)		
4	Rotary Encoder (gray, Sidetone)	red blinking	Microphone muted
		off	Microphone open
5	Rotary Encoder (red, Volume)	red blinking	Speaker muted
		off	Speaker active

2.3 Lever Key Numbering

The lever keys of the DSP-1232HL are numbered from top left to bottom right:

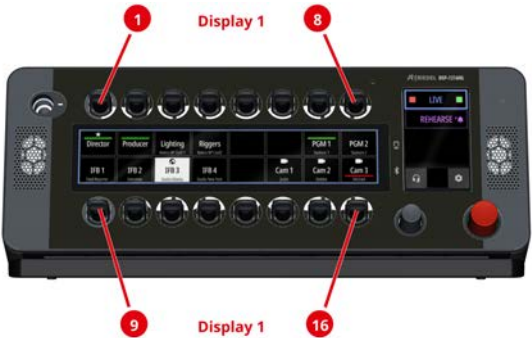


figure 11: Numbering of lever keys

2.4 Volume

Main Volume / Muting

Turning the right red rotary encoder adjusts the main volume of the SmartPanel.

This is visualized by a vertical bar on the right side in the info display.

If the headset mode is activated, the volume of the connected headset is set.

If the speaker mode is activated, the volume of the internal speaker is set.

The volumes for the speaker and for the headset can be set independently of each other.

Pressing the right red rotary encoder causes the speaker to be switched off. This is indicated by a blinking LED in this rotary encoder.



figure 12: main volume (DSP-1216HL)

Port Volume / Muting

The individual port volume is adjusted via the integrated rotary encoders in the respective lever key. The volume is temporarily visualized by a horizontal bar in the respective key display. If the SmartPanel is operated on an Artist-1024, the volume can be visualized temporarily or permanently, depending on the setting in the Director. For more information, see the Director manual.

Pressing a rotary encoder mutes the respective port. Muting is also possible by turning down the volume completely. This is indicated by a mute symbol in the respective key display.

The volume setting is independent of the mute state and can be made while the key is muted.



figure 13: port volume (DSP-1216HL)

Sidetone Volume

The left gray rotary encoder is used to adjust the volume of the sidetone. The volume is temporarily visualized by a vertical bar on the left side in the info display. In addition, it is displayed for which headset (A, B, A/B) the volume is set. In the default setting, the sidetone volume for headset A and headset B is controlled together.



figure 14: sidetone volume (DSP-1216HL)

If the linked sidetone setting is switched off (⇒ [Settings Menu > Device Settings](#)), the sidetone volumes of headsets A & B can be set individually. A long press on the left gray rotary encoder switches between Sidetone A and Sidetone B control and is shown in the display accordingly.



figure 15: switch individual sidetone volume headset A & B (DSP-1216HL)

The Sidetone function is always active on 1200 SmartPanels and cannot be additionally configured in the Director.

Microphone Muting

A short press on the left gray rotary encoder switches the microphone off (mute). This is indicated by a blinking LED inside this rotary encoder.



figure 16: microphone muting (DSP-1216HL)

2.5 Info Display

The info display is located on the right side of the SmartPanel and offers the following range of functions:

- Switching of [Key Banks / Apps](#)
- Indication of active functions
- Switching between panel- and headset operation
- Open the [Settings Menu](#)

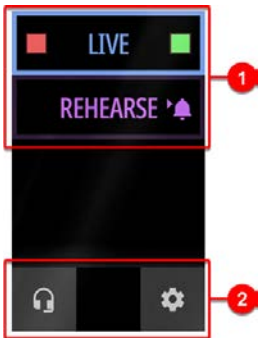


figure 17: Info Display (RSP-1232HL)

1	Indication and switching the active key bank		
	• The active key bank is represented by a brighter border. The inactive key bank is represented by a darker border. • An inactive key bank is activated by a short touch. The touch duration can be adjusted in the Settings menu (⇒ Device Settings). • The colors can be customized using the Director configuration software.		
	Various symbols signal events on the corresponding key bank		
	Beep		If at least one channel on the inactive key bank has an incoming beep, the Beep symbol is displayed.
	Talk	This symbol depends of the operation mode:	
2	Talk/Listen		If at least one channel on the key bank has an active call, the Talk symbol is displayed.
	Talk/Mute		
	Mute / Listen	This symbol depends of the operation mode:	
	Talk/Listen		If at least one channel on the key bank listens to a remote station, the Listen symbol is displayed.
	Talk/Mute		If at least one channel on the key bank is muted, the Mute symbol is displayed.
	Speaker / Headset	The left symbol indicates the currently selected Speaker/Headset mode. Touch the symbol for a moment to switch between the two modes.	
	Speaker		SmartPanel speaker and microphone are active.
	Headset		The connected headset is active.
	Gear		Touch the gear symbol for a moment to open the Settings Menu .



Incoming calls to keys that are located on an **inactive** key bank are indicated in the info display by a flashing key bank. The background of the corresponding key bank then remains bright as long as the call is active.

Navigation in the Settings Menu



- **Turning** the left gray rotary encoder.
- Vertical **Wiping** the touch screen.

- Select the next / previous menu item
- Change values / settings



- **Pushing** the left gray rotary encoder.
- **Tapping** the touch screen.

- Enter selected menu item.
- During navigation, the current menu level is shown at the bottom center of the display.



BACK icon
in the info display

Back to parent menu item



ESC icon
in the info display

Cancel entry



OK icon
in the info display

Confirm entry



HOME icon
in the info display

leave menu / back to main view

2.6 Technical Specifications

DSP-1216HL

Front Elements

Keys	16× software-assignable lever keys with rotary encoder and push buttons
Rotaries	2× rotary encoders
Displays	2× high-resolution, bright color, sunlight readable TFT displays with multi-touch control (capacitive)
Mic	1× threaded 6.3 mm jack for microphone 1× internal panel microphone
Speaker	Full-range 2.1 system (left, right, subwoofer), DSP-controlled
NFC	Technology RFID, Frequency 13.56 MHz (future use)
Bluetooth	Frequency DTS Band 2400 ... 2483.5 MHz (future use)
Lightsensor	Adaptation of the display brightness to the environment

Rear Elements

IEC	Power Input
RJ45	2× Ethernet ETH 1 / ETH 2 (EtherCON, 1000BASE-T Ethernet, AES67) 1× Artist Matrix connector (AES3) 1× Management port for panel configuration
MicroSD-card	1× MicroSD / MicroSDHC card up to 32 GB (for service purpose only)
BNC	1× Artist Matrix connector (AES3)
SFP	2× Ethernet ETH 3 / ETH 4 (1000BASE-X, Ethernet, AES67)
USB	1× USB 2.0 (standard Type-C, max. 500 mA) 2× USB 2.0 Headset A/B (standard Type-C, max. 500 mA)
DisplayPort	1× DisplayPort connector (future use)
D-Sub-9	3× GPI input (U_{in} = +5 V ... +48 V, female) 3× GPI output (U_{max} 48 V / 300 mA, protected by self-healing fuse, male)
XLR-3	2× Analog audio 4-wire inputs (A/B, female) 2× Analog audio 4-wire outputs (A/B, male)
XLR-4	2× Headset (A/B, user-exchangeable headset connector with preinstalled 4-pin male XLR connector)

Audio

Maximum Level	Audio A/B Input (XLR-3)	+24 dBu	± 0 dBFS, 150 Ω source
	Audio A/B Output (XLR-3)	+24 dBu +23 dBu	@ 0 dBFS, 2 kΩ load @ 0 dBFS, 600 Ω load
	Headset A/B Microphone (XLR-4)	+16 dBu	± 0 dBFS, 0 dB gain
	Headset A/B Phones (XLR-4)	+19 dBu	@ 0 dBFS, 150 Ω load
	Panel Microphone	1 mA RMS	± 0 dBFS, 2k Ω source
Frequency Response	Audio A/B Input (XLR-3)	20 Hz ... 20 kHz, -0.3 ... -0.3 dB	@ -20 dBFS, 150 Ω source
	Audio A/B Output (XLR-3)	20 Hz ... 20 kHz, -0.3 ... -0.3 dB	@ -20 dBFS, 600 Ω load
	Headset A/B Microphone (XLR-4)	20 Hz ... 20 kHz, -2.0 ... -0.3 dB	@ -20 dBFS, 150 Ω source
	Headset A/B Phones (XLR-4)	20 Hz ... 20 kHz, -0.3 ... -0.3 dB	@ -20 dBFS, 600 Ω load
	Panel Microphone	20 Hz ... 20 kHz, -6.0 ... -0.3 dB	@ -20 dBFS, 2k Ω source
Distortion THD+N	Audio A/B Input (XLR-3)	<0.001 % ± -100 dB, 20 Hz ... 20 kHz	@ -1 dBFS, 150 Ω source
	Audio A/B Output (XLR-3)	<0.001 % ± -100 dB, 20 Hz ... 20 kHz	@ -1 dBFS, 600 Ω load
	Headset A/B Microphone (XLR-4)	<0.001 % ± -100 dB, 20 Hz ... 20 kHz	@ -1 dBFS, +20 dB gain, 150 Ω source
	Headset A/B Phones (XLR-4)	<0.001 % ± -100 dB, 20 Hz ... 20 kHz	@ -1 dBFS, 600 Ω load
	Panel Microphone	<0.001 % ± -100 dB, 20 Hz ... 20 kHz	@ -1 dBFS, 2k Ω source
Sample Rate / Resolution	48 kHz / 24 Bit		

General

Power	Supply voltage	100 – 240 VAC, 50 – 60 Hz	
	Power consumption	≤15 W, ≤50 BTU/hr	
Dimensions	Form factor	Desktop	
	Width	282 mm / 11.1"	outer dimensions with handle bars
	Height	115 mm / 4.5"	
	Depth	174 mm / 6.8"	
	VESA mount	75 × 75 mm	
Weight		2.525 g / 5.57 lbs	including two preinstalled 4-pin male XLR connectors
Cooling	Fan noise (temperature controlled fan)	<23 dB(A) idle, 26 dB(A) max. fan speed	@ 0.7m (noise emission meets GK10 / DIN 15996)
Environment	Operating temperature	0 ... +40°C	
	Storage temperature	-30 ... +80°C	
	Humidity	20 ... 90 % relative (non-condensing)	
	Max. altitude	3000 m AMSL	

3 RSP-1216HL SmartPanel

The unique feature set of Riedel's RSP-1216HL SmartPanel includes 3 high-resolution, sunlight readable, multi-touch color displays and 16 hybrid lever keys including rotary encoders in 1RU.

Features

- 16 hybrid lever keys
- 3 high-resolution, sunlight-readable displays
- Integrated power supply
- 2 SFP slots
- 2 USB ports
- 2 Ethernet connectors
- 2 Matrix connectors (RJ45/BNC)
- 1 Expansion connector
- NFC/Bluetooth connectivity (future use)
- 1 Management connector
- 1 SD card slot
- 1 Displayport (future use)
- 3 GPI-In
- 3 GPI-Out
- 2 Analog audio
- 2 Headset connector (RJ45)
- removable gooseneck microphone
- internal microphone (future use)
- Light Sensor (future use)
- exchangeable Headset connector (Mono: XLR4M / Stereo: XLR7M)
- 1RU

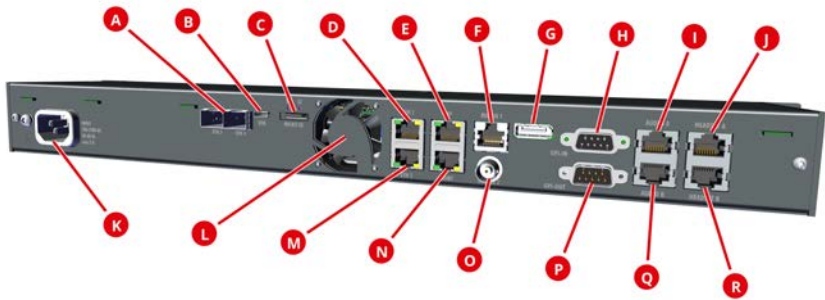


figure 19: rear view (RSP-1216HL)

1	Microphone Connector (6.3 mm jack)	1×
2	Key Displays (multi-touch color)	2×
3	Light Sensor (future use)	1×
4	NFC / Bluetooth Connection (future use)	1× / 1×
5	Info Display (multi-touch color)	1×
6	DSP-controlled Speaker	1×
7 J R	Headset Connectors (front exchangeable: XLR / rear: RJ45)	1× / 2×
8	Hybrid Lever Keys with Rotary Encoders	16×
9	Panel Microphone (future use)	1×
10	Rotary Encoder (left, grey, sidetone) with push functionality	1×
11 B	USB Connectors (front: Type-A / rear: Type-C)	1× / 1×
12	Rotary Encoder (right, red, volume) with push functionality	1×
A	SFP Slots ETH3/ETH4	2×
C	Micro SD Card Slot	1×
D M	Ethernet Connectors ETH1/ETH2 (RJ45)	2×
E	Expansion Connector EXP (RJ45)	1×
F O	Matrix Connectors (AES3, RJ45/BNC)	2×
G	Displayport DP (future use)	1×
H P	GPI Inputs / GPI Outputs (D-Sub-9, female/male)	3× / 3×
I Q	Analog Audio A/B Inputs / Outputs (RJ45)	2×
K	Mains Power Connector (mains input)	1×
L	Fan (temperature controlled)	1×
N	Management Connector MGNT (RJ45)	1×

All Ports and Pinouts can be found in chapter [Ports / Pinouts](#).

3.1 Operating Elements



figure 18: front view (RSP-1216HL)

3.2 Status LEDs



figure 20: front status LED positions (RSP-1216HL)

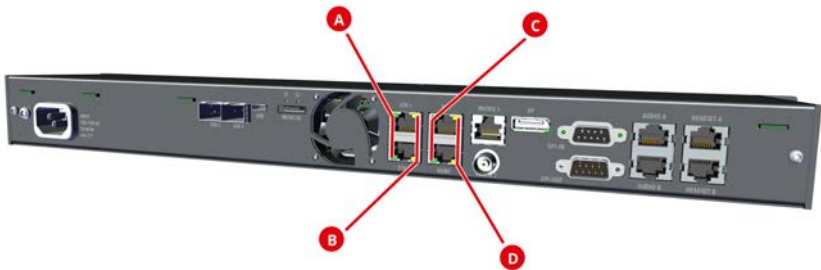


figure 21: rear status LED positions (RSP-1216HL)

The meaning of the Status LEDs in normal operation is listed in the following table:

1	Microphone Status LED	white	Panel microphone or headset microphone active.
		off	Panel microphone or headset microphone deactivated
2	LED Ring (top)	RGB	Depending on operation mode: • Group color • Signalization
3	LED Ring (bottom)		
4	Rotary Encoder (left, sidetone)	red blinking	Microphone muted
		off	Microphone open
5	Rotary Encoder (right, volume)	red blinking	Speaker muted
		off	Speaker active
A	Ethernet (left)	green	Link ok
		off	No link
B	Ethernet (right)	yellow	Activity
		off	No activity
C	Expansion / Management (left)	green	Link ok
		off	No link
D	Expansion / Management (right)	yellow	Activity
		off	No activity

3.3 Lever Key Numbering

The lever keys of the RSP-1216HL are numbered separately for each display from left to right:



figure 22: Numbering of lever keys (RSP-1216HL)

3.4 Power-Up

Connect the SmartPanel with the mains voltage and wait until it has booted.
If the SmartPanel is not connected to a matrix, you will see the following contents in all displays:



figure 23: key display – RSP-1216HL (no connection)

Intercom Mode	Shows the current selected intercom mode. (Artist-1024, Artist-32/64/128)	
Intercom	Status of the connection to the matrix. (No conn. to Matrix, Checking ..., Connecting Audio ...)	
Management Port Media 1 Media 2	Media 1/2	Shows the Ethernet port that is assigned to the corresponding Media x interface.
	Status	Status of the connection to the MGNT/Media x interface. (Not OK, OK)
	Config	Displays the current IP configuration of the MGNT/Media x interface. (DHCP or the statically set IP address x.x.x.x)
	IP	Displays the current IP address of the MGNT/Media x interface. (N/A, x.x.x.x)

As soon as the SmartPanel is connected to the matrix, the programmed key assignment is displayed.



figure 24: RSP-1216HL (connected with matrix)

- The name (**key label**) of the corresponding channel is displayed above each lever key.
- The subtitle (**16-char subtitle**) of the corresponding channel is displayed in the second line.

3.5 Volume

Main Volume / Muting

Turning the right red rotary encoder adjusts the main volume of the SmartPanel.

This is visualized by a vertical bar on the right side in the info display.

In addition, the menu is displayed showing the currently selected speaker/headset mode in the upper icon.

If the headset mode is activated, the volume of the connected headset is set.

If the speaker mode is activated, the volume of the internal speaker is set.

The volumes for the speaker and for the headset can be set independently of each other.

Pressing the right red rotary encoder causes the speaker to be switched off. This is indicated by a blinking LED in this rotary encoder.



figure 25: main volume (RSP-1216HL)

Port Volume / Muting

The individual port volume is adjusted via the integrated rotary encoders in the respective lever key. The volume is temporarily visualized by a horizontal bar in the respective key display. If the SmartPanel is operated on an Artist-1024, the volume can be visualized temporarily or permanently, depending on the setting in the Director. For more information, see the Director manual.

Pressing a rotary encoder mutes the respective port. Muting is also possible by turning down the volume completely. This is indicated by a mute symbol in the respective key display.

The volume setting is independent of the mute state and can be made while the key is muted.



figure 26: port volume (RSP-1216HL)

Sidetone Volume

The left gray rotary encoder is used to adjust the volume of the sidetone. The volume is temporarily visualized by a vertical bar on the left side in the info display. In addition, it is displayed for which headset (A, B, A/B) the volume is set. In the default setting, the sidetone volume for headset A and headset B is controlled together.



figure 27: sidetone volume (RSP-1216HL)

If the linked sidetone setting is switched off (⇒ [Settings Menu > Device Settings](#)), the sidetone volumes of headsets A & B can be set individually. A long press on the left gray rotary encoder switches between Sidetone A and Sidetone B control and is shown in the display accordingly.



figure 28: switch individual sidetone volume headset A & B (RSP-1216HL)



The Sidetone function is always active on 1200 SmartPanels and cannot be additionally configured in the Director.

Microphone Muting

A short press on the left gray rotary encoder switches the microphone off (mute). This is indicated by a blinking LED inside this rotary encoder.



figure 29: microphone muting (RSP-1216HL)

3.6 Info Display

The info display is located on the right side of the SmartPanel and offers the following range of functions:

- Switching of [Key Banks / Apps](#)
- Indication of currently active functions
- Switching between panel- and headset operation
- Opening the [Settings Menu](#)

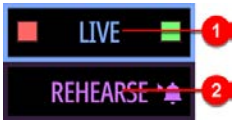


figure 30: Info Display (RSP-1216HL)

1	Active Key Bank • The active key bank is represented by a brighter border.
2	Inactive Key Bank • The inactive key bank is represented by a darker border. • An inactive key bank is activated by a short touch. The touch duration can be adjusted in the Settings menu (⇒ Device Settings).

	The colors can be customized using the Director configuration software.
--	---

Symbols in the Info Display

Different symbols signal events that are currently happening on the corresponding key bank.

Beep		If at least one channel on the inactive key bank has an incoming beep, the Beep symbol is displayed.
Talk	This symbol depends of the operation mode:	
	Talk/Listen	If at least one channel on the key bank has an active call, the Talk symbol is displayed.
	Talk/Mute	
Mute / Listen	This symbol depends of the operation mode:	
	Talk/Listen	If at least one channel on the key bank listens to a remote station, the Listen symbol is displayed.
	Talk/Mute	If at least one channel on the key bank is muted, the Mute symbol is displayed.

	Incoming calls to keys that are located on an inactive key bank are indicated in the info display by a flashing key bank. The background of the corresponding key bank then remains bright as long as the call is active.
--	--

Opening the Menu

- Wipe on the info display from right to left to show the menu.
- or
- Turn the right red knob (main volume).

The menu slides in from the right side.



figure 31: menu (RSP-1216HL)



figure 32: show menu (RSP-1216HL)

1	Speaker / Headset	The upper icon indicates the currently selected Speaker/Headset mode. Touch the icon to switch between the two modes.	
		Speaker	SmartPanel speaker and microphone are active.
		Headset	The connected headset is active.
2	Gear		Touch the gear icon to open the Settings Menu .

Navigation in the Settings Menu

	• Turning the left grey rotary encoder. • Vertical Wiping the touch screen.	• Select the next / previous menu item • Change values / settings During navigation, the current menu level is briefly shown at the top of the display.
	• Pushing the left grey rotary encoder. • Tapping the touch screen.	Enter selected menu item. During navigation, the current menu level is briefly shown at the top of the display.
	Wipe on the info display from right to left to show the menu.	
	 BACK icon in the info display	Back to parent menu item
	 ESC icon in the info display	Cancel entry
	 OK icon in the info display	Confirm entry
	 HOME icon in the info display	leave menu / back to main view

3.7 Technical Specifications

RSP-1216HL

Front Elements

Keys	16× software-assignable hybrid lever keys
Rotaries	2× rotary encoders for data entry
Displays	3× high-resolution, bright color, sunlight readable TFT displays with multi-touch control (capacitive)
Mic	1× threaded 6.3 mm jack for microphone 1× internal panel microphone
Headset	User-exchangeable Headset connector with preinstalled 4-pin male XLR connector. (Mono: XLR4M / Stereo: XLR7M)
Speaker	1× full-range, high-quality speakers
USB	1× USB 2.0 (standard Type-A, max. 500 mA)
NFC	Technology RFID, Frequency 13.56 MHz (future use)
Bluetooth	Frequency DTS Band 2400 ... 2483.5 MHz (future use)
Light Sensor	Adaptation of the display brightness to the environment (future use)

Rear Elements

IEC	Power Input
SFP	2× Ethernet ETH 3 / ETH 4 (Ethernet, AES67)
USB	1× USB 2.0 (standard Type-C, max. 500 mA)
MicroSD-card	1× MicroSD / MicroSDHC card up to 32 GB (for service purpose only)
RJ45	2× Ethernet ETH 1 / ETH 2 (10/100/1000BASE-T Ethernet, AES67)
	1× Expansion EXP connector for expansion panels
	1× Management MGNT connector for panel configuration (separation of audio and management network)
	1× Matrix 1 connector for matrix connection (AES3)
	2× Analog audio 4-wire inputs and outputs
	2× Headset ("Headset A" is identical to front connector signal)
BNC	1× Matrix 2 connector for matrix connection (AES3)
DisplayPort	1× DisplayPort connector
Sub-D9 (male)	3× GPI output (max. 48 V / 300 mA, protected by self-healing fuse)
Sub-D9 (female)	3× GPI input (+5 V ... +48 V)

Audio

Maximum Level	Audio A/B Output	+24 dBu	@ 0 dBFS, 2 k Ω load
		+23 dBu	@ 0 dBFS, 600 Ω load
	Audio A/B Input	+24 dBu	$\pm$ 0 dBFS
	Headset Phones	+20.5 dBu	@ 0 dBFS, 150 Ω load
	Headset Microphone	+6 dBu	$\pm$ -6 dBFS
	Max SPL Internal Speaker	101 dB	@ 1 m
Frequency Response	Panel/Internal Mic (electret)	70 Hz ... 20 kHz, -3 dB (70 Hz high-pass filter)	@ 25 μ A ($\pm$ 110 dB SPL)
	Headset Mic A/B	20 Hz ... 20 kHz, -0.1 dB	@ -20 dBFS (-20 dBu), -12 dB internal gain
	Headset Phones	20 Hz ... 20 kHz, -0.4 dB	@ -20 dBFS, 150 Ω load
	Audio A/B Input	20 Hz ... 20 kHz, -0.4 dB	@ -20 dBFS (+4 dBu), 150 Ω source
	Audio A/B Output	20 Hz ... 20 kHz, -0.3 dB	@ -20 dBFS, 600 Ω load
	Internal Speaker	140 Hz ... 16.6 kHz, -10 dB	
Distortion THD+N	Panel Mic	<0.03 %, 70 Hz ... 20 kHz	@ 25 μ A ($\pm$ 110dB SPL)
	Headset Mic A/B	<0.004 %, 20 Hz ... 20 kHz	@ -1 dBFS (-1 dBu), -12 dB internal gain
	Headset Phones	<0.10 %, 20 Hz ... 200 Hz	@ -1 dBFS, 150 Ω load
		<0.004 %, 200 Hz ... 20 kHz	
		<0.03 %, 20 Hz ... 200 Hz	@ -20 dBFS, 150 Ω load
		<0.004 %, 200 Hz ... 20 kHz	
	Audio A/B Input	<0.010 %, 20 Hz ... 20 kHz	@ -1 dBFS (+23 dBu), 150 Ω source
		<0.004 %, 20 Hz ... 20 kHz	@ -20 dBFS (+4 dBu), 150 Ω source
	Audio A/B Output	<0.004 %, 20 Hz ... 20 kHz	@ -1 dBFS, 600 Ω load
Sample Rate / Resolution	48 kHz / 24 Bit		

General

Power	supply voltage	100 - 240 VAC, 50 - 60 Hz	
	power consumption	≤15 W, ≤50 BTU/hr	
Dimensions	width	483 mm / 19" (445 mm / 17.5", installing dimensions)	
	height	44 mm / 1.7"	
	depth	138 mm / 5.4" (95 mm / 3.7", installing dimensions)	
	form factor	19", 1RU	
Weight	2.3 kg / 5.1 lbs		
Cooling	fan noise (speed temperature controlled)	<23 dB(A) idle, 26 dB(A) max. fan speed	@ 0.7m (low noise emission according GK10 / DIN 15996)
Environment	operating temperature	0° ... +45°C	
	storage temperature	-30° ... +80°C	
	humidity	20 % ... 90 % relative (non-condensing)	
	max. altitude	3000 m AMSL	

4 ESP-1216HL SmartPanel

When used in conjunction with an RSP-1232HL or RSP-1216HL SmartPanel, the ESP-1216HL expansion SmartPanel provides an additional 16 hybrid lever buttons with integrated knobs and two high-resolution multitouch color displays with excellent readability. The expansion SmartPanel is only supported in conjunction with an Artist-1024. Furthermore, only the Intercom app on the ESP-1216HL is supported. If another app is switched to on the connected main SmartPanel, the Intercom app can still be operated on the expansion SmartPanel.

Features

- 16 hybrid lever keys including rotary encoders
- 2 high-resolution, sunlight readable, multi-touch color displays
- Integrated power supply
- 2 Expansion connectors (for cascading up to 6 expansion panels)
- 1 SD card slot
- 1RU

4.1 Operating Elements



figure 33: front view (ESP-1216HL)

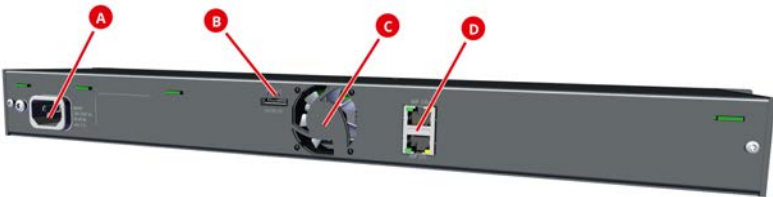


figure 34: rear view (ESP-1216HL)

1	Key Displays (multi-touch color)	2×
2	Hybrid Lever Keys with Rotary Encoders	16×
A	Mains Power Connector (mains input)	1×
B	Micro SD Card Slot	1×
C	Fan (temperature controlled)	1×
D	Expansion Connectors EXP I/O (RJ45)	2×

All Ports and Pinouts can be found in chapter [Ports / Pinouts](#).

4.2 Status LEDs



figure 35: front status LED positions (ESP-1216HL)

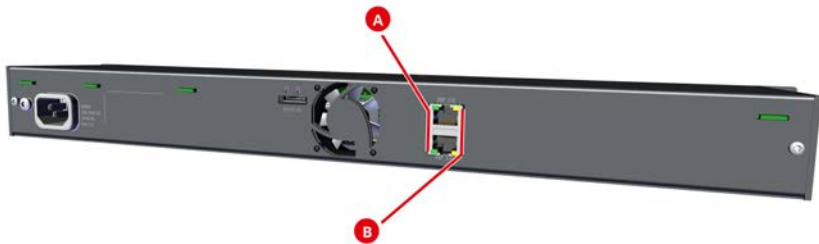


figure 36: rear status LED positions (ESP-1216HL)

The meaning of the Status LEDs in normal operation is listed in the following table:

1	LED Ring (top)	RGB	Depending on operation mode: • Group color • Signalization
2	LED Ring (bottom)		
A	Expansion I/O (left)	green	Link ok
		off	No link
B	Expansion I/O (right)	yellow	Activity
		off	No activity

4.3 Lever Key Numbering

The lever keys of the ESP-1216HL are numbered from left to right independently of the displays:



figure 37: Numbering of lever keys (ESP-1216HL)

4.4 Daisy Chaining

To connect an expansion SmartPanel, it must be connected to a main SmartPanel (RSP-1216HL or RSP-1232HL). To do this, connect the EXP connector of the main SmartPanel to the EXP connector of the expansion SmartPanel. Further expansion SmartPanels are connected in cascade accordingly. A total of up to 6 expansion SmartPanels can be cascaded. Shielded CAT5 patch cables must be used to connect the devices.



figure 38: ESP SmartPanel daisy chaining

4.5 Expansion Address

If the expansion SmartPanel is supplied with mains voltage for the first time or if there is no connection to the main SmartPanel, the expansion address can be set in the right display. Touch the up and down symbols or use the rightmost lever key to set the corresponding address. The connection is established after the input is confirmed by touching the green tick. After 10 seconds of inactivity, this selection screen is exited and the SmartPanel continues with the boot process.

To change the current set expansion address, the connection to the main SmartPanel must be disconnected.



figure 39: key display – ESP-1216HL (no connection)

4.6 Power-Up

Connect the ESP-1216HL to mains voltage and wait until the SmartPanel has booted up. Unless the SmartPanel is connected to a main SmartPanel, you will see the following contents in the key display:



figure 40: ESP-2324 (showing the idle screen)

Intercom	Status of the connection to the main SmartPanel.
Expansion Link	Status of the expansion interface connection.
Firmware	Displays the firmware version of the expansion SmartPanel.
Address	Displays the expansion address of the expansion SmartPanel.

4.7 Technical Specifications

ESP-1216HL

Front Elements

Keys	16× software-assignable hybrid lever keys
Displays	2× high-resolution, bright color, sunlight readable TFT displays with multi-touch control (capacitive)

Rear Elements

IEC	Power Input
MicroSD-card	1× MicroSD / MicroSDHC card up to 32 GB (for service purpose only)
RJ45	2× Expansion EXP I/O connector for expansion panels

General

Power	supply voltage	100 - 240 VAC, 50 - 60 Hz	
	power consumption	≤15 W, ≤50 BTU/hr	
Dimensions	width	483 mm / 19" (445 mm / 17.5", installing dimensions)	
	height	44 mm / 1.7"	
	depth	131 mm / 5.2" (102 mm / 4.0", installing dimensions)	
	form factor	19", 1RU	
Weight	2.1 kg / 4.6 lbs		
Cooling	fan noise (speed temperature controlled)	<23 dB(A) idle, 26 dB(A) max. fan speed	@ 0.7m (low noise emission according GK15 / DIN 15996)
Environment	operating temperature	0° ... +45°C	
	storage temperature	-30° ... +80°C	
	humidity	20 % ... 90 % relative (non-condensing)	
	max. altitude	3000 m absolute	

5 RSP-1232HL SmartPanel

The unique feature set of Riedel's RSP-1232HL SmartPanel includes 3 high-resolution, sunlight readable, multi-touch color displays and 32 hybrid lever keys including rotary encoders in 2RU.

Features

- 32 hybrid lever keys
- 3 high-resolution, sunlight-readable displays
- Integrated power supply
- 2 SFP slots
- 2 USB ports
- 2 Ethernet connectors
- 2 Matrix connectors (RJ45/BNC)
- 1 Expansion connector
- NFC/Bluetooth connectivity (future use)
- 1 Management connector
- 1 SD card slot
- 1 Displayport (future use)
- 3 GPI-In
- 3 GPI-Out
- 2 Analog audio
- 2 Headset connector (RJ45)
- removable gooseneck microphone
- internal microphone (future use)
- Light Sensor (future use)
- exchangeable Headset connector (Mono: XLR4M / Stereo: XLR7M)
- 2RU

5.1 Operating Elements



figure 41: RSP-1232HL (front view)

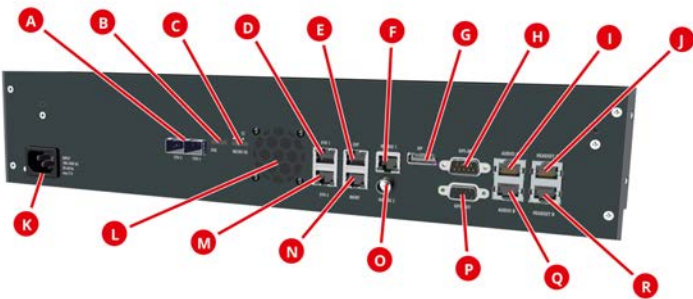


figure 42: RSP-1232HL (rear view)

1	Microphone Connector (6.3 mm jack)	1×
2	Key Displays (multi-touch color)	2×
3	Hybrid Lever Keys with Rotary Encoders	32×
4	Panel Microphone (future use)	1×
5	Light Sensor (future use)	1×
6	Rotary Encoder (big) with push functionality	1×
7 13	DSP-controlled Speaker (left + right))	2×
8 J R	Headset Connectors (front exchangeable: XLR / rear: RJ45)	1× / 2×
9	NFC / Bluetooth Connection (future use)	1× / 1×
10	Info Display (multi-touch color)	1×
11 B	USB Connectors (front: Type-A / rear: Type-C)	1× / 1×
12	Rotary Encoder (small) with push functionality	1×
A	SFP Slots ETH3/ETH4	2×
C	Micro SD Card Slot	1×
D M	Ethernet Connectors ETH1/ETH2 (RJ45)	2×
E	Expansion Connector EXP (RJ45)	1×
F O	Matrix Connectors (AES3, RJ45/BNC)	2×
G	Displayport DP (future use)	1×
H P	GPI Inputs / GPI Outputs (D-Sub-9, female/male)	3× / 3×
I Q	Analog Audio A/B Inputs / Outputs (RJ45)	2×
K	Mains Power Connector (mains input)	1×
L	Fan (temperature controlled)	1×
N	Management Connector MGNT (RJ45)	1×

All Ports and Pinouts can be found in chapter [Ports / Pinouts](#).

5.2 Status LEDs



figure 43: RSP-1232HL (front status LED positions)

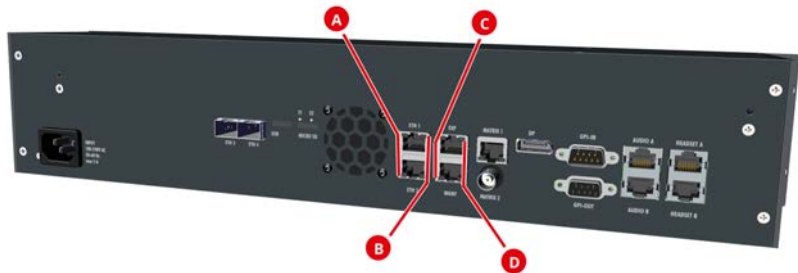


figure 44: RSP-1232HL (rear status LED positions)

The meaning of the Status LEDs in normal operation is listed in the following table:

1	Microphone Status LED	white	Panel microphone active, Headset deactivated
		off	Headset active, Panel microphone deactivated
2	LED Ring (top)	RGB	Depending on operation mode: • Group color • Signalization
4	LED Ring (bottom)		
3	Rotary Encoder (big)	red blinking	Speaker muted
		off	Speaker active
5	Rotary Encoder (small)	red blinking	Microphone muted
		off	Microphone open
A	Ethernet (left)	green	Link ok
		off	No link
B	Ethernet (right)	yellow	Activity
		off	No activity
C	Expansion / Management (left)	green	Link ok
		off	No link
D	Expansion / Management (right)	yellow	Activity
		off	No activity

5.3 Lever Key Numbering

The lever keys of the RSP-1232HL are numbered separately for each display from top left to bottom right:



figure 45: Numbering of lever keys

5.4 Power-Up

Connect the SmartPanel with the mains voltage and wait until it has booted.
If the SmartPanel is not connected to a matrix, you will see the following contents in all displays:

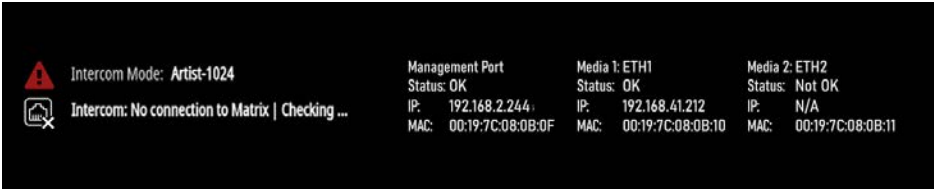


figure 46: key display – RSP-1232HL (no connection)

Intercom Mode	Shows the current selected intercom mode. (Artist-1024, Artist-32/64/128)
Intercom	Status of the connection to the matrix. (No conn. to Matrix, Checking ..., Connecting Audio ...)
Management Port	Media 1/2 Shows the Ethernet port that is assigned to the corresponding Media x interface.
Media 1	Status Status of the connection to the MGNT/Media x interface. (Not OK, OK)
Media 2	Config Displays the current IP configuration of the MGNT/Media x interface. (DHCP or the statically set IP address x.x.x.x)
	IP Displays the current IP address of the MGNT/Media x interface. (N/A, x.x.x.x)

As soon as the SmartPanel is connected to the matrix, the programmed key assignment is displayed.



figure 47: RSP-1232HL (connected with matrix)

- The name (**key label**) of the corresponding channel is displayed below/above each lever key.
- The subtitle (**16-char subtitle**) of the corresponding channel is displayed in the second line.

5.5 Volume

Main Volume / Muting

Turning the upper big rotary encoder adjusts the main volume of the SmartPanel.

This is visualized by a vertical bar on the right side in the info display.

If the headset mode is activated, the volume of the connected headset is set.

If the speaker mode is activated, the volume of the internal speaker is set.

The volumes for the speaker and for the headset can be set independently of each other.

Pressing the upper big rotary encoder causes the speaker to be switched off. This is indicated by a blinking LED in this rotary encoder.



figure 48: main volume (RSP-1232HL)

Port Volume / Muting

The individual port volume is adjusted via the integrated rotary encoders in the respective lever key. The volume is temporarily visualized by a horizontal bar in the respective key display. If the SmartPanel is operated on an Artist-1024, the volume can be visualized temporarily or permanently, depending on the setting in the Director. For more information, see the Director manual.

Pressing a rotary encoder mutes the respective port. Muting is also possible by turning down the volume completely. This is indicated by a mute symbol in the respective key display.

The volume setting is independent of the mute state and can be made while the key is muted.



figure 49: port volume (RSP-1232HL)

Sidetone Volume

The lower small rotary encoder is used to adjust the volume of the sidetone. The volume is temporarily visualized by a vertical bar on the left side in the info display. In addition, it is displayed for which headset (A, B, A/B) the volume is set. In the default setting, the sidetone volume for headset A and headset B is controlled together.



figure 50: sidetone volume (RSP-1232HL)

If the linked sidetone setting is switched off (⇒ [Settings Menu > Device Settings](#)), the sidetone volumes of headsets A & B can be set individually. A long press on the lower small rotary encoder switches between Sidetone A and Sidetone B control and is shown in the display accordingly.



figure 51: switch individual sidetone volume headset A & B (RSP-1232HL)

The Sidetone function is always active on 1200 SmartPanels and cannot be additionally configured in the Director.

Microphone Muting

A short press on the lower small rotary encoder switches the microphone off (mute). This is indicated by a blinking LED inside this rotary encoder.



figure 52: microphone muting (RSP-1232HL)

5.6 Info Display

The info display is located on the right side of the SmartPanel and offers the following range of functions:

- Switching of [Key Banks / Apps](#)
- Indication of active functions
- Switching between panel- and headset operation
- Open the [Settings Menu](#)

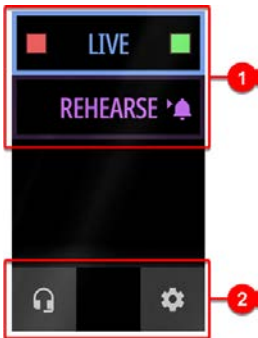


figure 53: Info Display (RSP-1232HL)

1

Indication and switching the active key bank

- The active key bank is represented by a brighter border. The inactive key bank is represented by a darker border.
- An inactive key bank is activated by a short touch.
- The touch duration can be adjusted in the Settings menu (⇒ [Device Settings](#)).
- The colors can be customized using the Director configuration software.

Various symbols signal events on the corresponding key bank

Beep		If at least one channel on the inactive key bank has an incoming beep, the Beep symbol is displayed.
Talk	This symbol depends of the operation mode:	
	Talk/Listen	 If at least one channel on the key bank has an active call, the Talk symbol is displayed.
	Talk/Mute	
Mute / Listen	This symbol depends of the operation mode:	
	Talk/Listen	 If at least one channel on the key bank listens to a remote station, the Listen symbol is displayed.
	Talk/Mute	 If at least one channel on the key bank is muted, the Mute symbol is displayed.

2

Speaker / Headset	The left symbol indicates the currently selected Speaker/Headset mode. Touch the symbol for a moment to switch between the two modes.	
	Speaker	 SmartPanel speaker and microphone are active.
	Headset	 The connected headset is active.

Gear		Touch the gear symbol for a moment to open the Settings Menu .
------	---	--

Incoming calls to keys that are located on an **inactive** key bank are indicated in the info display by a flashing key bank. The background of the corresponding key bank then remains bright as long as the call is active.

Navigation in the Settings Menu



- **Turning** the lower, small rotary encoder.
- **Wiping** the touch screen.

- Select the next / previous menu item
- Change values / settings



- **Pushing** the lower, small rotary encoder.
- **Tapping** the touchscreen.

- Enter selected menu item.
- During navigation, the current menu level is shown at the bottom center of the display.



BACK icon
in the info display

Back to parent menu item



ESC icon
in the info display

Cancel entry



OK icon
in the info display

Confirm entry



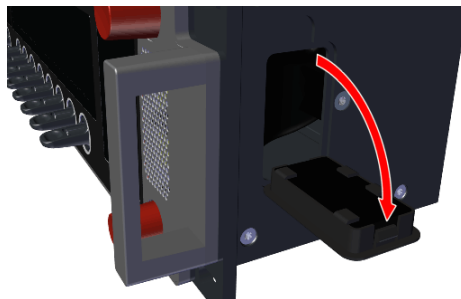
HOME icon
in the info display

leave menu / back to main view

5.7 Replacing the Air Filter

The air filters are located on both device sides.

- Use your fingers to pull out the grille including the air filter on the upper side.



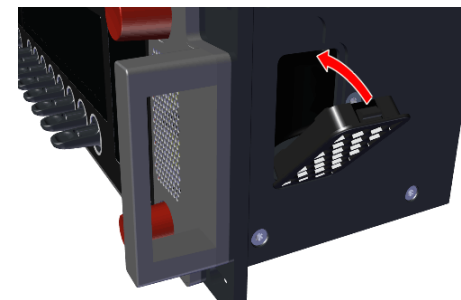
- Remove the air filter out of the grille.



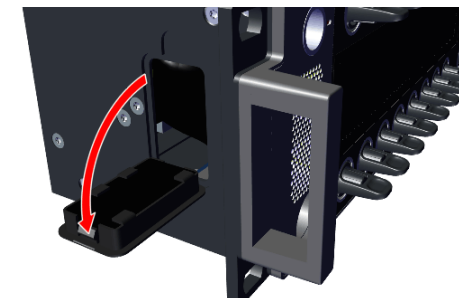
- Push the new/cleaned air filter in the grille.



- Insert the grille into the bottom of the SmartPanel first and then press it evenly.



- Repeat this step on the opposite side of the chassis.



5.8 Technical Specifications

RSP-1232HL

Front Elements

Keys	32× software-assignable hybrid lever keys
Rotaries	2× rotary encoders for data entry
Displays	3× high-resolution, bright color, sunlight readable TFT displays with multi-touch control (capacitive)
Mic	1× threaded 6.3 mm jack for microphone 1× internal panel microphone
Headset	User-exchangeable Headset connector with preinstalled 4-pin male XLR connector. (Mono: XLR4M / Stereo: XLR7M)
Speaker	2× full-range, high-quality speakers
USB	1× USB 2.0 (standard Type-A, max. 500 mA)
NFC	Technology RFID, Frequency 13.56 MHz (future use)
Bluetooth	Frequency DTS Band 2400 ... 2483.5 MHz (future use)
Light Sensor	Adaptation of the display brightness to the environment (future use)

Rear Elements

IEC	Power Input
SFP	2× Ethernet ETH 3 / ETH 4 (Ethernet, AES67)
USB	1× USB 2.0 (standard Type-C, max. 500 mA)
MicroSD-card	1× MicroSD / MicroSDHC card up to 32 GB (for service purpose only)
RJ45	2× Ethernet ETH 1 / ETH 2 (10/100/1000BASE-T Ethernet, AES67)
	1× Expansion EXP connector for expansion panels
	1× Management MGNT connector for panel configuration (separation of audio and management network)
	1× Matrix connector for matrix connection (AES3)
	2× Analog audio 4-wire inputs and outputs
	2× Headset ("Headset A" is identical to front connector signal)
BNC	1× Matrix connector for matrix connection (AES3)
DisplayPort	1× DisplayPort connector
Sub-D9 (male)	3× GPI output (max. 48 V / 300 mA, protected by self-healing fuse)
Sub-D9 (female)	3× GPI input (+5 V ... +48 V)

Audio

Maximum Level	Audio A/B Output	+24 dBu	@ 0 dBFS, 2 kΩ load
		+23 dBu	@ 0 dBFS, 600 Ω load
	Audio A/B Input	+24 dBu	± 0 dBFS
	Headset Phones	+20.5 dBu	@ 0 dBFS, 150 Ω load
	Headset Microphone	+6 dBu	± -6 dBFS
	Max SPL Internal Speaker	110 dB	@ 1 m
Frequency Response	Panel/Internal Mic (electret)	70 Hz ... 20 kHz, -3 dB (70 Hz high-pass filter)	@ 25 µA (± 110 dB SPL)
	Headset Mic A/B	20 Hz ... 20 kHz, -0.1 dB	@ -20 dBFS (-20 dBu), -12 dB internal gain
	Headset Phones	20 Hz ... 20 kHz, -0.4 dB	@ -20 dBFS, 150 Ω load
	Audio A/B Input	20 Hz ... 20 kHz, -0.4 dB	@ -20 dBFS (+4 dBu), 150 Ω source
	Audio A/B Output	20 Hz ... 20 kHz, -0.3 dB	@ -20 dBFS, 600 Ω load
	Internal Speaker	120 Hz ... 16.6 kHz, -10 dB	
Distortion THD+N	Panel Mic	<0.03 %, 70 Hz ... 20 kHz	@ 25 µA (± 110dB SPL)
	Headset Mic A/B	<0.004 %, 20 Hz ... 20 kHz	@ -1 dBFS (-1 dBu), -12 dB internal gain
	Headset Phones	<0.10 %, 20 Hz ... 200 Hz	@ -1 dBFS, 150 Ω load
		<0.004 %, 200 Hz ... 20 kHz	
		<0.03 %, 20 Hz ... 200 Hz	@ -20 dBFS, 150 Ω load
		<0.004 %, 200 Hz ... 20 kHz	
	Audio A/B Input	<0.010 %, 20 Hz ... 20 kHz	@ -1 dBFS (+23 dBu), 150 Ω source
		<0.004 %, 20 Hz ... 20 kHz	@ -20 dBFS (+4 dBu), 150 Ω source
	Audio A/B Output	<0.004 %, 20 Hz ... 20 kHz	@ -1 dBFS, 600 Ω load
Sample Rate / Resolution	48 kHz / 24 Bit		

General

Power	supply voltage	100 - 240 VAC, 50 - 60 Hz	
	power consumption	≤20 W, ≤70 BTU/hr	
Dimensions	width	483 mm / 19" (445 mm / 17.5", installing dimensions)	
	height	88 mm / 3.5"	
	depth	138 mm / 5.4" (95 mm / 3.7", installing dimensions)	
	form factor	19", 2 RU	
Weight	3.4 kg / 7.4 lbs		
Cooling	fan noise (speed temperature controlled)	<23 dB(A) idle, 34 dB(A) max. fan speed	@ 0.7m (low noise emission according GK15 / DIN 15996)
Environment	operating temperature	0° ... +45°C	
	storage temperature	-30° ... +80°C	
	humidity	20 % ... 90 % relative (non-condensing)	
	max. altitude	3000 m AMSL	

6 Settings Menu

Basic information and settings of the SmartPanel can be displayed and modified in the **Settings Menu**.

➤ Touch the  gear icon on the info display for a moment to open the **Settings Menu**.

Settings Menu	Features
Device Settings	Brightness and sidetone settings
Network	Network settings
Applications	Selection of the interface through which an application is connected. (Web Interface, Audio Monitoring App, Control Panel App)
Transport	Selection of the transport mode (Artist-32/64/128 or Artist-1024)
Matrix ^{*1}	Show Matrix information
Licensing	Installation and display of licenses
Service	Show device information, firmware update, reboot SmartPanel ...

^{*1} only available in **Intercom Mode** Artist-32/64/128

6.1 Device Settings

In the **Device Settings** menu, brightness and sidetone settings can be made.

Settings Menu	Features
Brightness	Separate adjustment of the brightness of displays and LEDs. (between 10% ... 100%, in 10% steps)
	LED Brightness: Adjusting the brightness of the key rings.
	Display Brightness: Adjusting the brightness of the displays.
Sidetone	The sidetone volumes of headsets A & B can be set individually when the SmartPanel is connected to an Artist-1024. Thus, a second SmartPanel user can now adjust the sidetone volume of his headset B independently of the sidetone volume of the headset A. By default, the sidetone volume of headsets A & B is linked and adjusted together.
	Link Sidetone A & B: <u>(ON, OFF)</u> ON: The sidetone volume of Headset-A and Headset-B are linked and are set together. OFF: The sidetone volume of Headset-A and Headset-B can be set independently. If the option is set back from OFF to ON, the volume of sidetone B will be adjusted to the current volume of sidetone A.
	Sidetone Limiter: ^{*1} <u>(OFF, ON)</u> When the sidetone is set to a high level, the audio signal from the headphones may feed back to the headset microphone. The common sidetone limiter prevents sidetone settings above a certain level and thus avoids unwanted feedback for headset A & B. The sidetone level correlates directly with the main volume setting, i.e. the sidetone is automatically reduced when the main volume is increased.
	Sidetone Limiter A/B: ^{*2} <u>(OFF, ON)</u> Individual setting of the sidetone limiter of the corresponding headset A or B.
Keybanks	The response time for changing the keybanks (Tap Timeout) can be adjusted user-specifically. (<u>100</u> ... 1000ms, in 100 ms- steps)

^{*1} only if **Link Sidetone A & B** is *activated* (ON)

^{*2} only if **Link Sidetone A & B** is *deactivated* (OFF)

6.2 Network

In the **Network** menu, the Ethernet connections of the SmartPanel (**ETH 1...4**) can be activated and the respective network settings edited. Furthermore, the Ethernet connections are assigned to the interfaces (**MEDIA 1/2** and **MGNT** management).

Settings Menu	Features														
Status	Display of status information of the three network interfaces Media 1 , Media 2 and MGNT . - It is displayed if the interface is deactivated. (Disabled) - An activated interface shows the current IP address and the gateway. - It is displayed whether the interface has an Ethernet connection. (Link: up/down)														
MEDIA 1 / MEDIA 2	Definition, which audio interface (MEDIA 1/2) shall be transported via which Ethernet port (ETH 1...4). Two separate Media networks can be enabled to support 'Seamless Protection Switching' according to SMPTE 2022-7. An intercom audio stream is duplicated and transported over different paths between the SmartPanel and the Artist-1024. The two streams are combined within the receiver and reconstructed to the original stream, e.g.: - If packet A is lost in path MEDIA 1, packet A is taken from path MEDIA 2. - If path MEDIA 1 fails completely, the entire data stream is taken over by path MEDIA 2 Any combination of the SFP ports (ETH 3/4) and/or RJ45 ports (ETH 1/2) can be configured for 2022-7 redundancy. Thus, it is possible to create a redundancy scheme in a mixed fiber and copper network. If both MEDIA interfaced are used, it must be ensured that different subnets are configured for Media 1 and Media 2, otherwise routing problems may occur. <table> <tr> <td>Media Port</td><td>Activation by selecting the Ethernet port to be assigned to the corresponding Media x interface. (ETH 1 ... ETH 4, Disabled)</td></tr> <tr> <td>Config Mode</td><td>Configuration mode of the Media x interfaces. (DHCP, Static) (Changes take effect immediately without the device having to be rebooted. Manual entries are saved when 'DHCP' is selected and called up again when you return to 'Static'.)</td></tr> <tr> <td>IP Address</td><td>Static IP-address of the Media x port.</td></tr> <tr> <td>Subnet Mask</td><td>Network mask of the Media x port.</td></tr> <tr> <td>Gateway</td><td>Gateway of the Media x port.</td></tr> <tr> <td>Speed</td><td>Selection of the Media x port speed. (Auto, 1G Full-Duplex)</td></tr> <tr> <td>DNS 1 / DNS 2</td><td>Configuration of two static IP addresses of NMOS registration servers for automatic registration of NMOS transmitters and receivers.</td></tr> </table>	Media Port	Activation by selecting the Ethernet port to be assigned to the corresponding Media x interface. (ETH 1 ... ETH 4 , Disabled)	Config Mode	Configuration mode of the Media x interfaces. (DHCP , Static) (Changes take effect immediately without the device having to be rebooted. Manual entries are saved when 'DHCP' is selected and called up again when you return to 'Static'.)	IP Address	Static IP-address of the Media x port.	Subnet Mask	Network mask of the Media x port.	Gateway	Gateway of the Media x port.	Speed	Selection of the Media x port speed. (Auto , 1G Full-Duplex)	DNS 1 / DNS 2	Configuration of two static IP addresses of NMOS registration servers for automatic registration of NMOS transmitters and receivers.
Media Port	Activation by selecting the Ethernet port to be assigned to the corresponding Media x interface. (ETH 1 ... ETH 4 , Disabled)														
Config Mode	Configuration mode of the Media x interfaces. (DHCP , Static) (Changes take effect immediately without the device having to be rebooted. Manual entries are saved when 'DHCP' is selected and called up again when you return to 'Static'.)														
IP Address	Static IP-address of the Media x port.														
Subnet Mask	Network mask of the Media x port.														
Gateway	Gateway of the Media x port.														
Speed	Selection of the Media x port speed. (Auto , 1G Full-Duplex)														
DNS 1 / DNS 2	Configuration of two static IP addresses of NMOS registration servers for automatic registration of NMOS transmitters and receivers.														

Settings Menu	Features	
MGNT	Activation and configuration of the management port (RJ45) of the SmartPanel. This port is used exclusively for configuring the SmartPanel and enables a separation between the audio and the configuration network. If this port is activated and the web interface of the SmartPanel is to be accessible via the MGNT port, this must also be selected in the Applications > Web Interface menu.	
	Port	Enable / disable the MGNT port. (Disabled , Enabled)
	Config Mode	Configuration mode of the Media x interface. (DHCP , Static) (Changes take effect immediately without the device having to be rebooted. Manual entries are saved when 'DHCP' is selected and called up again when you return to 'Static'.)
	 DHCP is only allowed if the SmartPanel is operated on an Artist with the firmware version 8.6 (or higher).	
	IP Address	Static IP-address of the MGNT port.
	Subnet Mask	Network mask of the MGNT port.
	Gateway	Gateway of the MGNT port.
	DNS 1 / DNS 2	Configuration of two static IP addresses of NMOS registration servers for automatic registration of NMOS transmitters and receivers.

6.3 Applications

In the **Applications** menu, the interfaces can be defined through which the respective application are connected to the network.

	The network settings of the interfaces are set in the Settings menu Network .
---	---

Settings Menu	Features
WebUI	Selection of the interface (<i>MEDIA 1</i> , MEDIA 2, Media 1 & 2, MGNT) through which the SmartPanel web interface can be accessed. The Audio Monitoring app is also connected via this interface.
NMOS Interface	Selection of the interface (<i>MEDIA 1</i> , MEDIA 2, MGNT) to which all NMOS applications of the SmartPanel connect, e.g. the Control Panel App.

6.4 Transport

In the **Transport** menu, you can select whether the SmartPanel should connect to an Artist-32/64/128 or Artist-1024.

	Changing the intercom mode will cause the SmartPanel to restart.
---	--

Settings Menu	Features
Intercom Mode	Selection of the Artist matrix type to which the SmartPanel is to connect. (<i>Artist-32/64/128</i> , <i>Artist-1024</i>)
Transport Mode ^{*1}	Selection of the protocol to be used for connection to the Artist matrix. (<i>AES67</i> , AES3 Cat, AES3 Coax)
TCP Port	Selection of the TCP port to be used for connection to the Artist matrix. (Artist-32/64/128: <i>5060</i> , Artist-1024: <i>6060</i>)

^{*1} only available in **Intercom Mode** Artist-32/64/128

6.5 Matrix

The menu **Matrix** shows information about the connected Matrix.

Content is only available if the SmartPanel is connected with a Matrix.

The contents are displayed in different positions depending on the SmartPanel type.

The Matrix menu is only available in **Intercom Mode** Artist-32/64/128.

RSP-1216HL		RSP-1232HL		Display	Features
Display 1	Key 1	Display 1	Key 1	Net	Net number of the connected matrix.
	Key 2		Key 2	Node	Node number of the connected matrix.
	Key 3		Key 3	Bay	Bay number of the connected matrix.
	Key 4		Key 4	Port	Port number of the connected matrix.
	Key 5		Key 5	Room	Shows the Room code (if applied).
	Key 6		Key 6	Name	Name of the SmartPanel.
	Key 7		Key 7	Firmware-Version	Current version of the firmware of the connected matrix.
	–		Key 8	Bootloader-Version	Current version of the Bootloader of the connected matrix.
	–		Key 9	Emergency-Version	Current version of the Emergency-firmware of the connected matrix.
	Key 8		Key 10	CurAPI	Shows the active audio patch.
Display 2	Key 1	Display 2	Key 11	PAN	Number of the panel in the Artist.
	Key 2		Key 12	Alarm	Number of alarms in the connected matrix.
	Key 3, 4, 5		Key 1, 2, 3	Node IP	IP-address of the connected matrix.
	Key 6		Key 4	OnCall	Number of incoming calls to the SmartPanel that are active when the matrix menu is open.
	Key 7		Key 5	Datum	Shows the current date of the connected matrix.
	Key 8		Key 6	Uhrzeit	Shows the current time of the connected matrix..
	–		Key 7	MIC conf	The microphone setting of the panel can be changed between dynamic and electret by using the lever key 29.
	–		Key 8	HS conf	The microphone setting of the headset can be changed between dynamic and electret by using the lever key 31.

6.6 Licensing

In the **Licensing** menu you can retrieve license information and install licenses.

Settings Menu	Features
Add License ...	Installing a license on the SmartPanel. See also chapter ' Licensing '.
Licenses	Listing of all already installed licenses.

6.7 Service

Settings Menu	Features	
Device-Info	Longname: * ¹	Displays the name of the SmartPanel defined as 'Long Name' in the Director configuration.
	Date:	Displays the system date of the matrix.
	FW Version:	Displays the firmware version currently in operation.
	SN#:	Displays the serial number of the SmartPanel.
Firmware Update	Install New Firmware ...	Installs a new firmware from a USB stick that has to be plugged into the USB port on the front. When the USB stick is plugged in, it is scanned for compatible firmware files. It does not matter in which (sub-)folder the firmware file is located. You can select which firmware is to be loaded onto the SmartPanel. See also chapter " Firmware-Update ".
	Current:	Shows the current firmware version.
Log Files	Stores the internal log file onto an USB stick. This data is used by the Riedel service for analysis and troubleshooting.	
	Save to USB	Saves the log file "report *.tgz" to a previously inserted USB stick. The file is saved in the folder "\Riedel\reports".
Device Status	Displays current error messages of the SmartPanel.	
Reboot Panel	Cancel	Exits the menu item and jumps back one level.
	Reboot Panel now	Restarts the SmartPanels.
Demos * ²	Talk / Listen 1	A SmartPanel, which is not connected to a matrix, can be set to different operating modes for simulation. New users can familiarise themselves with the functions of the levers/push buttons and the respective LED/display information.
	Talk / Listen 2	
	Talk / Mute	The demo mode is automatically exited if the SmartPanel is connected to a matrix.
Production Tests * ²	Test suite 1	This function is intended for service purposes.
	Without latching	

*¹ only available in **Intercom Mode Artist-1024**

*² The menu items **Demo** and **Production Test** are only available in **Intercom Mode Artist-32/64/128** and when the SmartPanel is not connected to any matrix.

7 Web Interface

The SmartPanel features a web interface for configuration purpose.
Enter the IP address of the **Web Interface** of the SmartPanel in the web browser of a PC on the same network.

To determine the IP address of the web interface, the interface of the SmartPanel (**MEDIA 1/2, MGNT**) via which the web interface can be reached must first be determined in [Settings Menu > Applications > Web Interface](#). After that, the IP address of this interface can be retrieved in [Settings Menu > Network](#).

A screen resolution of at least 1280x760 pixels is required to display the web interface.

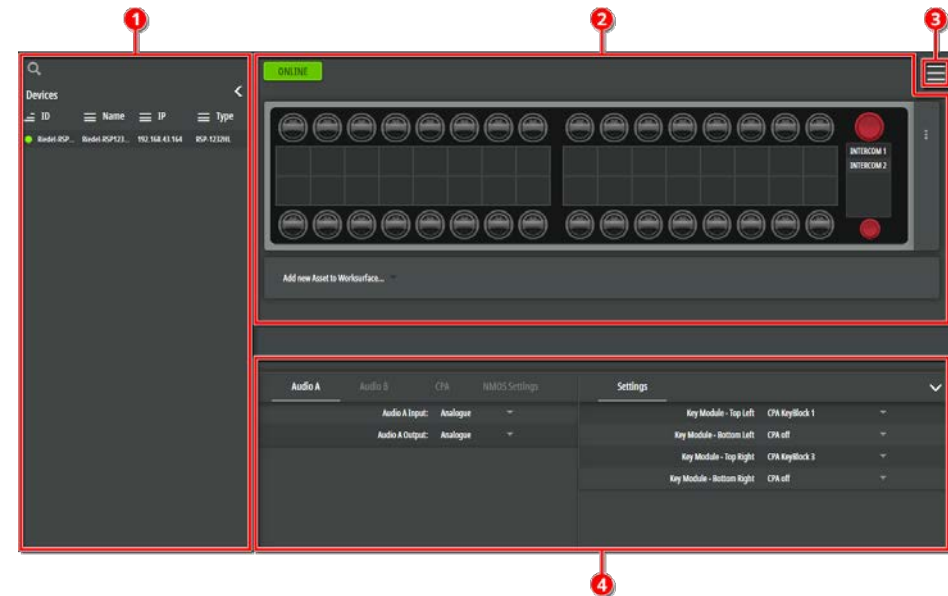


figure 54: SmartPanel – web interface

- 1

Asset Drawer

The SmartPanel which IP address was called up in the web browser is displayed here.
(Further functions may be available in this section in the future.)
- 2

Work Surface (future use)

Displays the user defined keys of the selected SmartPanel.
- 3

Main Menu

[Firmware Update](#) Opens the firmware manager.
- 4

Parameter Drawer

Here the apps and their settings are made.

7.1 Asset Drawer

The **asset drawer** shows the SmartPanel which IP address was called up in the web browser.
(Further functions may be available in this section in the future.)

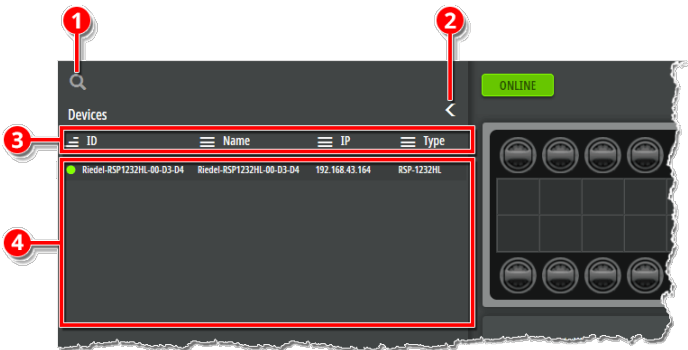


figure 55: Asset Drawer

- 1

Enter a text in this search field to filter the displayed elements. The filtering starts while filling this field; it is not necessary to press the enter key to start filtering.
(For future use.)
- 2

Buttons to show/hide the asset drawer.
- 3

Clicking a column header will sort the elements in the respective column.
In total following columns are available:

ID	Object name within the network.
Name	Panel name within the network.
IP	IP address of the SmartPanel.
Type	Type of the SmartPanel (e.g. RSP-1232HL or RSP-2318)
- 4

List of all SmartPanels that correspond to the filter criteria. (For future use.)

Individualization the Asset Drawer

The following adjustments can be made to change the size and contents of the asset drawer.

Adjusting the width of the Asset Drawer

- Move the mouse to the right edge of the asset drawer.
- Hold down the mouse button and drag the changed cursor to the left / right.



Adjusting the column width

- Move the mouse between two columns.
- Hold down the mouse button and drag the changed cursor to the left / right.



Changing the Order / Hiding Columns

- In the column header, right-click the gear (⚙️) that appears when the mouse is over the column header.
- In the dialog that opens, select the element whose properties you want to adjust by clicking on it.



1. The order of the columns can be changed by clicking the vertical arrows.
 2. Columns can be shown/hidden by clicking the horizontal arrows.
- Finally, confirm your change by clicking the OK button.



7.2 Work Surface

The **work surface** the user-defined key assignments of the SmartPanel are displayed and configured. A SmartPanel can be opened in the Work Surface by double-clicking it in the [Asset Drawer](#).

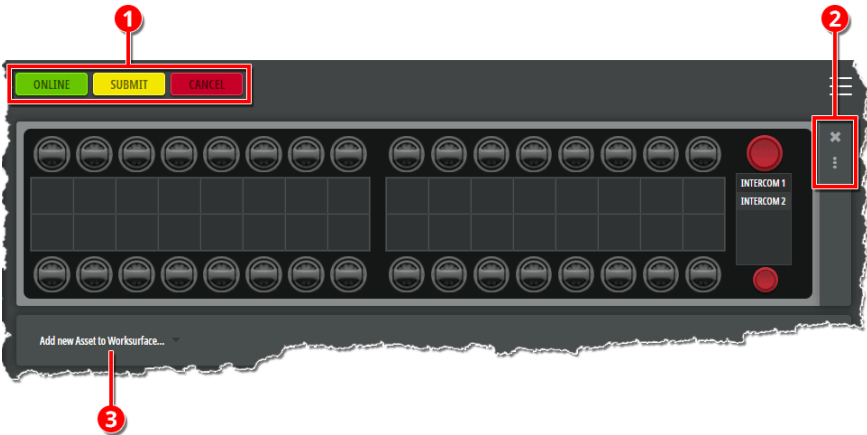


figure 56: Work Surface

1	ONLINE indicates an active Ethernet connection to the SmartPanel.	ONLINE
	OFFLINE indicates an interrupted Ethernet connection to the SmartPanel.	OFFLINE
	Changes in the web interface are not automatically transferred to the connected SmartPanel. Clicking this button will submit all changes done in the web interface.	SUBMIT
	Clicking this button will <i>discard all</i> changes done in the web interface. To undo individual changes, click the icon (🔄) at the point where the changes were made.	CANCEL
2	Symbol to close the preview of the respective element.	✕
	Using Drag & Drop, the corresponding element can be moved vertically on the worksurface and arranged in a new position.	⋮
3	Drop-down selection to add further SmartPanels to the work surface.	Add new Asset to Worksurface...

7.3 Main Menu

At the top right is the main menu, where the firmware of the panel can be updated.



figure 57: Main Menu

7.3.1 Firmware Manager



figure 58: SmartPanel web interface

- 1 Asset List**
The asset list displays all 1200 and 2300 series SmartPanels found on the network.
The view can be grouped with the arrow icons.
- 2 Firmware Update Buttons**
Buttons to update the firmware. A maximum of ten SmartPanels can be updated in parallel.

SELECT FW	Opens a dialog to select the firmware file (.cfw).
INSTALL	Installs the selected firmware on a SmartPanel.
REBOOT	Restarts a SmartPanel.
- 3 Auto Reboot**
If the switch is enabled, the SmartPanel is automatically restarted after the update.
If the switch is disabled, the user must restart the SmartPanel after the update manually by using the REBOOT button to complete the firmware update.
- 4 Sync Device Group**
If the switch is enabled, the firmware of all found SmartPanels is updated.
If the switch is disabled, the firmware can be updated individually on SmartPanels.

7.4 Parameter Drawer

In the **parameter drawer** the apps and their settings are made.

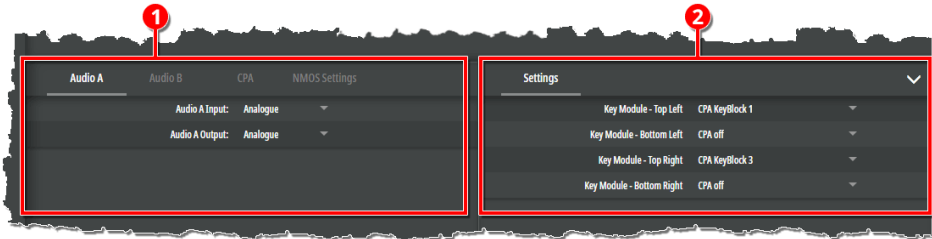


figure 59: Parameter Drawer

- 1** On the left side, there are various tabs where the apps and their associated settings appear.
- 2** On the right side there are more configurations.

7.4.1 Audio A/B

The **Audio A/B** tab of the Parameter Drawer defines whether the A/B audio input/output path uses the analog connector on the rear side of the SmartPanel or a digital AES67 4-wire.

Audio A/B

The **Audio A** and **Audio B** tabs are used to configure the input and output of the audio patch.



figure 60: Audio A/B (Parameter Drawer)

Audio A/B Input	The input of the audio patch Audio A/B can be defined via the list selection.	
	Analogue	Defines the analog 'Audio A/B' connector as input of the audio patch.
	AES67 *1	Defines a digital AES67 4-wire as input of the audio patch. The input stream is configured in the Stream Setup .
Audio A/B Output	The output of the audio patch Audio A/B can be defined via the list selection.	
	Analogue	Defines the analog 'Audio A/B' connector as output of the audio patch.
	AES67 *1	Defines a digital AES67 4-wire as output of the audio patch. The output stream is configured in the Stream Setup .

*1 requires an AES67 4-Wire license

Stream Setup

The digital AES67 4 wires are configured in the stream setup. Different parameters are available depending on whether an input or output is configured.

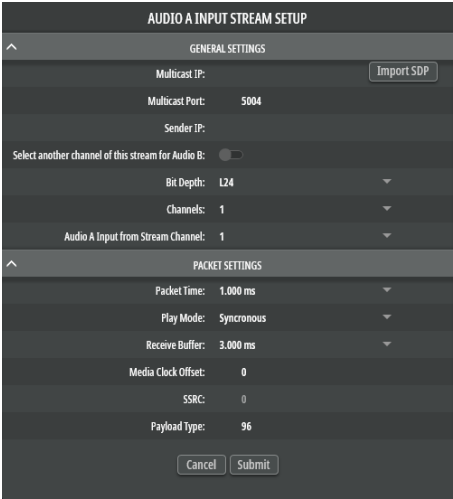


figure 61: Input Stream (Stream Setup)



figure 62: Output Stream (Stream Setup)

General Settings	
Multicast IP	Field to enter the Multicast address of the RTP sender (224.0.0.0 ... 239.255.255.254) Inputs: The Import SDP button allows loading the settings from a SDP file. Outputs: The Export SDP button allows saving the settings to a SDP file.
Multicast Port	Field to enter the Multicast port of the RTP sender (0 ... 5004 ... 65535)
Sender IP *1	Field to enter the IP address of the sender in case of IGMPv3.
Select another channel of this stream for Audio B *2	If this function is activated, a second audio channel can be selected in this window, which is routed to/from the audio patch 'Audio B'.
Bit Depth	Selection of the Bit resolution. (L16, L24)
Channels	Amount of used audio channels in the AES67 stream. (1 ... 64)
Audio Input from Stream Channel	Selection of the audio channel to be received/transmitted in this port.

*1 'Inputs' only
*2 'Audio A' only

Packet Settings

Packet Time	Packet time is the real-time duration of media data in a packet. Samples per packet are calculated from packet time and sampling rate. Short packet time allows for lower latency, but requires more bandwidth due to overhead. Implemented for interoperability reasons. Depending of selected amount of audio channels and the bit depth, shorter packet times are available. (0.125, 0.250, 0.333, 1.000 or 1.333 ms)
Play Mode ^{*3}	Selection between Synton and Synchron. In Synchron mode audio packets will be discarded if the PTP timestamp is missing or invalid. Hence only audio signals are output if they are transmitted in a PTP synchronized network. In Synton mode audio packets without or with invalid PTP timestamps are processed and output, hence this mode can be used in networks without PTP synchronization.
Receive Buffer ^{*3}	Selection of the size of the AES67 receive buffer to adapt the expected delay of connected panels. The default buffer is 3 × Packet Time. The longer the selected packet time, the shorter is the available receive buffer. (0.375 ... 99 ms)
Media Clock Offset	Selection of the Time Stamp Offset. (0...32)
SSRC	Selection of the synchronization source. (0...32)
Payload Type	Selection of the Payload type. (96...127)

^{*3} 'Audio A' only

7.4.2 Control Panel App

In the CPA tab of the Parameter Drawer, the Control Panel app can be enabled/disabled.

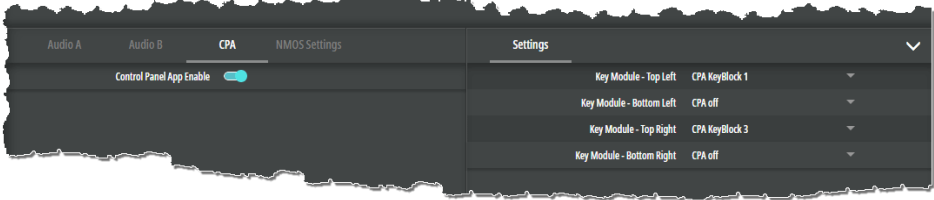


figure 63: CPA (Parameter Drawer)

CPA

Control Panel App Enable	This switch is used to enable/disable the Control Panel app. When the app is activated, the settings are displayed on the right side. Furthermore, an additional Key Bank is available for selection in the Info Display of the SmartPanel. The Control Panel app can be used on this Key Bank while other apps (e.g. Intercom) remain in operation at the same time.
--------------------------	---

Settings

Key Module - Top Left	In the dropdown list, the desired keyblock can be assigned or the assignment can be switched off (CPA keyblock 1...4, CPA off).
Key Module - Bottom Left	The assignment of the CPA keyblocks is independent of the NMOS configuration and can be adjusted at any time without having to change the NMOS configuration (transmitter/receiver).
Key Module - Top Right	
Key Module - Bottom Right	

See also chapter [SmartPanel Apps/Licenses > Control Panel App](#).

7.4.3 NMOS Settings

In the **NMOS Settings** tab of the Parameter Drawer, NMOS settings can be made.

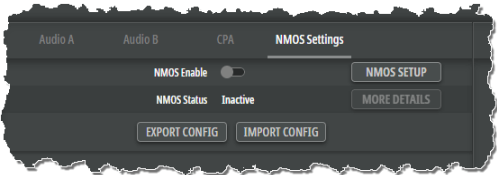


figure 64: NMOS Settings (Parameter Drawer)

NMOS Enable	This switch is used to enable/disable the NMOS service of the SmartPanel. The NMOS SETUP button can be used to open the NMOS settings window.
NMOS Status	This field displays the current NMOS status (inactive , activated (P2P) , activated (registered)). The MORE DETAILS button can be used to open a window with further status information.
EXPORT CONFIG	The EXPORT CONFIG button allows saving the settings to a JSON file.
IMPORT CONFIG *1	The IMPORT CONFIG button allows loading the settings from a JSON file.

*1 if NMOS inactive

NMOS Setup

In the NMOS setup the NMOS configuration takes place.

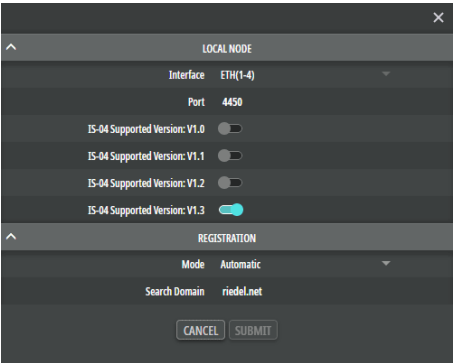


figure 65: NMOS Setup (NMOS Settings)

Interface	Display/selection of the Ethernet interface.
Port	Input of the Ethernet port.
IS-04 Supported Version: V1.1	Switch for activating the IS-04 versions to be supported.
IS-04 Supported Version: V1.2	
IS-04 Supported Version: V1.3	

Registration	
Mode	Selection between 'Automatic', 'P2P' and 'Manual'. Automatic: NMOS use IS04 to discover NMOS registry in subnet. If there's NMOS registry, this node directly connect to it. If not, it switch to P2P mode. P2P: NMOS node directly search for other node via mDNS instead of relying on NMOS registry. Manual: NMOS attempt to connect to NMOS registry specified in following entries (IP Address, Port, NMOS Version).
Search Domain *2	Field for entering the domain.
IP Address *3	Field for entering the IP address.
Port *3	Field for entering the port. (≥1)
NMOS Version *3	Field to select the NMOS version. (v1.0, v1.1, v1.2, <u>v1.3</u>)

*2 if Mode = Automatic

*3 if Mode = Manual

8 SmartPanel Apps/Licenses

The firmware version **2.0** of the SmartPanel contains following apps:

App name	License name	Version	Description
Intercom app	INT_1200_PRO	1.0	PRO version of the Intercom Application for the RSP-1232HL / RSP-1216HL SmartPanels; turns the RSP-1232HL / RSP-1216 HL User Interfaces into Intercom Panels; supports 32 (resp. 16) keys; 2 SFP and 2 ETH (RJ45) AES67 Matrix Link ports; 2 analog 4-wire connections (RJ45); 3 GPI-In, 3 GPI-Out; 2 headset connectors (XLR/RJ45); 2 Matrix connectors (RJ45/BNC); 2 USB ports
AES3 app	INT_1200_AES3	1.0	License to enable AES3 Intercom Matrix connectivity on RSP-1232HL / RSP-1216HL SmartPanels
AES67 4-wire app	INT_1200_AES67_4W	1.0	Allows 1200 series SmartPanels to be connected to up to 2 SMPTE 2110-30 (AES67) channels on the audio network (without occupying ports on the Artist matrix) instead of the analog audio inputs (Audio A/B).
Control Panel app	CPA_1200_PLUS	1.0	PLUS license of the Control Panel Application (Version 1.0) for 1200 Series SmartPanels. Enables exchange of control data and status information via NMOS. Supports NMOS IS-04, IS-05 and IS-07. Allows sending control commands of Hybrid Lever keys and their rotary encoders. Allows receiving control commands for LED rings and displays (text, icons, color) via NMOS.
Audio Monitoring App	AMA_1200_PLUS	1.0	The Audio Monitoring app enables intercom and IP-based audio monitoring via the internal speaker or via a stereo headset.

The installation of licenses is described in chapter '[License Installation](#)'.



In the following chapters, functions are illustrated using an RSP-1216HL or RSP-1232HL. The operation is generally identical for all SmartPanel types, but the arrangement of the key labeling and the Info Display may differ. Deviating operation is explained at the appropriate points.

8.1 Intercom App

The Intercom app turns the SmartPanels in innovated and intelligent intercom panels.

Features	RSP-1216HL	RSP-1232HL	ESP-1216HL
Hybrid lever keys	16	32	16
2x SFP- and 2x Ethernet connectors (RJ45)	✓	✓	✗
2x analog 4-wire connectors (RJ45)	✓	✓	✗
3x GPI-In and 3x GPI-Out	✓	✓	✗
2x Headset connectors (XLR/RJ45)	✓	✓	✗
2x Matrix connectors (RJ45/BNC) for Artist-32/64/128 connections	✓	✓	✗
2x USB ports	✓	✓	✗
1x MicroSD card slot	✓	✓	✓
Expansion connector for cascading of up to 6 expansion SmartPanels	1	1	2

8.1.1 Operation

This chapter describes the general operation of the Intercom app on the SmartPanel:

Lever-Key Functions

Push the lever key up or down to trigger the function. An activated function is indicated either by the lever keys' LED ring or in the corresponding key display.

The lever up key function is only latching.

The lever down key function depends on the configuration in Director: momentary, latching or automatic (short press = latched / long press = momentary).



figure 66: Lever Key Functions

Key Display Functions (Secondary Function Drawer)

Touching the display of a key for half a second opens a Secondary Function Drawer. The dialog will disappear after 3 seconds of inactivity. Depending on whether the SmartPanel is connected to an Artist-32/64/128 or Artist-1024, different secondary functions are available.

When connected to an Artist-1024, only relevant secondary functions related to the respective key function are offered (e.g. only unconfigured keys offer the 'Copy Reply' function).



figure 67: Key Display Functions (Secondary Function Drawer)

In total, the following secondary functions are available:

Symbol	Artist		Feature
	32/64/128	1024	
	✓	✓	Sends a beep to the remote panel as long as the symbol is touched.
	✓	✓	Activates/deactivates the listening function of the outgoing audio (Talk) on the remote panel (monitor remote panel). In Talk/Listen mode, this function corresponds to the lever key movement upwards. In Talk/Mute mode the activated monitoring function is indicated by an ear icon in the upper right area.
	✓	✓	Sets the volume of the corresponding channel to normal level or switches off the muting.
	✓	✓	Configures the copy-reply function to an empty key (without configuration).
	✗	✓	Monitor Off / Autolisten Off Switches the listening function off again.
	✗	✓	Removes the Copy-Reply function.
	✗	✓	- Opens the Telephone Dial keypad. - Once the connection has been established, the dial keypad can be called up again to dial DTMF tones. The DTMF tone is sent directly as soon as a number is pressed.
	✗	✓	Opens the Scroll-List or the reply stack.
	✗	✓	Opens the phone book, which can be used to conveniently establish connections to VoIP devices. The creation and the management of phone books is done in the Director. ⇒ Operation (Artist-1024) > Phone Book
	✗	✓	Dials the specified phone number to VoIP devices. The numbers are defined in the Director. ⇒ Operation (Artist-1024) > Fixed Number
	✗	✓	Function to edit an IFB or conference.
	✗	✓	Establish Call
	✗	✓	End Call

8.1.1.1 Operation (Artist-32/64/128)

1200 SmartPanels differ in regards to workflow and user interface depending on whether they are connected to an Artist-32/64/128 or Artist-1024.

Artist-32/64/128	Artist-1024	This chapter describes the operation of Intercom functions when the SmartPanel is connected to an Artist-32/64/128.
✓	✗	

Scroll-List

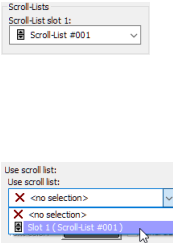


Access to a Scroll-List must be enabled in the Director software. A SmartPanel can only be assigned one Scroll-List if it is connected to an Artist-32/64/128.

- Right-click on the respective SmartPanel:
Properties > 'General' tab > 'Scroll-List slot 1...5'

On each key of this SmartPanel, the use of this assigned Scroll-List can then be activated.

- Right-click on the respective key:
Properties > 'General' tab > 'Use scroll list'



- To call up the Scroll-List configured in the Director on a 1200' SmartPanel, the respective configured rotary knob must be pushed twice.



"Search" appears in the corresponding display.

- Turn the rotary knob to select whether the stored functions are to be selected via the alphanumeric name search (Search) or the function type (Call2 Port/Listen2 Port, ...).
- Confirm the selected search method by pushing the rotary knob.



Alphanumeric name search

The first digit of the name flashes.

- Turn the rotary knob to select the first character.
- Then confirm by pushing the rotary knob.
- The second digit can now be selected by turning.
- Push the rotary knob again to confirm.



Continue until all digits have been entered.

Selection via function type

- Select an available function from the previously selected function group by turning the rotary knob.



Edit Conference

- Push down the lever on which the "EditConf" function is configured.



"Sel Conf" appears in the corresponding display and conferences that can be edited are highlighted in white.

- Select the conference to be edited by pushing the corresponding lever down.



The selected conference flashes for a time and all available members are now highlighted in white.



- If a corresponding lever is pushed down repeatedly, this member can be added to or removed from the conference.



This determines whether the participant is allowed to listen (L, Listen) and/or talk (T, Talk):

L ADD4 T	Listen and Talk
ADD4 T	Talk only
L ADD4	Listen only
REMOVE	No member

- When all desired changes are made, push the "EditConf" lever down ("Yes") to apply the changes in the system.
- or
- Pull the "EditConf" lever up ("No") to discard the current changes..



Edit IFB

- Push down the lever on which the "Edit IFB" function is configured.



IFBs that can be edited are highlighted.

- Select the IFB to be edited by pushing the corresponding lever down.



All available IFB inputs are now highlighted.



- Push the corresponding lever down to select this IFB input.



- Push the "Edit IFB" lever down to apply the changes in the system.



Reply Stack Access



To enable access to the Reply Stack via the secondary functions drawer, the **Enable Scroll function** must be activated in the Director in the Reply key properties.

- Right-click on the respective Reply key: **Properties** > 'Reply' tab
- Enable checkbox: ☒ Enable Scroll function

- To call up the reply stack, the rotary knob of the Reply key must be pushed twice.



The display shows the last call.



The calls can be scrolled through in chronological order.
The last call is displayed in the first position, the second to last call in the second position, etc.
The first call is thus stored in the last position (max.20).

- Select the call you want to call back with the Reply key:
 - Go in direction from the last call to the first call (1 ... 20):
 - Turning the rotary knob clockwise.



or

- Go in direction from the first call to the last call(20 ... 1):
 - Turn the rotary knob counterclockwise.
- or
- Push the lever up or down.



- Confirm the selection:
 - Push the Reply knob.
- or
- Wait until the function is exited and the background is no longer displayed brightly. The caller selected in the display is taken over in the process.



Copy Reply (or Remove Copy Reply)

➤ Open the [Secondary Functions Drawer](#) of an empty key (or a Copy-Reply key).

➤ Select the  Copy icon to copy the topmost entry from the replay stack to this empty key.



➤ Select again the  Copy icon to delete the Copy Reply function from this key.



 **Copy Reply** works only on unconfigured keys. This prevents keys that have already been configured from being accidentally changed.

Monitor, Listen, Autolisten

The operation differs depending on whether the Talk/Mute or Talk/Listen workflow is set on the SmartPanel.

Talk/Mute Workflow

➤ Open the [Secondary Functions Drawer](#) of a key.

➤ Select the  Monitor icon to enable the Monitor function on this key.



➤ Select again the  Monitor icon to disable the Monitor/Autolisten function on this key.



Talk/Listen Workflow

➤ Drag the lever up to enable or disable the list function.

Function	Talk/Mute workflow	Talk/Listen workflow
Monitor / Listen	Secondary function: Monitor	Lever Key: Up
Monitor Listen Off	Secondary function: Monitor Off	Lever Key: Up
Autolisten Off	Secondary function: Autolisten Off	Lever Key: Up

 The **Monitor** and **Listen** functions cannot be active on one key at the same time.

8.1.1.2 Operation (Artist-1024)

1200 SmartPanels differ in regards to workflow and user interface depending on whether they are connected to an Artist-32/64/128 or Artist-1024.

Artist-32/64/128	Artist-1024	This chapter describes the operation of Intercom functions when the SmartPanel is connected to an Artist-1024.
✗	✓	

Telephone Dial

- Open the [Secondary Functions Drawer](#) of a key.
- Select the  keypad icon.

RSP-1216HL (Telephone Dial)

The Info Display shows the prompt:
"Select with gray rotary knob".



- Enter the desired digits one after the other:
 - Turn the gray rotary knob to select the digit.
 - Press the gray rotary knob to confirm the set digit and move to the next digit.



- Tap the  icon to delete the last digit entered.



- Initiate the call:
 - Tap the green 
- or
- Cancel the call:
 - Tap the red 



RSP-1232HL (Telephone Dial)

The dial keypad appears on the Info Display.



- Enter the desired digits one after the other:
 - Tap the desired digit.



- Tap the  icon to delete the last digit entered.



- Initiate the call:
 - Tap the green 
- or
- Cancel the call:
 - Tap the red 



Scroll-List

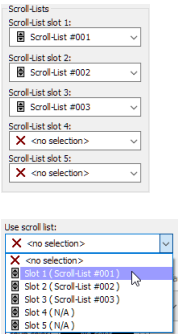
- Open the [Secondary Functions Drawer](#) of a key.
- Select the  list icon.

Access to a Scroll-List must be enabled in the Director software. It is possible to assign up to five individual Scroll-Lists to a SmartPanel.

- Right-click on the respective SmartPanel:
Properties > 'General' tab > 'Scroll-List slot 1...5'

On each key of this SmartPanel, the use of the assigned Scroll-Lists can then be activated.

- Right-click on the respective key:
Properties > 'General' tab > 'Use scroll list'



RSP-1216HL (Scroll-List)

The list selection appears on the info display.

The  and  icons can be used to switch between the list selection and numerical selection at any time.



Operation of the List Selection

- Select a function from the Scroll-List:
 - Vertical swipe and tap on an entry
 - or
 - Turn the gray rotary knob
- Confirm the selection:
 - Tap the green 
 - or
 - Press the gray rotary knob
- or
- Cancel the operation:
 - Tap the red 



Operation of the Numerical Selection

The Info Display shows the prompt: "Select with gray rotary knob".



- Enter the first three digits of the desired keypad shortcut one after the other by selecting the corresponding digit (0-9).
 - Turn the gray rotary knob to select the digit.
 - Press the gray rotary knob to confirm the set digit and move to the next digit.



Unavailable digits are not displayed and skipped.

- Tap the  icon to delete the last digit entered.



When the last digit is selected, the existing function is shown directly in the display.



- Confirm the selection:
 - Tap the green 
 - or
 - Press the gray rotary knob
- or
- Cancel the operation:
 - Tap the red 



RSP-1232HL (Scroll-List)

The list selection appears on the info display.

The  and  icons can be used to switch between the list selection and numerical selection at any time.



Operation of the List Selection

- Select a function from the Scroll-List:
 - Vertical swipe and tap on an entry
 - or
 - Turn the lower rotary knob



- Confirm the selection:
 - Tap the green 
 - or
 - Press the lower rotary knob
- or
- Cancel the operation:
 - Tap the red 



Operation of the Numerical Selection

The numeric keypad appears on the info display.



- Enter the first three digits of the desired keypad shortcut one after the other by tapping the corresponding digit (0-9).

Available digits are displayed brightly, unavailable digits are grayed out.



- Tap the  icon to delete the last digit entered.



After selecting the second last digit, the available functions are shown directly in the display under the respective digit.

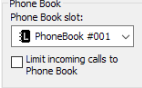
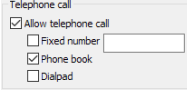


- Confirm the selection:
 - Tap the green 
- or
- Cancel the operation:
 - Tap the red 



Phone Book

- Open the [Secondary Functions Drawer](#) of a key to which a call to a VoIP device (CONNECT) is assigned.
- Select the  phone book icon.

	Access to a phone book must be enabled in the Director software. • Right-click on the respective SmartPanel > Properties > 'General' tab > 'Phone Book slot'	 Phone Book Phone Book slot: PhoneBook #001 ☐ Limit incoming calls to Phone Book
	On each key of this SmartPanel, the use of the assigned phone book can then be activated. • Right-click on the respective key > Properties > 'Call' tab > 'Allow telephone call' > 'Phone book'	 Telephone call ☒ Allow telephone call ☐ Fixed number ☒ Phone book ☐ Dailpad

RSP-1216HL (Phone Book)

The phone book entries appears on the info display.



- Select a name from the phone book:
 - Vertical swipe and tap on an entry
 - or
 - Turn the gray rotary knob



- Confirm the selection:
 - Tap the green 
 - or
 - Press the gray rotary knob



or

- Cancel the operation:
 - Tap the red 



RSP-1232HL (Phone Book)

The phone book entries appear on the info display.



- Select a name from the phone book:
 - Vertical swipe and tap on an entry
 - or
 - Turn the lower rotary knob



- Confirm the selection:
 - Tap the green 
 - or
 - Press the lower rotary knob



or

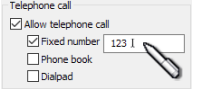
- Cancel the operation:
 - Tap the red 



Fixed Number

- Open the [Secondary Functions Drawer](#) of a key to which a call to a VoIP device (CONNECT) is assigned.
- Select the  number icon.

The specified phone number is directly dialed.

	Access to a fixed number must be activated in the Director software. The fixed number to be used must be defined for each button on this SmartPanel. • Right-click on the respective key > Properties > 'Call' tab > 'Allow telephone call' > 'Fixed number'	

Accepting/Rejecting a VoIP Call

- Accept the VoIP call:
 - Press the lever downwards.
 - or
 - Open the [Secondary Functions Drawer](#) of the corresponding key and select the  Accept icon.



or

- Reject the VoIP call:
 - Press the lever upwards.
 - or
 - Open the [Secondary Functions Drawer](#) of the corresponding key and select the  Reject icon.



Edit Conference

- Open the [Secondary Functions Drawer](#) of a conference key.
- Select the  edit icon.



The **Edit Conference** function is not a key command, but must be activated in the Director for the corresponding conference in the key properties.

- Right-click on the respective conference key: **Properties > 'Conference' tab**
- Enable checkbox: ☒ Use this command to select the destination conference during an Edit Conference operation

The Info Display shows all Conference members and DYNACONF members (if a Call to Port is configured on this panel).



- Navigate to the desired conference member:
 - RSP-1232HL
 - Vertical swipe
 - or
 - Turn the lower rotary knob
- RSP-1216HL
 - Vertical swipe
 - or
 - Turn the gray rotary knob



The Talk and Listen permissions of the individual members are indicated by corresponding symbols on their left and right side.

- Tap an icon to change the permission.

Enabled permissions are green  / , disabled permissions are gray  / .



- Tap the center of a member to activate or deactivate it.

Enabled members are bright, deactivated members are grayed out.

Unselected members and all DYNACONF members will remain in the list (if a Call to Port is configured on this panel).



- Confirm the entry:

- RSP-1232HL
 - Tap the green 
- or
- Press the lower rotary knob

- RSP-1216HL
 - Swipe from right to left to show the menu and tap the green 
- or
- Press the gray rotary knob

or



- Cancel the operation:

- RSP-1232HL
 - Tap the red 
- RSP-1216HL
 - Swipe from right to left to show the menu and tap the red 



Edit IFB

- Open the [Secondary Functions Drawer](#) of a conference key.
- Select the  edit icon.

The **Edit IFB** function is not a key command, but must be activated in the Director for the corresponding IFB in the key properties.

- Right-click on the respective IFB key: **Properties** > 'Call to IFB' tab
- Enable checkbox: ☒ Enable for Edit IFB operation

The Info Display shows all available Mix-Minus members.



The currently active Mix-Minus is displayed with a white border.



- Select a new Mix-Minus member:
 - RSP-1232HL
 - Vertical swipe and tap on a member
 - or
 - Turn the lower rotary knob
- RSP-1216HL
 - Vertical swipe and tap on a member
- or
- Turn the gray rotary knob



- Confirm the selection:
 - RSP-1232HL
 - Tap the green 
 - or
 - Press the lower rotary knob
- RSP-1216HL
 - Swipe from right to left to show the menu and tap the green 
- or
- Press the gray rotary knob

or

- Cancel the operation:
 - RSP-1232HL
 - Tap the red 
 - RSP-1216HL
 - Swipe from right to left to show the menu and tap the red 



Reply Stack Access

- Open the [Secondary Functions Drawer](#) of a Reply key.
- Select the  list icon.

	To enable access to the Reply Stack via the secondary functions drawer, the Enable Scroll function must be activated in the Director in the Reply key properties. • Right-click on the respective Reply key: Properties > 'Reply' tab • Enable checkbox: ☒ Enable Scroll function
---	---

The Info Display shows the last 20 calls.



The calls are listed in chronological order.
The last call is displayed at the top.



- Select the call you want to call back with the Reply key:

- RSP-1232HL
 - Vertical swipe and tap on a member
 - or
 - Turn the lower rotary knob
- RSP-1216HL
 - Vertical swipe and tap on a member
 - or
 - Turn the gray rotary knob



- Confirm the selection:

- RSP-1232HL
 - Tap the green 
 - or
 - Press the lower rotary knob
- RSP-1216HL
 - Swipe from right to left to show the menu and tap the green 
 - or
 - Press the gray rotary knob

or

- Cancel the operation:

- RSP-1232HL
 - Tap the red 
- RSP-1216HL
 - Swipe from right to left to show the menu and tap the red 



Copy Reply (or Remove Copy Reply)

- Open the [Secondary Functions Drawer](#) of an empty key (or a Copy-Reply key).
- Select the copy icon to copy the topmost entry from the replay stack to this empty key.



- Select the Remove-Copy icon to delete the Copy Reply function from this key.



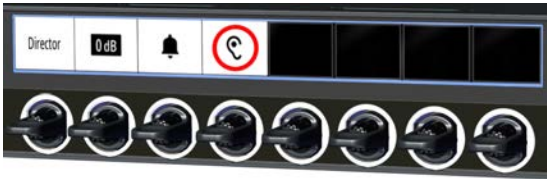
Copy Reply is only available on unconfigured keys. This prevents keys that have already been configured from being accidentally changed.

Monitor, Listen, Autolisten

The operation differs depending on whether the Talk/Mute or Talk/Listen workflow is set on the SmartPanel.

Talk/Mute Workflow

- Open the [Secondary Functions Drawer](#) of a key.
- Select the monitor icon to enable the Monitor function on this key.



- Select the Remove-Monitor icon to disable the Monitor/Autolisten function on this key.



Talk/Listen Workflow

- Drag the lever up to enable or disable the list function.

Function	Talk/Mute workflow	Talk/Listen workflow
Monitor / Listen	Secondary function: Monitor	Lever Key: Up
Monitor Listen Off	Secondary function: Monitor Off	Lever Key: Up
Autolisten Off	Secondary function: Autolisten Off	Lever Key: Up

The **Monitor** and **Listen** functions cannot be active on one key at the same time.

8.1.2 Signalization

The LED ring as well as the corresponding key display can be used to indicate any activity of the respective port. The indication varies depending on the selected [workflow mode](#) (Talk/Mute or Talk/Listen).

Furthermore a symbol can be displayed in the corresponding ports.

The name (**Key Label**), subtitle (**16-char Subtitle**) and the symbol (**Icon**) of the port can be entered in the Director software: right-click on the respective key > **properties** > **'General'** tab.

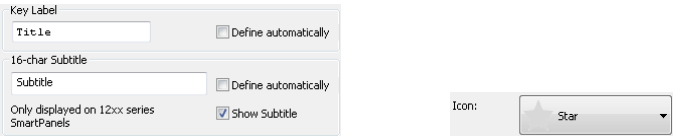


figure 68: name / subtitle / icon of the port in the Director

Talk/Mute-Mode

In Talk/Mute mode, signaling is always shown via icons in the upper area in the key display.

Signal	Display	Description
Call (active, outgoing)		The mic icon in the upper left area indicates an active outgoing call.
Mute (active)		The red mute icon in the upper right area indicates a muted port.
Monitor (active)		The ear icon in the upper right area indicates a monitored port.

Talk/Listen-Mode

In Talk/Listen mode, the signalization depends on the configuration of the group color:

- If the group color is indicated via the LED ring, the signalization is indicated via the display.
- If the group color is indicated via the display, the signalization is indicated via the LED ring.

Signal	Display	Description
Call (active, outgoing)	Signaling via the <i>key display</i> (Group color via the LED ring)	 A red bar is displayed below the title.
	Signaling via the LED ring (Group color via the key display)	 The lower part of the LED ring lights red.
Monitor (listen, active)	Signaling via the <i>key display</i> (Group color via the LED ring)	 A green bar is displayed above the title.
	Signaling via the LED ring (Group color via the key display)	 The upper part of the LED ring lights green.

Common Signalization

Signal	Display	Description
Intercom Call (incoming)		The key display flashes for 5 seconds during an incoming call. Afterwards, the background remains bright as long as the call is active. Incoming calls to keys that are located on an inactive key bank are indicated in the info display by a flashing key bank.
VoIP Call (incoming)		The key display flashes for 5 seconds during an incoming VoIP call and shows a phone icon.
Beep (incoming)		The animated bell icon shows where the Beep being received is coming from.
Beep (outgoing)		The animated bell shows that the user is beeping a remote panel.
Port occupied		Depending on the setting in the Director, the "In Use" icon is displayed on a key when the target SmartPanel configured on that key is busy (for example, because it is currently receiving a call from a third party). For more information, see the Director manual.
Active Control Signal		This signal will cover all control functions in the Artist. The user can choose to color the control signal in the key function.
Locked		This symbol appears as long as the key has been locked by a Remote Key function. No key actions can be triggered when the key is locked.
Offline		This symbol indicates that the remote panel is currently unreachable.

8.1.3 Lever Groups

The keys of the SmartPanel can be assigned into up to 16 groups. For an easy identification each group has an separate group color. The group color can be selected in **Key Properties** in the Director software: right-click on the respective key > **Properties** > 'General' tab > 'Group color'. The group color is indicated either in the LED ring or in the display of the SmartPanel. This setting is done in **Panel Properties** in the Director software: right-click on the respective SmartPanel > **Properties** > 'UI Config' tab > 'Group color'.

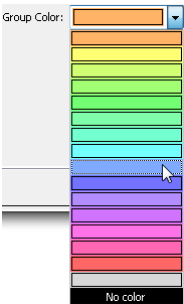


figure 69: group color per key in Director (Key Properties)

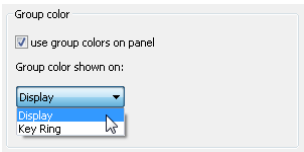


figure 70: indication of group color in Director (Panel Properties)

The key signalization is indicated in the opposite way:

- If the group color is indicated via the LED ring, the signalization is indicated via the display.
- If the group color is indicated via the display, the signalization is indicated via the LED ring.

Group Color via LED ring

Signalization (bars) via the display
(only in Talk/Listen mode)

Group Color
(i.e. light blue LED ring)

Group Color via Display

Group Color
(i.e. light blue border)

Signalization via the LED ring
(only in Talk/Listen mode)

In Talk/Mute mode, signaling is always shown via icons in the key display.

8.1.4 Operation Mode

The 1200 SmartPanel series offers two different ways of operation:

- Talk/Listen
- Talk/Mute

The desired mode can be set in the Director software (panel properties > 'UI Config' tab):
right-click on the respective SmartPanel > Properties > 'UI Config' tab > 'Panel operation mode'.

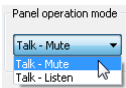
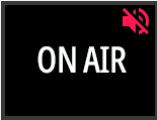


figure 71: workflow mode in Director

The following table shows the function of lever keys in both modes:

Lever Direction	Talk/Listen	Talk/Mute
up *1	  figure 72: Listen-Signalizing	  figure 73: Mute-Signalizing
down *2	 • Talk to a panel • Execute additional configured commands  figure 74: Talk-Signalizing	  figure 75: Talk-Signalizing

*1 latching only

*2 auto, momentary and latching

8.1.5 Key Banks

Key banks are layers of keys that are accessed by simply touching a button on the screen. The Info display shows two key banks in the main. The user can switch between the key banks by briefly touching the respective name. The active key bank is highlighted in the info display by a thicker border. The color of the active key bank is also shown as border in both key displays.



figure 76: view of selected key bank

The name and color of the key banks can be entered / selected in the Director software:
right-click on the respective SmartPanel > Properties > 'UI Config' tab > 'Key Bank configuration'.



figure 77: name / color of key banks in the Director

8.2 AES67 4-wire App

The AES67 4-wire app allows 1200 series SmartPanels to be connected to up to 2 SMPTE 2110-30 (AES67) channels on the audio network (without occupying ports on the Artist matrix) instead of the analog audio inputs (Audio A/B). In order to use this, audio channels A and/or B must be changed from analog to AES67 in the web interface.



This app requires a license file (INT_1200_AES67_4W). Further information can be found in the chapter [Licensing](#).

Follow these steps to activate the AES67 4-wire operation.



The AES67 4-wire can only be used if the SmartPanel is connected to the matrix via 'AES67'.

If the SmartPanel is connected to an Artist-1024, the transport mode is automatically AES67.
If the SmartPanel is connected to an Artist-32/64/128, the transport mode must be set to AES67 as follows.

- Touch the gear icon in the info display.
- Select the menu: 'Transport'.
- In the 'Transport Mode' entry, select the 'AES67' option.

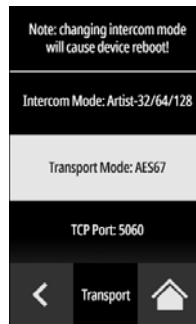


figure 78: transport mode of the SmartPanel

Open the web interface of the SmartPanel:

- Enter the IP address in the web browser (e.g. 192.168.41.159).

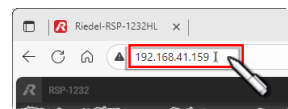


figure 79: web interface of the SmartPanel

- Select the 'Audio A' or 'Audio B' tab in the Parameter Drawer.



figure 80: Audio A/B tab

- Change the setting from 'Analogue' (default) to 'AES67' for each 4-wire's individual input or output channel.



figure 81: Analogue -> AES67

- Click on 'Stream Setup'.



figure 82: stream setup

- 1) Enter the stream parameters.
- 2) Alternatively the parameters can be loaded via a SDP-file by clicking the button 'Import SDP'.



figure 83: stream parameter

- In **Audio A** Parameter Drawer: Activate the 'Select another channel...' switch to select another channel from the same stream for **Audio B**.

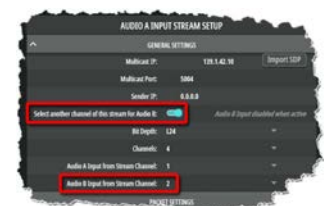


figure 84: selection of Audio B channel

- By clicking the 'Submit' button the connection to the stream is established immediately and the analogue 4-wire is switched over immediately.
- If you click the 'Cancel' button, all entries are discarded and the stream setup is closed.

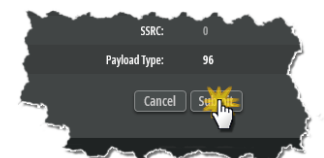


figure 85: confirm/cancel entries

- Quickly change between different channels within a stream by selecting it in the drop-down list.

(The change must be confirmed by clicking the **SUBMIT** button at the top of the web interface.)



figure 86: change channel

- When you switch back to the 4-wire analog system, your AES67 configuration is saved for later use.



figure 87: stored stream parameters

- Route your AES67 or analogue inputs/outputs in the Director audiopatch as you prefer it for your setup.

Either the analog or digital (AES67) audio inputs/outputs are available.

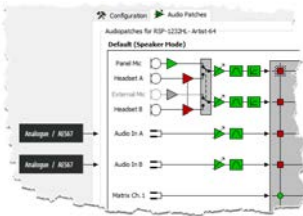


figure 88: routing in the Director audiopatch

8.3 Control Panel App

The Control Panel app (CPA) allows the exchange of control data and status information via NMOS and supports NMOS IS-04, IS-05 and IS-07. It enables the sending of control commands of the hybrid lever buttons and their rotary encoders, as well as the receiving of control commands for LED rings and displays including text, icons and color.

- This app requires a license file (**CPA_1200_PLUS**). Further information can be found in the chapter [Licensing](#).
- Depending on the application, the 1200 series SmartPanel with CPA serves as an input/output-only device in conjunction with a third-party control system. Please visit the [Riedel website](#) to learn more about the supporting third-party vendors.
- CPA uses the interface selected in the Settings menu [Applications > Control Panel App](#) for communication (**MEDIA 1**, **MEDIA 2**, **MGNT**). The network settings of the selected interface are set in the Settings menu [Network](#).

Follow these steps to use the Control Panel app.

Open the web interface of the SmartPanel:

- Enter the IP address in the web browser (e.g. 192.168.41.159).

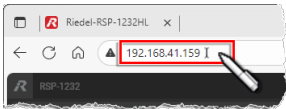


figure 89: web interface of the SmartPanel

- Select the 'CPA' tab in the Parameter Drawer.



figure 90: CPA tab

- Activate the 'Control Panel App Enable' switch.



figure 91: CPA Enable

The four modules of the lever keys are available for selection:

- Top Left
 - Bottom Left
 - Top Right
 - Bottom Right
-
- Click to the right of the desired 'Key Module x' and assign a 'CPA Keyblock 1...4' or unassign it (CPA off).



figure 92: KeyBlock assignment

- Click on the **SUBMIT** button to transfer the changes to the SmartPanel.



figure 93: transferring changes to the SmartPanel

An additional key bank called "control" is now available for selection in the Info Display. The Control Panel app can be used on this Key Bank while other apps (e.g. Intercom) remain in operation at the same time.



Abbildung 94: CPA-Keybank "control"

The following functions are supported by the Control Panel app:

Send Functions	Lever Key Up State	✓
	Lever Key Down State	✓
	Rotary Increment/Decrement (+/-)	✓
	Rotary Push Button State	✓
Receive Functions	Key Label	8 Characters
	Key Label Subtitle	16 Characters
	Key Label Border Color	16 Colors
	Key Activity State	On / Off / Flashing
	Pre-Defined Icon	21
	Key Bank Border Color (main + info display)	16 Colors
	Key Bank Name	10 Characters
	LED Upper Ring Color	16 Colors
	LED Lower Ring Color	16 Colors

For more information on the individual configuration of NMOS commands, please contact your system integrator, the manufacturer of your control system or the Riedel support.

8.4 Audio Monitoring App

The Audio Monitoring app (AMA) enables intercom and IP-based audio monitoring via the internal speaker or via a connected stereo headset in high audio quality. AMA allows direct connection to any SMPTE 2110-30 (AES67) stream available on the network - either dynamically managed via NMOS or in a static IP/SDP-based configuration that mixes the audio directly in the SmartPanel. The app can be configured via a dedicated configuration tool or a broadcast controller via the built-in API. The selection and management of monitored audio sources is as simple as it is flexible. Users can monitor up to 16 stereo/mono SMPTE 2110-30 (AES67) streams in parallel, while a total of 256 audio sources can be pre-configured and managed directly via the SmartPanels' high-resolution touch displays and intuitive interfaces.



To be able to use the Audio Monitoring app, the SmartPanel requires a licensed intercom app and must be connected to an Artist-1024.
AMA will not run if the SmartPanel is connected to an Artist-32/64/128.

High Level System Overview

Maximum number of audio sources (joined simultaneously, assigned on keys)	16
Maximum number of possible Audio Monitoring Sources (AMS)	256
One dedicated Key Bank	✓
Works standalone	✗
Use AMA and Intercom app simultaneously (on the same hardware)	✓
AMA along with other apps (Control & Intercom) on the same key bank	✗
Changing the key assignment of the audio sources on the SmartPanel	✓
Support for Secondary Functions Drawer (source list, normalize, isolate, mono sum)	✓
Level display for each channel	✓
Live View & Remote Control	✓
Synton & Synchron mode (PTP synchronized)	✓

Supported Audio Standards / Formats

SMPTE 2110-30 (AES67)	✓
SMPTE 2022-7 (Redundancy)	✓
Mono	✓
Stereo	✓
NMOS IS-04, IS-05, IS-08	✓
Multi-channel (e.g. 5.1 surround)	✗
Dolby support	✗

8.4.1 Configuration

The entire configuration of the Audio Monitoring App can be done in two ways:

- Stand-alone application 'Riedel AMA Config Tool' (⇒ [AMA Config Tool](#))
- API interface (via a broadcast controller)

The following properties can be configured:

The audio monitoring sources (AMS) ...

- can be defined as IP/SDP or NMOS
- can be in synchronous as well as in synton mode
- can be mono or stereo sources
- can be connected to audio channels of one or more streams
- can be provided with titles/subtitles and grouped by color

Each channel of an audio monitoring source can have individual stream settings:

- mono signal from a single stream
- Stereo signal from a single stream
- Stereo signal from multiple streams



The number of channels in the stream itself is not limited.

However, one Audio Monitoring Source (AMS) can only consist of a maximum of 2 channels.

The following functions are supported by the API:
(*Default values* are shown in italics and underlined.)

	GET	PUT	POST	DELETE
/global-settings Global AMA settings (setting whether the application is active or inactive)	✓	✓	✗	✗
/media-state Stream status information per route and AMS ID	✓	✗	✗	✗
/device-information SmartPanel information	✓	✗	✗	✗
/settings/ama Current AMA settings (internal settings of the AMA)	✓	✓	✗	✗
/settings/nmos Current NMOS settings	✓	✓	✗	✗
/audio-monitoring-sources Audio monitoring sources known to the SmartPanel	✓	✗	✓	✗
/audio-monitoring-sources/{id} Individual audio monitoring sources	✓	✓	✗	✓
/key-mapping Audio monitoring source to key bindings	✓	✓	✗	✗

/global-settings

amaMode	Setting whether the application is active or inactive. (<i>Active</i> , Inactive)
---------	---

/media-state

amsID	Unique ID of the audio source to be monitored. (String: \$uuid)
streamStates	Stream status information per route and AMS ID. (Active, Inactive)
leftLeg rightLeg	media1State media2State

/device-information

deviceType	Information of SmartPanel types. (RSP1232HL, RSP1216HL)
------------	--

/settings/ama

loacalPersistence		Restore configured audio sources after reboot. (Disabled, <i>Enabled</i>)
audio	trimLevelInDb	Level of all monitored audio sources. (-72.3 ... <i>0</i> ... +18 dB)
	legRoleOrder	NMOS IS-08 Channel Order. (<i>Left</i> , <i>Right</i> / Right, Left)
display	groupColorDisplay Location	Position of the group color. (<i>None</i> , OnDisplay, OnKeyRing)
	peakMeterClipping	Enables the clipping warning. (<i>Disabled</i> , Enabled)
	clipIndication TimeoutInMs	Time how long a clipping is signaled. (1000 ... <i>3000</i> ... 10000 ms)
input	secondaryFunction DrawerBehavior	Enables the Key Display Functions. (Disabled, <i>Enabled</i>)
interApp Behavior	amaDucking	Configures the AMA ducking behavior. (Disabled, DB_Minus_3, DB_Minus_6, DB_Minus_9, DB_Minus_12, DB_Minus_18, DB_Minus_24, <i>Mute</i>)
	intercomHeadset Ducking	Configures the intercom headset behavior. (Disabled, DB_Minus_3, DB_Minus_6, <i>DB_Minus_9</i> , DB_Minus_12, DB_Minus_18, DB_Minus_24, Mute)
	intercomSpeaker Ducking	Configures the intercom speaker behavior. (Disabled, DB_Minus_3, DB_Minus_6, <i>DB_Minus_9</i> , DB_Minus_12, DB_Minus_18, DB_Minus_24, Mute)
keybank	color	Color of the key bank. (SandyBrown, UnmellowYellow, MediumSpringBud, Inchworm, ScreaminGreen, MintGreen, <i>Aquamarine</i> , ElectricBlue, MayaBlue, MediumSlateBlue, BrightLavender, Heliotrope, PaleMagenta, HotPink, Timberwolf)
	name	Name of the key bank. (String: <i>Monitoring</i>)

/settings/nmos

nodePort		(1024 ... ~~8080~~ ... 65535)
nodeVersions		(Unknown, v1_1, v1_2, ~~v1_3~~)
registrationMode		(Static, Auto, P2P)
Registry	ip	(\$ ~~ip~~ v4)
	port	(1 ... ~~9696~~ ... 65535)
	version	(Unknown, v1_1, v1_2, ~~v1_3~~)
searchDomain		(String)

/audio-monitoring-sources

id	Unique ID of the AMS to be monitored. (String: \$uuid)	
meta Information	label	Titel of the AMS. (String, max. 8 char)
	subtitle	Subtitle of the AMS. (String, max. 16 char)
	color	AMS-Farbe (~~SandyBrown~~ , UnmellowYellow, MediumSpringBud, Inchworm, ScreaminGreen, MintGreen, Aquamarine, ElectricBlue, MayaBlue, MediumSlateBlue, BrightLavender, Heliotrope, PaleMagenta, HotPink, Timberwolf)
function Behavior	solo	Allows/denise the solo function for this audio source. (Forbidden, ~~Allowed~~)
	isolate	Allows/denies stereo audio sources to isolate the left/right audio channel. (Forbidden, ~~Allowed~~)
audioFormat	(~~Mono~~ , Stereo)	

/audio-monitoring-sources

leg Information	sourceType		Select whether the audio source is configured manually (or via SDP) or via NMOS. (<i>Manual</i> , NMOS)		
	stream Channels	playMode	(Synton, <i>Synchron</i>)		
		receiverId	(String: \$uuid)		
		receiveBufferFactor	Selection of the size of the receive buffer to compensate for runtime differences of the streams. (3 ... <i>8</i> ... 112)		
	channel Selection	streamChannelIndex	(Integer)		
		legRole	(Mono, Left, Right)		
	sdp Data	transport	sourceAddress	(String: \$ipv4)	
			sourcePort	(1024 ... <i>1024</i> ... 65535)	
			destinationAddress	(String: \$ipv4)	
			destinationPort	(1024 ... <i>1024</i> ... 65535)	
		audio	numberOfChannels	integer, min.:1)	
			sampleRate	<i>(Unknown)</i> , RATE_44_1_KHz, RATE_48_KHz, RATE_96_KHz)	
			pTime	Packet time is the real-time duration of media data in a packet. <i>(Unknown)</i> , P_TIME_0_125, P_TIME_0_25, P_TIME_0_333, P_TIME_0_5, P_TIME_1, P_TIME_1_333, P_TIME_4)	
			payloadType	Selection of the Payload type. <i>(96</i> ... 127)	
			mediaClockOffset	Selection of the Time Stamp Offset. (<i>0</i> ... 65535 ms)	
			codecType	Selection of the resolution. <i>(Unknown)</i> , L16, L24)	

/key-mapping

keyAddress	keyBlock	(1 ... 2)
keyAddress	key	(1 ... 8)
amsId	(String: \$uuid)	

Example "NMOS Mono Single Source"

```
{ "audioFormat": "Mono",
  "functionBehavior":
    { "isolate": "Allowed",
      "solo": "Allowed"
    },
  "id": "dda5ab80-f279-455a-a227-216a6afdc67d",
  "legInformation":
    { "sourceType": "NMOS",
      "streamChannels":
        [ { "playMode": "Synchron",
            "receiveBufferFactor": 8,
            "receiverId": "2bd3d5db-7628-4c3e-9c4a-8db2158e228f"
          }
        ]
    },
  "metaInformation":
    { "color": "SandyBrown",
      "label": "AMS",
      "subtitle": "NMOS"
    }
}
```

Example "NMOS Stereo Dual Source"

```
{ "audioFormat": "Stereo",
  "functionBehavior":
    { "isolate": "Allowed",
      "solo": "Allowed"
    },
  "id": "c6e6f7e7-f8c8-4a0b-bfc5-42c871e61e74",
  "legInformation":
    { "sourceType": "NMOS",
      "streamChannels":
        [ { "playMode": "Synchron",
            "receiveBufferFactor": 8,
            "receiverId": "e362c345-411d-4475-9876-dffa3a79dbf3"
          },
          { "playMode": "Synchron",
            "receiveBufferFactor": 8,
            "receiverId": "540b2a0e-d198-4459-9da0-612c9deff0b7"
          }
        ]
    },
  "metaInformation":
    { "color": "SandyBrown",
      "label": "AMS 2",
      "subtitle": "NMOS"
    }
}
```

Example "SDP Stereo Dual Source"

```
{ "audioFormat": "Stereo",
  "functionBehavior":
    { "isolate": "Allowed",
      "solo": "Allowed"
    },
  "id": "e37d8908-f88c-4821-b5a8-35dd67c41a16",
  "legInformation":
    { "sourceType": "SDP",
      "streamChannels":
        [ { "channelSelection":
            [ { "legRole": "Left",
                "streamChannelIndex": 4
              },
              { "legRole": "Right",
                "streamChannelIndex": 7
              }
            ]
          },
          { "playMode": "Synton",
            "receiveBufferFactor": 8,
            "sdpData":
              { "audio":
                  { "codecType": "L24",
                    "mediaClockOffset": 0,
                    "numberOfChannels": 8,
                    "pTime": "P_TIME 1",
                    "payloadType": 98,
                    "sampleRate": "RATE_48_KHz"
                  }
                },
            "transport":
              [ { "destinationAddress": "239.0.0.2",
                  "destinationPort": 5004,
                  "sourceAddress": "",
                  "sourcePort": 0
                }
              ]
            }
          ]
    },
  "metaInformation":
    { "color": "SandyBrown",
      "label": "AMS 16",
      "subtitle": ""
    }
}
```

8.4.2 AMA Config Tool

The 'Riedel AMA Config Tool' is a stand-alone software that must be installed on a Windows or Linux PC before use.

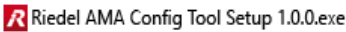
The configuration tool is well suited for a setup with small installations (max. 10 end devices). For larger systems, it is recommended to use the API interface.

Installation

The software is available for download to registered users on the Riedel website.

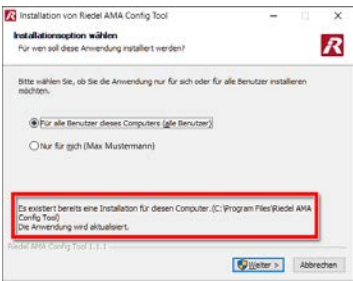
- Log in to the [MYRIEDEL](#) area first.
- Then switch to the [DOWNLOADS](#) area.
- Use the search field to find the file 'Riedel AMA Config Tool Setup.exe'.
- Download the appropriate installer (Win, Linux).

- Start the installation by executing the setup file.



The installation wizard is started.

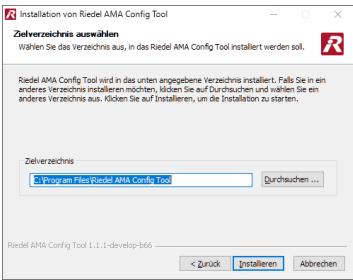
- Please select whether you want to install the application for yourself only or for all users.
- Click 'Next >' to continue.



The installation requires admin rights.

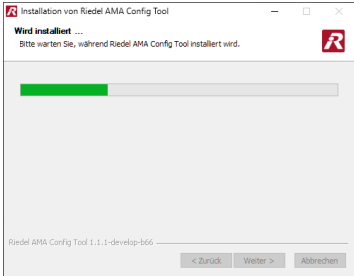
If the AMA Config Tool is already installed on the PC, you will be informed that the application is being updated. This setting of the previous installation can be adjusted here.

- Click 'Browse...' if you want to customize the installation path.
- Click 'Install' to continue.

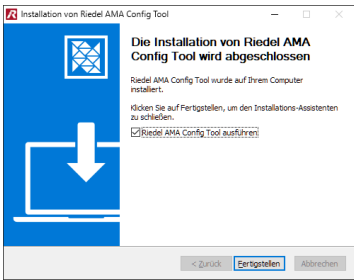


If the AMA Config Tool is already installed on the PC, the application will be removed from the previous folder if you have adjusted the installation path here.

The application is installed.



- Click 'Finish' to complete the installation.



Starting AMA Config Tool

- Click in the start menu of the PC on 'Riedel AMA Config Tool' to start the software.



figure 95: start menu

Connecting AMA Config Tool

- To configure the Audio Monitoring App, enter the network address of your SmartPanel and click 'Connect'.

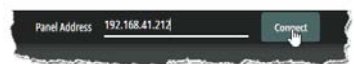


figure 96: Connect

8.4.2.1 Overview

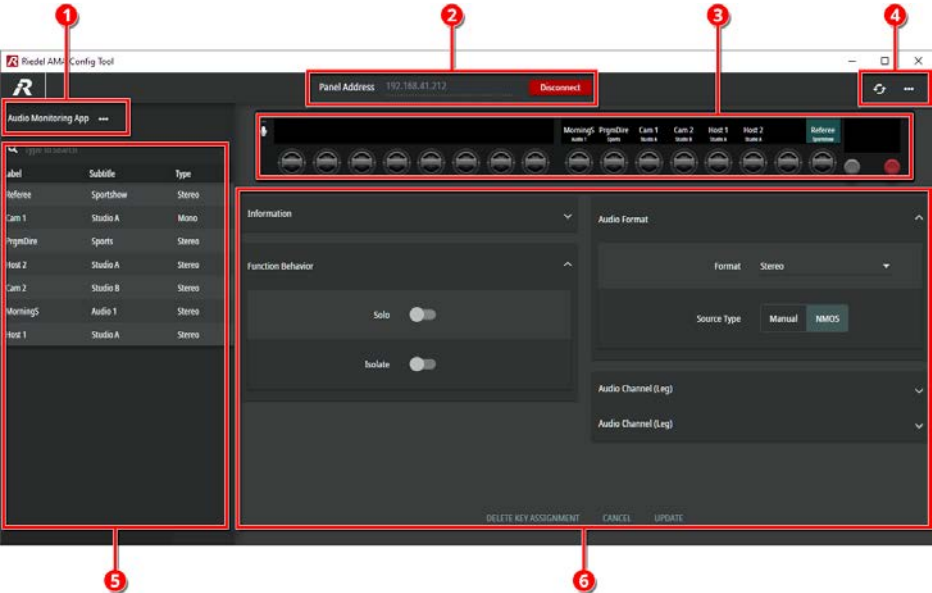


figure 97: AMA Config Tool – overview

1 Main menu	
Add new Audio Monitoring Source	Add a new audio source to the list.
Edit 'Selected Source'	Edit an audio source selected in the list.
Delete 'Selected Source'	Delete an audio source selected in the list.
AMA Configuration	General configuration of the Audio Monitoring app, such as clipping display, ducking behavior, etc.
NMOS Configuration	Configuration of the NMOS interface.
Import Audio Monitoring Sources	Import audio sources stored in a ".json" file.
Export Audio Monitoring Sources	Export the audio sources in the list as a ".json" file.
2 Connection to the SmartPanel	
Panel Address	Enter the IP address of the SmartPanel.
Connect	Establishing the connection to the SmartPanel.
Disconnect	Disconnect the connection to the SmartPanel.
3 Preview (drop area)	
The configured key assignments of the SmartPanel are displayed here. An audio source can be configured to a SmartPanel key by dragging it from the list of audio sources and dropping it on the corresponding key in this preview.	
4 Sub menu	
Refresh	Refreshing the view to see changes of the SmartPanel.
Live View & Remote Control	Opens the Live View in the standard browser, in which the remote control of the SmartPanel can also be activated.
About	Version information of the AMA Tool.
5 List of audio sources (drag area)	
The created audio sources are displayed here. An audio source can be configured to a SmartPanel button by dragging it from this list and dropping it on the corresponding button in the preview. This list can be sorted by clicking on a column header. For example, if you click on "Label", the list will be sorted alphabetically.	
Label	Title of the audio source.
Subtitle	Subtitle of the audio source.
Type	Audio type (Mono/Stereo) of the audio source.
Source	Source type (SDP/NMOS) of the audio source.
6 Parameter Drawer	
View and edit stream parameters of the audio source selected in the preview.	
Delete Key Assignment	Remove the audio source on the selected key.
Cancel	Discard all changed settings of the selected key.
Update / Submit	Update the changed settings of the selected key on the SmartPanel.

8.4.2.2 Main Menu



figure 98: main menu

Audio Monitoring Source

Calling up this dialog for configuring audio sources is done ...

- In the main menu by creating a new audio source 'Add new Audio Monitoring Source'.
- In the main menu by editing an audio source 'Edit Selected Source', which is marked in the list of audio sources.
- In the list of audio sources by right-clicking on an entry and selecting the 'Edit' option.
- In the preview by selecting an audio source by a single click.

Create another Source	If the check box is activated, this dialog remains open after creating (CREATE) an audio source in order to directly configure another audio source.
Cancel	Discard all changes and close the dialog.
Create / Update	Creates the audio source with the current parameters.

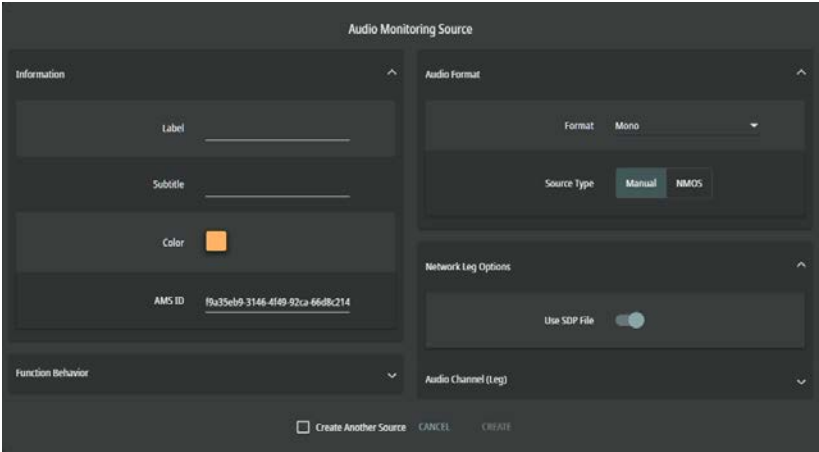


figure 99: Audio Monitoring Source (e.g. manual configuration with SDP file)

The parameters are grouped into different sections, each of which can be expanded or collapsed.

Information

Label	Title of the audio source shown in the center of the display. (max. 8 chars)
Subtitle	Subtitle of the audio source shown at the bottom of the display. (max. 16 chars)
Color	Selection of the group color for this audio source.
AMS ID	Unique ID of this receiver for identification via NMOS.

Function Behavior

Solo	Enables/disables the solo function for this audio source. Soloing is done by pressing and holding the lever down. (Default setting: <i>enabled</i>)
Isolate	Enables/disables the left/right audio channel to be isolated for stereo audio sources. Isolation is done via the key display/secondary functions. (Default setting: <i>enabled</i>)

Audio Format

Format	Defines whether the audio source is 'Stereo' or 'Mono'. (Default setting: <i>Mono</i>)
Source Type	Select whether the audio source is configured manually (or via SDP) or via NMOS. (Default setting: <i>Manual</i>)

Network Leg Options

The 'Network Leg Options' section is only available ...

- if **Source Type** is set to '*Manual*' in the '**Audio Format**' section and

Use SDP File	Selection whether the configuration is done via an SDP file. (Default setting: <i>enabled</i>)
Configure Redundancy *1	Selection of whether a redundant stream is to be configured. If redundancy is enabled, an additional Secondary Transport Interface section is displayed in the Audio Channel (Leg) area. (Default setting: <i>disabled</i>)

*1 only if **Use SDP File** is *disabled*

	If an AMS is created with an SDP file, it must be ensured that the correct format is followed (⇒ Configuration > Example "SDP Stereo Dual Source"). The Config Tool does not check the SDP files; these are parsed directly by the Audio Monitoring app. A faulty SDP file can therefore result in a non-functioning AMS.
---	--

Audio Channel (Leg)

If '**Stereo**' is selected as the **Format** in the '**Audio Format**' section, there are two separate '**Left/Right Audio Channel (Leg)**' sections.

Play Mode	Selection between 'Synton' and 'Synchron'. In Synchron mode audio packets will be discarded if the PTP timestamp is missing or invalid. Hence only audio signals are output if they are transmitted in a PTP synchronized network. In Synton mode audio packets without or with invalid PTP timestamps are processed and output, hence this mode can be used in networks without PTP synchronization. This may lead to increased delay and jitter. (Default setting: <i>Synchron</i>)
Receive Buffer Factor	Selection of the size of the receive buffer to compensate for runtime differences of the streams. (3 ... 112 / default setting: <i>8</i>)
Channel Selection *2	Sets the audio channel to be received.
Use SDP for all *2, 3	Select whether the SDP settings are also valid for the left/right stream. (Default setting: <i>enabled</i>)
SDP file *2, 4	Button to open a dialog where the stream settings can be loaded from an SDP file.
Create one NMOS Receiver for both Channels *3, 5	Only one NMOS receiver is generated for both channels. (Default setting: <i>disabled</i>)

*2 only if **Source Type** is set to '*Manual*' in the '**Audio Format**' section

*3 only if **Format** is set to '*Stereo*' in the '**Audio Format**' section

*4 only if **Use SDP File** is *enabled* in the '**Network Leg Options**' section

*5 only if **Source Type** is set to '*NMOS*' in the '**Audio Format**' section

Audio

The 'Audio' section is only available ...

- if **Source Type** is set to 'Manual' in the 'Audio Format' section and
- if the 'Use SDP File' option is *disabled* in the 'Network Leg Options' section.

Bit Depth	Selection of the resolution. (L16, L24 / default setting: <u>L24</u>)
Media Clock Offset	Selection of the Time Stamp Offset. (0 ... 65535 ms / default setting: <u>0</u>)
Number of Channels	Amount of used audio channels in the stream. (1 ... n / default setting: <u>1</u>)
Packet Time	Packet time is the real-time duration of media data in a packet. Samples per packet are calculated from packet time and sampling rate. Short packet time allows for lower latency but requires more bandwidth due to overhead. Implemented for interoperability reasons. Depending on selected amount of audio channels and the bit depth, shorter packet times are available. (0.125, 0.25, 0.333, 0.5, 1, 1.333 or 4 ms / default setting: <u>1</u>)
Payload Type	Selection of the Payload type. (96 ... 127 / default setting: <u>96</u>)
Sample Rate	Selection of the sampling rate. (44.1, 48 or 96 kHz / default setting: <u>48</u>)

Primary/Secondary Transport Interface

The 'Secondary Transport Interface' section is only available ...

- if **Source Type** is set to 'Manual' in the 'Audio Format' section and
- if the 'Configure Redundancy' option is *enabled* in the 'Network Leg Options' section.

Multicast IP	Source address of the Audio Monitor Source.
Multicast Port	Source port of the Audio Monitor Source. (1024 ... 65535 / default setting: <u>5004</u>)
Sender IP	IP address of the audio source.
Sender Port	IP port of the audio source. (1024 ... 65535 / default setting: <u>5004</u>)



This information must be known for creation and either comes automatically from the SDP file (if loaded) or is entered manually.

To check which media interface is used for AMA, a web interface can be called with the IP address of the SmartPanel and the addition **"/ama/v1.0/media-state"** (e.g. **http://192.168.41.212/ama/v1.0/media-state**). If 2022-7 is active, **"media1State"** and **"media2State"** are displayed as **"Active"**.

▼ eb3fabfb-4fd4-4ae0-9da4-793335faf8fb:	
▼ leftleg:	
media1State:	"Active"
media2State:	"Inactive"
▼ rightleg:	
media1State:	"Active"
media2State:	"Inactive"

AMA Configuration

Calling up this dialog for the general configuration of the Audio Monitoring app is done ...

- In the main menu by clicking 'AMA Configuration'.

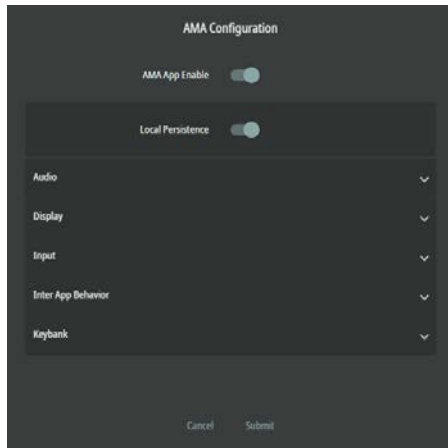


figure 100: AMA Configuration

The parameters are grouped into different categories, each of which can be expanded or collapsed.

AMA App Enable	Enables/disables the Audio Monitoring App on the SmartPanel. (Default setting: <i>enabled</i>)
Local Persistence	Enables/disables local persistence. If this function is <i>deactivated</i> , the audio sources currently configured on the keys are <i>not</i> restored after a restart of the SmartPanel. (Default setting: <i>enabled</i>)

Audio

Trim Level in dB	Setting the level of all monitored audio sources. (-72.3 ... +18 dB / default setting: 0)
NMOS IS-08 Channel Order	Sets the order (top/bottom) of the left and right audio channels. (Left Right, Right Left / default setting: <i>Left Right</i>)

Display

Group Color Display Location	• None: No group color is displayed. • On Display: The group color is shown as a border in the display. • On Keyring: The group color is displayed in the LED ring. (Default setting: <i>None</i>)
Peak Meter Clipping	Enables/disables the warning in case of a clipping audio source. (Default setting: <i>disabled</i>)
Clip Indication Timeout in ms	Sets the time how long a clipping audio signal is signaled. (1000 ... 10000 ms / default setting: <i>3000</i>)

Input

Secondary Drawer Behavior	Enables/disables the Key Display Functions (Secondary Function Drawer) of the SmartPanel. (Default setting: <i>enabled</i>)
----------------------------------	--

Inter App Behavior

AMA Ducking	• Disabled: The monitored audio source is never dimmed. • -3 ... -24 dB: Setting of the level (in 3 dB steps) at which a monitored audio source is dimmed when an intercom call is received at the SmartPanel. • Mute: The monitored audio source is muted when an intercom call is received at the SmartPanel. (Default setting: <i>Mute</i>)
Intercom Headset Ducking	• Disabled: The intercom audio is never dimmed in the <i>headset</i>. • -3 ... -24 dB: Setting of the level (in 3 dB steps) at which the intercom audio in the <i>headset</i> is dimmed as long as the lever for the solo function is held down. • Mute: The intercom audio is muted in the <i>headset</i> as long as the lever for the solo function is held down. (Default setting: <i>-9</i>)
Intercom Speaker Ducking	• Disabled: The intercom audio is never dimmed in the <i>speaker</i>. • -3 ... -24 dB: Setting of the level (in 3 dB steps) at which the intercom audio in the <i>speaker</i> is dimmed as long as the lever for the solo function is held down. • Mute: The intercom audio is muted in the <i>speaker</i> as long as the lever for the solo function is held down. (Default setting: <i>-9</i>)

Keybank

Color	Selection of the color with which the Audio Monitoring app appears in the info display. (Default setting: <i>Aquamarine</i>)
Name	Enter the name of the Audio Monitoring app that is shown in the info display. (Default setting: <i>Monitoring</i>)

NMOS Configuration

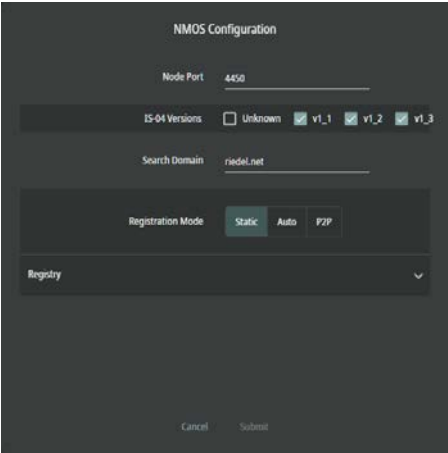


figure 101: NMOS Configuration

The NMOS configuration contains the following parameters:

Node Port	Input of the Ethernet port. (1024 ... 65535, default setting: 8080)
IS-04 Versions	Selection of NMOS versions to be supported. (Unknown, v1_1, v1_2, v1_3, default setting: v1_3)
Search Domain	Entering the domain.
Registration Mode	• Static: NMOS tries to connect to the NMOS registry specified in entries in the Registry section (IP address, port, NMOS version). • Auto: NMOS uses IS04 to determine the NMOS registration on the subnet. If there is an NMOS registration, this node connects to it directly. If not, it switches to P2P mode. • P2P: The NMOS node searches for other nodes directly via mDNS instead of relying on the NMOS registry.

The NMOS status can be checked in the web interface of the SmartPanel (⇒ [Web Interface > Parameter Drawer > NMOS Settings](#)).



If NMOS is to be used, the use of an NMOS registration server is recommended. The NMOS peer-to-peer mode uses mDNS and only works in Layer 2 network environments.

AMA always expects an IS-08 audio channel mapping in NMOS mode. There is no default mapping of AES67 stream channel to the panel L/R audio channel. This means for every NMOS AMS the AES67 channels must be mapped before the AMS appears as online in the AMA keybank and audio can be monitored.

Import Audio Monitoring Sources

This function can be used to import the user-defined audio sources that were previously saved as a JSON file. A dialog opens where the corresponding file can be selected. After pressing the **Open** button, all the audio sources present in the file are displayed in the list of audio sources.

Audio sources that are already present in the list of the connected SmartPanel are ignored during import. The import function must be executed separately for each SmartPanel.

Export Audio Monitoring Sources

With this function, all audio sources present in the list can be saved as a JSON file. In the dialog, navigate to the desired folder and specify a file name. After clicking the **Save** button, the audio sources with all parameters are written to the file.

Only data from the connected SmartPanel is saved in each file. The export function must be executed separately for each SmartPanel.

8.4.2.3 List of Audio Sources

All created audio sources are listed in this area.

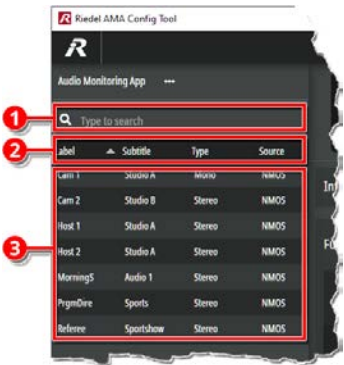


figure 102: list of Audio Monitoring Sources

1

Filter
Enter a text in this search field to filter the displayed elements. The filtering starts while filling this field; it is not necessary to press the enter key to start filtering.

2

Header
Clicking a column header will sort the elements in the respective column.

Label	Title of the audio source shown in the center of the display.
Subtitle	Subtitle of the audio source shown at the bottom of the display.
Type	Audio type (Mono/Stereo) of the audio source.
Source	Source type (SDP/NMOS) of the audio source.

3

Audio Monitoring Sources (AMS)
List of all audio sources that correspond to the filter criteria.

Individualization the List

The following adjustments can be made to change the size and contents of the asset drawer.

Adjusting the column width

- Move the mouse between two column headers.
- Hold down the mouse button and drag the changed cursor to the left / right.



Changing the column order

- Move the mouse over a column header.
- Hold down the mouse button and drag the changed cursor to the desired position on the left/right side.



8.4.2.4 Assign Audio Sources

Assigning audio sources to keys is done by simply dragging any AMS from the list and dropping it on the display above the desired key.

A maximum number of 16 out of a total of 256 audio sources can be dragged onto the SmartPanel display.



figure 103: AMA Config Tool – assign audio sources

Changes to the assignment are immediately transferred to the SmartPanel and can be used there directly.

The assignments can be customized not only in the 'Riedel AMA Config Tool', but also on the SmartPanel.

All entries are available for selection that are present in the list of audio sources (maximum 256).

(⇒ [Operation > Change Audio Sources](#))

Changes that have been made on the SmartPanel can be retrieved using the **Refresh** button.

8.4.3 Operation

This chapter describes the general operation of the Audio Monitoring App on the SmartPanel. For this, the key bank 'Monitoring' must be activated in the info display. The info display continues to show all relevant signals, even if you are on another key bank. Thus, you will not miss an important intercom call even if you are checking your audio sources.

Lever-Key Functions

Mute

When the app is started, all audio sources are muted. This is indicated by the small crossed-out red speaker.

- Press the lever upwards.
- or
- Press the rotary knob.

Muting is cancelled at the respective audio source or the audio source is muted again.



Solo

- Press the lever downwards.

The solo function of an audio source is activated and all other audio sources are muted. This can be done with several keys at once.

The solo function is only active as long as the lever is held down. When the lever is released, the audio settings return to the settings before Solo was activated.



Volume

- Turn the rotary knob.

The individual volume of each audio source can be adjusted. The volume is temporarily visualized by a horizontal bar. (The right/red (⇒ [RSP-1216HL](#)) or upper/large (⇒ [RSP-1232HL](#)) volume control changes the overall volume of the SmartPanel).



Key Display Functions (Secondary Function Drawer)

Touching the display of a key for half a second opens a Secondary Function Drawer. The dialog will disappear after 3 seconds of inactivity.

Only relevant secondary functions are offered. This means that different secondary functions are available depending on the state of the configured audio source.



figure 104: AMA Key Display Functions (Secondary Function Drawer)

In total, the following secondary functions are available:

Symbol	Feature
ISOLATE L	Isolate left audio channel. (Mute right audio channel.)
ISOLATE R	Isolate right audio channel. (Mute left audio channel.)
MONOSUM	Switches a stereo signal to a mono sum signal. (The left and right audio channels are output summed).
STEREO	Switches a mono sum signal to a stereo signal. (The left and right audio channels are output individually).
0 dB	Sets the volume of the corresponding audio source to normal level.
	Function to change the audio source.

Change Audio Sources

- Open the [Secondary Functions Drawer](#) of an audio source or an empty key.
- Select the  edit icon.

The info display shows all available audio sources.



- Select a new audio source:
 - RSP-1232HL
 - Vertical swipe and tap on an audio source
 - or
 - Turn the lower rotary knob
 - RSP-1216HL
 - Vertical swipe and tap on an audio source
 - or
 - Turn the gray rotary knob



- Confirm the entry:
 - RSP-1232HL
 - Tap the green 
 - or
 - Press the lower rotary knob
 - RSP-1216HL
 - Swipe from right to left to show the menu and tap the green 
 - or
 - Press the gray rotary knob
- or



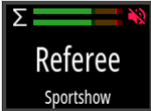
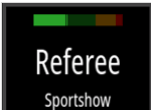
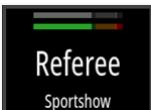
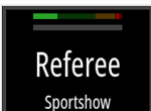
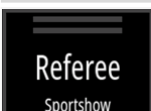
- Cancel the operation:
 - RSP-1232HL
 - Tap the red 
 - RSP-1216HL
 - Swipe from right to left to show the menu and tap the red 



8.4.4 Signalization

The Audio Monitoring app shows the following signalizations in the display and/or in the LED ring.

General Signalization

Display	Description	
	Top	Mono sum icon / level meter / mute icon
	Center	Title
	Bottom	Subtitle
	Level meter: Stereo audio source The default setting (top = left / bottom = right audio channel) can be changed in the AMA configuration. (⇒ NMOS-IS-08 Channel Order)	
	Level meter: Mono audio source	
	Level meter: Stereo audio source (right audio channel isolated)	
	Level meter: Stereo audio source (right audio source offline)	
	Level meter: Audio source offline	

	The level meter has the following threshold values (dBFS): 
---	---

Soloing an Audio Source

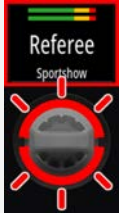
If an audio source is switched solo (pressing and holding the lever down), this is indicated by a yellow signalization depending on the configured group color.
(⇒ [Group Color Display Location](#))

Solo Signalization		
Without Group Color	Group Color via LED ring	Group Color via Display
- The display shows a yellow border. - The title and subtitle are yellow. - The LED ring shows the group color (e.g. light blue).		- The display shows a yellow border. - The title and subtitle are yellow. - The LED ring shows the group color (e.g. light blue). 
		- The group color (e.g. light blue) is shown as a border around the display. - The title and subtitle are yellow. - The LED ring is yellow. 

Clipping of an Audio Source

If an audio source is clipping (level above 0 dBFS), this is indicated by a red blinking signalization depending on the configured group color.
(⇒ [Group Color Display Location](#))

If you are in intercom mode or on another key bank, this is signaled by a red flashing border around the 'Monitoring' key bank in the info display.
The standard signaling display duration of 3 seconds can be set between 1 and 10 seconds in the AMA configuration.
(⇒ [Clip Indication Timeout in ms](#))

Clipping Signalization		
Without Group Color	Group Color via LED ring	Group Color via Display
- The display shows a red border. - The LED ring flashes red.		- The display shows a red border. - The LED ring alternately shows red and the group color (e.g. light blue). 
		- The group color (e.g. light blue) is shown as a border around the display. - The LED ring flashes red. 

8.4.5 Audio Behavior

The "ducking" audio behavior can be configured across applications, e.g. that AMA signals are suppressed when an intercom call is received. Individual channels or the entire app can be muted, and the (channel) volume can be set individually.

(⇒ [AMA Configuration > Inter App Behavior](#))

AMA Ducking (Intercom ducks AMA)

If an audio source is monitored and an intercom call arrives, the monitored audio source is dimmed. The dim level can be configured in the **AMA Configuration** options or via the API.
(⇒ [AMA Ducking](#))

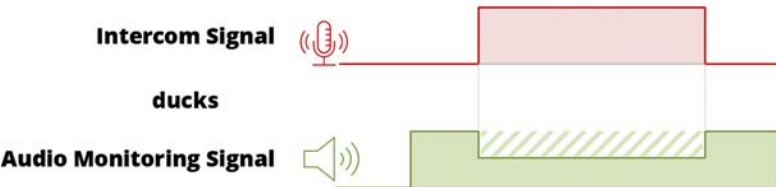


figure 105: AMA Ducking (Intercom ducks AMA)

Intercom Headset/Speaker Ducking (AMA ducks Intercom)

If an audio source is switched to solo mode in the Audio Monitoring app, the intercom audio is dimmed as long as the lever key for soloing is pressed down. The dim level can be configured in the **AMA Configuration** options or via the API.
The level can be configured individually for headset and speaker operation.
(⇒ [Intercom Headset Ducking](#) and [Intercom Speaker Ducking](#))

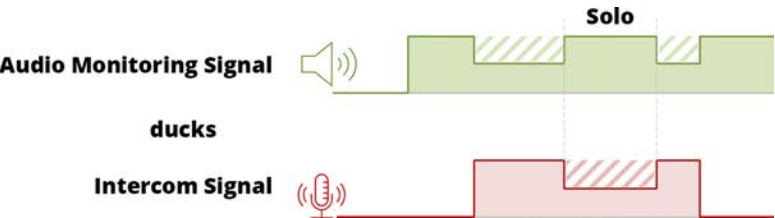


figure 106: Intercom Headset/Speaker Ducking (AMA ducks Intercom)

8.5 License Installation

The 1200 series SmartPanels need license files to activate the apps running on the panel. If a panel is not already licensed by Riedel, the license file is provided by your local distributor. The name of the license file needs to be equal to the serial number of the panel where the license will be installed. The serial number of a SmartPanel is 13 digits long and contains numbers only (e.g. "1234512345678"). The license file is a "bin"-file (e.g. "1234512345678.bin"). Every license file is only readable by the panel matching the serial number.

Installing a License

- Format an USB pen drive in the FAT32 or NTFS file format.
- Copy the license file to any (sub-) folder.
The folder can contain multiple license files. Each panel will pick its corresponding license file.

Optional:

- Open the [Settings-Menu](#) and navigate to the menu item: 'Licensing'. > 'Add License ...'.

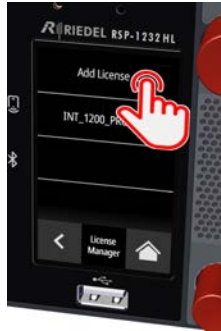


figure 107: add license

- Insert the USB stick with the license into the SmartPanel.



figure 108: connect USB stick

The SmartPanel finds the corresponding license(s) based on the serial number.

- Confirm the installation of the license by touching the green check symbol.



figure 109: install license

The license file is activated and the Info Display shows the currently valid licenses.

- Pull the USB stick out of the SmartPanel.



figure 110: current licenses

Reviewing the License Status

- Open the [Settings-Menu](#) and select the menu item: 'Licensing'.

The info display shows the current license status and all available apps.



figure 111: check license status

Activation Issues

In case you encounter problems activating your license file (license was rejected):

- Note the error code.



figure 112: license rejected

- Open the [Settings-Menu](#) and navigate to the menu item: 'Service > Device-Info'.

Information about the SmartPanel is displayed:

- Note all information that is displayed on the info display.
- Contact your local service representative with the above information.



figure 113: panel information

9 Firmware Update

The firmware of the RSP-1232HL and RSP-1216HL SmartPanels can be updated with a USB stick or via the web interface. The firmware of the ESP-1216HL expansion SmartPanels is automatically updated to the version of the connected main SmartPanel.

9.1 FW update via USB pen drive

The installation of a firmware with a USB stick can be done manually or automatically.

For automatic installation proceed as follows:

- Format an USB pen drive in the FAT32 or NTFS file format.
- Create the folders: "\\Riedel\\firmware\\unattended".
- Copy the desired firmware file into the above mentioned folder.
- The file does not need to be renamed. All names are accepted.
- When the SmartPanel is booted, insert the USB pen drive into the USB connector below the info display.
- The update process is started automatically.

A manual installation can be started via Settings > Service > Firmware Update. It does not matter in which (sub-) folder the firmware file is located. When the USB stick is plugged in, it is checked for compatible firmware files. Afterwards you can select which firmware should be installed on the SmartPanel. See also chapter ['Service'](#).



Do not power cycle the panel and do not remove the USB pen drive until the upload procedure is finished.

- The firmware is uploaded in the SmartPanel now.

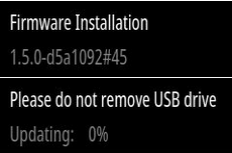


figure 114: firmware upload

- After the firmware has been loaded, the update process is executed. At this stage, the USB stick can be removed from the SmartPanel.

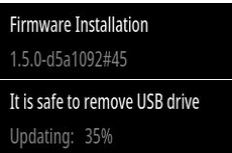


figure 115: firmware update

- When the firmware update is complete, a countdown is displayed for five seconds after which the SmartPanel restarts automatically.

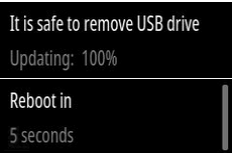


figure 116: reboot

9.2 FW update via web interface

Enter the IP address of the **Web Interface** of the SmartPanel in the web browser of a PC on the same network.



To determine the IP address of the web interface, the interface of the SmartPanel (**MEDIA 1/2, MGNT**) via which the web interface can be reached must first be determined in [Settings Menu > Applications > Web Interface](#). After that, the IP address of this interface can be retrieved in [Settings Menu > Network](#).



Do not disconnect the SmartPanel from mains during the update process.



figure 117:
Interface of
'Web
Interface'

figure 118: IP
address of the
'Web
Interface'

Open the web interface of the SmartPanel:

- Enter the IP address in the web browser (e.g. 192.168.41.159).

In this example there is only one SmartPanel in the network.

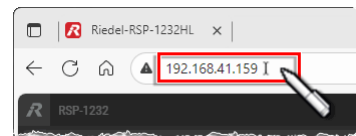


figure 119: web interface of the SmartPanel

The web interface opens.

- Open on the right side the main menu (☰) of the SmartPanel and select '**Firmware Update**'.



figure 120: Firmware Update

The firmware manager opens.

- Click on the '**SELECT FW**' button.
- Navigate to the location of the firmware file and select the desired one by clicking the **Open** button.



figure 121: select firmware

- Click on the '**INSTALL**' button.



figure 122: install

The selected firmware is transferred into the SmartPanel. A bar graph visualizes the update progress.

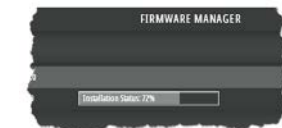


figure 123: install

The SmartPanel must be rebooted to finish the update process.

- Click on the '**Reboot**' button if the '**Auto Reboot**' function is disabled.

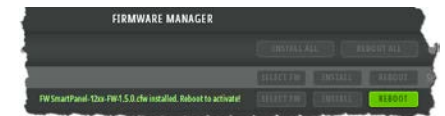


figure 124: reboot

The device is restarted. The connection is interrupted during the restart.



figure 125: restarting device

If the connection is re-established after the reboot, the new firmware version is active.



figure 126: new firmware

While the update is being performed, the following message appears in the SmartPanel display:



A firmware update is running. The panel may become unresponsive while the update is running. Please do not turn off or reboot the panel while the update is running.

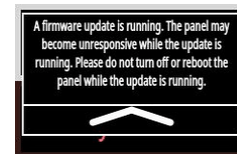


Abbildung 127: Firmware-Update im Gange

10 Appendix

10.1 Ports / Pinouts

In this chapter the Ports/Pinouts of the 1200 series SmartPanels are shown.

Ethernet port

The Ethernet connectors are used to connect an intercom network (AES67). This port is 1000Base-T compatible.

	Pin	Signal	Standard color
	1	BI_DA+	orange/white
	2	BI_DA-	orange
	3	BI_DB+	green/white
	4	BI_DC+	blue
	5	BI_DC-	blue/white
	6	BI_DB-	green
	7	BI_DD+	brown/white
	8	BI_DD-	brown

figure 128: ETH connector RJ-45 pinout (8P8C)

Management port

The Management connector is used to configure the panel over a network that is separated from the intercom network. This port is 100Base-T compatible.

	Pin	Signal	Standard color
	1	TX+	orange/white
	2	TX-	orange
	3	RX+	green/white
	4	--	blue
	5	--	blue/white
	6	RX-	green
	7	--	brown/white
	8	--	brown

figure 129: MGNT connector RJ-45 pinout (8P8C)

Expansion port

The Expansion connector is used to connect Expansion Panels.

	Pin	Signal	Standard color
	1	TX+	orange/white
	2	TX-	orange
	3	RX+	green/white
	4	--	blue
	5	--	blue/white
	6	RX-	green
	7	--	brown/white
	8	--	brown

figure 130: Expansion connector RJ-45 pinout (8P8C)

Matrix connectors

The Matrix connectors are used for the connection to the intercom matrix (AES3).

	Pin	Matrix 1
	1	TxD +
	2	TxD -
	3	RxD +
	4	--
	5	--
	6	RxD -
	7	--
	8	--
Chassis		Chassis GND

figure 131: Matrix 1 connector RJ-45 pinout

	Pin	Matrix 2
	1	TxRx Data +
	2	TxRx Data -

figure 132: Matrix 2 connector BNC pinout

GPI IN port

The GPI input connector contains 3 single ports.

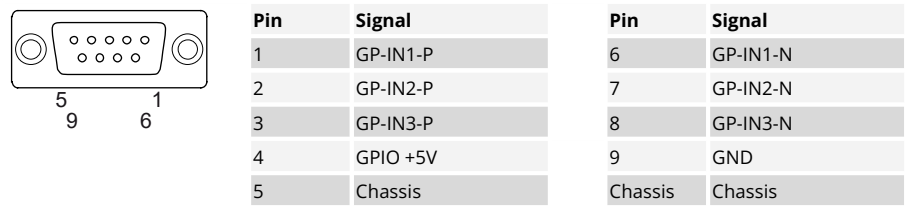


figure 133: GPI IN connector Sub-D-9 female pinout

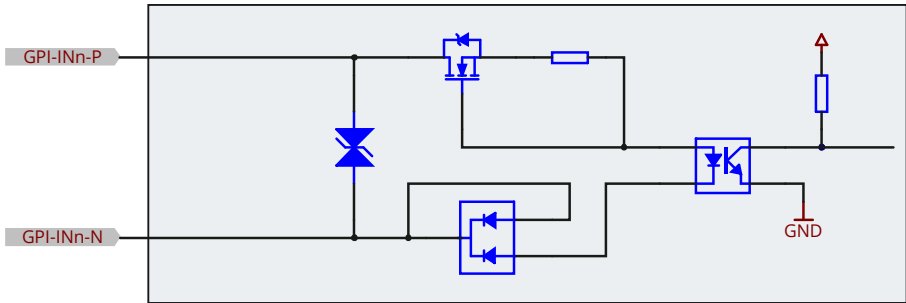


figure 134: GPI IN connector schematic

- The input voltage range of the GPI inputs is +5 to +48 VDC (~5 mA current draw, internal optocouplers).
- The polarity of the inputs is important. The higher potential must be connected to "P" of each channel.
- The inputs are galvanically isolated.
- The "GPIO +5V" output voltage drops by increasing the load: 5V @ 0mA / 3.3V @ 50mA.

GPI OUT port

The GPI output connector contains 3 single ports.

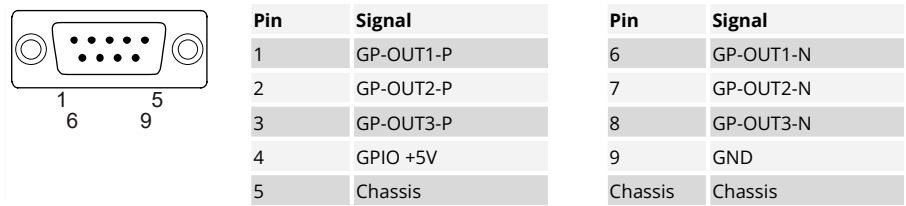


figure 135: GPI OUT connector Sub-D-9 male pinout

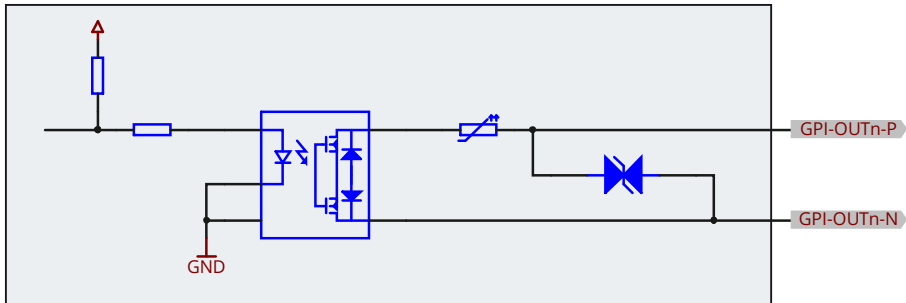


figure 136: GPI OUT connector schematic

- The GPI output contact rating is 300 mA, 48 VDC maximum (protected by self-healing fuse).
- The polarity of the output has no preference.
- The outputs are galvanically isolated.
- The "GPIO +5V" output voltage drops by increasing the load: 5V @ 0mA / 3.3V @ 50mA.

Audio connector

	Pin	Signal	Standard color
	1	--	orange/white
	2	--	orange
	3	--	green/white
	4	AIO-RX-P	blue
	5	AIO-RX-N	blue/white
	6	--	green
	7	AIO-TX-P	brown/white
	8	AIO-TX-N	brown

figure 137: Audio connector RJ-45 pinout

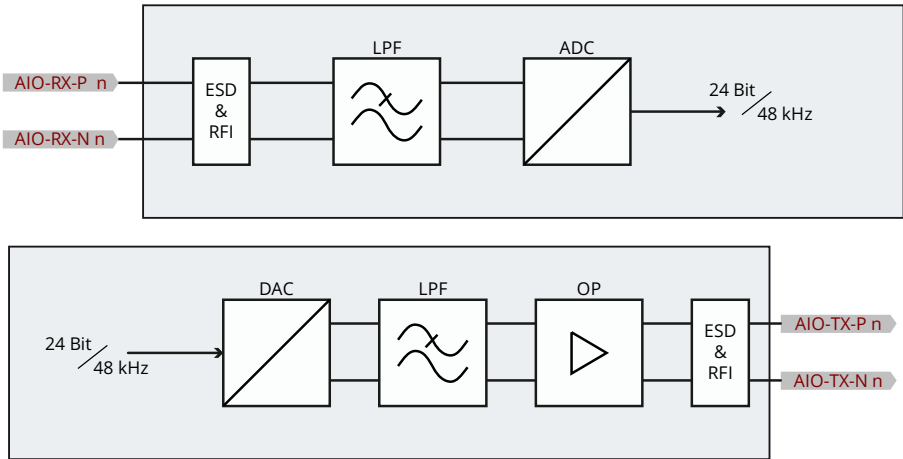


figure 138: Audio connector block diagram

Headset connectors

	Pin	Headset A	Headset B
	1*	HS Phones A + (right)	HS Phones B + (right)
	2	GND	GND
	3*	Data A	Data B
	4	HS MIC A + , (+5 VDC)	HS MIC B + , (+5 VDC)
	5	HS MIC A - , (GND)	HS MIC B - , (GND)
	6*	PTT A	PTT B
	7	HS Phones A + (left)	HS Phones B + (left)
	8	GND	GND
	Case	Chassis	Chassis

* future use

figure 139: Headset connector RJ-45 pinout

	Pin	Headset A
	1	HS MIC A - , (GND)
	2	HS MIC A + , (+5 VDC)
	3	GND
	4	HS Phones A + (left)

figure 140: Headset connector XLR-4 male pinout

Stereo operation is supported with the 7-pin XLR connector (XLR7M).

	Pin	Headset A
	1	HS MIC A - , (GND)
	2	HS MIC A + , (+5 VDC)
	3	GND
	4	HS Phones A + (left)
	5	HS Phones A + (right)
	6	PTT A
	7	Data A

figure 141: Headset connector XLR-7 male pinout

The microphone power supply (+5 VDC) is switched on (electret) or off (dynamic) according to the Director configuration.

10.2 XLR Insert

The SmartPanels are shipped with an XLR insert for 4-pin headphone connections. The pre-installed XLR insert can be replaced by the user.

The following table lists the part numbers (versions) of the XLR inserts that are compatible with the SmartPanel. The part number/version can be found on the label on the XLR insert. In addition to the compatible XLR insert, the XLR accessory includes an Allen wrench and a spare grub screw.

	XLR Insert	Grub Screw
Included XLR	XLR4M 6410515 (D00) 9300502 (A00) 9300545 (B00, C00)	M3x4 mm
XLR option (sales item): 9300956	XLR7M 9300649 (A00)	M3x4 mm

Replacing the Headset Plug

The front XLR insert in the RSP-1216HL and RSP-1232HL, as well as the two rear inserts in the DSP-1216HL, can be replaced by the user. The required steps are shown below using an RSP-1232HL as an example, but also apply to a RSP-1216HL and DSP-1216HL.

- Switch off the SmartPanel.
- Insert a suitable XLR connector into the XLR insert.



- Using a 1.5 mm Allen wrench, loosen the grub screw on the bottom of the SmartPanel below the XLR insert.



- Pull the XLR insert out of the SmartPanel using the XLR connector.



- Insert the desired XLR insert.

Use a suitable XLR connector to plug in the XLR insert.



- Tighten the grub screw with a torque of 0.15 Nm.
- Power the SmartPanel.

The new XLR insert is automatically detected by the SmartPanel.



XLR Schematic

XLR4M

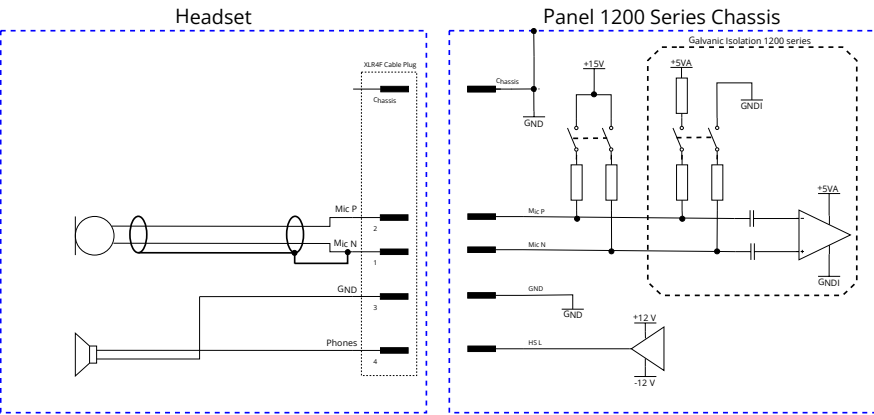


figure 142: XLR4M schematic

XLR7M

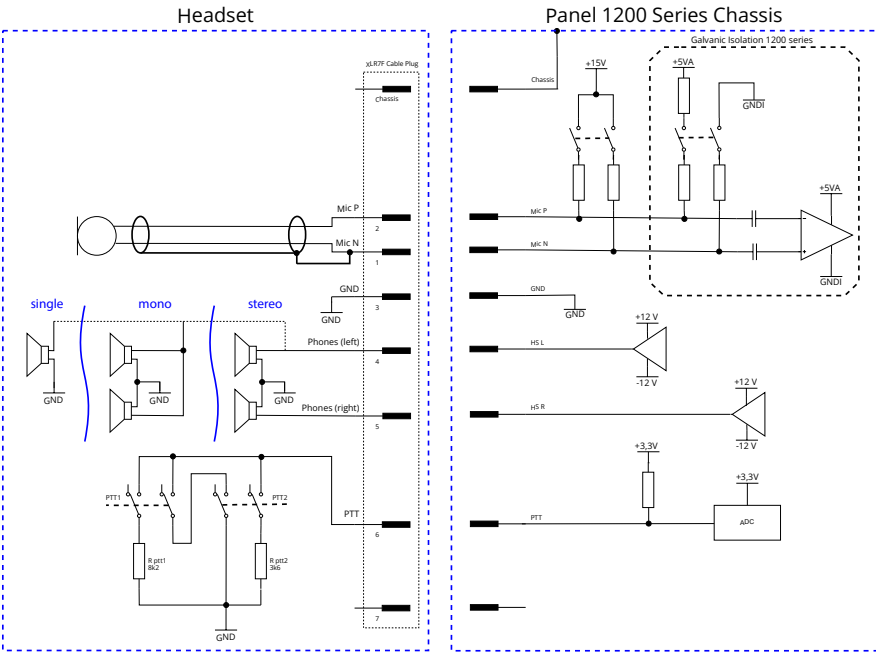


figure 143: XLR7M schematic

10.3 Network Port Usage

Port	Changeable by user	Protocol	Network / Interfaces	Description
80	No	TCP	Media or Control	Web UI of SmartPanel (http)
319, 320	No	UDP	Control	PTP v2
443	No	TCP	Media or Control	Web UI of SmartPanel (https standard) - for future use
5004 ... 5660 (only even)	Yes	UDP	Media	Audio (RTP) - Ports can not be changed for Unicast.
5005 ... 5259 (only odd)	No	RTCP	Media	Connection status for Panels connected to Artist 32/64/128 and trunklines.
5353	No	UDP	Control	mDNS for Discovery
6060	Yes	TCP	Media	Control connection from SIC to Panel
8001	No	TCP	Media or Control	Web UI of SmartPanel (WebSocket)
8989	Yes	TCP	Media or Control	NMOS

Please note that the user definable range is 1024 ... 65535 and can entirely be used if no other endpoints are configured on the same port.

10.4 Maintenance Recommendations

Following points are strongly recommended to prevent malfunction of the system.

General

- Check the functionality of the fan.

Daily

None

Weekly

None

Monthly

- Check fan dust filters and exchange them if necessary.

Yearly

None

Other

- Every three years, the fan filters should be exchanged due to an aging process even if they are not dusty or if the system was not in operation.

10.5 Service

For additional product trainings, after sales support, repairs etc. for your product, please visit the Riedel website at www.riedel.net and navigate to **Service & Support**.

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