

# User Manual Powerstick



Version 3.2

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**SEEBURG**  
acoustic line

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## 2 Foreword

The Powerstick is an ultra compact and especially low weight amplifier with 2x 500 Watt power @ 4 Ohm (AES) and integrated DSP Controller.

It is designed for installation in the stand columns (monopods) of the L-series and can also be docked directly on the back of the L-series line source speakers. Due to its design and the various mounting options, the power stick also can be used as a single device or can be integrated in e.g. truss constructions or exhibition stands. Various pre-configured presets and level settings are available for selection.

The integrated DSP controller is based on the same operating principle as the stand-alone controllers HDLM 8 and DSP 2.6. A mere 0.8 ms latency (from analogue input to output) is achieved through the use of a 96 kHz sample rate. The excellent signal to noise ratio is a further feature of the DSP controller. Electronic simulation of a transformer balanced input provides additional protection against hum and buzz caused for example by external interference. High grade electronic components from the industrial sector and first-class circuit design result in a robust device with excellent audio characteristics and minimize disruptive noise.

The default state of the integrated DSP controller is the standard configuration as described in this manual. Custom presets can be installed by the user himself because only a special audio file has to be generated and installed. This preset audio file can be programmed with the LPI (Loudspeaker Programming Interface) also by the user himself. The preset file is a custom audio file which is simply played into the audio input of the controller. In this manner, individual settings for different speaker combinations can be created. Furthermore, should you ever be unsure as to the integrity of the DSP configuration of your controller, you can obtain a fresh default file from SEEBURG acoustic line and re-install the original factory presets yourself. Efficient and intelligent limiter functions provide optimal protection without sacrificing any of the potential of the system.

If you would like further information about SEEBURG acoustic line products, or have any comments or suggestions regarding this handbook or the product, you can contact us here:

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### 3 Safety instructions

**Acoustic**

Even a low input level can result in a sound pressure level at the loudspeaker which can be damaging to your hearing. Do not remain in close proximity to the loudspeaker when it is being operated. Use hearing protection. Observe all relevant Health and Safety and Environmental Protection regulations.

**Mechanical**

Movable parts and falling objects during installation and de-rigging can cause serious injury. Observe at all times all relevant Health and Safety regulations and regulations on the installation and operation of PA systems.

**Magnetic und electrical**

Loudspeakers generate a magnetic field even without a source of power connected. This can damage or destroy magnetic storage devices. The PowerCon loop-through connector is under power when the device is in operation. Observe all relevant safety regulations at all times.

**General safety precautions**

The installation and de-rigging of this equipment should only be carried out by appropriately qualified and experienced personnel, and according to all relevant safety regulations. Find out about the applicable regulations in the country you work in and comply with the respective regulations.

Do not operate the Powerstick if you have any doubts about the safety of doing so, or if the loudspeaker shows any signs of faulty operation. There are no user serviceable parts inside the device. For repairs, contact your dealer or a qualified service technician.

The Powerstick is a class 1 device requiring a 230 V / 50 Hz power connection with earth contact.

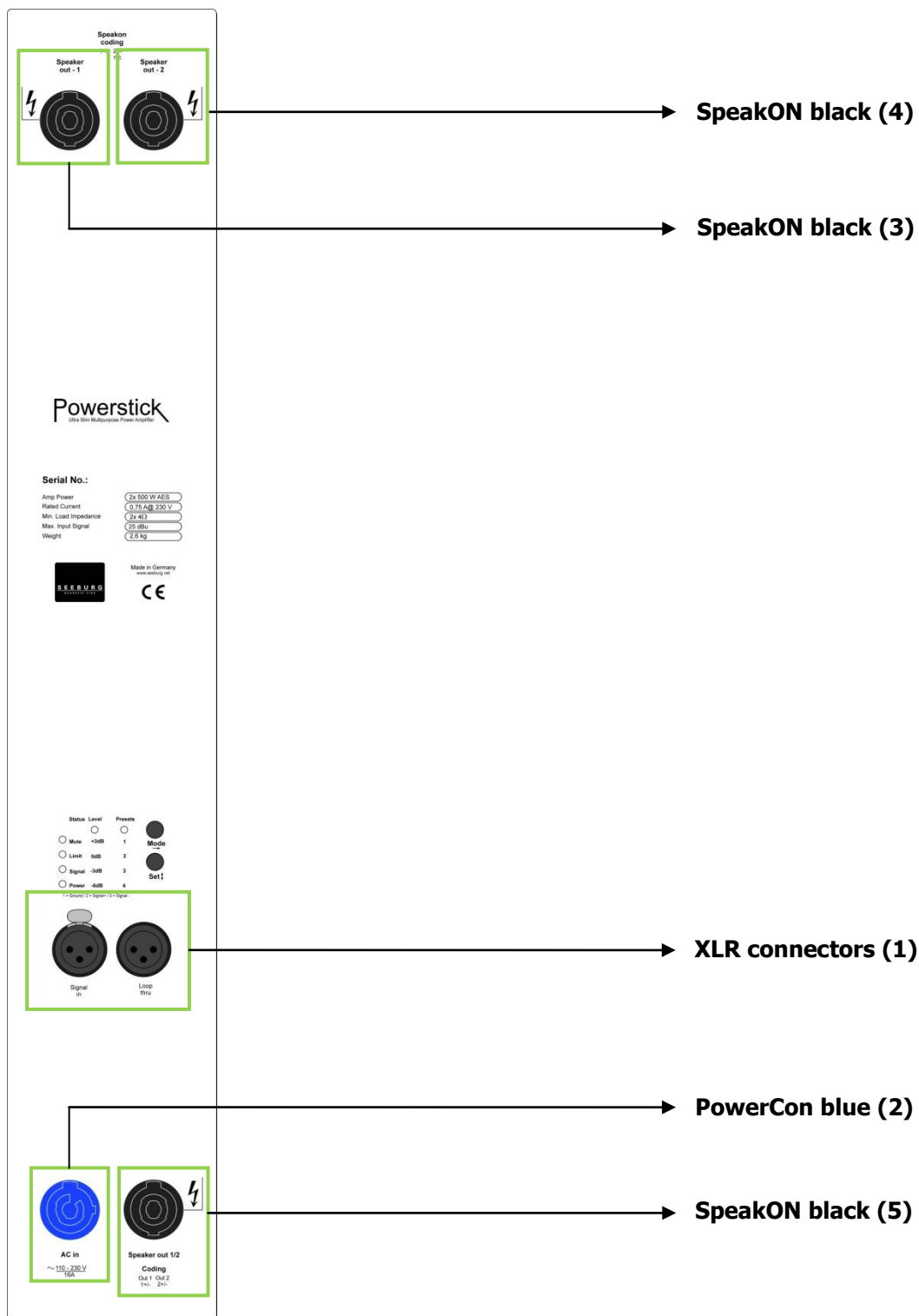
If the loudspeaker is connected to a power source in which the voltage is too high, a protective mechanism is triggered which reliably safeguards the amplifier module and DSP. Once triggered, the protection must be renewed by a qualified service technician.

Never open the housing. There are no user serviceable parts inside. Do not expose the Powerstick to rain, and avoid operating in environments below -5° C or above 40° C. Be aware of the possibility of condensation forming inside the housing due to rapid changes in temperature. Allow the Powerstick to adjust to ambient temperature before operation. Leave the device switched on if operating in unfavorable conditions.

To prevent overheating, do not operate the Powerstick in the direct vicinity of strong heat sources, and avoid direct sunlight. After long periods of operation, the housing, particularly metallic components such as the rear panel and the connector panel, can reach temperatures exceeding 40° C.

## 4 Connectors/Indicators

### 4.1 Connection panel



## 4.2 Connectors

### **XLR connectors (1)**

The Powerstick should be connected with a standard symmetrically wired XLR cable. To connect the input signal to further devices, use the male XLR Loop thru connector. To obtain full power performance from the system, the signal source should be able to provide a minimum of 6 dBu distortion free output voltage.

### **PowerCon blue (2)**

Power supply input voltage 110-230 VAC. This connector provides the function of an on-off switch. After powering on (turn the connector to the right until it locks), the systems starts up and is ready for use after approximately 3 seconds. Avoid repeatedly switching the system on and off, particularly when it is operating.

### **SpeakON (3)**

This connector is used to connect additional passive loudspeakers to amplifier channel 1.

Coding: „1+/1- Out 1“. ATTENTION! The nominal impedance of the connected passive systems must be 4 Ohm or more! In this connection mind the selection of the correct controller setup!

### **SpeakON (4)**

This connector is used to connect additional passive loudspeakers to amplifier channel 2.

Coding: „1+/1- Out 2“. ATTENTION! The nominal impedance of the connected passive systems must be 4 Ohm or more! In this connection mind the selection of the correct controller setup!

### **SpeakON (5)**

This connector is used to connect a passive mid-high system in combination with a subwoofer system by using system wiring.

Coding: „1+/1- Out 1“ and „2+/2- Out 2“. ATTENTION! The nominal impedance of the connected passive systems must be 4 Ohm or more on both the „1+/- group“ and the „2+/- group“! In this connection mind the selection of the correct controller setup!



The nominal power consumption of the Powerstick under full power is 0.75 A (measured with pink noise, Crest Factor 8). Transient peaks can, however, cause much higher momentary power drain. Observe carefully the nominal power consumption when connecting the loudspeaker(s) to the power source, and observe carefully the cut-off current of the safety circuit breakers. We recommend using the loudspeaker on power circuits with circuit breakers with C characteristic.



### 4.3 Controls



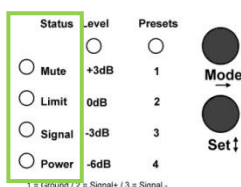
#### Mode button:

Switch between the modes Status / Level and Presets.

#### Set button:

Set various values and Mute on/off.

### 4.4 Status indication



#### Mute LED:

Lights red when the system is muted (press the Set button in Status Mode), or in technically critical conditions.

#### Limit LED:

Lights yellow when the limiter is limiting one or more amplifier channels.

#### Signal LED:

Lights green when a signal of more than -20 dBu is present. The LED still lights up when the system is muted.

#### Power LED:

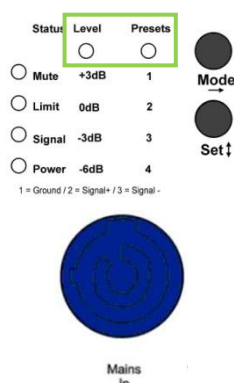
Lights when the system is powered up.

## 5 Operation

### 5.1 Starting up

The last settings are restored when the device is switched on. This also applies to the choice of the preset bank. When the start-up is completed, the system is in status mode. If the red Mute LED lights up depending on the previous setting, no signal is being transmitted. Pressing the set button once deactivates the mute function, the mute LED will go off and the system is ready for operation.

### 5.2 Selecting a bank



The loudspeaker presets are stored in the DSP controller in up to 3 banks. To change banks, press and hold the Mode button whilst the loudspeaker is switched on.

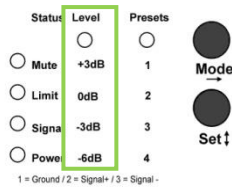
1. Press and hold the Mode button.
2. Connect the power cable (PowerCon blue).
3. Corresponding LEDs blink to indicate the chosen bank.
4. Release the Mode button.

When the power cable is connected, the level and/or preset LED lamps blink to indicate which bank is selected. The level LED blinks to indicate the first bank, the preset LED for the second. The third bank is indicated by both LEDs blinking.

If only one bank is programmed, there is no possibility to switch the bank.

Bank 1 – L-Series	Bank 2 – Default Settings	Bank 3 – i-Series
2x L16 Fullrange	2x HP 50Hz	2x i4 Flat
2x L16 HP 180Hz	2x Low-Boost	2x i5 Flat
L16 HP + G Sub 1201 160Hz	Top + Sub 160Hz	i4 HP + G Sub 1001 160Hz
L16 HP + G Sub 1501 140Hz	Top + Sub 120Hz	i5 HP + G Sub 1001 120Hz

### 5.3 Setting level



Pressing the Mode button once selects the Level Mode, in which you can adjust the output volume in 3 dB steps. There are four settings available: +3 dB, 0 dB (standard), -3 dB and -6 dB. The setting is done by pressing the Set button. The Level LED lights to indicate which mode is activated. The four vertically aligned LEDs (lit green in this mode) indicate which setting is selected.

**ATTENTION!** The level settings apply only to the first amplifier channel which powers the SpeakON socket (3) and the „1+/- group“ of SpeakON socket (5) when the factory setting is programmed. It's possible to modify this setting (see 6.4.18).

### 5.4 Recalling presets

Pressing the Mode button twice selects the Preset Mode. Three different presets with an each switchable Cardioid Mode are available in each bank for selection via the Set button. The four vertically aligned LEDs indicate the current selection.

#### 5.4.1 Preset Bank 1 – L-Series



##### 1 - Fullrange:

Preset for use when L16 i/j are connected to SpeakON sockets (3) and (4) and are set up standalone. This setting is useful in full-range applications in which strong bass reproduction is required, but a sub-woofer cannot be used. The achievable low-frequency level is, however, limited.

##### 2 - 2x L16 HP 180Hz:

Preset for use when L16 i/j are connected to SpeakON sockets (3) and (4) and higher maximum sound pressure level is required.

##### 3 - L16 HP + G Sub 1201 160Hz:

Preset for use when L16 i/j are connected to SpeakON socket (3) in combination with up to 2 G Sub 1201 on SpeakON socket (5). The acoustical cross-over frequency in this preset is approx. 160 Hz.

##### 4 - L16 HP + G Sub 1501 140Hz:

Preset for use when L16 i/j are connected to SpeakON socket (3) in combination with up to 2 G Sub 1501 on SpeakON socket (5). The acoustical cross-over frequency in this preset is approx. 140 Hz.

### 5.4.2 Preset Bank 2 – Default Settings



#### 1 - 2x HP 50 Hz:

Preset for use when the second amplifier channel is powering a mid-high system (e.g. X1, A2 or X4) connected to SpeakON sockets (3) and (4). The high-pass filter at 50 Hz is a protection high-pass.

#### 2 - 2x Low-Boost:

Flat preset with a low-frequency boost for use when the second amplifier channel is powering a mid-high system (e.g. X1, A2 or X4) connected to SpeakON sockets (3) and (4). This setting is useful in full-range applications in which strong bass reproduction is required, but a subwoofer cannot be used. The achievable low-frequency level is, however, limited.

#### 3 - Top + Sub 160 Hz:

Preset with a higher cross-over frequency for use when smaller mid-high systems (e.g. A1 or X1) are connected to SpeakON socket (3) in combination with a subwoofer system (at min. 4 Ohm) on SpeakON socket (5). The cross-over frequency in this preset is approx. 160 Hz.

#### 4 - Top + Sub 120 Hz:

Preset with a higher cross-over frequency for use when mid-high systems (e.g. A3 or X4) are connected to SpeakON socket (3) in combination with a subwoofer system (at min. 4 Ohm) on SpeakON socket (5). The cross-over frequency in this preset is approx. 120 Hz.

### 5.4.3 Preset Bank 3 – i-Series



#### 1 - 2x i4 Flat:

Preset for use when i4 are connected to SpeakON sockets (3) and (4).

#### 2 - 2x i5 Flat:

Preset for use when i5 are connected to SpeakON sockets (3) and (4).

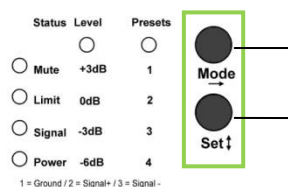
#### 3 - i4 HP + G Sub 1001 160 Hz:

Preset for use when i4 are connected to SpeakON socket (3) in combination with up to 2 G Sub 1001 on SpeakON socket (5). The acoustical cross-over frequency in this preset is approx. 160 Hz.

#### 4 - i5 HP + G Sub 1001 120 Hz:

Preset for use when i5 are connected to SpeakON socket (3) in combination with up to 2 G Sub 1001 on SpeakON socket (5). The acoustical cross-over frequency in this preset is approx. 120 Hz.

## 5.5 Locking the buttons



Press and hold the Set and Mode buttons simultaneously for more than 3 seconds to lock the controls of the system. Repeat the action to unlock the system.

## 6 Programming the DSP

### 6.1 Generating a preset audio file

The presets are written in text-form using a simple description language. This procedure, originally developed for the Seeburg HDLM 8, enables the professional creation of speaker setups without having to deal with the otherwise confusing and difficult to understand software solutions.

You can print the description text of a created preset and archive it or save it in a ".txt" file so that you can use it again later. The form of the descriptive language is kept quite simple that any skilled personnel can read and interpret it immediately, even years later.

The description language is called **LPI: Loudspeaker Programming Interface**.

The preset audio file is created in a web app. This app can be found in the internet under: <http://seeburg.net/lpi>

On this site the option to download the app for offline use is provided. The only requirement therefore is a browser compatible to HTML 5.

The created preset can be downloaded in the LPI app (after the preset text has been confirmed via „Apply“) as a “.wav” file or it can be played directly into the Powerstick via the audio output of the PC. This file contains the created presets and is programmed onto the power stick as described in section **Fehler! Verweisquelle konnte nicht gefunden werden..** To activate the programming function, the set button must be pressed in Status Mode to mute the power stick.

#### Steps for programming the Powerstick:

1. Write preset text in the LPI (or change an existing example preset)
2. Confirm with „Apply“
3. If desired, save the preset text as a text document for later reuse
4. Download the „-wav“ file
5. Play as explained in section 6.5 (the audio file can also be played directly from the LPI)

## 6.2 Preset structure (example)

```
powerstick

Bank "3 I-Series"

preset "I5 HP + G Sub 1001 120Hz"
input
gain +6dB #adaption to 32dB ampgain
# place EQ's here if required

out 1
volcontrol
#i5 HP
gain +0dB
phase nor
power 16R 120W 360W 26dB #amp module has 26dB ampgain!
rmstime 250ms
peaktime 50ms
hpf BW18 140Hz
peq 850Hz Q2 3dB
peq 1100Hz Q3 -2dB
peq 1880Hz Q3 -3dB
peq 7000Hz Q2 2dB
peq 15000Hz Q3 6dB

out 2
#GSub1001 120Hz
gain +6db
phase nor
power 8R 300W 1200W 26dB #amp module has 26dB ampgain!
rmstime 1000ms
peaktime 100ms
hpf BW12 54Hz
lpf LR24 120Hz
peq 54Hz Q2 +3dB
peq 80Hz Q2 +1.5dB
peq 250Hz Q1 -6dB
peq 310Hz Q8 -5dB
```

### 6.3 Overview over the LPI text commands

Filter	Notation	Definition
<b>All-pass filter</b>	apf [Q<q>] [< frequency>Hz kHz]	Defines an all-pass filter. When Q is set, an all-pass filter 2 <sup>nd</sup> order is implemented
<b>Bank</b>	bank "<labeling>"	Defines the preset bank. For each bank the same number of presets must be programmed
<b>Preset</b>	preset "<labeling>"	Defines a preset which includes the loudspeaker data for the two outputs
<b>Channel selection</b>	out 1 out 2	Selects the DSP- and amp channel Out 1 or Out 2
<b>Comment</b>	# <text>	The text following the pound sign is ignored by the DSP
<b>Delay</b>	delay <time>ms	Sets the time delay in milliseconds
<b>Level</b>	gain <value>dB	Increase or decrease of the level of the channel
<b>High-pass filter</b>	hpf [characteristic] [< frequency>Hz kHz]	Defines a high-pass filter with selectable characteristic (Butterworth, Bessel or Linkwitz-Riley with different selectable slew rate) at a certain frequency
<b>Low-pass filter</b>	lpf [characteristic] [< frequency>Hz kHz]	Defines a low-pass filter with selectable characteristic (Butterworth, Bessel or Linkwitz-Riley with different selectable slew rate) at a certain frequency
<b>High-Shelf</b>	hshelf [6/12] [< frequency>Hz kHz] [<gain>dB]	Defines a high frequency shelving filter. The frequency defines the middle of the filter
<b>Low-Shelf</b>	lshelf [6/12] [< frequency>Hz kHz] [<gain>dB]	Defines a low frequency shelving filter. The frequency defines the middle of the filter
<b>Parametric EQ</b>	Peq [Q<q>] [< frequency>Hz kHz] [<gain>dB]	Defines a parametric EQ with frequency, Q factor and gain
<b>Polarity</b>	phase nor / rev	Defines the polarity of the channel
<b>Limiter</b>	power [<impedance>R] [<thermal power>W] [<peak power>W] [<amp-gain>dB]	Sets limiter values for the selected DSP channel
<b>Release time</b>	releasetime <time>ms	Sets the release time of the limiters
<b>RMS time</b>	rmstime <time>ms	Sets the averaging time of the RMS measurement for the limiter
<b>Peak time</b>	peaktime <time>ms	Sets the averaging time of the peak measurement for the limiter
<b>Volume-Control</b>	volcontrol	Defines the DSP- or amp channel which whose volume can be set on the operation panel



## 6.4 LPI text commands in detail

### 6.4.1 All-pass filter

<b>Definition:</b>	apf [Q<q>] [< frequency>Hz kHz]	
<b>Description:</b>	Defines an all-pass filter. When Q is set, an all-pass filter 2nd order is implemented.	
<b>Example(s):</b>	apf 250Hz	# all-pass 1 <sup>st</sup> order
	apf 200Hz Q3.5	# all-pass 2 <sup>nd</sup> order

### 6.4.2 Preset bank

<b>Definition:</b>	bank "<labeling>"	
<b>Description:</b>	Creates a new preset bank. Each preset bank must have the same number of presets. Due to the labeling of the control panel it's recommended to program a maximum of three preset bank with each four presets.	
<b>Example(s):</b>	Bank 1 „L-Series“	# defines preset bank 1 under the name „L-Series“

### 6.4.3 Preset

<b>Definition:</b>	preset "< labeling>"	
<b>Description:</b>	Defines a preset which includes the loudspeaker data for the two outputs. The LPI processes all text commands until the next line below in which the text command „Preset“ or „Bank“ is used. For each preset bank we recommend a maximum of four presets.	
<b>Example(s):</b>	Preset 3 „i5 + G Sub 1001 120Hz“	# defines a Preset named „i5 + G Sub 1001 120Hz“ from this line on

#### 6.4.4 Channel selection

<b>Definition:</b>	Input   Out 1   Out 2	
<b>Description:</b>	Selects the DSP- and amp channel Out 1 or Out 2. For the selected channel the LPI processes all text commands until the next line below in which the text command for channel selection or the text command „Preset“ or „Bank“ is used.	
<b>Example(s):</b>	Input gain +6dB  Out 2 hpf BW18 50Hz	<i># refers to both DSP and amp channels within the preset</i>  <i># selects DSP-/Amp channel 2</i>

#### 6.4.5 Comment

<b>Definition:</b>	#	
<b>Description:</b>	To write a comment in a line, a pound sign (#) is set in front of the text. The text following the pound sign is ignored by the DSP.	
<b>Example(s):</b>	<i># comment</i>	<i># this text is painted green and simply serves as documentation or labeling function</i>

#### 6.4.6 Delay

<b>Definition:</b>	delay <time>ms	
<b>Description:</b>	Sets the time delay in milliseconds.	
<b>Example(s):</b>	delay 2.3ms	The channel in which this command is used gets delayed by 2.3 ms

### 6.4.7 Level

<b>Definition:</b>	gain <Wert>dB	
<b>Description:</b>	Sets the increase or decrease of the level of the channel.	
<b>Example(s):</b>	gain -3.5dB	The level of the channel in which this command is used gets decreased by 3.5 dB

### 6.4.8 High-pass filter

<b>Definition:</b>	hpf [characteristic] [< frequency>Hz kHz]	
<b>Description:</b>	<p>Defines a high-pass filter with a certain characteristic at a specified frequency (-3 dB point). The characteristic can be programmed as slew rate in Q factor or as follows:</p> <ul style="list-style-type: none"> <li>• Butterworth characteristic, 6 up to 48 dB per octave in 6 dB steps <ul style="list-style-type: none"> <li>• BW6, BW12, BW18, BW 24, BW 30, BW 36, BW 42, BW 48</li> </ul> </li> <li>• Bessel characteristic, 6 up to 48 dB per octave in 6 dB steps <ul style="list-style-type: none"> <li>• BS6, BS12, BS18, BS24, BS30, BS36, BS42, BS48</li> </ul> </li> <li>• Linkwitz-Riley characteristic, 12 up to 48 dB per octave in 12 dB steps <ul style="list-style-type: none"> <li>• LR12, LR24, LR48</li> </ul> </li> </ul>	
<b>Example(s):</b>	hpf LR24 1kHz	# Linkwitz-Riley 24 dB per octave at the frequency 1 kHz
	hpf Q0.6 200Hz	# high-pass filter programmed with Q

### 6.4.9 Low-pass filter

<b>Definition:</b>	<b>lpf [characteristic] [&lt; frequency&gt;Hz kHz]</b>	
<b>Description:</b>	<p>Defines a low-pass filter with a certain characteristic at a specified frequency (-3 dB point). The characteristic can be programmed as slew rate in Q factor or as follows:</p> <ul style="list-style-type: none"> <li>• Butterworth characteristic, 6 up to 48 dB per octave in 6 dB steps <ul style="list-style-type: none"> <li>• BW6, BW12, BW18, BW 24, BW 30, BW 36, BW 42, BW 48</li> </ul> </li> <li>• Bessel characteristic, 6 up to 48 dB per octave in 6 dB steps <ul style="list-style-type: none"> <li>• BS6, BS12, BS18, BS24, BS30, BS36, BS42, BS48</li> </ul> </li> <li>• Linkwitz-Riley characteristic, 12 up to 48 dB per octave in 12 dB steps <ul style="list-style-type: none"> <li>• LR12, LR24, LR48</li> </ul> </li> </ul>	
<b>Example(s):</b>	<i>lpf BW24 1.2Hz</i>	<i># Butterworth 24 dB pro octave at the frequency 1.2 kHz</i>
	<i>lpf Q0.5 800Hz</i>	<i># low-pass filter programmed with Q</i>

### 6.4.10 High-Shelf

<b>Definition:</b>	<b>hshelf [6/12] [&lt; frequency&gt;Hz kHz] [&lt;gain&gt;dB]</b>	
<b>Description:</b>	Defines a high frequency shelving filter. The frequency defines the middle of the filter.	
<b>Example(s):</b>	<i>hshelf 6 10kHz +3dB</i>	<i># High-Shelf filter with a slope of 6 dB per octave at 10 kHz by +3 dB</i>

### 6.4.11 Low-Shelf

<b>Definition:</b>	lshelf [6/12] [< frequency>Hz kHz] [<gain>dB]	
<b>Description:</b>	Defines a low frequency shelving filter. The frequency defines the middle of the filter.	
<b>Example(s):</b>	lshelf 12 800Hz -5dB	# Low-Shelf filter with a slope of 12 dB per octave at 800 Hz by -5 dB

### 6.4.12 Parametric EQ

<b>Definition:</b>	peq [Q <q>] [< frequency>Hz kHz] [<gain>dB]	
<b>Description:</b>	<p>Defines a parametric EQ with frequency, Q factor and gain.</p> <p>The Q factors are calculated by the ½-gain-method. The order of the instructions [Q], [ frequency] und [gain] is ignored by the DSP.</p>	
<b>Example(s):</b>	peq 2.5kHz Q1 -3dB	# parametric EQ at 2,5 kHz with Q1 and a level decrease by 3 dB

### 6.4.13 Polarity

<b>Definition:</b>	polarity nor/rev phase nor/rev	
<b>Description:</b>	Defines the polarity of the channel.	
<b>Example(s):</b>	phase rev	# the polarity of the channel is reversed

#### 6.4.14 Limiter

<b>Definition:</b>	power [<impedance>R] [<thermal power>W] [<peak power>W] [<amp-gain>dB]	
<b>Description:</b>	Sets thermal- and peak limiter. The higher power value is the peak power which should be twice as much as the thermal power. Set the ampgain (in dB) of your power amplifier. Normally amplifiers have 26 dB or 32 dB ampgain. Additionally release-, RMS-, and peak time can be set.	
<b>Example(s):</b>	power 8R 400W 1200W 32dB	<i># applies to speakers with 400 W AES power with 8 Ohm nominal impedance driven by a power amplifier with 32 dB ampgain</i>

#### 6.4.15 Release time

<b>Definition:</b>	releasetime <time>ms	
<b>Description:</b>	Sets the release time of the thermal limiter. When the release time is not set by the user standard values (60 ms for the output and 2500 ms for the input) are set by the DSP. Only use this function when you know what you are doing.	
<b>Example(s):</b>	power 8R 400W 1200W 32dB releasetime 75ms	<i># sets the limiter value # sets a release time of 75 ms</i>

#### 6.4.16 RMS time

<b>Definition:</b>	<b>rmstime &lt;time&gt;ms</b>	
<b>Description:</b>	Sets the averaging time of the RMS measurement for the limiter. When the RMS time is not set by the user standard value (35 ms) is set by the DSP. Only use this function when you know what you are doing.	
<b>Example(s):</b>	<p><i>power 8R 400W 1200W 32dB</i></p> <p><i>rmstime 250ms</i></p>	<p><i># sets the limiter value</i></p> <p><i># sets an integration time of 250 ms for the RMS limiter</i></p>

#### 6.4.17 Peak time

<b>Definition:</b>	<b>peaktime &lt;time&gt;ms</b>	
<b>Description:</b>	Sets the averaging time of the peak measurement for the limiter. When the RMS time is not set by the user standard value (35 ms) is set by the DSP. Only use this function when you know what you are doing.	
<b>Example(s):</b>	<p><i>power 8R 400W 1200W 32dB</i></p> <p><i>peaktime 50ms</i></p>	<p><i># sets the limiter value</i></p> <p><i># sets an integration time of 50 ms for the peak limiter</i></p>

#### 6.4.18 Volume-Control

<b>Definition:</b>	<b>volcontrol</b>	
<b>Description:</b>	The text command „volcontrol“ defines the DSP- or amp channel which whose volume can be set on the operation panel of the Powerstick. In the whole Powerstick preset text only the first „volcontrol“ command is regarded by the DSP. Further „volcontrol“ commands occurring in the preset text are ignored by the DSP.	
<b>Example(s):</b>	<p><i>out 1</i></p> <p><i>volcontrol</i></p> <p><i>gain +6dB</i></p>	<p><i># defines channel 1 as the channel whose level can set on the operation panel</i></p>

## 6.5 Reprogramming the Powerstick with preset audio files

By default, the built-in DSP controller is in a default configuration state that conforms to the description in the User Manual. The installation of special presets on the DSP controller can be done by the user himself, since only a special preset audio file must be loaded. The programming of these audio files via the LPI (Loudspeaker Programming Interface) can also be done by the user himself.

The preset is getting installed on the DSP by playing the preset audio file in the XLR input. This can be done in different ways (MP3 player, smart phone, PC, CD player, ...). Installation via PC is done as follows:

1. Use a mini-jack-XLR (stereo) cable to connect the headphone output to the XLR input of the self-powered box. Use only one of the XLR connectors.
2. Mute the box by pressing the Set button in Status Mode. The Mute LED lights up. The DSP controller can only receive data in the muted state.
3. Make sure your computer's volume is set to 100%.
4. Load the ".wav" file received from SEEBURG acoustic line into a music player.
5. Press the play button.
6. After a successful programming operation, the Mute LED turns off.



It is very important to ensure that the preset audio file is played in single mode. Other music files in the playlist or on the data storage medium will otherwise be played at full volume.



## 7 Technical specifications

<b>Description</b>	Ultra Slim Multipurpose Power Amplifier
<b>Amp Power</b>	2x 500 W AES @ 4 $\Omega$ / 110-230 V
<b>Rated Current</b>	0,75 A @ 230 V
<b>Min. Load Impedance</b>	2x 4 $\Omega$
<b>Max. Input Signal</b>	25 dBu
<b>DSP</b>	HDLM FPGA Processing 32 bit floating point
<b>AD / DA</b>	24 bit / 96 kHz
<b>Latency</b>	0,8 ms (analog in to analog out)
<b>Signal/Noise ratio</b>	115 dB
<b>Tuning Frequency</b> (excursion minimum)	---
<b>Connectors</b>	Neutrik XLR in/out Neutrik PowerCon in/out 3x Neutrik Speakon NL4MP out
<b>Handles</b>	---
<b>Rigging / Fittings</b>	2x keyhole for wall mounting 10x hole
<b>Weight</b>	2,6 kg
<b>Size</b> (height x width x depth)	50,8 x 8,5 x 8,2 cm
<b>Order No.</b>	00750/dp

The technical data sheet and further information about possible applications for the system and available accessories can be downloaded at the following Internet address:

[https://www.seeburg.net/download\\_getfile.php?file=downloads\\_EN/06-Datasheets/Electronics/Powerstick\\_Datasheet\\_engl.pdf](https://www.seeburg.net/download_getfile.php?file=downloads_EN/06-Datasheets/Electronics/Powerstick_Datasheet_engl.pdf)



This manual applies only to systems fitted with the *DPLM*-DSP Controller.

The version fitted with the *DPLM*-DSP Controller can be identified by the control panel located above the XLR connectors.

## 8 Declaration of conformity

### *EG Declaration of conformity*

This product

#### **Powerstick**

confirms to the following EU guidelines, including any additions:

- ✓ 2006/95/EG, Low Voltage
- ✓ 2004/108/EG, Electromagnetic Compatibility
- ✓ (Locations: Appendix 1, Paragraph 1, a and b)

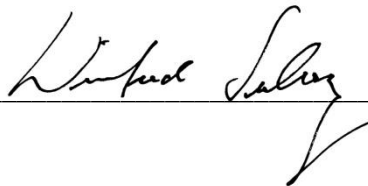
The following standards have been applied:

- ✓ DIN EN 60065
- ✓ DIN EN 55103-1:1996, classes E1 to E4
- ✓ DIN EN 55103-2:1996, classes E1 to E4

Declared by: Winfried Seeburg, SEEBURG acoustic line GmbH

Place and date: Senden, 01.01.2010

Legally binding sign: \_\_\_\_\_



The attachments constitute part of this declaration. This declaration certifies conformity with the listed guidelines, but does not guarantee any product characteristics. The safety precautions listed in the product documentation must be observed.

SEEBURG acoustic line Produktions- und Vertriebsgesellschaft mbH

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## **Benutzerhandbuch / User Manual**

Irrtum bei Beschreibung  
sowie technische  
Änderungen vorbehalten.

Alle SEEBURG acoustic line  
Produkte sind nur für den  
gewerblichen Einsatz bestimmt.

All specifications are  
current at the time of publishing  
but are subject to change.

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