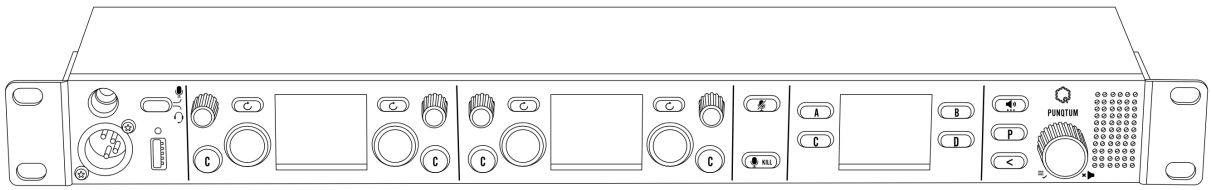
PUNQTUM

BY RIEDEL

USER MANUAL

Q210 PW – Speaker Station

Q-Series Network Based Partyline System



This manual is applicable for Firmware Version: 2.3

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1 Preface

Welcome to the PunQtum digital partyline family!
This document provides detailed information about the PunQtum Q-Series digital partyline system, pin outs, mechanical and electrical data.

NOTICE
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1.1 Information

Symbols

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

	This text indicates a situation that needs your close attention. It may also be used to alert against unsafe practice.

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

Service

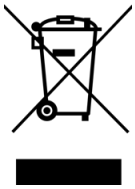
- All service must be provided ONLY by qualified service personnel.
- There are no user-serviceable parts inside the devices.
- Do not plug in, turn on or attempt to operate an obviously damaged device.
- Never attempt to modify the equipment components for any reason.

	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 unit.

Environment

- Never expose the device to high concentrations of dust or humidity.
- Never expose the device to any liquids.
- If the device has been exposed to a cold environment and transferred to a warm environment, condensation may form inside the housing. Wait at least 2 hours before applying any power to the device.

Disposal

	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 authorized 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 the local authority responsible.

2 About PunQtum Q-Series Digital Partyline System

PunQtum Q-Series digital partyline system is a digital, easy to use, full-duplex communications solution for theater and broadcast applications as well as for all kinds of cultural events like concerts, etc.
It is an all-new, network-based partyline system which combines all standard partyline system features including wireless access and more with the advantages of modern IP networks.
PunQtum Q-Series works on standard network infrastructure and is easy to install and set up.
The system works “out of the box” with a factory default configuration but can be quickly configured by user-friendly software to meet individual needs.
The system is completely decentralized. There is no master station or any other central point of intelligence in the whole system. All processing is handled locally in each device except for the PunQtum wireless Apps which require a PunQtum Q210 PW Speaker Station to serve as a bridge to the Q-Series digital partyline system. The capacity of one partyline system is set to a maximum of 32 channels, 4 program inputs, up to 4 public announce outputs and 32 control outputs. Each PunQtum Q210 PW Speaker Station serves up to 4 PunQtum Wireless App connections.

PunQtum Q-Series digital partyline systems are based on Roles and I/O settings to ease the use and administration of partyline systems.
A Role is a template for the channel configuration of a device. This allows channel settings and alternate functions to be predefined for different Roles needed to run a live show. As an example, think of the stage manager, sound, light, wardrobe and security personnel having different communication channels available to deliver a perfect job.
An I/O setting is a template for the settings of the equipment connected to a device. This, for example, allows I/O settings to be available for different Headsets being used at a venue to cover for different environmental situations.
Each device can be configured to any Role and I/O setting available.

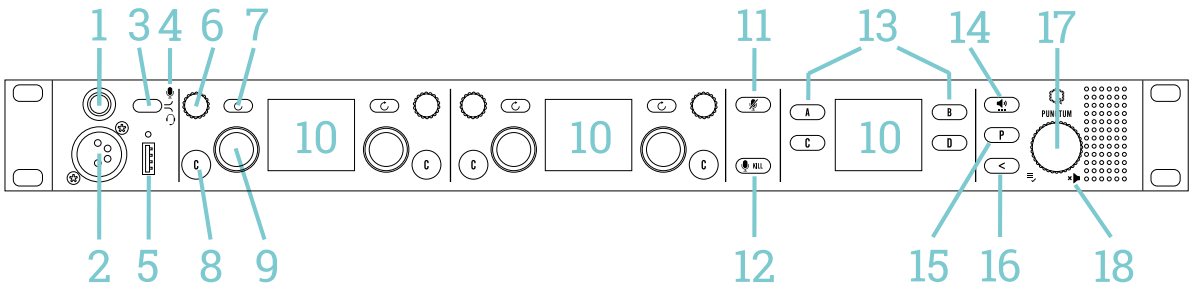
Multiple PunQtum partyline systems can share the same network infrastructure. This allows for the creation of production islands within a campus using the same IT network infrastructure. The number of devices (Beltpacks/Speaker Stations and Wireless Apps) is theoretically infinite but limited by the network capacity. Beltpacks are powered by PoE, either from a PoE switch or from a Speaker Station. They can be daisy-chained to reduce wiring efforts on site.

Beltpacks and Wireless Apps support simultaneous use of 2 channels with separate TALK and CALL buttons. An alternate page button allows the user to quickly reach alternate functions such as public announce, Talk To All, Talk To Many, control general purpose outputs and access system functions like Mic Kill asf. The Beltpack is designed with a combination of premium materials, including high-impact plastics and rubber to make it both tough and comfortable to use in any situation.

PunQtum Q-Series Beltpacks, Wireless Apps and Speaker Stations allow users to replay missed or not understood messages. Program input signals can be fed into the system using an analog audio input at any Speaker Station.

Sunlight readable, dimmable RGB color displays used for Beltpacks and Speaker Stations make for excellent readability of the intuitive user interface.

3 Front Panel Operating Elements



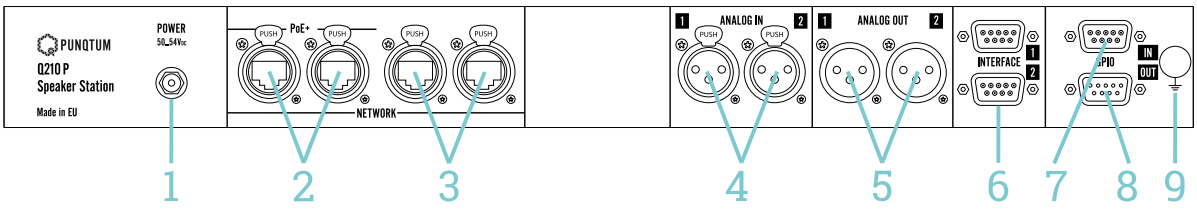
1. Gooseneck mic connector
2. Headset connector
3. Headset/Gooseneck selector
4. Headset/Gooseneck LED
5. USB host connector

6. Rotary encoder
7. REPLAY button
8. CALL button
9. TALK button

} per channel

10. Color TFT display
11. Mic Mute button
12. Mic KILL button
13. A/B/C/D buttons
14. VOLUME button
15. Alternate page button
16. BACK button
17. Main Rotary encoder
18. Speaker-Muted LED

4 Back Panel Connectors



1. DC power connector
2. Network with PoE+ output
3. Standard Network
4. Balanced analog inputs
5. Balanced analog outputs
6. Interface ports
7. GPI inputs
8. GPI outputs
9. Protective earth screw

5 PunQtum Wireless App support

The Q210 PW Speaker Station serves up to four connected PunQtum Wireless Apps. Factory default configuration allows a maximum of four active connections without user/ password authentication.

i	The configuration of wireless access functions is done using Q-Tool. Each Q210 PW Speaker Station enables transparent use of such configuration without any local user interface on the Q210 PW Speaker Station. Use your Q210PW Speaker Station at any position in your setup and profit from the wireless functionality at the same time!

5.1 Q210 PW Operation modes

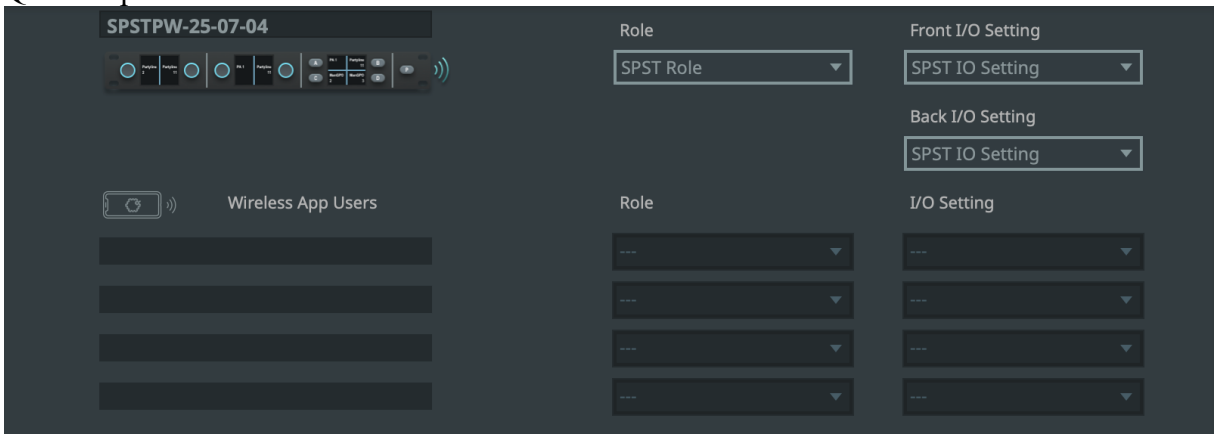
PunQtum Q210 PW Speaker Stations offer 2 operation modes to choose from.
The operation mode can be changed on the device only. See 0 Change operation mode.
Access to operation mode change menu entry can be controlled by Speakerstation role settings.
As seen below, the operation mode is reflected in the Speakerstation splash screen and Q-Tool displays a Speakerstation with the features available according to the operation mode.

5.1.1 Wireless mode

This is the default operation mode and allows for connection of up to four PunQtum Wireless Apps.

Splash screen shows current operation mode:

Q-tool representation in wireless mode:

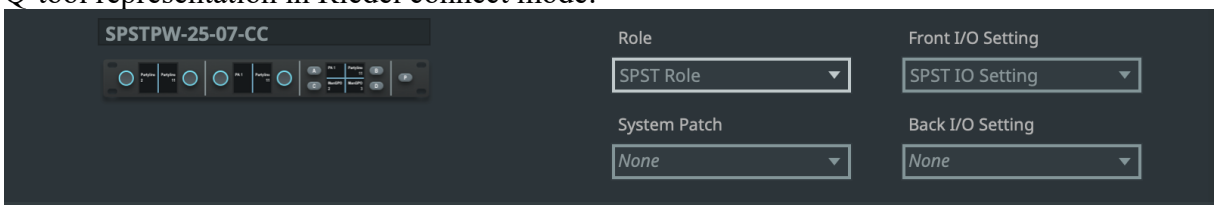


5.1.2 Riedel connect mode

This mode disables wireless connections but allows to use the Riedel connect feature the same way as with a Q210P Speakerstation

Splash screen shows current operation mode:

Q-tool representation in Riedel connect mode:



6 Getting Started

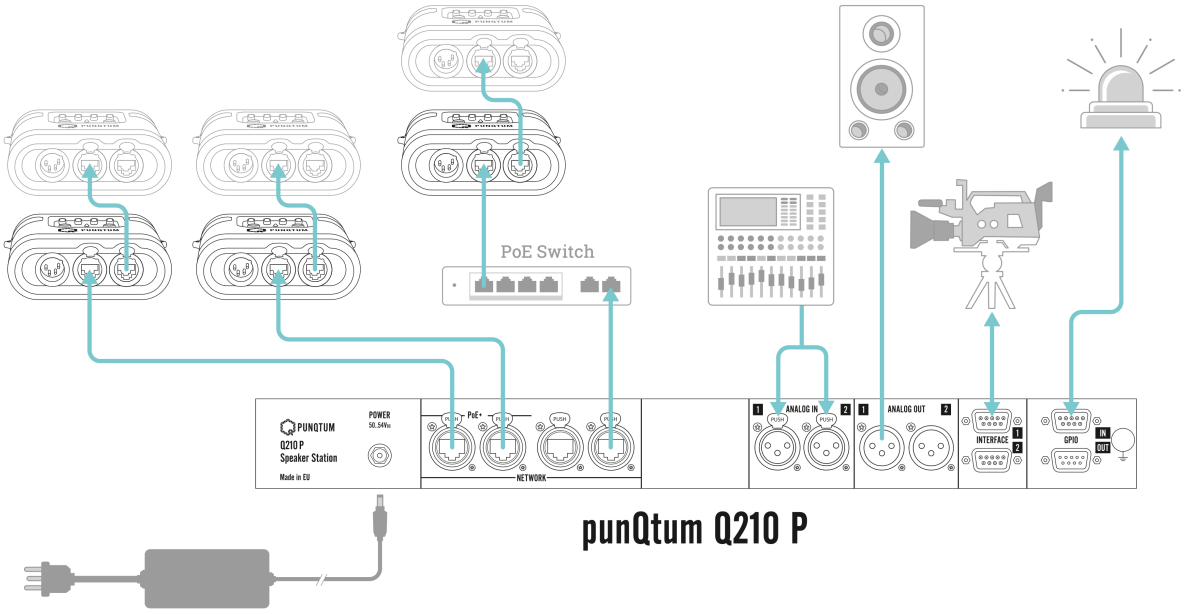
The Q210 P Speaker Station is your partyline network center. It is delivered with a factory default system configuration and will work “out of the box” together with Q110 Beltpacks in factory default system configuration.
The Speaker Station supports the use of a monaural headset or a gooseneck microphone used together with the built in or an externally connected speaker. The Speaker Station supports the use of both dynamic and electret microphones.

6.1 Powering Up

⚠	Only use the provided AC/DC power adapter for powering the Q210 PW Speaker Station. Always leave the DC plug connected to the Speaker Station and switch power on the AC side only. Do not connect outputs of PoE capable switches to the PoE+ ports of the Speaker Station as they might show non PoE standard behavior and provide power to the Speaker Station as well.

6.2 Back Panel Connections

The Q210 P Speaker Station provides 4 network switch connectors, 2 analog inputs, 2 analog outputs, 4 general purpose inputs, 4 general purpose outputs and 2 universal interface connections to complete your system. The factory default system configuration supports plug and play use of the network switch connectors and all analog inputs and outputs.



6.2.1 Network Switch Connections

The Q210 P Speaker Station provides 4 network switch ports to connect Q110 Beltpacks and other equipment.
The network ports labeled PoE+ provide power to 4 daisy chained Q110 Beltpacks each. No additional network equipment is needed to run PunQtum Q-Series digital partyline systems. However, PunQtum Q-Series digital partyline systems can easily be integrated into existing network infrastructure using the non PoE+ ports.

	Avoid connecting outputs of PoE capable switches to the PoE+ ports of the Speaker Station as they are also capable of providing PoE power.

6.2.1.1 Multicast Audio Streams

If you do not have any other audio streams present in your network infrastructure, you will most probably be fine.

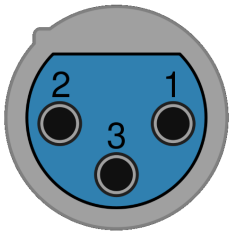
If you are using PunQtum Q-Series digital partyline systems in networks together with other audio network streaming technologies such as Ravenna, DANTE™ or other multicast-based streaming technologies, you need to make sure that your network infrastructure is capable of supporting IGMP (Internet Group Management Protocol) and that IGMP is correctly set up and configured:

	If you use a single switch only, it is irrelevant if the switch has IGMP snooping (aka multicast filtering) enabled or not. As soon as you have two switches, and one or more switches happen to have IGMP snooping enabled, it is necessary to configure one and only one IGMP querier in the network (usually, you select one switch). Without an IGMP querier, the multicast traffic will stop after a while due to IGMP timeouts. PunQtum Q-Series digital partyline system supports IGMP V2.

6.2.2 Connecting Program Signals and Public Address Outputs

2 independent program signals can be connected to the balanced analog inputs. On each device of your system, you can select which program input shall be heard.

Analog Input Connector: Type XLR 3pin, female



Pin	Name	Description
1	GND	Audio ground and shield
2	A+	Audio (positive)
3	A-	Audio (negative)

Please refer to the datasheet for technical details.

2 independent public address signals are available as balanced analogue outputs. Connect your lobby speakers and your wardrobe speakers to these outputs for example.

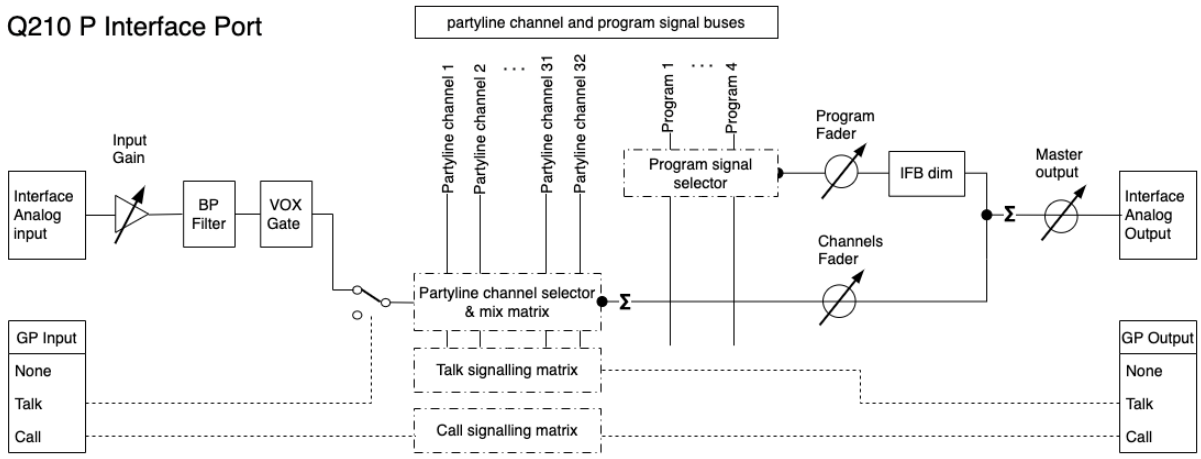
Analog Output Connector: Type XLR 3pin, male

Pin	Name	Description
1	GND	Audio ground and shield
2	A+	Audio (positive)
3	A-	Audio (negative)

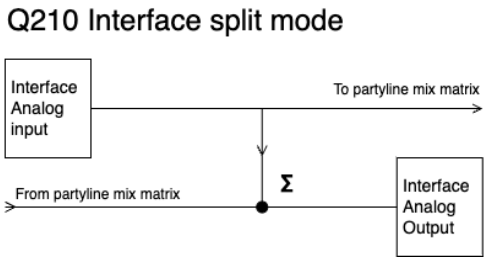
Please refer to the datasheet for technical details.

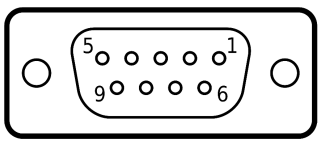
6.2.3 Interface ports

The Q210 P Speaker Station provides 2 interface ports to be used with cameras and other external equipment. Interface ports carry Channel and Program audio signals and are freely configurable in Q-Tool. Please consult Q-Tool help for more details. Interface ports are not part of the factory default configuration system.



Each interface provides the option to enable split mode:
Split mode adds the interface input signal received to the interface output directly.This is helpful to connect VHF radio systems for example.





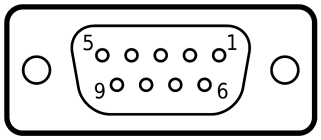
Connector type:
D-Sub 9pin, female

Pin	Name	Description
1	Audio Out +	Balanced audio output (positive)
2	GP Out A	General-purpose output (positive)
3	GND	Audio ground
4	GP In B	General-purpose input (negative)
5	Audio In -	Balanced audio input (negative)
6	Audio Out -	Balanced audio output (negative)
7	GP Out B	General-purpose output (negative)
8	GP In A	General-purpose input (positive)
9	Audio In +	Balanced audio input (positive)

The electrical specification for the GP Inputs and Outputs present on the universal connectors are the same as for the General Purpose Interfaces. Please refer to the datasheet for details.

6.2.4 General Purpose Inputs

General purpose inputs (GPI) can be used to control system functions or act the same as buttons available on the Q210 P Speaker Station front panel. They can also be assigned to any of control channels available per PunQtum Q-Series digital partyline system.
GPI are freely configurable in Q-Tool. They are not used as part of the factory default configuration system.
GPI are galvanically isolated current sensing inputs. Please refer to the datasheet for details.

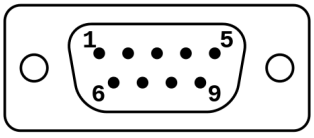


Connector type:
D-Sub 9pin, female

Pin	Name	Description
1	GP In-1 +	General-purpose input #1 (positive)
2	GP In-2 +	General-purpose input #2 (positive)
3	GP In-3 +	General-purpose input #3 (positive)
4	GP In-4 +	General-purpose input #4 (positive)
5	GND	Power ground
6	GP In-1 -	General-purpose input #1 (negative)
7	GP In-2 -	General-purpose input #2 (negative)
8	GP In-3 -	General-purpose input #3 (negative)
9	GP In-4 -	General-purpose input #4 (negative)

6.2.5 General Purpose Outputs

General purpose outputs (GPO) can be used to make system, call or talk states of partylines available externally. They can also represent the state of one of the 32 freely assignable control channels available per PunQtum Q-Series digital partyline system.
GPO are freely configurable in Q-Tool. They are not used as part of the factory default configuration system.
GPI are galvanically isolated switching outputs. Please refer to the datasheet for technical details.

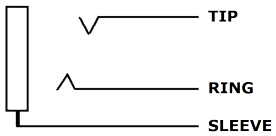


Connector type:
D-Sub 9pin, male

Pin	Name	Description
1	GP Out-4 A	General-purpose output #4 (A)
2	GP Out-3 A	General-purpose output #3 (A)
3	GP Out-2 A	General-purpose output #2 (A)
4	GP Out-1 A	General-purpose output #1 (A)
5	+5V	5V power (max. 150mA)
6	GP Out-4 B	General-purpose output #4 (B)
7	GP Out-3 B	General-purpose output #3 (B)
8	GP Out-2 B	General-purpose output #2 (B)
9	GP Out-1 B	General-purpose output #1 (B)

6.3 Front Panel Connections

6.3.1 Gooseneck Microphone Connector



Pin	Description
Tip	Microphone + / +5V bias voltage for electret mic
Ring	Microphone -
Sleeve	Microphone - / GND

The gooseneck microphone connector is a 1/4“/6.3 mm Jack TRS connector with 7/16“ -20 UNF thread. It supports electret or dynamic microphones.

The microphone bias power (+5.8V) will be switched on/off according to the mic type setting. This can be changed directly in the Speaker Station menu 8.6.2

6.3.2 Headset Connector

Pin	Description
1	Microphone -
2	Microphone + / +5V bias voltage for electret mic
3	Earphones -
4	Earphones +

The headset connector is a 4-pole male XLR connector and supports monoaural headsets with electret or dynamic microphones.

The microphone bias power (+5.8V) will be switched on/off according to the mic type setting. This can be changed directly in the Speaker Station menu 8.6.2
Earphones output can be limited not to exceed a defined volume level. This is configured in the role settings using Q-Tool configuration software.

7 Using your Speaker Station

A Speaker Station that is “new out of the box” includes a factory default system configuration. This allows all devices in factory default configuration to communicate without the need of the Q-tool configuration software.

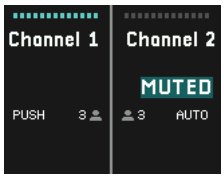
7.1 Front Panel operation elements

7.1.1 Headset Mic/Gooseneck Mic selector

Change between using a connected headset or a connected gooseneck microphone plus the built-in speaker for communication. The selected mode is indicated using LED’s. If Headset is selected, a speaker mute indicator is lit in addition.
Using Q-tool, you have the option to direct the speaker signal to one of the analog outputs instead of to the speaker.
Volumes of headset and speaker output can be set individually.

7.1.2 Channel rotary encoder

Moving the rotary knob clockwise will increase the volume, counterclockwise operation will decrease the volume.
Pushing the rotary encoder will mute / unmute the Channel.



7.1.3 Channel replay button

Use this button to start the replay of the last recorded message of a channel. See Replay available indication (K) for additional information on the replay function.

7.1.4 Channel CALL button

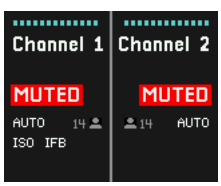
Use this button to issue a CALL signal on the Channel. If the CALL signal remains active for more than two seconds by pushing a call button for more than 2 seconds an ALARM signal will be issued on the channel. See 7.2.4 for additional information on the CALL function.

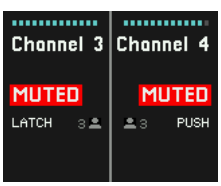
7.1.5 Channel TALK button

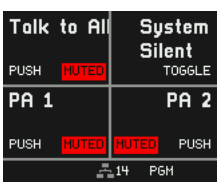
Use this button to talk to the Channel. A talk button offers different operation modes explained here: 7.2.5

7.1.6 Mic Mute button

Use this button to quickly mute the microphones connected to your Speaker Station. This is a handy feature to avoid any unwanted communication to any otherwise active channel when you have to discuss something with a person coming to your desk.
Active mic mute is shown on your Speaker Station like this:







7.1.7 Mic KILL button

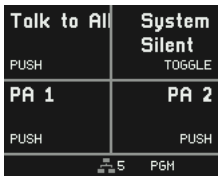
Clicking the Mic Kill button on a device will reset all active TALK functions of the channels the device Role is assigned to except for the TALK functions active on the device where Mic Kill is issued. A long press on the Mic Kill button will reset all active TALK functions of all channels available in the system configuration except for the TALK functions active on the device where Mic Kill is issued. The purpose of this function is to be able to 'silence' overly busy channels to be able to transmit important / urgent messages.

The Mic Kill button can be disabled in the role settings to avoid unwanted interference.

Please note that the mic kill function is not applied to interface connections, because they are typically used to interconnect different communication systems. Mic kill functions can be propagated to and received from other systems using the GPIO ports on a PunQtum Speaker Station.

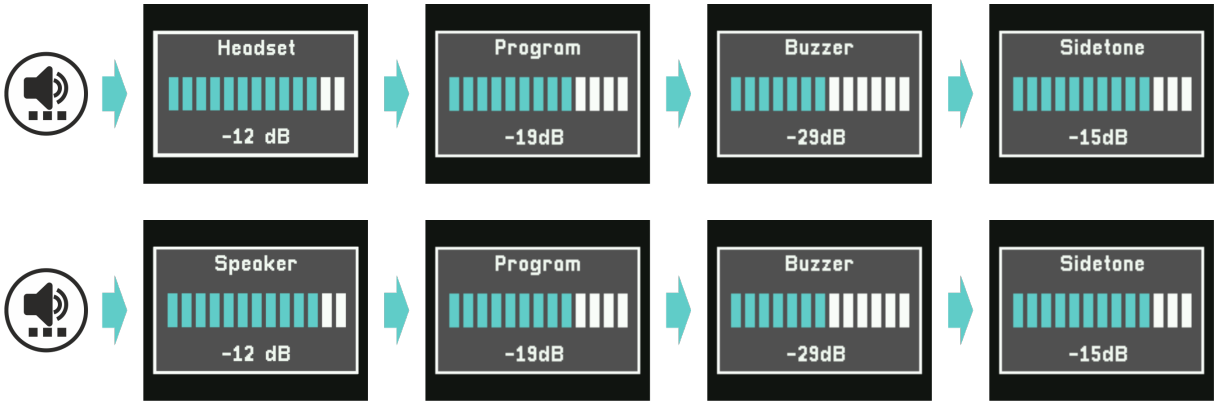
7.1.8 A/B/C/D Buttons

Pressing the A/B/C/D buttons gives you direct access to functions like Public Announce, Talk To All and Talk To Many, Control switching, System Mute, System Silent and Mic Kill. You can assign any of above functions to a Button of your choice using Q-tool configuration software.



7.1.9 Volume Button

Pressing the Volume Button will cycle you through all available volume settings depending on your headset/speaker selection:

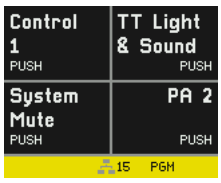


You may adjust each volume setting using the main rotary encoder. Your settings are stored in your Speaker Station.

Headset volume sets the overall volume for your headset.
Speaker volume sets the overall volume for your built-in or external speaker connected.
Program volume controls the volume of your program input.
Buzzer volume controls the volume of the CALL and ALARM signals.
Sidetone volume controls the volume of your own voice.

7.1.10 Alternate Page button

Pressing the Alternate Page button (P) will temporarily give access to an additional set of four functions like public announce, Talk To All and Talk To Many, controls switching, System Mute, System Silent and Mic Kill. You can assign a maximum of 4 functions to button A/B/C/D of the alternate page using Q-tool configuration software.
A yellow bottom bar indicates an active alternate page.



A second press on the Alternate Page button or a press on the Back button will leave the alternate page.

If no functions are assigned to the alternate page, the Alternate Page button is inactive.

7.1.11 Main Rotary Encoder

Use the main rotary encoder to adjust the output volume of your Speaker Station.

Pushing the main rotary encoder gives access to the setup menu. See Chapter Menu operation.

7.1.11.1 Splash screen

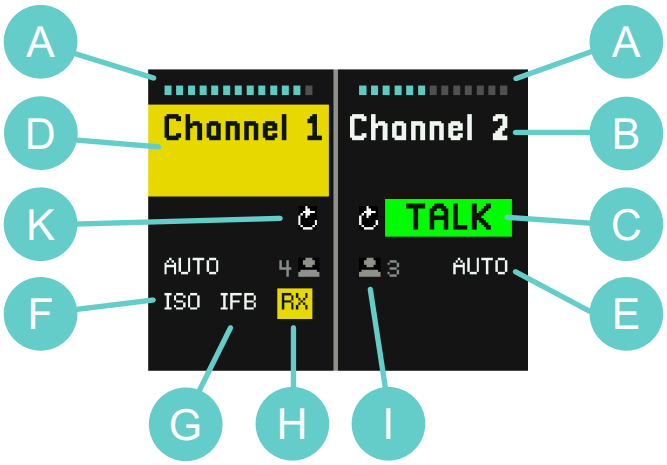
A long press on the main rotary encoder briefly displays the splash screen showing the device model, installed FW version, operation mode and device name.

7.1.12 Back Button

Use the Back button to navigate backwards in the menu or to leave the alternate page.

7.2 Channel Displays

The left and middle Speaker Station displays show information on status and configuration of the channels activated for the current role.



A	Channel volume
B	Channel name
C	TALK active indication
D	CALL active indication
E	TALK button operation mode
F	ISO active indication
G	IFB active indication
H	Audio receive indication
I	Channel user count
K	Replay available indication

7.2.1 Channel Volume (A)

Channel volume control can be set by the rotary encoder knobs (6 on Front Panel Operating Elements) next to the replay button of each channel of the Speaker Station. Moving the rotary knob clockwise will increase the volume, counterclockwise operation will decrease the volume. Pushing the rotary encoder will mute / unmute the Channel.

7.2.2 Channel Name (B)

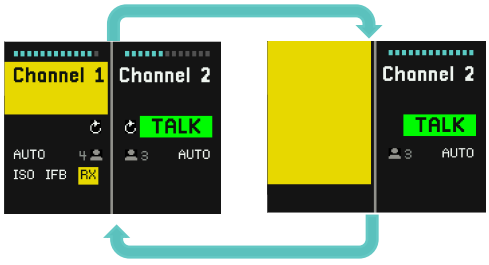
The Channel Name shown is the Name as defined in the system configuration using Q-Tool.

7.2.3 TALK active indication (C)

An active TALK function is indicated in the display per Channel. Use the TALK buttons (9 on Front Panel Operating Elements) to switch on and off the TALK status of each Channel.

7.2.4 CALL active indication (D)

If a CALL signal is received on a Channel, the display will show a yellow flashing square on the Name of the Channel. A CALL buzzer signal will be heard at the same time.
If a Call button is pushed for more than 2 seconds the display will flash with a larger section of the Channel. At the same time, a different buzzer signal will be heard to indicate the ALARM type call.
The volume of the buzzer signal can be changed individually on each device, see 7.1.9.



7.2.5 TALK button operation modes (E)

The TALK button offers three operation modes.

1. AUTO, a double function:
   - Push the TALK button momentarily, the TALK function is now latched on.
   - Push the TALK button momentarily, the TALK function is now off.
   - Push and hold the TALK button, the TALK function is active as long as the TALK button is held. When the TALK button is released the TALK function is switched off.

2. LATCH:
   - Push the TALK button momentarily, the TALK function is now latched on.
   - Push the TALK button momentarily, the TALK function is now off.

3. PUSH:
   - Push and hold the TALK button, the TALK function is active if the TALK button is held. When the TALK button is released, the TALK function is switched off.

TALK button operation mode can be set using Q-Tool configuration software.

If the operation mode is displayed in orange, quiet environment mode is active for the respective channel.

7.2.6 ISO active indication (F)

The symbol ISO indicates an active Isolate function. When you activate the TALK button of a Channel with activated ISO function, you will only hear the users of that Channel. Audio from other Channels is muted to improve intelligibility of this particular channel you are talking to. The Program input is not muted.

7.2.7 IFB active indication (G)

The symbol IFB indicates an active interruptible foldback. The program input signal level is dimmed by the amount specified in a Role if someone is speaking on the Channel.

7.2.8 Audio receive indication (H)

The yellow RX indication is shown if audio is being received on the Channel.

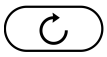
7.2.9 Channel User Count (I)

Shows the number of users available on this channel. If the symbol is shown in red and indicating 1 user, you are the only user of this channel.

7.2.10 Replay available indication (K)

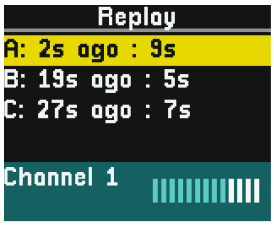
Replay indication will be shown if there is a recording present on that Channel.

Recorded messages can be replayed by pushing the replay button of the Channel.
The last recorded message will be played back immediately

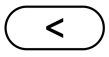


The Channel display will show the replay status.

The Speaker Station's right display informs about how long ago each message was recorded and how long each recorded message is. Start playback of each individual message by pressing buttons A to C. The bottom line tells you which Channel the message was recorded from and indicates the volume setting. While playing back you may use the Channel volume encoder or the main rotary encoder to adjust the Channel volume.



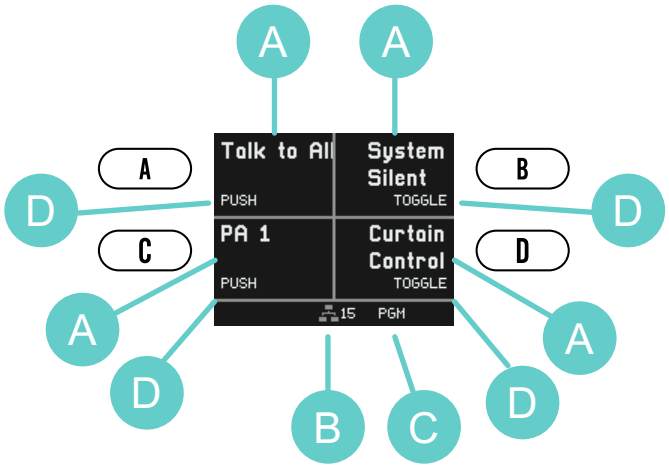
Pressing the Back button ends playback of recorded messages and returns to normal operation mode.
A long press on the Back button deletes all recorded messages.



If message recording is disabled in Q-Tool, the replay available indication is crossed out.

7.3 A/B/C/D button display

Public Announce, Talk to Many, Control and System functions can be assigned to buttons A to D and are shown in the right Speaker Station display.

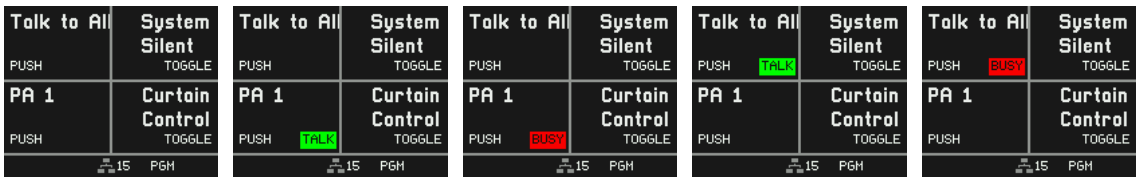


A	Button function
B	Partyline system device count
C	Program Input indication
D	Button operation mode

7.3.1 Public Announce, Talk to All and Talk to Many

A

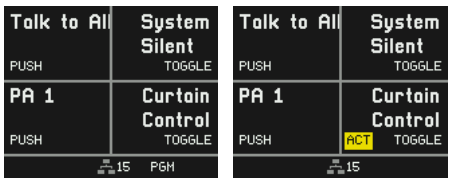
The function can be activated by pressing the button near the quadrant.
The display will show a green TALK indication, or a red BUSY indication if someone else is already using this function. Once the other user disables his TALK function, your TALK will show green and you can start talking.



7.3.2 Control switching

A

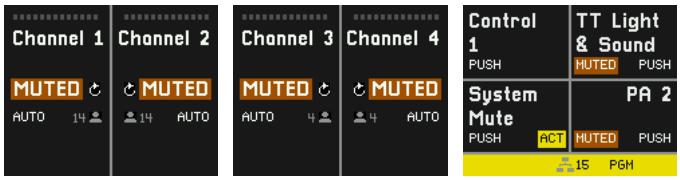
Control states can be changed from any device of a PunQtum Q-Series digital partyline system. If a Control has an active state, you will see a yellow ACT indicator. The state of control is made available to external devices through the General Purpose Outputs on the rear side.



7.3.3 System Mute function

A

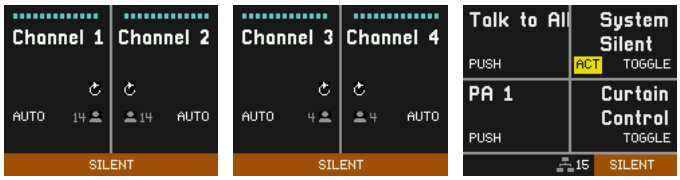
System Mute disables all CALL and TALK functions and mutes all program input signals. It stays active as long as the button is pressed (PUSH behavior). An active System Mute is shown with an orange MUTED indicator.



7.3.4 System Silent function

A

System Silent mutes the Q210P Speaker Station speaker and prevents any other PunQtum devices from making sound. Public announcements remain functional, optical signaling when using a CALL function remains functional as well. The function is activated through a button push. Pressing the button again deactivates the function (TOGGLE behavior). An active System Silent is shown with an orange SILENT indicator.



7.3.5 Partyline system device count

Shows the number of all units participating in your partyline system. If the symbol is shown in red and indicating 1, your device is the only one in the system.

7.3.6 PGM indication

The PGM symbol indicates a selected Program input. If the symbol is shown in white the Program input is received, if red, the selected Program input is not received.

Program inputs are only available if configured on a PunQtum Q210P Speaker Station as part of the partyline system.

7.3.7 Button operation modes

Buttons assigned to Controls can have TOGGLE or PUSH behavior:

- TOGGLE: Any short press on any assigned button changes the state of the Control. If a Control has an active state, it will be shown with a yellow ACT indicator.
- PUSH: Pressing and holding an assigned button will activate the function until the button is released again.

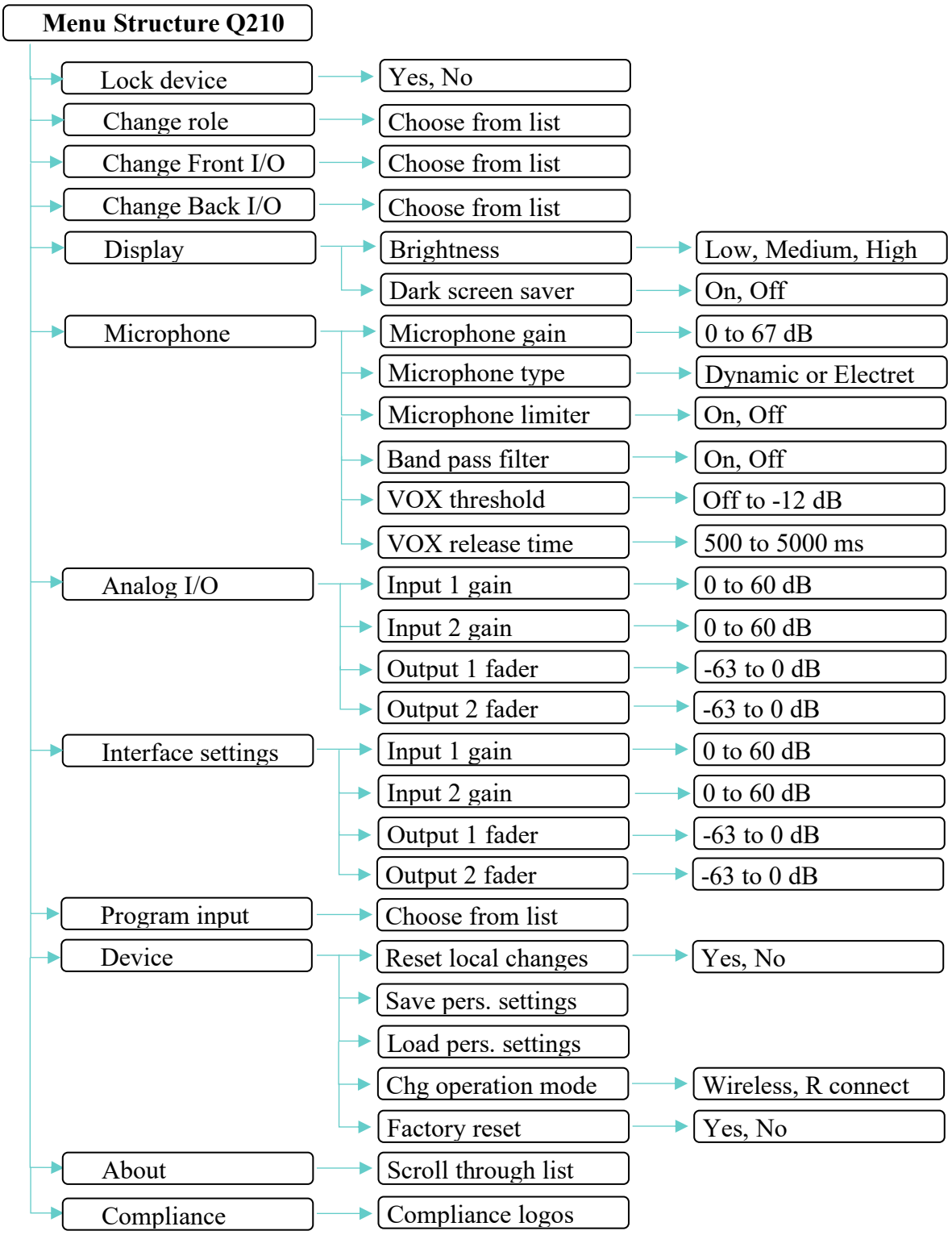
Please see 7.2.5 for TALK button operation modes.

8 Menu operation

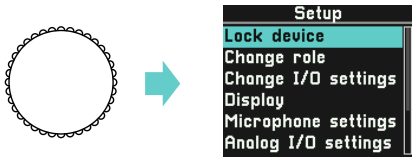
User changeable items are accessible through the menu. If menu items are locked in Q-Tool for the role selected, they are not displayed in the menu.

Push the main rotary encoder to enter the Menu, turn it to navigate through the Menu, and push it to select an item.

< Use this button to step backwards or exit the Menu.

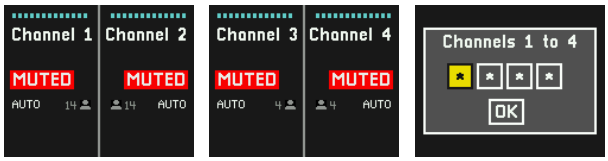


8.1 Lock device



Role settings for your device may include an option to lock the front panel using a 4 digit pin. The pin is defined per Role in Q-Tool configuration software.
The Lock device menu entry is only shown if the selected Role has an active lock front panel option.
Note that the factory default configuration does not include front panel locking.

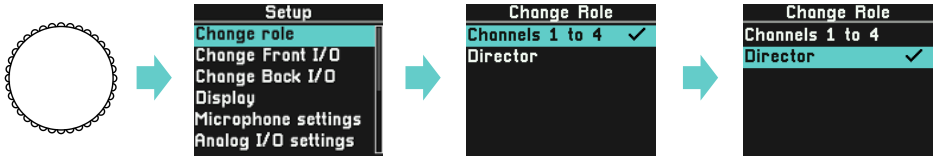
To lock your device, select ‘Lock device’ and push the main rotary encoder to confirm. The microphone of your device will be muted and the lock screen is showing the name of the selected role:



To unlock your device, enter the 4-digit pin using the main rotary encoder and confirm the unlock. The Back button allows scrolling back through the digits.

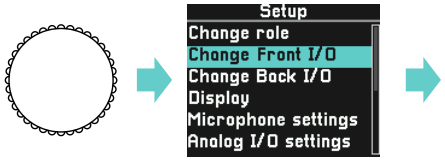
The backpanel connections of a Speaker Station continue working regardless of of the lock state of the device except for an analog output configured to 'Ext Speaker'.

8.2 Change Role



You may change your active Role. Roles can be defined with the help of Q-Tool configuration software.

8.3 Change Front I/O settings

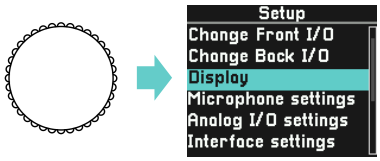


Select from different front panel I/O settings presets. Q-Tool configuration software allows to define more I/O settings to match the specifics of external devices connected to your Speaker Station front panel.

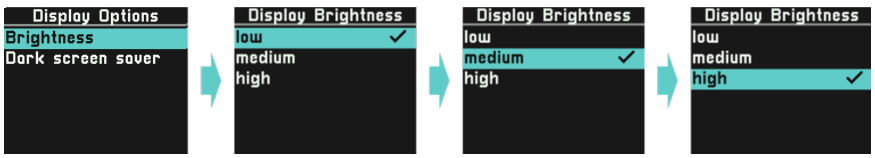
8.4 Change Back I/O settings

Select from different back panel I/O settings presets. Q-Tool configuration software allows to define more I/O settings to match the specifics of external devices connected to your Speaker Station back panel.

8.5 Display

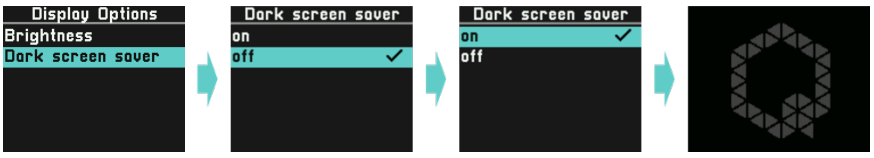


8.5.1 Brightness



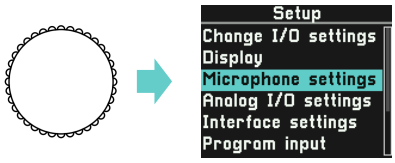
The display backlight can be varied in three steps and is stored on your device.

8.5.2 Dark screen saver



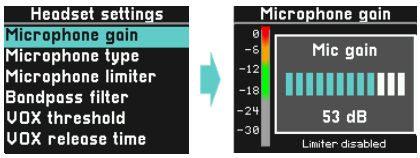
If the Dark screen saver is enabled, it will be activated automatically and deactivated by any button press or encoder turn. It will show a very low-brightness Q logo when active.

8.6 Microphone settings



Microphone settings enable access to the settings predefined in the I/O settings and enables fine-tuning the settings according to your specific situation. Your settings will be stored on the device and are applied again when you power up your device.

8.6.1 Microphone gain



The gain of your microphone can be adjusted from 0 dB to 67 dB. Speak into your microphone at the volume you typically use when working and adjust the level to be in the upper green range.
Please note that the limiter function is temporarily set to off when setting the gain level.

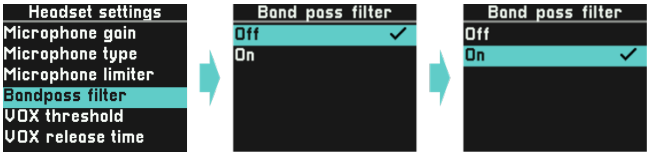
8.6.2 Microphone type

Electret microphones require a bias voltage for correct operation. If you set the microphone type to electret, a bias voltage will be applied to the microphone input. Dynamic microphones can work without bias voltage.

8.6.3 Microphone Limiter

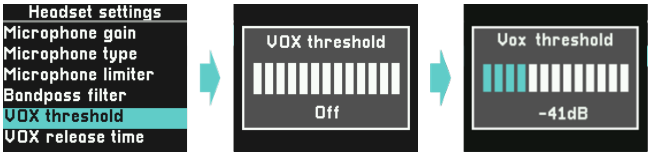
The limiter function is used to avoid distorted signals if someone gets excited and starts to speak more loudly. We recommend to set the limiter to on.

8.6.4 Band pass filter



The Band pass filter removes lower and higher frequencies from your microphone signal to improve speech intelligibility. Activate it if needed.

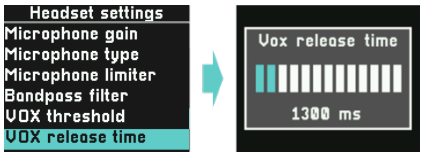
8.6.5 Vox Threshold



The Vox function acts as a signal gate and is used to reduce background noise in the system. The Vox threshold level determines at which level an audio signal is passed on to the system. Setting the Vox threshold to off completely removes the gate function from the signal path.

Make sure the level of your speech is higher than the VOX threshold level. Useable range is -63dB to -12dB

8.6.6 Vox Release

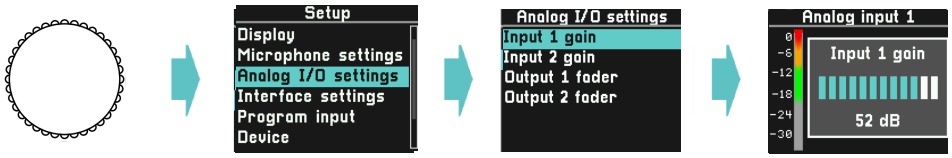


Vox release time determines how long your speech signal will be passed on to the system once the signal level goes below the VOX threshold level. This is used to avoid chopping your speech. VOX release time can be set from 500 milliseconds to 5 seconds in steps of 100 milliseconds.

8.7 Analog I/O settings

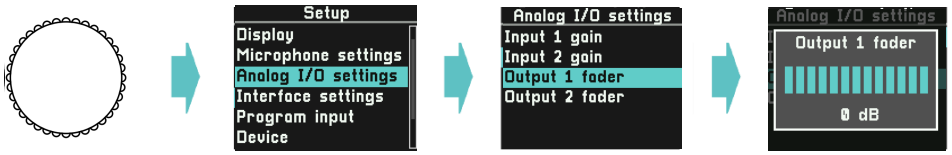
8.7.1 Analog Input

Adjust the gain of the backpanel analog inputs so the level is in the upper green range.
This overrides the settings that came with the I/O settings you chose for your Speaker Station.



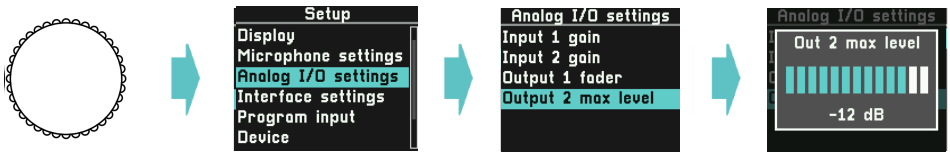
8.7.2 Analog output

Adjust the fader of the backpanel analog outputs according to your needs. This overrides the settings that came with the I/O settings you chose for your Speaker Station.



8.7.3 External Speaker Output

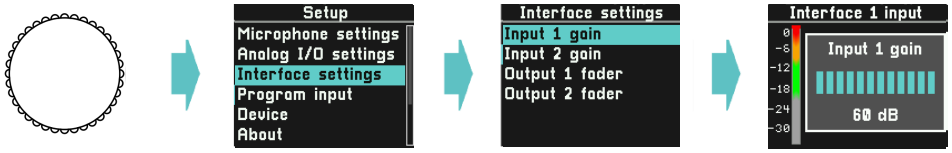
If one of your analog outputs is configured to ‘External Speaker Output’ you can adjust the maximum output level sent to your external speaker input, so it does not produce a distorted signal. Speaker volume is adjusted like described in Volume Button
This overrides the setting that came with the I/O settings you chose for your Speaker Station.



8.8 Interface settings

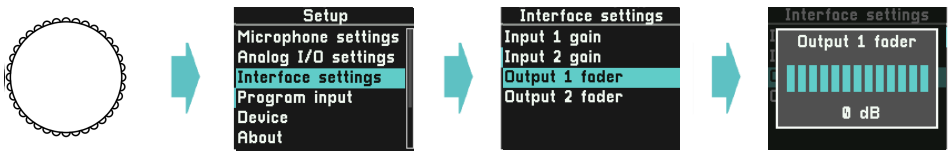
8.8.1 Interface Input Gain

Adjust the gain of the backpanel interface inputs so the level is in the upper green range. This overrides the settings that came with the I/O settings you chose for your Speaker Station.

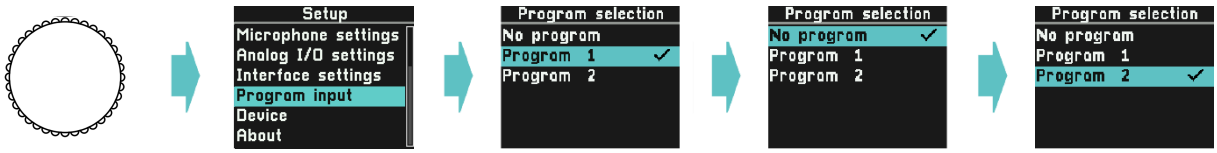


8.8.2 Interface Output Level

Adjust the fader of the backpanel interface outputs according to your needs. This overrides the settings that came with the I/O settings you chose for your Speaker Station.

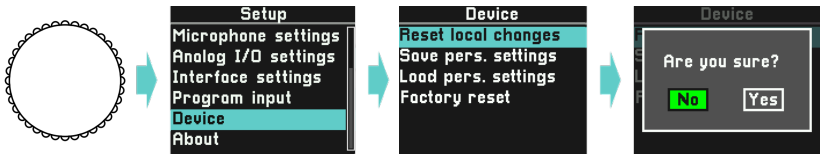


8.9 Program Input



The Program inputs defined for your partyline system are listed here. You may select the Program input that suits your Role best. Selecting “No program” will switch off the Program input on your unit.
The Program volume can be controlled using the Volume button. See Volume Button

8.10 Device



All current settings of your device are stored locally and applied again when powering up the device. Locally changed settings are not overwritten by system updates if:

- The system name is unchanged
- The system contains the currently active role name
- The system contains the currently active I/O settings name

8.10.1 Reset local changes

Use this entry to revert all settings to the values as set in the active Role and I/O setting. Volumes will be set to the default values. This command can also be sent from Q-Tool.

8.10.2 Save personal settings

This will save your personal settings to a storage space on your unit that is NOT overwritten by a firmware or a system update. Previously saved settings will be overwritten.
Personal settings include:

Microphone settings for each gooseneck and headset:

- Microphone gain
- Microphone type
- Bandpass Filter
- VOX threshold
- VOX release time

Volume settings:

- Master output speaker
- Master output headset
- Partyline fader for channels 1 to 4
- Sidetone fader
- Program fader
- Buzzer fader

Display settings:

- Brightness
- Screensaver

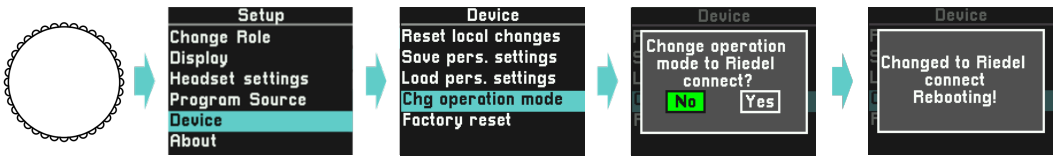
Backpanel audio settings:

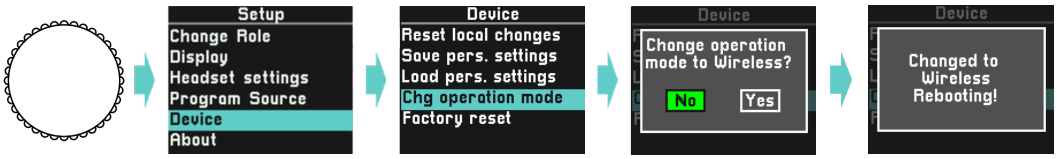
- Analog I/O
  - Input 1 & 2 gain
  - Output fader 1 & 2
- Interface 1 & 2
  - Input 1 & 2 gain
  - Output fader 1 & 2

8.10.3 Load personal settings

This will restore your previously saved personal settings and instantly apply them.

8.10.4 Change operation mode





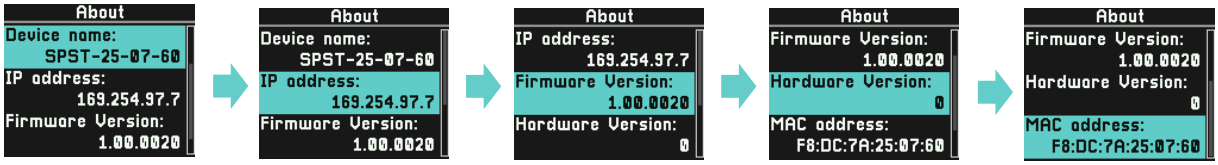
8.10.5 Factory reset

The unit will be reset to the factory default settings.

Please note that your device will lose connection to your active partyline system unless it is the factory default system. Use Q-Tool to add a device to a system other than the factory default system.

8.11 About

Get access to read-only information about your device. Scroll to access all available information:



8.11.1 Device name

The default name of your device is derived from the unique MAC address of your device. Use Q-Tool to name the device differently. The given name will not be changed when applying a FW update. Resetting the device to factory default condition will also reset the device name.

8.11.2 IP address

This is the current IP address of your device.

8.11.3 Firmware version

This is the current firmware version. Use Q-Tool to retrieve and apply FW updates.

8.11.4 Hardware version

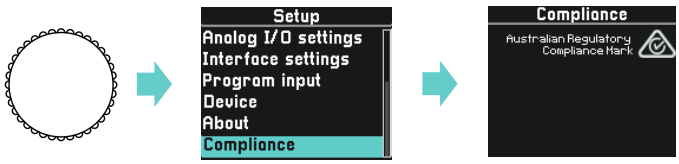
This is the hardware version of your unit. This value cannot be changed.

8.11.5 MAC address

This is the MAC address of your device. This value cannot be changed.

8.12 Compliance

Get access to read-only information about compliance marks



9 Lock modes

Different lock modes are offered to cover specific use cases. Lock modes are selectable per role.

9.1 Device lock

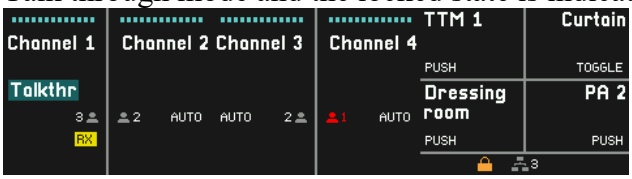
A locked device remains silent and cannot be operated before it is unlocked. Lock your device if you must leave it in a public place.

- Lock function is engaged on boot
- To unlock, press the menu button and enter the PIN defined in the role to unlock

9.2 Talk Through

Talk through operation uses the first channel for talkthrough communication. All other channels are not affected and can be used as configured.

- Lock function is engaged on boot
- Talk through channel behavior:
  - Channel and master volume buttons are locked
  - Talk function is available if configured (push or off)
  - Call button is disabled
- Input selection is locked to gooseneck
- Sidetone volume is set to zero
- Talk through mode and the locked state is indicated in the device display:



- Remaining channels are fully functional in locked mode.
- Alt functions are available
- An unlocked device allows for setting all levels and functionality defined in the role
- To unlock, press the menu button and enter the PIN defined in the role to unlock
- Talk through operation does not affect Riedel Connect patch nor punQtum wireless functionality

10 Q-Tool

Get your free copy of Q-Tool, the Q-series digital partyline configuration software, to enjoy the full features of your PunQtum partyline. You may download it from the PunQtum website www.PunQtum.com.

Please read the Q-Tool manual for more information on the configuration with Q-Tool.

11 Technical specifications

Technical specifications are in the Q210 P Speaker Station datasheet available from our website.