1200 series
SmartPanels 1.1
User Manual

DRAFT
05.10.2020

01-000HB03EG-B00

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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).

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

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

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

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SmartPanels 1.1 User Manual

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1 Preface

Thank you for choosing a Riedel product.

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

This manual is available in additional formats:

CHM	"Compiled HTML Help" is the standard format for Windows online help and .Net applications
EPUB	"Electronic Publishing format" is a cross-platform e-book standard

For further information, please refer to the Riedel Website or contact your local distributor or the Riedel headquarters in Wuppertal.

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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.

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

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.**

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

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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.

1.2 Change History

New This user manual contains following changes:

RSP-1216HL

The new SmartPanel in 1RU size. (⇨ RSP-1216HL SmartPanel)

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1.3 Firmware Version

This Manual refers to the 1200 series SmartPanels with the firmware version: **1.1**.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 with the small bottom rotary encoder to the menu: '**Device-Info**'.
- Push the small rotary encoder.

The second line in the Info-display shows the SmartPanel's firmware and bugfix version.

figure 1: firmware version (SmartPanel)

Web-Interface

Enter the IP address of the **AES67 interface** (Ethernet connectors) of the SmartPanel in the web browser of a PC on the same network.

> The IP addresses of the SmartPanel are displayed in the Panel-Menu > Network > **AES67**.

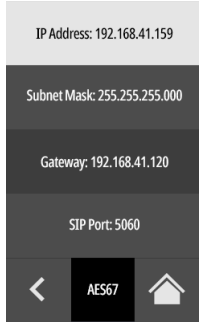

figure 2: IP address of the SmartPanel

Open the web interface of the SmartPanel:

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

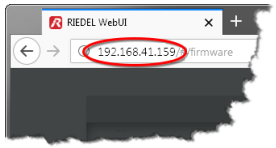

figure 3: web interface of the SmartPanel

The web interface opens.

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

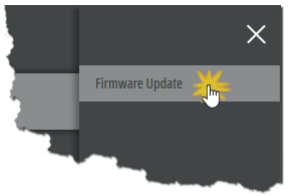

figure 4: Firmware Update

The firmware manager is opened.

The firmware version of the SmartPanel is displayed next to its IP address.

figure 5:firmware version (web interface)

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1.4 About 1200 Series SmartPanels

Building upon the technology that powers its SmartPanel app-driven user interfaces, Riedel Communications proudly introduced the new 1200 series SmartPanel today. The RSP-1232HL represents a quantum leap forward in workflow flexibility, power, and connectivity.

Featuring multiple full-color multitouch displays, 32 innovative hybrid-lever keys, the ability to leverage apps for multifunctionality, and the ability to adapt easily to the various workflows in use today, this new panel is poised to allow users to work the way they always have while opening up entirely new possibilities.

The two-year research and development effort behind the RSP-1232HL panel involved input from many users and industry pros. Every aspect of existing panel technology was evaluated, from the spacing of components to their look and feel. The result is a 32-key user interface with each lever key having an integrated rotary encoder that provides control over parameters in the same location as the key. The levers have been meticulously designed to have the perfect form, weight, comfort, responsiveness, and anti-fatigue qualities to effectively redefine the way an intercom panel should feel.

The RSP-1232HL has been designed to support varied workflows. Some comms users prefer “Talk & Listen” workflows where the user chooses what to listen to from an initially silent panel. Other workflows prefer a “Talk & Mute” workflow where users start with a panel that broadcasts everything, with the users selectively choosing which signals to turn off. Users decide which mode they prefer on a per-panel basis.

Inventing a panel from scratch also enables new features that greatly aid in making the panel easier to understand for users. Riedel’s new Logical Groups concept allows users to choose custom colors for either the key labels or the LED rings that are positioned around each key. Each key label has an eight-character main label, a 16-character sub-label, and user-defined icon labels. Along with that is an icon-based signaling mechanism to tell the user what state each key is in at any point in time. Open Mic, Muted Key, Incoming Beep, or Port Busy 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 always a big consideration for Riedel, and it was important that the new panel take advantage of both the AES3 digital connectivity the company has always used along with the SMPTE 2110-30 (AES67) connectivity that it has embraced in recent years. AES67 connections are two fiber SFPs and two RJ45 connections that create a variety of daisy-chaining and redundancy options to realize extraordinary cabling flexibility.

Other features include stereo, phase-accurate speakers; front-panel mic mute and sidetone adjustments and front/rear USB; GPIO 4-and wire ports.

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2 RSP-1216HL SmartPanel

The unique feature set of Riedel's RSP-1232HL SmartPanel includes 3 high-resolution, sunlight readable, multi-touch color displays and 16 lever keys including rotary encoders in 1RU.

Features

- 16 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 (future use)
- 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/stereo)
- 1RU

2.1 Operating Elements

figure 6: front view (RSP-1216HL)

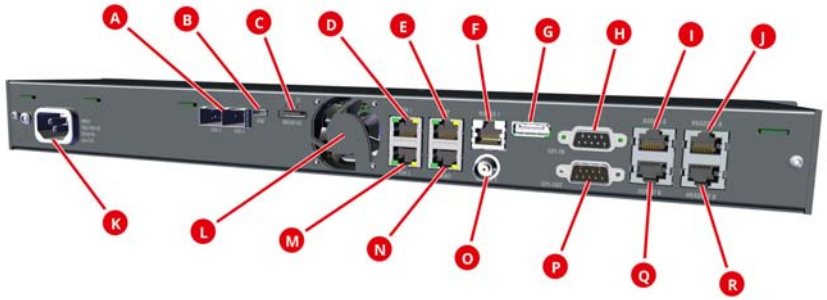

figure 7: rear view (RSP-1216HL)

1	Panel Microphone Connector (6.3 mm jack)	1×
2	Key-Displays (Touchscreen)	2×
3	Light Sensor (future use)	1×
4	NFC Antenna / Bluetooth-Antenna (future use)	1× / 1×
5	Info-Display (Touchscreen)	1×
6	Speaker	1×
7 J R	Headset Connectors (front: XLR / rear: RJ45)	1× / 2×
8	Lever Keys with integrated Rotary Encoders with push functionality	16×
9	Internal 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	Power Supply (mains input)	1×
L	Fan (temperature controlled)	1×
N	Management Connector MGNT (RJ45, future use)	1×

All Ports and Pinouts can be found in chapter Ports / Pinouts.

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2.2 Status LEDs

figure 8: front status LED positions (RSP-1216HL)

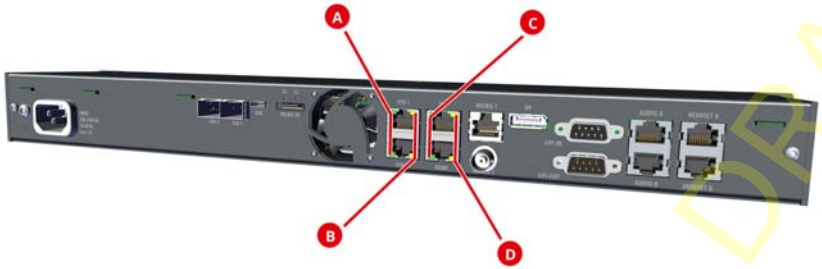

figure 9: rear status LED positions (RSP-1216HL)

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

1	**Panel Microphone**	**white**	Panel microphone active, Headset deactivated
		off	Headset active, Panel microphone deactivated
2 4	**LED Ring (top / bottom)**	**RGB**	Depending on operation mode: • Group-Color • Signalization
3	**Rotary Encoder (left, volume)**	**red blinking**	Speaker muted
		off	Speaker active
5	**Rotary Encoder (right, sidetone)**	**red blinking**	Microphone muted
		off	Microphone open
A	**Ethernet (left)**	**green**	Activity
		off	No activity
B	**Ethernet (right)**	**yellow**	100 Mbit/s link to the Intercom Network present
		green	1 Gbit/s link to the Intercom Network present
		off	No link
C	**Expansion / Management (left)**	**orange**	Link ok
		off	No link
D	**Expansion / Management (right)**	**yellow**	Activity
		off	No activity

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2.3 Lever Key Numbering

The lever keys are numbered as follows:

figure 10: Numbering of lever keys (RSP-1216HL)

2.4 Power-Up

Connect the RSP-1216HL with the mains voltage and wait until the SmartPanel has booted.

If the SmartPanel is not connected to a matrix, you will see the following contents in the info display on the right:

Info-display	Function
Network	State of the audio network.
Address	IP address of the AES67 port.
Media Port	Selection of the Ethernet-port that is connected to the AES67 network.
Transport Selected	Shows the current selected transport mode.
Matrix	State of the connection to the matrix.

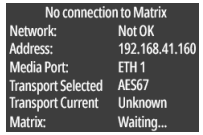

figure 11: info display RSP-1216HL (no connection)

If the SmartPanel is connected to the matrix, the matrix status changes to '**RX/TX OK**' before the default view is displayed.

figure 12: 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.

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2.5 Volume

Master Volume

The right red rotary encoder is used to adjust the master volume of the SmartPanel. The volume level is temporarily visualized by a vertical bar on the right side of the Info-display.
If the Headset mode is enabled, the volume of the connected headset is adjusted. The volume levels of speaker and headset can be set independently.
Pushing the right rotary encoder will mute the speaker. This is indicated by a blinking LED inside this rotary encoder.

figure 13: Master Volume (RSP-1216HL)

Port Volume

The individual port volume is adjusted by turning the integrated rotary encoder in the respective lever key. The volume level is temporarily visualized by a horizontal bar on the corresponding Key-display.
Pushing the rotary encoder will mute the corresponding port. Muting is also possible by turning down the volume completely. This is indicated by a mute icon in the corresponding Key-display.

figure 14: Port Volume (RSP-1216HL)

Sidetone Volume

The left grey rotary encoder is used to adjust the sidetone level of the SmartPanel. The volume level is temporarily visualized by a vertical bar on the left side of the Info-display.
Pushing the left rotary encoder will mute the microphone. This is indicated by a blinking LED inside this rotary encoder.

figure 15: Sidetone Volume (RSP-1216HL)

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

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2.6 Info-Display

The Info-display is located on the right side of the SmartPanel.

- Switching of Key-Banks (by prolonged touch)
- Indication of active functions
- Switching between panel- and headset operation
- Open the Panel-Menu

figure 16: Info-Display (RSP-1216HL)

1	Indication and switching the active Key-Bank. 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	Wipe from right to left on the info display to show the menu.		
	Speaker / Headset	Switching between speaker and headset.	
		Speaker	SmartPanel speaker and microphone are active.
		Headset	The connected headset is active.
	Info		???
	Gear		Opening the Panel-Menu.

Open the Panel-Menu

- Wipe from right to left on the info display to show the menu.
- Touch the gear icon to open the Panel-Menu.

figure 17: Panel-Menu (RSP-1216HL)

Navigation in the Panel-Menu

	• **Turning** the right rotary encoder. • **Wiping** the touch screen.	• Select the next / previous menu item • Change values / settings
	• **Pushing** the right rotary encoder. • **Tapping** the touchscreen.	Enter selected menu item
	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

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2.7 Technical Specifications

RSP-1216HL

Front Elements

Keys	16× software-assignable 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
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 MNG connector for panel configuration (separation of audio and management network, future use)
	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	101 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	140 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 <0.004 %, 200 Hz ... 20 kHz	@ -1 dBFS, 150 Ω load
		<0.03 %, 20 Hz ... 200 Hz <0.004 %, 200 Hz ... 20 kHz	@ -20 dBFS, 150 Ω load
	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		

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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	95 mm / 3.7"	
	form factor	19”, 1RU	
Weight	2.3 kg / 5.1 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 absolute	

2.8 Reset

A restart of the SmartPanel can be forced in the panel menu "Service > Reboot Panel".

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3 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 lever keys including rotary encoders in 2RU.

Features

- 32 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 (future use)
- 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/stereo)
- 2RU

3.1 Operating Elements

figure 18: RSP-1232HL (front view)

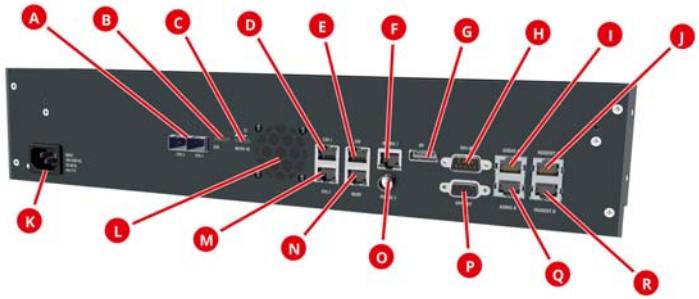

figure 19: RSP-1232HL (rear view)

1	Panel Microphone Connector (6.3 mm jack)	1×
2	Key-Displays (Touchscreen)	2×
3	Lever Keys with integrated Rotary Encoders with push functionality	32×
4	Internal Panel Microphone (future use)	1×
5	Light Sensor (future use)	1×
6	Rotary Encoder (big) with push functionality	1×
7 13	Speaker (left + right)	2×
8 J R	Headset Connectors (front: XLR / rear: RJ45)	1× / 2×
9	NFC Antenna / Bluetooth-Antenna (future use)	1× / 1×
10	Info-Display (Touchscreen)	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	Power Supply (mains input)	1×
L	Fan (temperature controlled)	1×
N	Management Connector MGNT (RJ45, future use)	1×

All Ports and Pinouts can be found in chapter Ports / Pinouts.

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3.2 Status LEDs

figure 20: RSP-1232HL (front status LED positions)

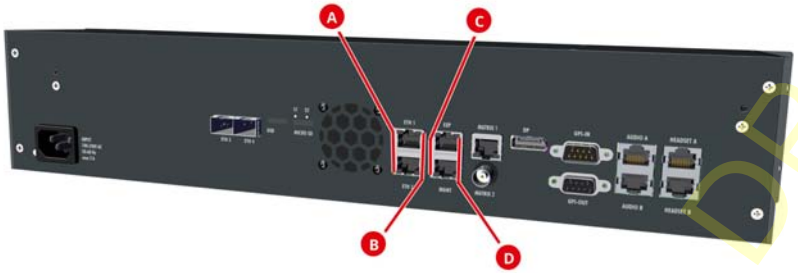

figure 21: RSP-1232HL (rear status LED positions)

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

1	**Panel Microphone**	**white**	Panel microphone active, Headset deactivated
		off	Headset active, Panel microphone deactivated
2 4	**LED Ring (top / bottom)**	**RGB**	Depending on operation mode: • Group-Color • Signalization
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**	Activity
		off	No activity
B	**Ethernet (right)**	**yellow**	100 Mbit/s link to the Intercom Network present
		green	1 Gbit/s link to the Intercom Network present
		off	No link
C	**Expansion / Management (left)**	**orange**	Link ok
		off	No link
D	**Expansion / Management (right)**	**yellow**	Activity
		off	No activity

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3.3 Lever Key Numbering

The lever keys are numbered as follows:

figure 22: Numbering of lever keys

3.4 Power-Up

Connect the RSP-1232HL with the mains voltage and wait until the SmartPanel has booted.

If the SmartPanel is not connected to a matrix, you will see the following contents in the info display on the right:

Info-display	Function
Network	State of the audio network.
Address	IP address of the AES67 port.
Media Port	Selection of the Ethernet-port that is connected to the AES67 network.
Transport Selected	Shows the current selected transport mode.
Matrix	State of the connection to the matrix.

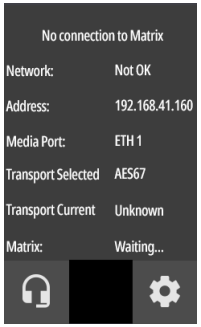

figure 23: Info-display (no connection)

If the SmartPanel is connected to the matrix, the matrix status changes to '**RX/TX OK**' before the default view is displayed.

figure 24: 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.

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3.5 Volume

Master Volume

The upper, big rotary encoder is used to adjust the master volume of the SmartPanel. The volume level is temporarily visualized by a vertical bar on the right side of the Info-display.
If the Headset mode is enabled, the volume of the connected headset is adjusted. The volume levels of speaker and headset can be set independently.
Pushing the big rotary encoder will mute the speaker. This is indicated by a blinking LED inside this rotary encoder.

figure 25: Master Volume (RSP-1232HL)

Port Volume

The individual port volume is adjusted by turning the integrated rotary encoder in the respective lever key. The volume level is temporarily visualized by a horizontal bar on the corresponding Key-display.
Pushing the rotary encoder will mute the corresponding port. Muting is also possible by turning down the volume completely. This is indicated by a mute icon in the corresponding Key-display.

figure 26: Port Volume (RSP-1232HL)

Sidetone Volume

The lower, small rotary encoder is used to adjust the sidetone level of the SmartPanel. The volume level is temporarily visualized by a vertical bar on the left side of the Info-display.
Pushing the small rotary encoder will mute the microphone. This is indicated by a blinking LED inside this rotary encoder.

figure 27: Sidetone Volume (RSP-1232HL)

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

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3.6 Info-Display

The Info-display is located on the right side of the SmartPanel.

- Switching of Key-Banks (by prolonged touch)
- Indication of active functions
- Switching between panel- and headset operation
- Open the Panel-Menu

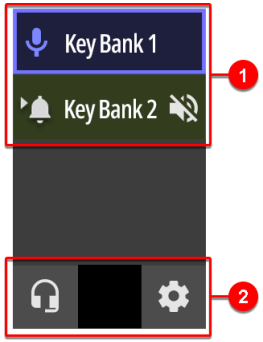

figure 28: Info-Display (RSP-1232HL)

1	Indication and switching the active Key-Bank. 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**	Switching between speaker and headset.	
		Speaker	SmartPanel speaker and microphone are active.
		Headset	The connected headset is active.
	Gear		Opening the Panel-Menu.

Navigation in the Panel-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
	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

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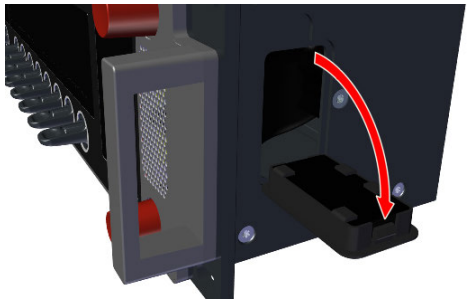
3.7 Replacing the Air Filter

The air filters are located on both device sides.

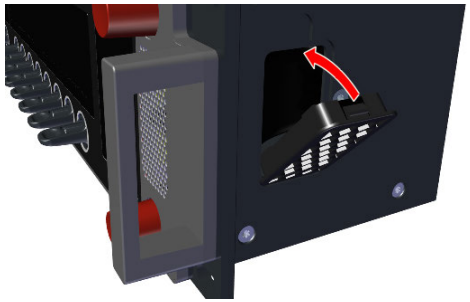
- Use your fingers to pull out the grille including the air filter on the upper side.



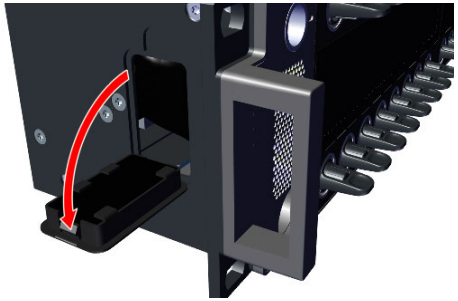
- Remove the air filter out of the grille.

- 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.



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3.8 Technical Specifications

RSP-1232HL

Front Elements

Keys	32× software-assignable 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
Speaker	2× full-range, high-quality speakers
USB	1× USB 2.0 (standard Type-A, max. 1000 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. 1000 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 MNG connector for panel configuration (separation of audio and management network, future use)
	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 <0.004 %, 200 Hz ... 20 kHz	@ -1 dBFS, 150 Ω load
		<0.03 %, 20 Hz ... 200 Hz <0.004 %, 200 Hz ... 20 kHz	@ -20 dBFS, 150 Ω load
	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		

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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	95 mm / 3.7"	
	form factor	19”, 2 RU	
Weight	3.4 kg / 7.4 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	

3.9 Reset

A restart of the SmartPanel can be forced in the panel menu "Service > Reboot Panel".

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4 Panel-Menu

Basic information and settings of the SmartPanel can be displayed and modified in the Panel menu.

➢ Touch the gear icon on the Info-Display to open the Panel menu.

Info-display	Function
Transport	Set Transport Mode (**AES3** or **AES67**)
Brightness	Adjust brightness off displays and LEDs
Device-Info	Show SmartPanel information
Network	Show/edit network settings
Matrix	Show Matrix information
Service	Stores a log file and reboots the SmartPanel

4.1 Transport

The menu **Transport** allows selecting the protocol that is used to connect the SmartPanel with a matrix.

Info-display	Function	
Selected Mode:	Display of the current selected mode. The mode can be changed by pressing and turning the small rotary encoder.	
	AES3 Cat	The SmartPanel establishes a connection via RJ45 matrix connector.
	AES3 Coax	The SmartPanel establishes a connection via BNC matrix connector.
	AES67	The SmartPanel established a connection via the Ethernet-port defined for using AES67 (see panel-menu: Network>AES67: Media-Port).

4.2 Brightness

The menu **Brightness** allows adjusting the display and LED brightness between 10% and 100%.

Info-display	Function
Display Brightness:	Adjusting the brightness of the displays.
LED Brightness:	Adjusting the brightness of the key rings.

4.3 Device-Info

The menu **Device-Info** shows information about the SmartPanel.

Info-display	Function
Date:	Shows the current date.
FW Version:	Shows the current firmware version.
SN#:	Shows the serial number of the SmartPanel.

4.4 Network

The menu **Network** allows showing/editing network settings.
The menu **AES67** allows configuring the AES67 interface.

Info-display	Function
IP Address	Static IP-address of the AES67-port.
Subnet Mask	Network mask of the AES67-port.
Gateway	Gateway of the AES67-port.
SIP Port	Selection of the SIP-port. (Standard 5060)
Media Port	Selection of the Ethernet-port (ETH1…4) that is connected to the AES67 network.

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4.5 Matrix

The menu **Matrix** shows information about the connected Matrix.
Content is only available if the SmartPanel is connected with a Matrix.

Display	Function
Net	Net number of the connected matrix.
Node	Node number of the connected matrix.
Bay	Bay number of the connected matrix.
Port	Port number of the connected matrix.
Room	Shows the Room code (if applied).
Name	Name of the SmartPanel.
Firmware-Version	Current version of the firmware of the connected matrix.
Bootloader-Version	Current version of the Bootloader of the connected matrix.
Emergency-Version	Current version of the Emergency-firmware of the connected matrix.
CurAPi	Shows the active audio patch.
PAN	Number of the panel in the Artist.
Alarm	Number of alarms in the connected matrix.
Node IP	IP-address of the connected matrix.
OnCall	Number of incoming calls to the SmartPanel that are active when the matrix menu is opend.
Datum	Shows the current date of the connected matrix.
Uhrzeit	Shows the current time of the connected matrix..
MIC conf	The microphone setting of the panel can be changed between **dynamic** and **electret** by using the lever key 29.
HS conf	The microphone setting of the headset can be changed between **dynamic** and **electret** by using the lever key 31.

4.6 Service

The menu **Service** allows storing logfiles and rebooting the SmartPanel.

Info-display	Function	
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".
Demos	**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. The demo mode is automatically exited if the SmartPanel is connected to a matrix.
	Talk/Listen 2	
	Talk/Mute	
Reboot Panel	**Reboot now**	Restarts the SmartPanels.
	Cancel	Exits the menu item and jumps back one level.
Production Test	**Testsuite 1**	This function is intended for service purposes.

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5 SmartPanel Firmware

The firmware version **1.1** contains following app:

App	License	Version	Description	
Intercom	**RSP-1232HL-APP-PRO**	1.0	Standard App for Intercom functionality.	These licenses are already pre-installed on the SmartPanel.
AES3	**RSP-1232HL-LIC-AES3**	1.0	App to use the AES3 interface.	
AES67 4-Wire	**AES67-4W-APP**	1.0	App to use the AES67 4-wire.	

5.1 Licensing

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.

5.2 Intercom App

The first SmartPanel app turns the SmartPanels in innovated and intelligent intercom panels.
Riedel's intercom app can be quickly and easily upgraded to the desired edition, without changing any hardware components.

> This app requires a license file. This license is already pre-installed on the SmartPanel.

Intercom App	RSP-1216HL-APP-PRO	RSP-1232HL-APP-PRO
Intercom Keys	16	32
Multi-Touch Displays	3	
GPI (In/Out)	3/3	
Audio I/O (A/B)	✓/✓	
Headset (A/B)	✓/✓	
Expansion Panels	✓	
Key-Banks	✓	
Logical Groups	✓	

> The intercom functions are illustrated in the following chapters using an RSP-1232 SmartPanel.
> The functions are the same with other SmartPanels of the 1200 series.

5.2.1 Operation

This chapter describes the operation of the Intercom app of 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 29: Lever Key Functions

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Key-Display Functions

Touching the display of a key for half a second opens a drawer with various key functions. The dialog will disappear after 3 seconds of inactivity.

figure 30: Key-Display functions

	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 functions is adequat to the lever up key function. In **Talk/Mute** mode the activated monitoring function is indicated by an ear icon in the upper right area.
Norm.	Sets the volume of the corresponding channel to normal level or switches off the muting.
	Configures the **copy/reply** button to this port.

Scroll Lists

To call up scroll lists configured in the Director on a 1200 smart panel, the respective configured rotary encoder must be pressed twice (double-click). In the respective key display, either the alphanumeric name search (**Search**) or the function type (**C2 Port/L2 Port**, ...) can now be selected by turning and pressing the rotary knob in order to select a scroll list entry.

figure 31: Scroll Lists

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5.2.2 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.

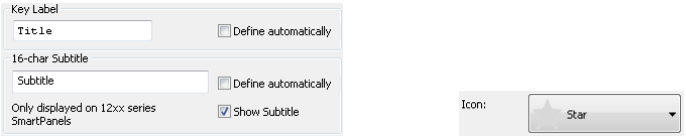
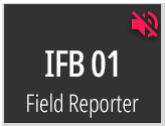


figure 32: name / subtitle / icon of the port in the Director

Talk/Mute-Modus

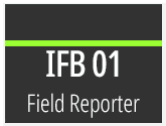
In Talk/Mute mode, signaling is always shown via icons in the upper area in the key display.

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.

Talk/Listen-Modus

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

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

Signal	Display		Description
Call (active, outgoing)	**Signaling** via the *Key-display* (**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 *Key-Display* (**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.

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Common Signalization		
Signal	**Display**	**Description**
Call (incoming)	IFB 01 Field Reporter	The Key-display is highlighted (fade in / out) while a call is incoming if the port is not muted.
Beep (incoming)	IFB 01 Field Reporter	The animated bell icon shows where the Beep being received is coming from.
Beep (outgoing)	IFB 01 Field Reporter	The animated bell shows that the user is beeping a remote panel.
Port occupied	IFB 01 Field Reporter	This symbol indicates that the remote panel is currently in a call.
Active Control Signal	IFB 01 Field Reporter	This signal will cover all control functions in the Artist. The user can choose to color the control signal in the key function.

5.2.3 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 key 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**'.

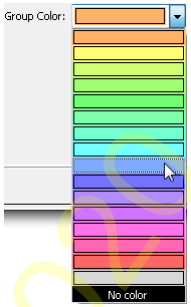

figure 33: group color per key in Director (Key Properties)

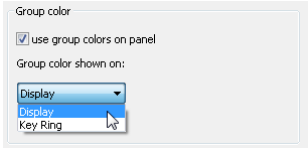

figure 34: indication of group color in Director (Panel Properties)

The key signalization is indicated in the opposite way:

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

Group Color via Key Ring	
Group-Color (i.e. light blue)	
Signalization (Bars) via the display (only in Talk/Listen mode)	

Group Color via Display	
Signalization via the key ring (only in Talk/Listen mode)	
Group-Color (i.e. light blue)	

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

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5.2.4 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**'.

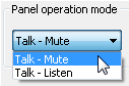

figure 35: workflow mode in Director

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

Lever Direction		Talk/Listen	Talk/Mute
up *1		Listen to outgoing audio (Talk) on a remote panel (monitor remote panel)	Mute the incoming audio signal
down *2		• Talk to a panel • Execute additional configured commands	

*1 latching only
*2 auto, momentary and latching

5.2.5 Key-Banks

Key Banks – a new take on shift pages – 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 touching the respective name for 0.5 seconds. The active key bank is highlighted in the Info-Display by a thicker border. Furthermore the color of the active Key-Bank is shown as border in both Key-Displays.

figure 36: View of selected Key-Bank

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

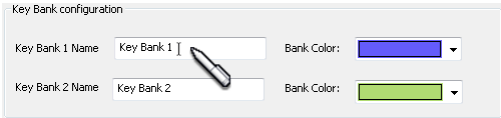

figure 37: name / color of key banks in the Director

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5.3 Web Interface

The SmartPanel features a web interface for configuration purpose.

Enter the IP address of the **AES67 interface** (Ethernet connectors) of the SmartPanel in the web browser of a PC in the same network.

ℹ	The IP addresses of the SmartPanel are displayed in the Panel-Menü > Network > **AES67**.

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

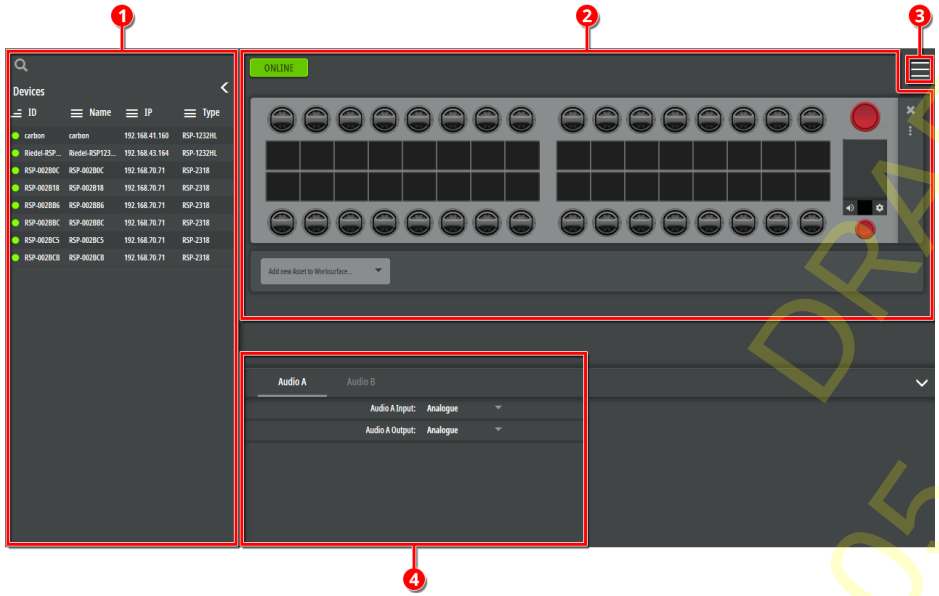

figure 38: SmartPanel – web interface

1	**Asset Drawer** All SmartPanels found in the network are listed here.	
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** The inputs/outputs of the audio paths A/B can be defined.	

5.3.1 Asset Drawer

The **asset drawer** shows all SmartPanels found in the network.
Double-Clicking an entry opens the SmartPanel in the Work Surface.

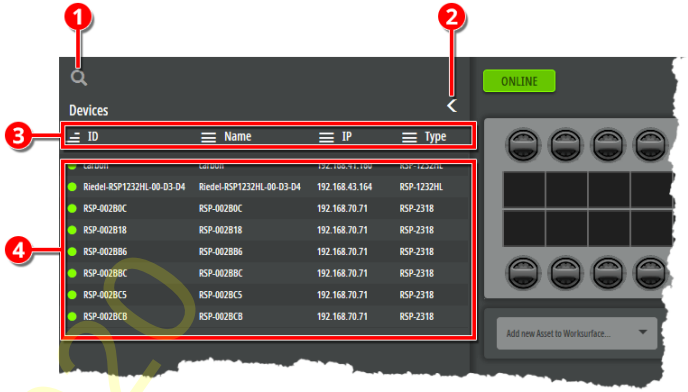

figure 39: Asset Drawer

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.	
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.	

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Individualization the Asset Drawer

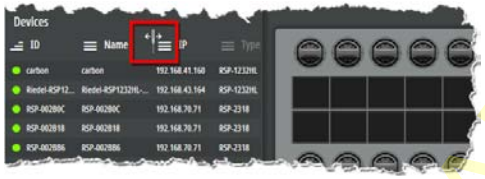
The following adjustments can be made to change the size and contents of the asset drawer.

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.

5.3.2 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.

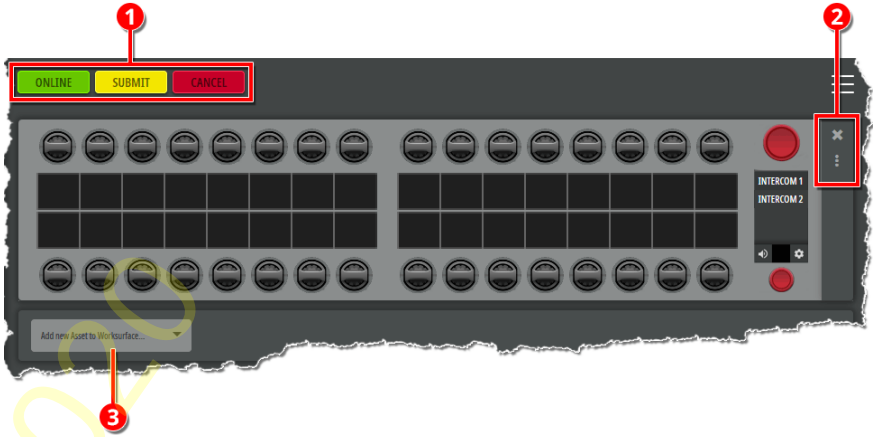


figure 40: Work Surface

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 *discard all* 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...

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5.3.3 Main Menu

5.3.3.1 Firmware Manager

figure 41: SmartPanel web interface

1	**Asset List** The asset list displays all SmartPanels that are found in 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.

5.3.4 Parameter Drawer

In the **parameter drawer**, the inputs/outputs of the audio paths A/B can be defined.

Audio A/B

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

figure 42: 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	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	Defines a digital **AES67 4-wire** as output of the audio patch. The output stream is configured in the Stream Setup.

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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.

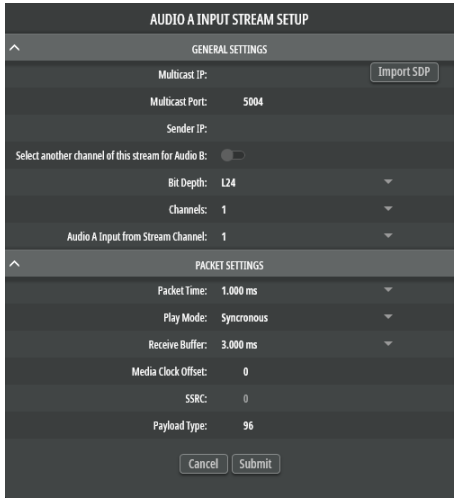

figure 43: Input Stream (Stream Setup)

figure 44: Output Stream (Stream Setup)

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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

5.4 Firmware Update

There are two ways to update the firmware of the 1200 series SmartPanels:

1. Via USB pen drive
2. Via web interface

Firmware update via USB pen drive

- Format an USB pen drive in the FAT32 or NTFS file format.
- Create the folders: "\\Riedel\firmware\unattended".
- Copy the desired RSP-1232HL firmware file into the above mentioned folder.
- The file does not need to be renamed. All names are accepted.
- When the RSP-1232HL SmartPanel is booted, insert the USB pen drive into the USB connector below the Info-display.

The update process is started automatically.

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

- The firmware is uploaded in the SmartPanel now.

figure 45: update in progress

- After storing the firmware you will be prompted to remove the USB pen drive.

figure 46: update finished

- The SmartPanel is automatically rebooting after removing the USB pen drive.

The firmware update is finished now.

figure 47: rebooting

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Firmware update via web interface

Enter the IP address of the **AES67 interface** (Ethernet connectors) of the SmartPanel in the web browser of a PC on the same network.

i	The IP addresses of the SmartPanel are displayed in the Panel-Menu > Network > **AES67**.

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

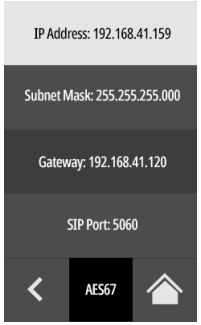

figure 48: IP address of the SmartPanel

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 49: web interface of the SmartPanel

The web interface opens.

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

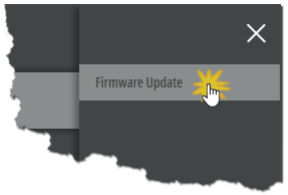

figure 50: Firmware Update

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 51: select firmware

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

figure 52: install

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

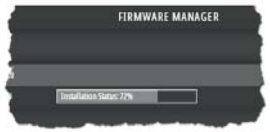

figure 53: install

The SmartPanel must be rebooted to finish the update process.

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

figure 54: reboot

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

figure 55: restarting device

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

figure 56: new firmware

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5.5 AES67 4-wire App

This chapter describes the required steps to activate the AES67 4-wire operation.

ℹ	The SmartPanel must be licensed for this function.

- Touch the gear icon in the Info-display.
- Select the menu: '**Transport**'.
- Select the option '**AES67**'.

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

figure 57: 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 58: web interface of the SmartPanel

- Select the '**Audio A**' or '**Audio B**' Parameter Drawer:

figure 59: Audio A/B tab

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

figure 60: Analogue -> AES67

- Click on '**Stream Setup**'.

figure 61: 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 62: 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 63: 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.

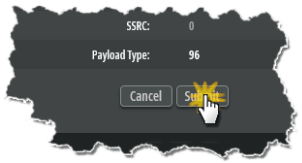

figure 64: confirm/cancel entries

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- 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 65: change channel

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

figure 66: stored stream parameters

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

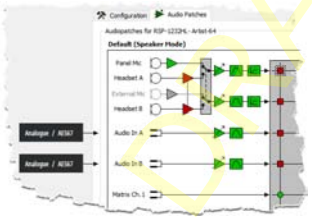

figure 67: routing in the Director audiopatch

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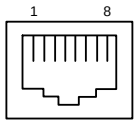
6 Appendix

6.1 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.

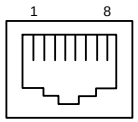


Pin	Signal	Standard color
1	BI_DA+	orange/white
2	BI_DA-	orange
3	BI_DB+	green/white
4	BI_DC+	blue
5	BI_DC-	blue/white
6	BI_DB-	green
7	BI_DD+	brown/white
8	BI_DD-	brown

figure 68: ETH connector RJ-45 pinout (8P8C)

Management port

The Management connector is currently not used. In future this port is used to configure the panel over a network that is separated from the intercom network. This port is 100Base-T compatible.

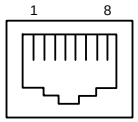


Pin	Signal	Standard color
1	TX+	orange/white
2	TX-	orange
3	RX+	green/white
4	--	blue
5	--	blue/white
6	RX-	green
7	--	brown/white
8	--	brown

figure 69: MGNT connector RJ-45 pinout (8P8C)

Expansion port

The Expansion connector is used to connect Expansion Panels.

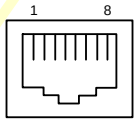


Pin	Signal	Standard color
1	TX+	orange/white
2	TX-	orange
3	RX+	green/white
4	--	blue
5	--	blue/white
6	RX-	green
7	--	brown/white
8	--	brown

figure 70: 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 71: Matrix 1 connector RJ-45 pinout

Pin	Matrix 2
1	TxRx Data +
2	TxRx Data -

figure 72: Matrix 2 connector BNC pinout

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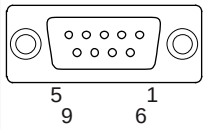
GPI IN port

The GPI input connector contains 3 single ports.



Pin	Signal	Pin	Signal
1	GP-IN1-P	6	GP-IN1-N
2	GP-IN2-P	7	GP-IN2-N
3	GP-IN3-P	8	GP-IN3-N
4	GPIO +5V	9	GND
5	Chassis	Chassis	Chassis

figure 73: GPI IN connector Sub-D-9 female pinout

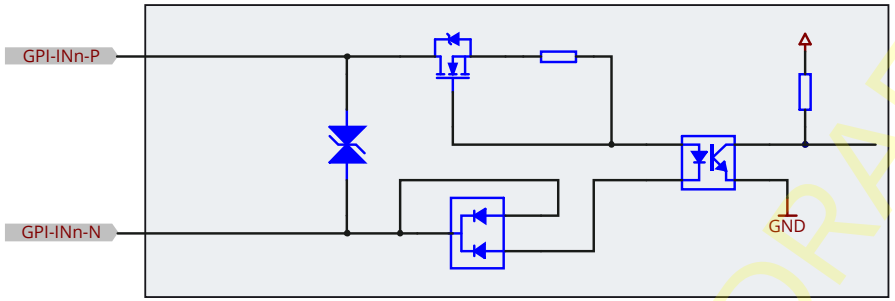
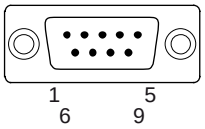


figure 74: GPI IN connector schematic

- 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.



Pin	Signal	Pin	Signal
1	GP-OUT1-P	6	GP-OUT1-N
2	GP-OUT2-P	7	GP-OUT2-N
3	GP-OUT3-P	8	GP-OUT3-N
4	--	9	--
5	Chassis	Chassis	Chassis

figure 75: GPI OUT connector Sub-D-9 male pinout

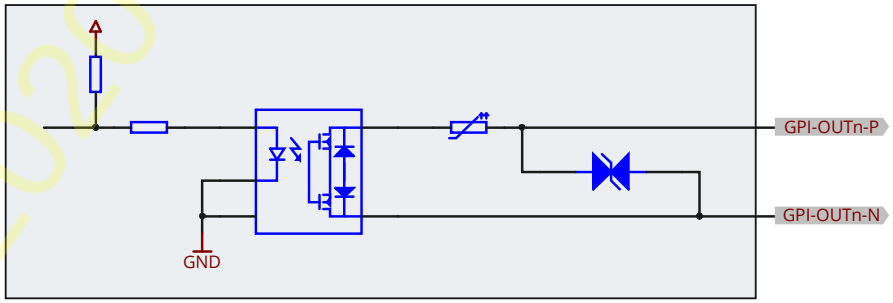


figure 76: GPI OUT connector schematic

- The GPI output contact rating is 300 mA, 60 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.

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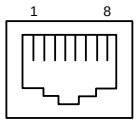
Audio connector



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 77: Audio connector RJ-45 pinout

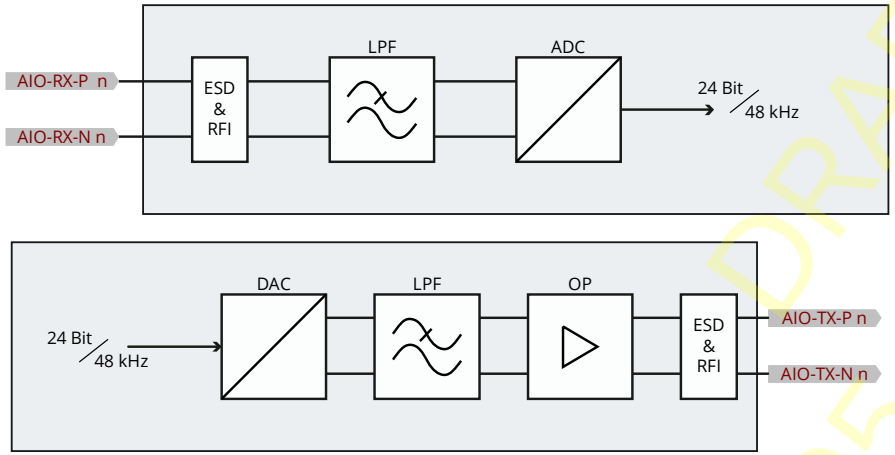
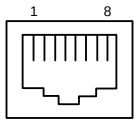


figure 78: Audio connector block diagram

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

figure 79: Headset connector RJ-45 pinout

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

figure 80: Headset connector XLR-4 male pinout

The microphone power (+5 VDC) will be switched on/off according to the microphone type.

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6.2 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.

6.3 Service

If you have any further questions, we offer comprehensive customer service options for this product including:

- Telephone Service
- Email Service
- Fax Service
- Configuration Support
- Trainings
- Repair

Your primary point of contact for any service issues is your local dealer.
In addition, Riedel Customer Service in Wuppertal, Germany is also available to assist you.

Telephone: +49 (0) 202 292 9400
(Monday - Friday, 8am – 5pm, Central European Time)

Fax: +49 (0) 202 292 9419

Or use the contact form on our website:
www.riedel.net > Services > Support

For repairs, please contact your local dealer. Your dealer will be able to help process your repair as fast as possible and/or arrange for the delivery of spare parts.

The address for repairs sent directly to Riedel Communications GmbH is:

Riedel Communications GmbH & Co. KG
- Repairs -
Uellendahler Str. 353
D-42109 Wuppertal
Germany

Please add a completed repair form to all your repairs.
The form can be found at the Riedel website:
www.riedel.net > Services > Repairs

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