

PYKO-out

Professional IP ↔ Audio Endpoint



User manual

Important Safety Information read carefully before using this equipment!

Follow these instructions and keep them in a safe place! Keep in mind that damages due to failure to observe the instructions contained in this manual are not covered by warranty.

Instructions importantes de sécurité lire soigneusement avant d'utiliser l'équipement!

Lisez et suivez ces instructions. Conservez les pour consultation ultérieure! Les dommages dus au non-respect des instructions contenues dans ce manuel ne sont pas couverts par la garantie.

Wichtige Sicherheitshinweise vor Inbetriebnahme des Gerätes sorgfältig lesen!

Befolgen Sie die Anweisungen und bewahren Sie sie für spätere Fragen auf! Bei Schäden, die durch Nichtbeachten dieser Bedienungsanleitung verursacht werden, erlischt der Garantieanspruch!



Throughout this manual, the lightning bolt triangle is used to alert the user to the risk of electric shock.



The exclamation point triangle is used to alert the user to important operating or maintenance instructions.



Do Not Open the Cabinet

There are no user-serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your warranty. If it is necessary to open the device for maintenance or advanced configuration purposes, this is to be done by qualified personnel only after disconnecting the power cord and network cables!



Ne pas ouvrir l'appareil

L'ouverture du coffret peut produire un risque de choc électrique, et toute modification du produit annule votre garantie. S'il est nécessaire d'ouvrir l'appareil pour l'entretien ou la configuration avancée, cela doit être fait par du personnel qualifié, après avoir débranché le cordon d'alimentation et les câbles réseaux!



Gerät nicht öffnen

Öffnen des Geräts kann eine Gefährdung durch Stromschlag und Erlöschen der Garantie zur Folge haben. Reparaturarbeiten und Änderungen der Hardwarekonfiguration dürfen nur von qualifiziertem Personal nach Entfernen der Strom- und Netzkabel durchgeführt werden.



Power supply

The device is to be connected only to a power supply as specified in this manual and marked on the equipment.



Alimentation

Il est primordial de connecter l'appareil à une alimentation électrique telle que spécifiée dans ce manuel d'utilisateur et sur le matériel même.



Stromversorgung

Das Gerät darf nur mit der in dieser Bedienungsanleitung und auf dem Gerät angegebenen Stromversorgung betrieben werden.

This equipment must be earthed!

Do not block any of the ventilation openings!

Humidity

To reduce the risk of fire or shock, do not expose this device to rain or moisture. Do not place objects filled with liquid on this device.

Installation Location

To ensure proper operation and to avoid safety hazards, the device must be installed in a 19" rack mount chassis. The electrical installation of the building should dispose of easily accessible disconnecting means in the immediate vicinity of the device.

If rack installation is not possible, place it on a firm and level surface. The use of a supply lead with a power plug respecting the legal standards in the country of use is obligatory. The plug shall be easily accessible in case of a problem.

Avoid installation in extremely hot or cold locations, or in an area that is exposed to direct sunlight or heating equipment. Avoid moist or humid locations.

Connection of this product to an IT power supply system is only in Norway.

Cleaning

Clean only with a soft, dry cloth. If necessary, after disconnecting the unit's cables, wipe it with a soft cloth dampened with mild soapy water, then with a fresh cloth with clean water. Wipe dry immediately with a dry cloth. NEVER use benzene, aerosol cleaners, thinner, alcohol or any other volatile cleaning agent. Do not use abrasive cleaners, which may damage the finish of metal or other parts.

Refer all servicing to qualified service personnel.

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

Moving the device

Before moving the unit, be certain to disconnect any cables that connect with other components.

Cet équipement doit être raccordé à la terre !

N'obstruer aucune ouverture de ventilation !

Humidité

Afin de réduire les risques de feu ou de choc, n'exposez pas cet appareil à la pluie ou l'humidité. Ne placez pas d'objet contenant un liquide sur l'appareil.

Installation, mise en place

Afin d'assurer le fonctionnement correct et de minimiser les risques potentiels liés à la sécurité, l'appareil doit être installé dans une baie de montage de type 19 pouces. Prévoir dans l'installation électrique du bâtiment un dispositif de sectionnement aisément accessible et à proximité immédiate de l'appareil.

Si l'installation dans une baie ne vous est pas possible, placez-le sur une surface solide et plane. L'utilisation d'un câble d'alimentation avec une fiche de prise de courant respectant les normes en vigueur dans le pays d'utilisation est obligatoire. De plus la fiche de prise de courant doit être aisément accessible en cas de problème.

Évitez une installation dans des endroits très chauds ou très froids ainsi que dans des lieux exposés directement au soleil. Évitez les lieux présentant un excès d'humidité.

Le raccordement de ce produit à un régime d'alimentation IT n'est possible qu'en Norvège.

Nettoyage

Nettoyez uniquement avec un chiffon doux et sec. Si nécessaire, après avoir débranché le cordon d'alimentation, essuyez-le avec un chiffon doux humidifié avec de l'eau savonneuse puis rincez-le à l'aide d'un chiffon propre et d'eau claire.

Séchez-le immédiatement avec un chiffon sec. N'utilisez JAMAIS d'essence, de nettoyeurs en aérosols, d'alcool ou tout autre agent nettoyant volatil. N'utilisez pas de produits nettoyants abrasifs qui pourraient endommager les finitions métalliques ou d'autres pièces.

Réparation

Lorsque l'appareil a été endommagé quelle qu'en soit la cause ou qu'il ne fonctionne pas normalement, toute réparation doit être effectuée par du personnel qualifié. Avant de transporter l'unité, assurez-vous d'avoir bien déconnecté le cordon d'alimentation ainsi que tous les câbles la reliant à d'autres appareils.

Erdung ist zu gewährleisten!

Belüftungsschlitze nicht verdecken!

Wasser und Feuchtigkeit

Um Brand- oder Stromschlagrisiken zu vermeiden, darf das Gerät nicht mit Feuchtigkeit in Berührung kommen.

Aufbau des Geräts

Um den einwandfreien Betrieb zu gewährleisten und Sicherheitsrisiken zu vermeiden, sollte das Gerät in einem 19-Zoll Baugruppenrahmen montiert werden. Die elektrische Installation des Gebäudes sollte über einen leicht zugänglichen Trennschalter in unmittelbarer Nähe des Geräts verfügen. Nur wenn die Installation im Rack nicht möglich ist, stellen Sie das Gerät auf einen festen, waagerechten Untergrund.

Die Verwendung eines Anschlußkabels und eines Steckers, die die im Benutzungsland gültigen Normen erfüllen, ist obligatorisch. Des Weiteren muß die Steckdose für einen eventuellen Problemfall leicht zugänglich sein.

Meiden Sie Standorte in der Nähe von Wärme- oder Feuchtigkeitsquellen sowie direkte Sonneneinstrahlung.

Anschluß dieses Produktes an eine spezielle IT-Stromversorgung ist nur in Norwegen genehmigt.

Reinigen des Geräts

Säubern Sie das Gerät nur mit einem weichen, trockenen Tuch. Bei Bedarf verwenden Sie ein mit mildem Seifenwasser befeuchtetes Tuch, nachdem Sie die Netzanschlusskabel aus der Steckdose gezogen haben, anschließend ein weiches, mit klarem Wasser befeuchtetes Tuch. Trocken Sie das Gerät sofort im Anschluß. Keinesfalls Benzol, Verdünnungsmittel oder sonstige starke Lösungsmittel oder Scheuerreiniger verwenden, da hierdurch das Gehäuse beschädigt werden könnte.

Lassen Sie etwaige Reparaturen nur von qualifizierten Fachleuten durchführen!

Sollten das Netzkabel oder der Netzstecker beschädigt sein, oder sollte das Gerät selbst beschädigt worden sein (z. B. durch Eindringen von Feuchtigkeit durch Fall auf den Boden), oder sollte es nicht ordnungsgemäß funktionieren oder eine deutliche Funktionsabweichung aufweisen, so ist es von qualifizierten Fachleuten zu reparieren.

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INFORMATION FOR THE USER

This equipment has been tested and found to comply with the limits for a CLASS B digital device, pursuant to Part 15 of the FCC Rules and with the following European and international Standards for:

In order to guarantee compliance with the above standards in an installation, the following must be done:

- the provided cables must not be modified.
- additional cables used must have their respective shield connected to each extremity.

The limits specified in the standards are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- * reorient or relocate the receiving antenna.
- * increase the separation between the equipment and the receiver.
- * connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- * consult the dealer or an experienced audio/television technician for help.

Note: *Connecting this device to peripheral devices that do not comply with CLASS B requirements or using an unshielded peripheral data cable could also result in harmful interference to radio or television reception. The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. To ensure that the use of this product does not contribute to interference, it is necessary to use shielded I/O cables.*

This device has been tested and found to comply with the following standards:

- International: CISPR22 (2005) Class B.
- Europe: EMC 2004/108/CE specifications.
- United States: FCC Rules-Part 15-Class B (digital device).

In order to guarantee compliance with the above standards in an installation, the following must be done:

- the provided cable must not be modified.
- additional cables used must have their respective shield connected to each extremity.

OVERVIEW

Contents of this package

The package consists of the following components:

- a PYKO-out device
- a counterpart for the power connector

Also available (optionally):

- Power supply with cable and connector mounted.
- Adaptor for mounting the PYKO-in on a DIN rail
- Adaptor for mounting the PYKO-in in a 19" rack

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You have just acquired a Digigram IP ↔ audio endpoint and we congratulate you!

PYKO-out allows you to draw the most from an IP network in order to set up professional audio installations. The manual at hand will guide you through installation, configuration and use. For any software related issue, please refer to the specific documentation provided in its on-line help.

For more information on PYKO applications, please refer to the document 'Audio system cookbook', available on our [web site](#).

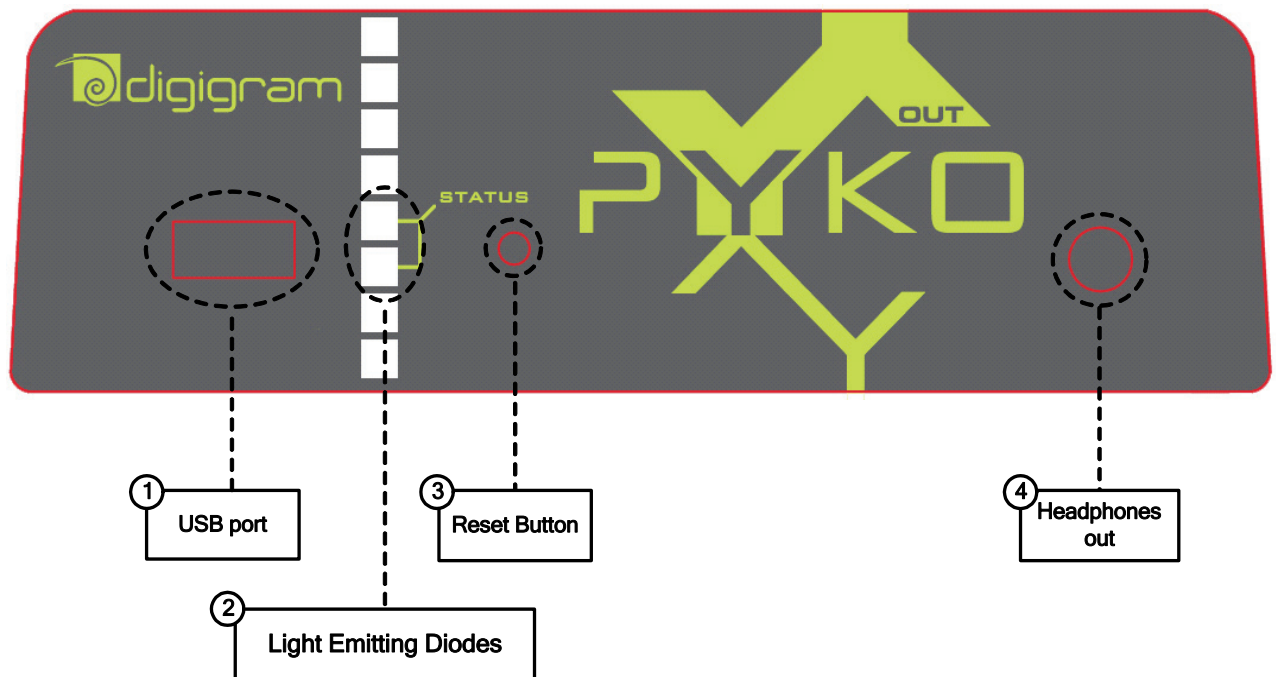
KEY FEATURES

- 1 line level stereo output on terminal block
- 1 USB port on front panel
- 1 internal USB port (exclusive of front panel USB port)
- 1 RJ45 port
- 1 headphones output
- 4/4 GPIOs on terminal block
- 1 RS232 port
- 1/3" 1U rack enclosure
- Remote control and management through .html pages, 'Audio Manager' software, or EScontrol software (EtherSound mode)

Also available:

- * 1U 19 inch rack to mount up to three PYKOs
(optional, including fastenings)

The PYKO-out front panel



1. USB port

USB 1.1 interface allowing to store audio files in mp3 format to play them on the outputs.

2. LEDs

Two electroluminescent diodes indicate the network activity and the presence of an audio stream.

3. Reset button

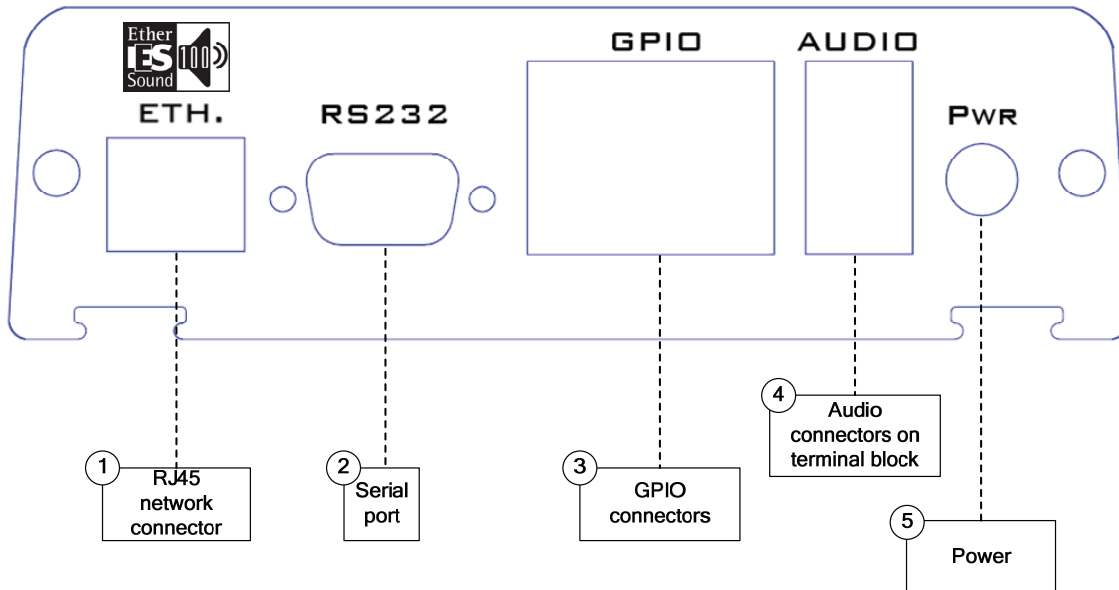
Press this button briefly to reset your PYKO.

If you press it until the LED blinks (approximately 5 seconds), PYKO-out will be is reset to factory configuration, i.e. to 'Stream Server' mode with IP address 192.168.0.100., DHCP=OFF, and the UDP/TCP ports to the default UDP and TCP port values (40002 respectively 40004).

4. Headphones out (mini jack)

- At start-up, PYKO-out announces its IP address on this output.
- During operation, it plays the audio in parallel of the stereo line output.

The PYKO-out back panel



1. RJ45 network connector

RJ45 for a network connection in 10/100 Mbps half-/full-duplex.

2. Serial port

RS232 interface on DB9 (see Appendix G, management of RS232 port).

3. GPIO connectors

These terminal blocks allow setup of external control and monitoring devices through configurable and protected General Purpose Inputs and Outputs. See the chapter dedicated to the GPIOs for more details (cf. Appendix E, management of the GPIOs).

4. Audio connectors

These terminal blocks allow to connect the audio inputs and outputs. (cf. Appendix D, Audio connectors).



5. Power supply

24 VDC with plug to screw.

INSTALLATION

Connecting your PYKO-out device

It is recommended to establish all connections before powering the device up.

Power supply

Before plugging the power cord, make sure it is not damaged.

Just like for any other audio system, power the individual devices up following the audio path and power down in the opposite direction.

Do not allow anything to rest on the power cable. Keep the power cable away from where people could trip over it.

Set-up

- Use an Ethernet cable to connect your PYKO-out to the network through its RJ45 port (labeled 'ETH.' on the back panel). To connect your PYKO-out directly to your computer, use a crossover cable.
- Plug your headphones (front panel)
- *Prepare pen and paper in order to write the IP address down, which will be announced over the headphones output.*
- Connect the electric cable to the plug labeled 'PWR' on the back panel and to the power outlet

Audio

The pinout used on the XLRs is standard: pin 1 carries the signal ground, pin 2 carries the positive signal ("hot", +) and pin 3 carries the negative signal ("cold", -).

Internal USB port

PYKO-out has an internal USB port for storing audio files (.mp3) in order to play them on the output. To use this functionality, please insert a USB stick before powering the device up and connecting it to the network.

Note: These operations require opening of the cabinet and shall be done by qualified personnel only. The use of the internal USB port disables the USB port on the front panel.

Configuration

You can use PYKO-out along with Audio Manager, in stand-alone or in EtherSound mode.

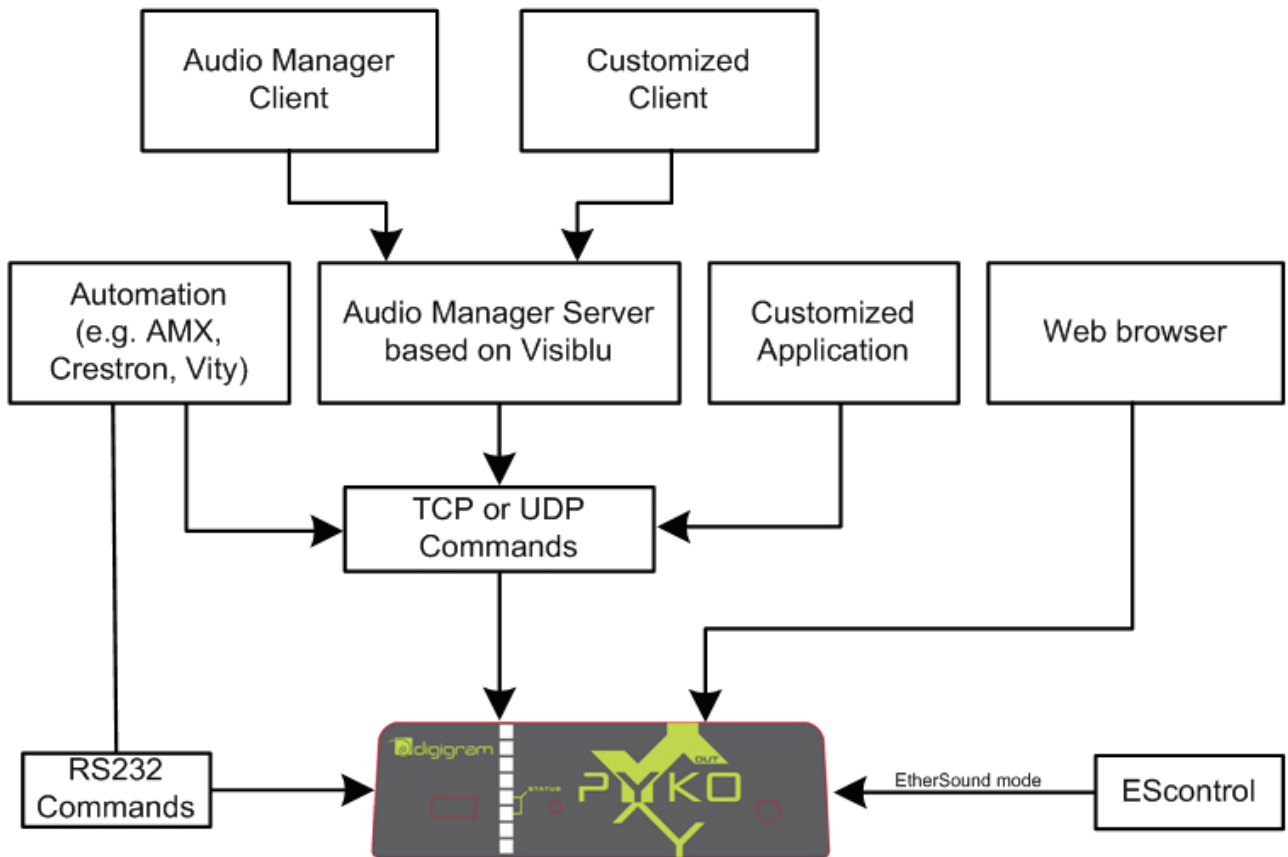
Firmware update

Digigram provides a firmware (compound.bin) compatible PYKO-out that is installed by default (factory configuration).

Digigram may decide to publish updates of the embedded firmware. It may then become necessary to upgrade your devices. In this case, please connect to the corresponding page on www.digigram.com/drivers/index.php and download the most recent version. Then, go to the <Tools>, <Update> section of the PYKO-out html page, click 'Browse' to indicate the location of the downloaded file, then the 'Upload' button. When the message 'compound.bin successfully loaded' is displayed, click onto the link 'Click on update before updating the next component or unplug the power supply to reboot the device' in the message, then onto the 'Reboot' button to finish the update, or, alternatively, disconnect then replug the power cord.

MANAGING THE PYKO-OUT

Depending on your needs, there are several ways of configuring and controlling PYKO-out.



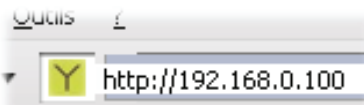
Configuration

PYKO-out embeds a web server that enables you to control the PYKO through your favorite Internet browser.

- Put your headphones on. At start-up, PYKO will announce its IP address over the headphones output – write this address down!

Note: PYKO-out factory setting is IP address configured at 192.168.0.100

- Open your web browser.
- Type the PYKO-out IP address into the address bar and hit the 'Enter' key.



- You can now visualize the Web pages that enable you to parameterize the device. We recommend to assign a fix IP address (Menu: **Settings/Network**)

Using PYKO-out with Audio Manager

If you use your PYKOs with Audio Manager, you will first have to either assign an IP address through the web pages or turn the DHCP on (Audio Manager will then automatically assign an IP address). Audio Manager Server will detect this address and allow the Audio Manager Client to configure it.

To be detected by Audio Manager, the TCP control port has to be set to “40002”, the UDP listening port to “40004”. These are also the values defined in the factory configuration.

You may decide that Audio Manager is to control PYKO-out only in part. In this case, use the PYKO-out html pages to configure the device accordingly (cf. on-line help of the pages).

For more details on managing PYKO through Audio Manager, please refer to its on line help.

PYKO-out in ‘stand-alone’ mode

You can now access the embedded html pages that will allow you to configure the device.

The screenshot displays the PYKO-out web interface. At the top, there is a 'REAL TIME INFORMATION' section with the following data:

Stream priority level	No out signal
Audio format	No out signal
Volume	No out signal
Mute (#2 #3)	OFF
Out Peak Meters	No out signal No out signal
Listening port	No Stream

Below this is a navigation menu with 'Info', 'Settings', 'Audio', 'Live', and 'Tools'. The 'Settings: Network' section is active, showing fields for Logical name, IP Address (0.0.0.0), Netmask (255.255.255.0), Gateway IP Address (0.0.0.0), DHCP Host Name, and Web Server Port (80). There are 'Apply' and 'Cancel' buttons. To the right is a 'Help' section with the following text:

IP Address / Netmask / Gateway
Set "0.0.0.0" for automatic discovery (DHCP), "xxx.xxx.xxx.xxx" for static IP address; default is "192.168.0.100", Netmask default is "255.255.255.0".

Logical name
Name used by the remote control application to access the device.

DHCP Host Name
Name of the device included within DHCP request. If empty, a name based on the device's MAC address is generated automatically. Enter up to 15 characters.

Web server port
Defines a port for the PYKO web server. If set to "0" the default HTTP port (80) is used.

At the bottom of the interface, a status bar reads: - | Logical Name: | IP: 192.168.254.135 | Device Type: PYKO-out | Application loaded: Play-Out V01.07 | -

Next, set the parameters for the three audio stream priority levels (Menu: **Audio**)



REAL TIME INFORMATION

Stream priority level	No out signal
Audio format	No out signal
Volume	No out signal
Mute (#2 #3)	OFF
Out Peak Meters	No out signal No out signal
Listening port	No Stream

Out
Play-Out V01.07

Info Settings **Audio** Live Tools

Audio: Stream priority 2 (standard)

IP Address: 0 . 0 . 0 . 0

Receive Port: 0

Number of streams: 1

Channel Mode: not applicable

Audio Format: mp3

Latency: 10 Highest

Default volume: -12dB

Minimum volume: -40dB

Maximum volume: 0dB

Initial mute state: Off On

Apply Cancel

Help

IP Address
Significant if the stream to listen is multicast

Receive Port
The port number. "0" for no stream

Number of streams
Defines additional ports starting from the port number set above by increasing this number by steps of two, e.g. port number above set to 7000 for stream 1, then stream 2 = port 7002, stream 3 = 7004, etc.

Channel Mode
The channel mode (only significant in PCM)

Audio Format
The Audio format of the incoming stream

Latency
In case of audio artefacts at start or during listening the stream, increase the latency parameter

Default volume

Minimum volume
The minimum volume available in [Live](#) command

Maximum volume
The maximum volume available in [Live](#) command

Initial mute state
Applies to the stream priority level #2 and #3

- | Logical Name: | IP: 192.168.254.135 | Device Type: PYKO-out | Application loaded: Play-Out V01.07 | -

For more details on parameterizing your PYKO-out in 'stand-alone' mode, please refer to on-line help of the html pages.

Using PYKO-out with EtherSound

PYKO-out is also capable of decoding EtherSound 100/spkr (www.ethersound.com). This is an exclusive mode of PYKO-out. In this mode, PYKO-out can decode two EtherSound mono streams.

As default setting ex factory, the equipment works in IP mode. Switching from IP mode to EtherSound is done through the Web pages by selecting the EtherSound mode.

In EtherSound mode, the control of PYKO-out is done through EScontrol. Access to the web pages is no longer possible.

To switch back to IP mode, PYKO-out needs to be reset (press the **'Reset'** button for at least five seconds). PYKO-out will re-boot with the default factory settings.

Note: *each time PYKO-out is switched from one mode to another, the previous settings are lost, the device reboots in factory configuration.*

Priority levels

With the 'Play-out' firmware (default factory setting) there are three priority levels on the PYKO-out stereo output. These three levels are accessible through the web pages.

- A stream sent on level '1' will be played with the highest priority. Therefore, it is recommended to assign the audio streams to the level '2' to let level '1' available for a stream coming from an alarm system.
- In case the level '2' stream disappears, PYKO-out will play a level '3' stream. As soon as the level '2' stream(s) is (are) available again, PYKO-out switches back to this level.

Note: *Certain functionalities such as for example the 'Mute' are not available at level '1'. These priority levels do not exist in EtherSound mode.*

Particular mode of level 2

- If you use PYKO-out with Audio Manager, the stream coming from Audio Manager will be automatically assigned to level '2'.
- It is possible from Audio Manager (or any other software featuring this functionality) to send several streams to level '2' of PYKO-out, provided that the port numbers are different. That makes it possible to change the stream being listened to by switching either by GPI or by the web page to the following stream.

Example: Audio Manager sends towards PYKO-out (i.e. towards same IP address) 32 different playlists (thus on 32 consecutive ports). By either html page or GPI it is possible to pass to the following (port $n+2$) or to the preceding stream (port $n-2$)

GPIO

PYKO-out is delivered with four GPIs and four GPOs on terminal block connectors; the counterparts are provided. For details see Appendix D.

GPI

The PYKO-out GPIs are compatible TTL 5 V.

A GPI must maintain its state for at least 20 ms.

The GPIs can have either local action or a distant action by TCP tunneling.

For the local actions, the user can:

- choose whether it will take place on rising or falling edge
- modify the output volume + or -
- mute the output
- listen to the following or preceding level '2' RTP stream

For the TCP tunneling:

- the changes of a GPI state are transmitted through TCP if an application is connected. This information is received either by Audio Manager or by another application, but it cannot be received directly by another PYKO-out.
- TCP connection is required by Audio Manager (PYKO-out is used as server). To establish the connection, the listening port has to be configured by html page.
- the overall latency of the GPI signal transfer via Audio Manager to the destination GPO is inferior to 100 ms.

GPO

The PYKO-out GPOs are relay outputs.

It is possible to configure through the web page whether the initial value of each GPO is set to '0' or to '1'.

The GPO can be configured by TCP protocol or from an application.

Serial port (RS232 on DB9)

PYKO-out provides a RS232 serial port on male DB9 on the back panel.

The RS232 can be used to control the PYKO through an external interface, such as e. g. Vity, AMX or Crestron.

It is possible to use the RS232 in gateway mode, in multicast and multi-destination (up to 4 destinations)

Parameter setting of the tunneling is done from the PYKO-out html pages.

For the pinout of the serial port, please refer to the appendix F.

Audio format

PYKO-out can decode various audio formats, depending on the embedded firmware (see appendix A). Decoding can be either mono or stereo.

Note: If for some reason the decoding parameter should not correspond to the one of the audio stream received, PYKO-out will interpret that as an error and will not play the stream. PYKO-out will then switch to the audio stream of minor priority (Stream priority level n-1).

SPECIFICATIONS**Configuration**

Size	140 mm x 41 mm x 145 mm (1/3 1U rack)
Power supply	24 VDC, +/- 20% WARNING Do not open the power supply module. It contains hazardous voltages. There are no user-serviceable parts inside.
Temp / humidity (non-condensing) Operating: Storage:	0 °C – 45 °C / 0% - 70% -5 °C – 70 °C / 0% - 95%
Power requirements at 24 V	0.04 A
Net weight	0,477 kg (~1.05 lb)

Outputs

Analog audio (mono)	2 outputs
Impedance	50 Ω

Connectivity

Audio	2x3 pins on terminal block
Ethernet port	RJ45 10/100-bit.
GPIO	4 GPIOs compatible TTL 4 relay GPOs on 2x8 pins on terminal block
Serial port	1 RS232 on DB9
USB	USB 1.1 interface for memory stick (FAT16) 1 port on front panel, 1 internal port (exclusive!)

Audio specifications

Sampling frequencies available	Programmable from 8 to 48 kHz
A/D and D/A converter resolution	24 bits
Supported audio formats	PCM (16 bits)

Analog audio performance

Measurements done at Fs=48 kHz unless stated otherwise, with filter on the 20 Hz- 20 kHz range

Frequency response (play)	at 48 kHz: 20 Hz - 20 kHz: +0 /-2 dB
Channel phase difference: 20/20kHz	<0.2°/2°
Dynamic range (A-weighted)	Analog outputs: > 102 dB
THD + noise 1 kHz at -2 dBfs	Analog outputs: <-84 dB
Crosstalk (Analog in or out)	1 kHz at 18 dBu: <-90 dB 15 kHz at 18 dBu: <-110 dB

Software, formats, protocols

Stream formats Audio formats	IP (RTP, SHOUTcast, IceCast) MP3 (variable bit rate up to 320 kBit/s) G.711 (μLaw/aLaw at 8 kHz) PCM (16 bit at 8 up to 48 kHz)
Management Network protocols	Audio-Manager, html pages via embedded web server http web server: personalized web interface for a flexible management UDP client/server: to send/receive network commands SNMP: enables PYKO to be managed over the network in very large systems DHCP, DNS, IGMP

APPENDIX A: FIRMWARE

Digigram provides three PYKO-out compatible firmware applications (compound.bin).

Firmware description

The **Play-out** firmware is used for PA applications.

The **'Play-out extended'** firmware is used for “store and forward” broadcast applications.

Firmware	Play-out	Play-out extended	Webcast Receiver
Control through Audio Manager	•		
TCP protocol	•		

Audio Format	Play-out	Play-out extended	Webcast Receiver
MP3 16 to 48 kHz	dec*	dec	dec
PCM (16bit) 8 to 32 kHz	dec	dec	
PCM (16bit) 44,1 to 48 kHz	dec	dec	44.1kHz on priority port
G711	dec	dec	
Shoutcast/icecast			•
AAC+			USB/shoutcast
EtherSound	Stereo dec (firmware indep.)		
USB		• level 3 for backup, level 2 for prerecorded announce	•
FTP on USB		•	
GPIO local event	•		
GPIO tunneling	•	•	
FD Serial Link management (RS232)	•	•	
Multicast	Rx	Rx	Rx
IGMP	•	•	•
SNMP	•	•	•
Niveaux de priorité	3	3	3

There are 3 levels of priority for the applications. These levels are configurable through the embedded web pages.

If you control the **'Play-out'** application through Audio Manager, it will use by default priority level # 2.

* Dec= decoding

APPENDIX B: USING THE INTERNAL USB PORT

These settings shall be executed by qualified personnel only!

Tools required:

- a #1 Pozidriv screwdriver
- an ESD-preventive wrist strap

Electrostatic discharge (ESD) can damage several components on the board. To avoid such damage in handling the board, take the following precautions:

Bring the device and everything that contacts it to ground potential by providing a conductive surface and discharge paths. As a minimum, observe these precautions:

- Disconnect all power and signal sources.
- Place the device on a grounded conductive work surface.
- Ground yourself via a grounding wrist strap or by holding a grounded object.
- Ground any tools that will contact the device.
- Unscrew the two flat-head Pozidriv screws counterclockwise and open the cabinet.
- Insert the USB stick into the port provided for this purpose.

APPENDIX C: OUTPUT LEVEL SELECTION

These settings shall be executed by qualified personnel only!

Tools required:

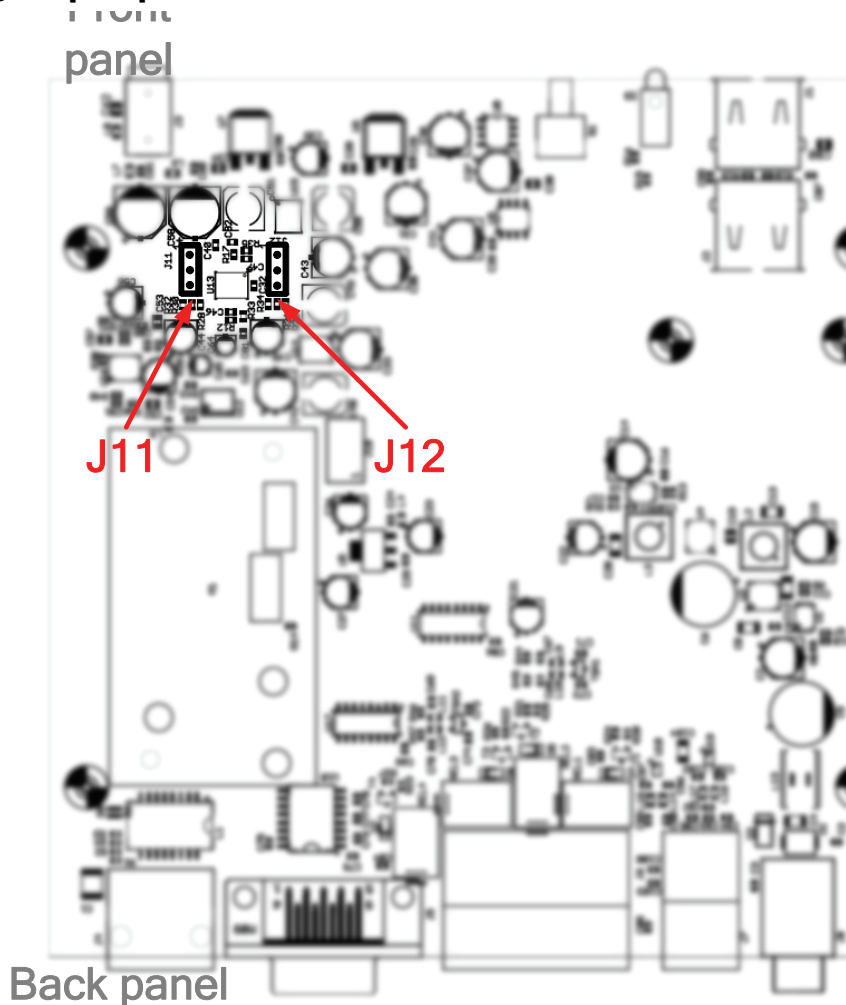
- a #1 Pozidriv screwdriver
- an ESD-preventive wrist strap

Electrostatic discharge (ESD) can damage several components on the board. To avoid such damage in handling the board, take the following precautions:

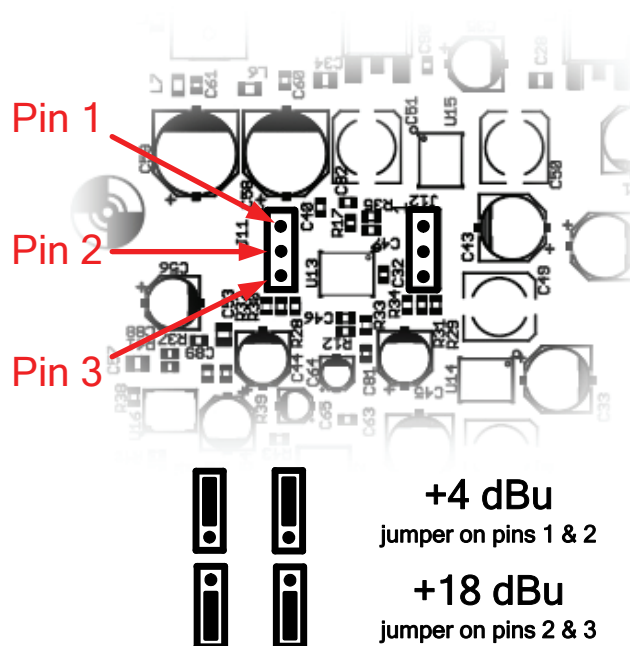
Bring the device and everything that contacts it to ground potential by providing a conductive surface and discharge paths. As a minimum, observe these precautions:

- Disconnect all power and signal sources.
- Place the device on a grounded conductive work surface.
- Ground yourself via a grounding wrist strap or by holding a grounded object.
- Ground any tools that will contact the device.
- Unscrew the two flat-head Pozidriv screws counterclockwise and open the cabinet.

Jumper position on motherboard



Nominal output level



Jumper positioning

This setting defines whether the nominal level of the analog signals is either +18 dBu or +4 dBu (“Professional”).

Default factory setting is +18 dBu for all outputs.

The settings act upon the nominal output level. Having located the pair to modify in the overview (*previous page*), set the jumpers according to the above illustrations to match the requirements of your system.

APPENDIX D: RTP FORMAT

An audio stream encoder must respect the size and the payload type described underneath.

RTP frame size

The maximum payload size in bytes for the encoder can be calculated from the formula:

$$\text{Min}(1300, 20 \cdot \text{chans} \cdot \text{Bps} \cdot \text{samplerate} / 1000)$$

where *chans* is the number of channels, *Bps* is the number of bytes per sample and *samplerate* is the sampling rate in Hertz;

The maximum payload size for MP3 is 1400 bytes.

RTP payload types

The following table shows the defined RTP payload types that the encoder must respect.

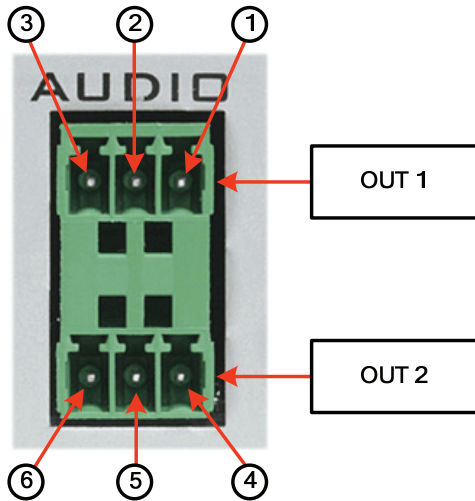
RTP payload type	Audio Format
0	μ-Law, 8bit, mono, 8kHz
8	A-Law, 8bit, mono, 8kHz
10	PCM 16bit, MSB first, signed, 44.1 kHz stereo, left channel first
11	PCM 16bit, MSB first, signed, 44.1 kHz mono
14	MPEG audio
96	PCM, 16bit, MSB first, signed, 8 kHz mono
99	PCM, 16bit, MSB first, signed, 24 kHz mono
102	PCM, 16bit, MSB first, signed, 32 kHz mono reserved
103	PCM 16bit, MSB first, signed, 48 kHz stereo, left channel first
111	PCM, 16bit, MSB first, signed, 12 kHz mono
127	Other formats

Payload types 0, 8, 10, 11 and 14 are defined by the RTP standard.

Digigram defines assignment for payload types 96 to 127 (dynamic payload types) in the above tables.

APPENDIX E: AUDIO CONNECTORS

The audio inputs/outputs of PYKO-out come on a terminal block connector with two lines of three pins each (= two counterparts).

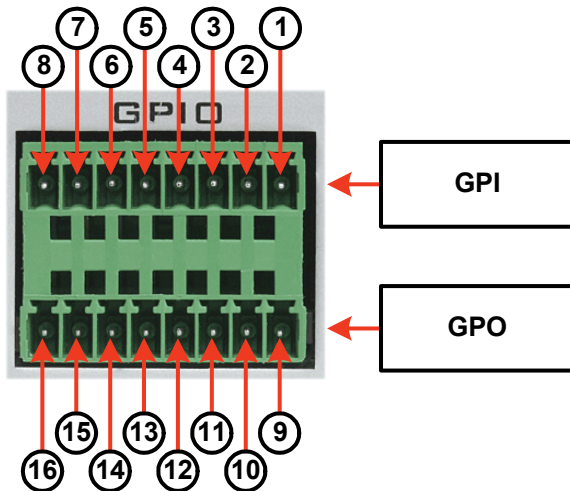


Pinout

Pin	Signal
1	GND
2	OUT 1-
3	OUT 1+
4	GND
5	OUT 2-
6	OUT 2+

ANNEXE F: GPIO CONNECTORS

PYKO-out features four TTL 5 V compatible GPIs and four relay GPOs. The counterparts are provided.



GPI pinout

Pin	8	7	6	5	4	3	2	1
Signal	IN4	GND	IN3	GND	IN2	GND	IN1	GND

GPO pinout

Pin	16, 15	14, 13	12, 11	10, 9
Signal	OUT4	OUT3	OUT2	OUT1

General Purpose Inputs (GPIs)

The state of a GPI can be either “1” or “0”. It is read at “0” as soon as it is connected to the ground (GND). Otherwise it is read “1”.

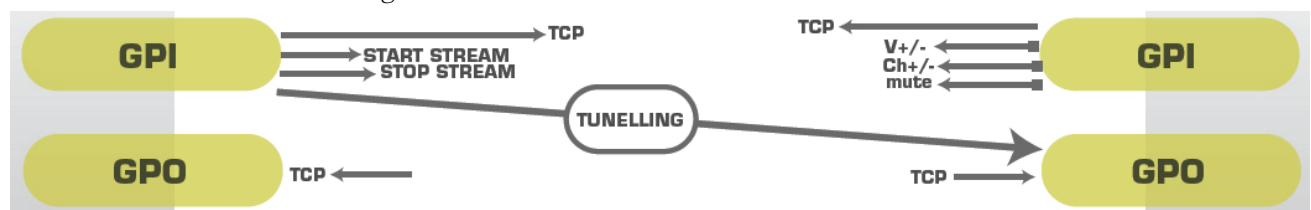
Note: Each GPI can receive an external command contact.

General Purpose Outputs (GPOs)

The PYKO-out GPOs are relay outputs. They feature two pins each and are all configured the same way. Pins 9 & 10 belong to GPO # 1, 11 & 12 to GPO # 2, 13 & 14 to GPO # 3, and 15 & 16 to GPO #4.

If written at “1”, the GPO closes the linked relay. If written at “0”, the GPO opens the linked relay.

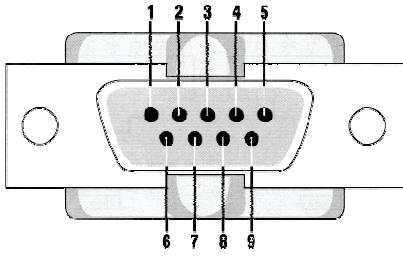
GPIOs can be used for tunneling from one PYKO towards another (GPIIn-> GPOn).



GPO relay specifications

Maximum power switching capability	10 W
Maximum switching current	1 A _{DC}
Maximum carrying current	1 A _{DC}
Maximum switching voltage	125 V _{AC} /60 V _{DC}
Typical life expectancy (switching max power)	10 ⁶ operations

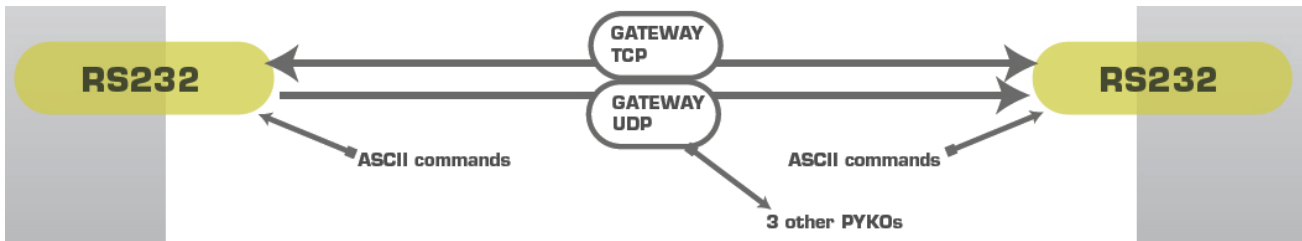
APPENDIX G: SERIAL PORT (RS232 ON DB9)



Pin	Description
1	not connected
2	RxD (received data)RxD (received data)
3	TxD (transmitted data)
4	not connected
5	signal ground
6	not connected
7	RTS (request to send)
8	CTS (clear to send)
9	not connected

PYKO-out provides an RS232 serial port on a male DB-9 connector on its back panel. This port can be used for remote control of PYKO-out through an external interface such as e.g. Vity, AMX or Crestron, or for tunneling purposes.

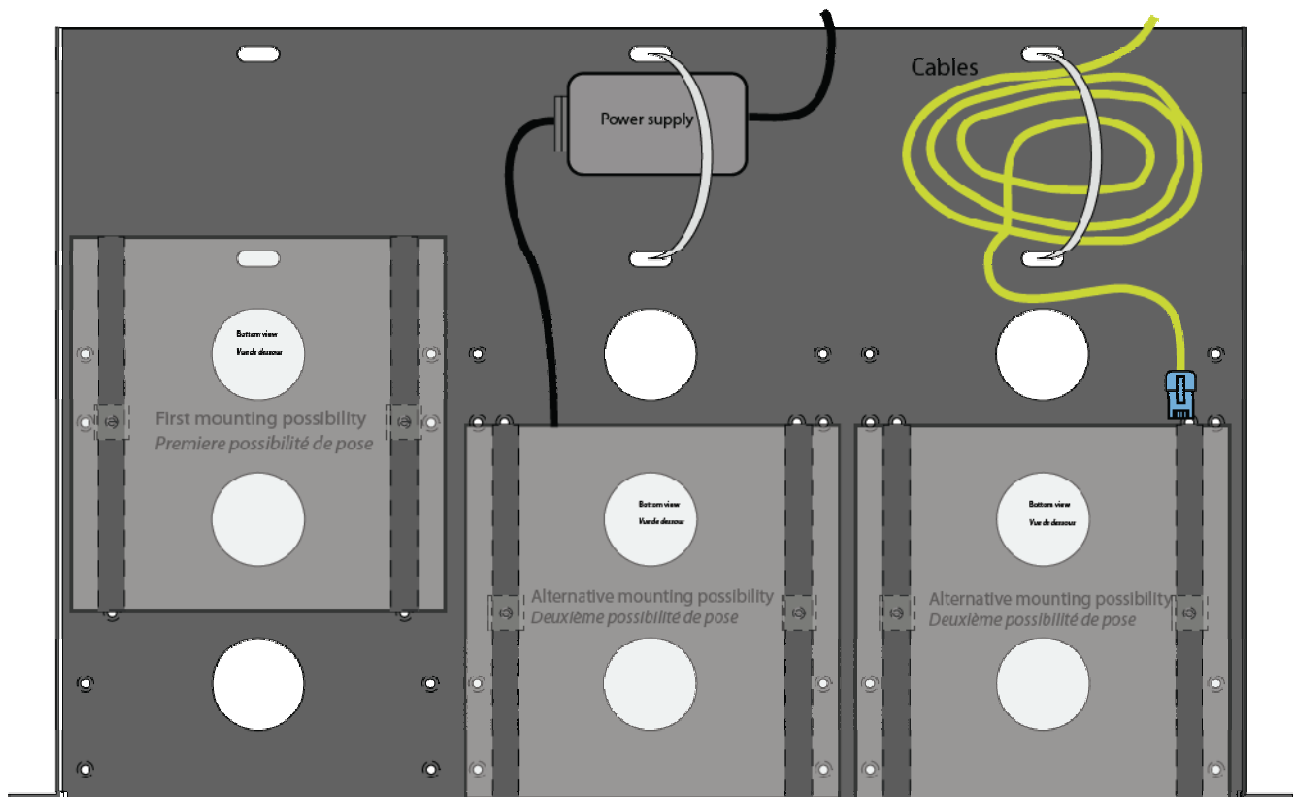
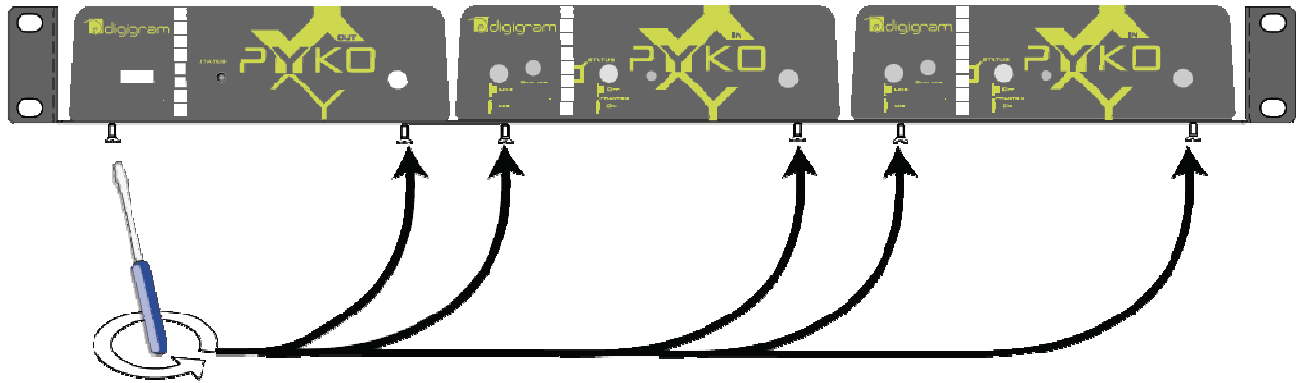
It is possible to use the RS232 in gateway mode, in multicast, and in multi-destination (up to 4 destinations)



APPENDIX H: MOUNTING PYKO...

...in a rack

You can mount up to three PYKOs in a 19" rack:

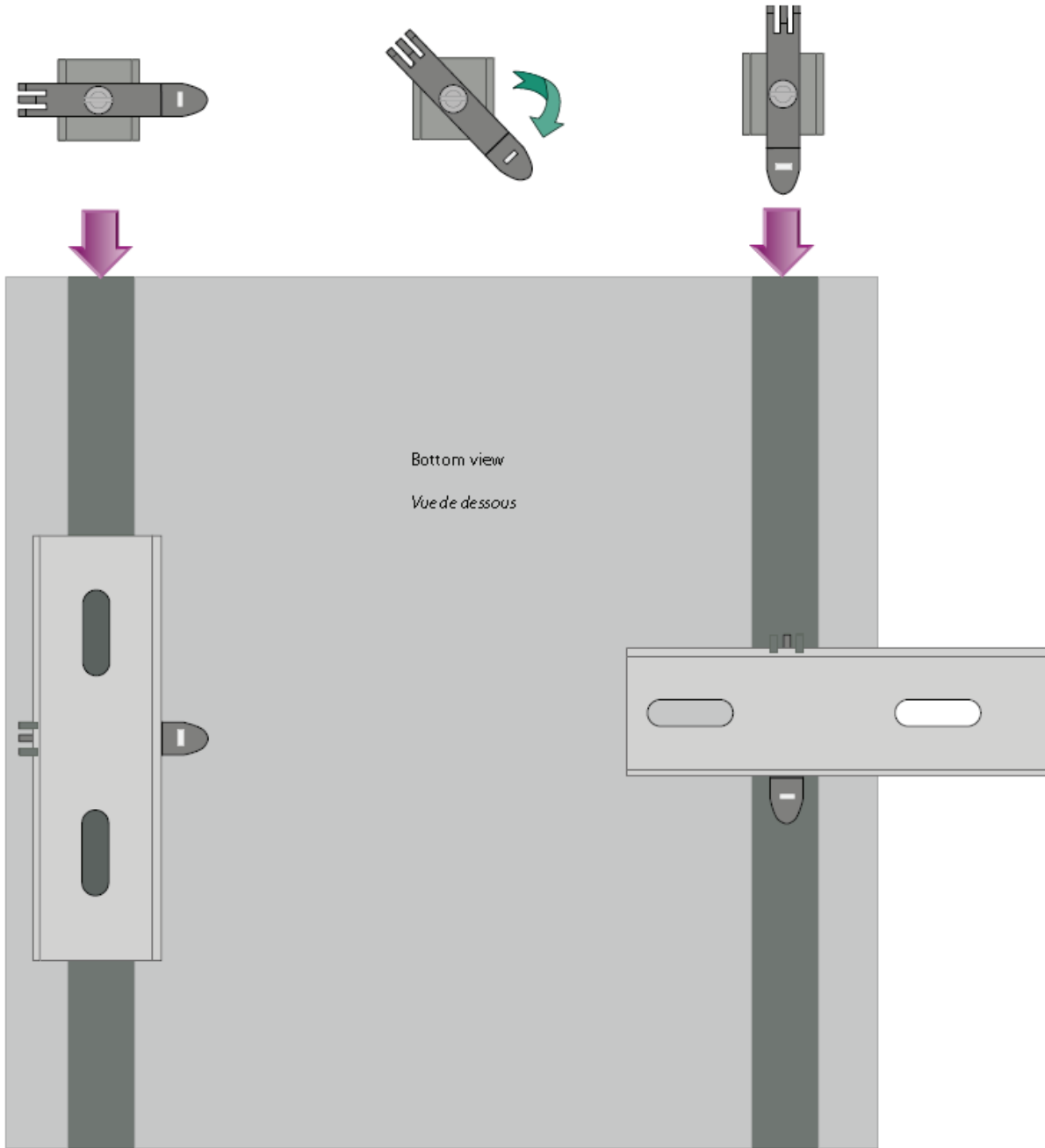


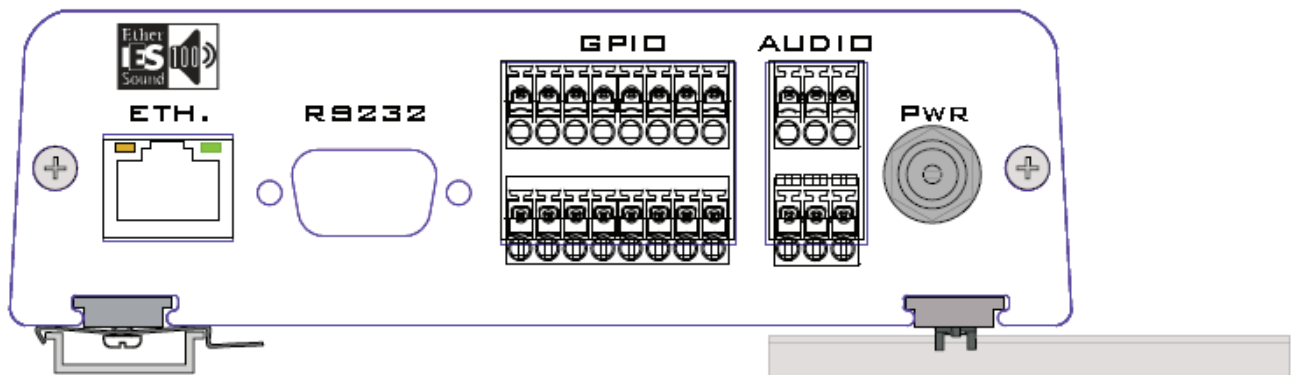
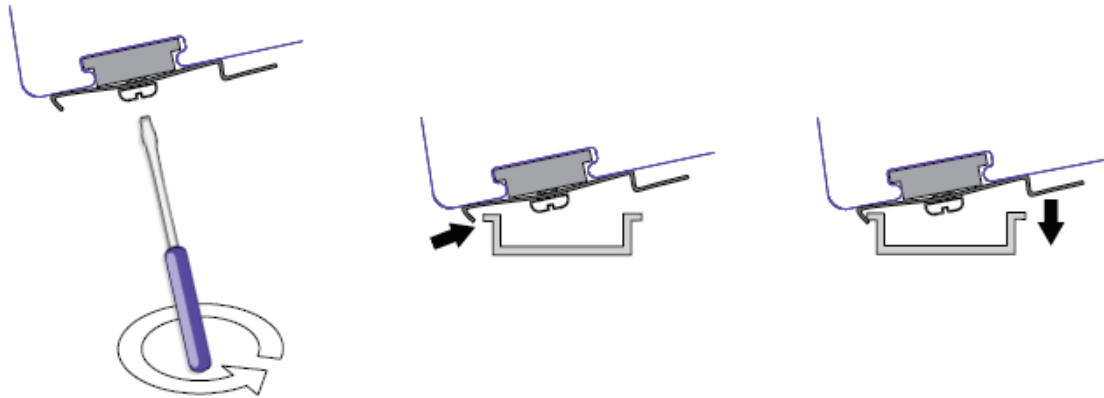
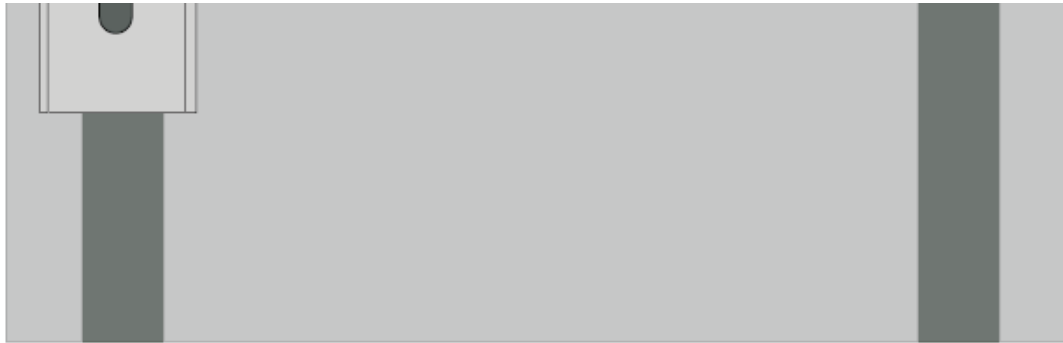
...on a DIN rail:

Insert the DIN-RAIL mount kit into the sliders on PYKO's bottom side.

First mounting possibility:

Second mounting possibility:





**For technical support,
please contact your system supplier**



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