

USER MANUAL

ZPR4620

6+2 Channel Rack Zoning Mixer

ENGLISH Page 2-15



■ Introduction

Dear customer,

congratulations on the purchase of this quality mixing desk. To meet your requirements, this unit has been designed and built to the highest standards, so that we can assure you that you have made a good and satisfying investment. To take full advantage of all possibilities and for your own safety and the safety of your environment, please read these operating instructions carefully before you start using the unit.

■ Product description

The ZPR4620 6+2 Channel Rack Zoning Mixer is a stereo mixing console with 2 microphone inputs, 6 stereo inputs, adjustable talk-over and one balanced master stereo output plus three balanced mono zone outputs with installation-specific features, which make this unit a very versatile choice in any environment from leisure to commercial applications.

■ Security advice before use



Warning: Read this section carefully before installing, powering, operating, cleaning or servicing this product!

The following symbols are used to identify important safety information in this manual:



DANGER!

Safety hazard. Risk of injury or death.



WARNING!

Hazardous voltage. Risk of severe or fatal electric shock.



WARNING!

Fire hazard.



WARNING!

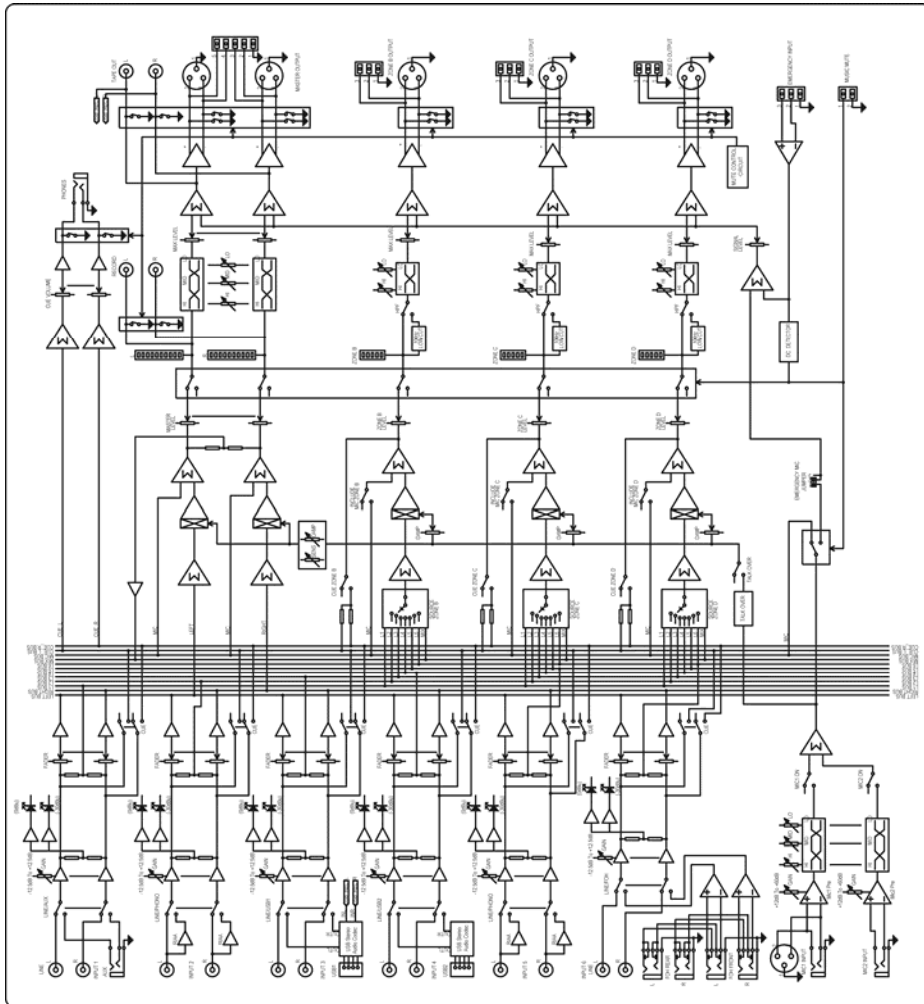
Read manual before installation and operation.



General advice:

1. Read this manual completely before using the product.
2. Keep this manual in your records for future reference.
3. Follow all instruction printed in this manual, otherwise warranty may be void.
4. Follow all printed security advice on the product itself. The lighting flash with arrowhead within an equilateral triangle makes you aware of non-insulated AC mains voltage inside the unit. The exclamation mark within an equilateral triangle makes you aware of important operating and maintenance instructions in the literature attached to this product.
5. Take care of enough distance between this product and sources of

■ Block Diagram



hum and noise like electric motors and transformers.

6. Carry this product with greatest care. Punches, big forces and heavy vibration may damage this product mechanically.
7. The manufacturer takes no responsibility for injury or damage caused by not following the safety precautions and instructions printed in this manual.



Protection from electric shock:

1. Only connect this unit to a mains socket outlet with protective earth connection, ground-fault (earth-fault) protection and overload protection.
2. Where the mains plug or an appliance coupler is used as a disconnect device, the disconnect device shall remain readily operable.
3. To pull the AC Cord out of the wall outlet or the unit's AC socket, never pull the cable itself, but only the AC plug.
4. Disconnect the unit from AC supply by pulling the AC plug out of the wall outlet or the unit's AC socket before any kind of cleaning on the product. Use smooth and dry cloth only for cleaning. Check all connection cables before reconnecting the unit.
5. Do not expose this unit to any dripping or splashing liquids, and do not place objects filled with liquids, such as vases, on the unit. Do not operate this unit near to open water or in high humidity.
6. Choose the position of the AC cord according to the lowest risk of damage by foot steps or by squeezing it. Take especially care of the AC cord outlet on the unit as well as the AC plug and wall outlet at the other end of the cable.
7. Do not open the unit for service purpose, as there are no user-serviceable parts inside. Warranty will be void in any case of unauthorized service by the user or other not authorized persons.



Protection from fire:

1. Take care of not placing the unit near sources of heat (e.g. powerful amplifiers, fog machines).
2. Take always care of sufficient air convection in the unit's environment to avoid overheating, especially when mounting in a closed environment. Make sure air convection slots – if any - are not blocked. Do not operate this unit in environmental temperatures exceeding 40 degrees Celsius.
3. Check the total maximum power of your AC wall outlet if you connect several units to one wall outlet and avoid any overloading.



Protection from injury and damage:

1. Never use any accessories or modifications not authorized by the manufacturer of this unit.
2. Choose a location for operation where the unit is protected from

vibration and where a fixed mounting position is provided.

3. Before plugging the AC cord in the wall outlet, check whether the AC mains voltage and frequency is the same as this product is specified for. Whenever your AC plug should not match the wall outlet, contact you dealer immediately.
4. If fluids have spilled into the unit or small parts have intruded the unit, immediately switch off the unit and hand it over to the authorized service for a security check.
5. Disconnect the unit from AC supply by pulling the AC plug out of the wall outlet or the unit's AC socket during a thunder-storm in order to avoid any damage on the unit due to AC voltage peaks.
6. In cause of not correct function of this unit or damaged AC cord or other damaged parts, pull immediately the AC plug out of the wall outlet and hand the unit over to the authorized service for a security check.
7. To meet all aspects of functionality and security during maintenance work to be performed on this unit, all parts should be replaced by genuine spare parts. Consequently, take care of your dealer or maintenance company to be authorized by the manufacturer.

■ Health advice

This unit produces and absorbs electromagnetic radiation. The strength of radiation and the sensitivity for disturbing interference matches the CE and FCC requirements. A corresponding sign is printed on the backside of the unit. Any change or modification may affect the behavior of the unit concerning electromagnetic radiation, with the CE requirements eventually not to be met any more. The manufacturer takes no responsibility in this case.

■ Functional advice

This unit is immune to the presence of electromagnetic disturbances – both conducted and radiated - up to a certain level. Under peak conditions, the unit is classified to show a “class C” performance criteria and may encounter temporary degradation or loss of function which may need manual help to recover. In such case, disconnect the AC power from the unit and reconnect it again to recover.

■ Environmental advice



This unit is build to conform to the ROHS standards and the WEEE directive 2002/96/EC of the European Parliament and of the Council of the European Union. Under these regulations, the product shall not be discarded into regular garbage at the end of its life, but shall be returned to authorized recycling stations.

Further to that, this unit does not need regular maintenance. The internal electronics are protected by a 5x20mm fuse. The fuse can be accessed by the small drawer at the AC inlet. To change the fuse, unplug the AC cord first, pull out the fuse drawer and replace the fuse ONLY with a fuse of SAME voltage and rating. If the fuse blows again after replacement, hand over the unit to qualified service personnel.

■ Technical Data

Mains Input EU version.....	AC220-250V~ 50Hz
Mains Input US version.....	AC110-120V~ 60Hz
Power consumption.....	max. 24W
Frequency response.....	20Hz-20kHz ±1.0 dBu
S/N.....	>82dB
THD+N.....	< 0.07% @ 1kHz
Dimensions.....	W 483× H133.5x D 183.5mm
Weight	4.2 kg

■ Standards

This product complies with the following standards:

EU safety.....	EN 60065:2001 +A1
EU EMC.....	EN55103-1:1997, EN55103-2: 1997
US safety	UL60065
US EMC.....	FCC Part 15

This product meets both the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.

For further information ask your dealer or visit the website of the manufacturer.

■ Operation

Apart from using good equipment, good sound comes from using it correctly. Level setting mistakes are one of the common reasons why even good equipment may not perform as desired. For setting levels, please be reminded that two guidelines need to be followed:

- Avoid distortion by leaving some headroom. Never overrun any audio-equipment's inputs. Level meters and displays allow you to make sure that signals do not enter critical levels.
- Avoid unnecessary amplification by using as little attenuation as possible. For example, if you turn down the input gain of a mixer to minimum, and then increase the main output of the mixer to maximum to drive your amplifier properly, you will create unnecessary noise, as you first dispose of some already existing signal level, and then later apply amplification (tainted with noise) to make it up.

Obviously, these two requirements are marking a levelling window that the operator must match to achieve a good sound with as little distortion and noise as possible.



DANGER: Excessive volume levels on headphones or other sound systems may cause hearing damage. Always turn the volume control to minimum when you switch the unit on, and do not exceed healthy listening levels.

■ Maintenance and warranty

While we have chosen the best components to make this product as rugged and reliable as possible, some parts in audio products (potentiometers, faders, switches) are subject to wear which is a matter of operation cycles, and not of time. While providing a full time-based warranty according to the country's of purchase requirements on the function of the electronic circuitry, we hence have to limit the warranty on such electro-mechanical parts to 90 days from the date of purchase.

In many cases, malfunction of electro-mechanical parts occurs due to dust contamination, which may require cleaning of such parts. As the inside of such parts is not accessible, a common practice is to use cleaning fluids in the shape of sprays. Please be reminded that many of such fluids contain chemicals which may wash away the dust but at the same time corrode or damage contact surface and may cause cosmetic damage to other parts. We hence explicitly exclude any claims for exchange of damaged part due to mechanical or chemical impact.

Without liability, we recommend CaiLube MCL fader cleaner and lubricant available from CAIG Laboratories if the need of cleaning for electro-mechanical parts occurs.

■ Unpacking

Please check that the box contains the following items:

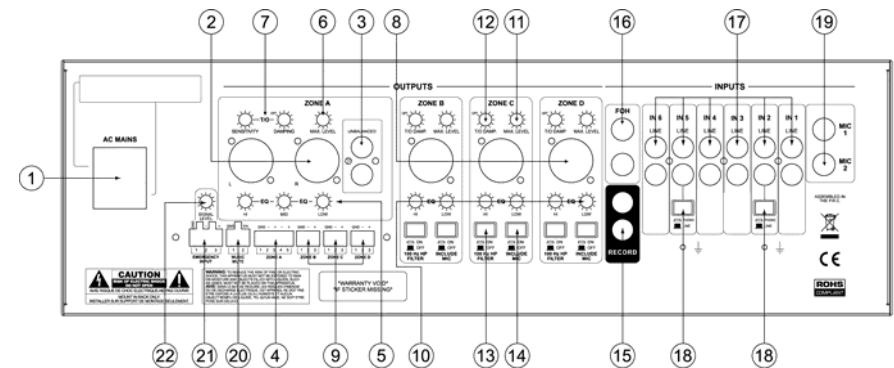
- Main parts:
- 1 pcs. ZPR4620 main unit
 - 1 pcs. Mains cable
 - 1 pcs. Operation manual

If any part is missing, please contact your dealer immediately for replacement.



Warning: After unpacking, and before plugging the AC cord in the wall outlet, check whether the AC mains voltage and frequency is the same as this product is specified for (see rear panel of product). Whenever the specified voltage or your AC plug should not match the local conditions, do NOT plug the AC cord into the wall outlet and contact you dealer immediately.

■ Back Panel



1. AC inlet and fuse holder. Use the supplied AC cord to connect the unit to AC mains. Make sure voltage and frequency stated on the unit comply with your local AC supply. The fuse can be accessed by the small drawer at the AC inlet. To change the fuse, unplug the AC cord first, pull out the fuse drawer and replace the fuse ONLY with a fuse of SAME voltage and rating. If the fuse blows again after replacement, hand over the unit to qualified service personnel.
2. Stereo Master output. This is a balanced stereo XLR output carrying the main output signal controlled by (36).
3. Stereo Master output. This is an unbalanced RCA output carrying the same signal as output (2).

4. Stereo Master output. This is a balanced terminal block output carrying the same signal as output (2)
5. Equalizer for Stereo Master output. This is a 3-band stereo equalizer to adjust the frequency response of the Stereo Master output. Adjustments shall be made with a small screw driver. Note that the total angle is 300 degrees and do not apply excessive force with the screw driver.
6. Maximum level setting for Stereo Master output. This control allows to limit the maximum level at the outputs (2)/(3)/(4) in order to match the connected sound system. Adjustments made on this control will not be displayed by the output level meter (37). Adjustments shall be made with a small screw driver. Note that the total angle is 300 degrees and do not apply excessive force with the screw driver.
7. Talkover adjustment for Stereo Master output. These two controls allow to set the level at which the talkover is enabled (SENSITIVITY) and the amount of damping which is applied once the talkover is active (DAMPING). If no talkover effect is required for the stereo master output, the DAMPING control can be set to "off". Adjustments shall be made with a small screw driver. Note that the total angle is 300 degrees and do not apply excessive force with the screw driver.
8. Zone A/B/C mono outputs. These are balanced mono XLR outputs carrying the zone output signals controlled by (38) respectively.
9. Zone A/B/C mono outputs. These are balanced terminal block outputs carrying the same signal as outputs (8)
10. Equalizers for Zone A/B/C outputs. These are 2-band stereo equalizers to adjust the frequency response of the Mono zone outputs. Adjustments shall be made with a small screw driver. Note that the total angle is 300 degrees and do not apply excessive force with the screw driver.
11. Maximum level setting for Zone A/B/C outputs. These controls allows to limit the maximum level at the outputs (8)/(9) in order to match the connected sound system. Adjustments made on this control will not be displayed by the output level meter (40). Adjustments shall be made with a small screw driver. Note that the total angle is 300 degrees and do not apply excessive force with the screw driver.
12. Talkover adjustment for Mono zone outputs. These controls allow to set the amount of damping which is applied once the talkover is active (DAMPING). If no talkover effect is required for any of these mono zone outputs, the DAMPING control can be set to "off" for the respective zone. Adjustments shall be made with a small screw driver. Note that the total angle is 300 degrees and do not apply excessive force with the screw driver.
13. 100Hz High-Pass filter for Mono zone outputs. This helps to reduce the low-frequency energy on outputs (8)/(9) which is specifically useful if a zone is used to feed a background music system which may consist of relatively small wall or ceiling speakers.
14. Microphone include/exclude switch for Mono zone outputs. Pressing this switch will include the microphone signal into the respective zone output, releasing the switch will exclude the microphone signal from the respective

■ Connections

For connecting this unit to AC mains, please note:

- Check whether the AC mains voltage and frequency is the same as this product is specified for (see rear panel of product). Whenever the specified voltage or your AC plug should not match the local conditions, do NOT plug the AC cord into the wall outlet and contact your dealer immediately.
- Do not operate this unit without the line cord earth ground connected. To do so may increase the risk of electric shock and increase line cord conducted emissions.

For making audio signal connections, always remember that good and reliable connections are a basic requirement for good sound and reliable operation. Bad soldering of cables can result in intermittent audio signals or temporarily lost ground connections, hence always use good cables. In case of doubt about making proper connections, please see check the standard pin assignments required for proper operation in the appendix of this manual.

It is also essential that high-gain inputs are terminated properly to avoid excess noise contribution. Specifically, this applies to the PHONO inputs. If these inputs are not used and the sensitivity is switched to "PHONO", the inputs shall be terminated with the supplied termination plugs (as factory-inserted at delivery).

■ Powering up

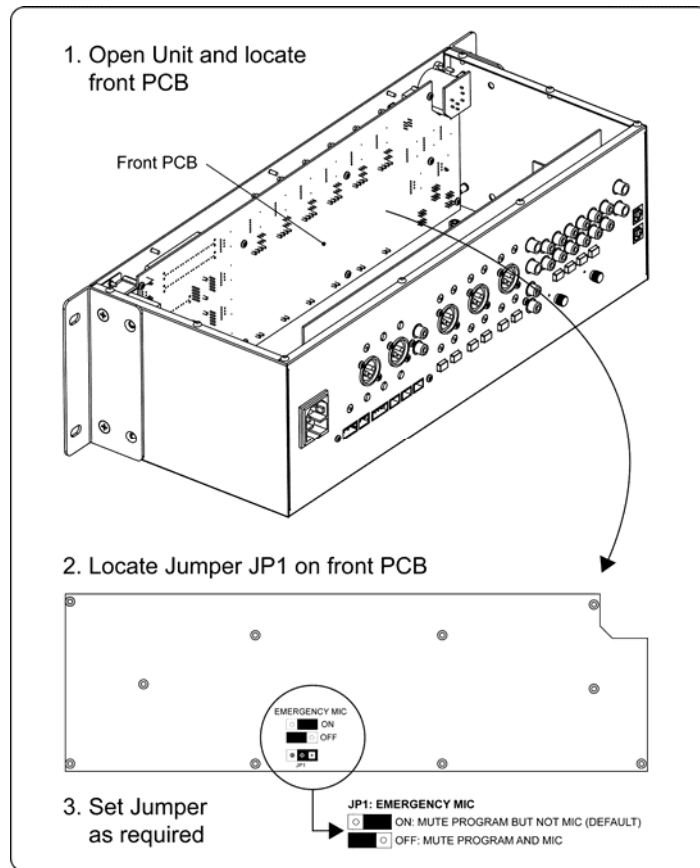
Following a proper power-up sequence protects your equipment – specifically speakers – and your ears. Follow the below procedure:

- Turn down all output volume controls of any equipment in your audio system.
- Switch on your audio sources first (Turntables, CD Players, PC's with soundcards, Tapedecks, etc.)
- Switch on the audio mixer
- Switch on any audio processor between the mixer and the amplifier(s) [if any].
- Switch on the amplifier(s).
- Turn up the audio level on your sources if such controls are provided.
- Set the audio output of your mixer to a low level.
- Set the audio output of any audio processor between the mixer and the amplifier(s) to a medium level [if any such processors].
- Turn up the volume controls of your amplifier(s) slowly.
- Make adjustments to all volume settings as needed.

For switching off, follow the inverse sequence – always switch off your amplifier(s) first, then any processors between mixer and amplifier(s), then the mixer, then the sources.

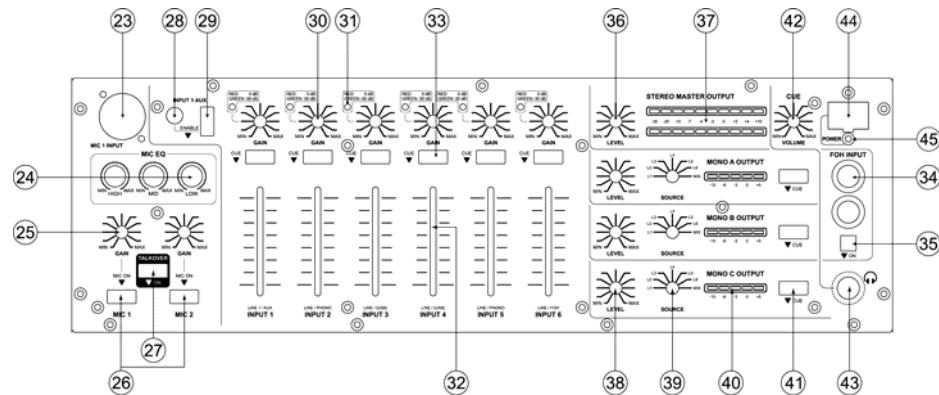
■ Microphone routing

Depending on the application, user habits and local safety requirements, it can be useful to either enable or disable the local microphones during an emergency case where an incoming emergency signal into the emergency input (21) shuts down all program signals. The advantage of disabling the microphones for this case is that the local user can not interfere the legibility of the emergency announcement by using his own microphone, the disadvantage is that if for whatever reason the emergency announcement does not stop, the local user can still give emergency/evacuation guidance by means of the local microphone. As a factory default, the microphones are not muted during an incoming emergency message. To change this, a qualified installer or technician must open the unit after disconnecting it from AC supply, and follow below instructions.



- zone output. Note that once the microphone is excluded from a specific zone, the DAMPING control (12) of the talkover in this zone shall be set to "OFF" as otherwise a microphone signal could not be heard but would still reduce the program signal when the microphone is in use.
- Record output. This is an unbalanced stereo output carrying the same signal as the main outputs (2)/(3)/(4), but not influenced by the main volume control (36). This is normally used for recording the output to an external tape, CD or memory device.
- FOH input. This is a 1/4" TRS balanced stereo input specifically designed to allow the connection of the output of a stage mixer, in order to use the connected sound system for the replay of the stage mixer's signal. This is useful in applications where apart from stereo source replay also live music is performed over the same sound system. The FOH input is routed to input channel 6 and will replace the LINE6 signal once the relative front-panel switch (35) is set to "ON". It is in parallel to the front-panel FOH input (34).
- Line inputs. These RCA connectors provide inputs for line-level signals to the assigned channels. LINE2 and LINE5 can be switched to PHONO sensitivity by means of the switches (18) and LINE6 can be switched to the FOH input by means of the front-panel switch (35).
- PHONO conversion switches for LINE inputs. These switches change the sensitivity of the LINE inputs to PHONO (RIAA equalized) level.
- Microphone input for MIC1 and MIC2. These are balanced 1/4" TRS connector without phantom power provision, hence only suitable for dynamic microphones. Please note that for MIC1, this connector has priority to the front panel mic connector (23), so if you intend to use the front panel mic socket (23), please do not plug anything into this rear-panel socket.
- Music Mute input. This is a terminal block input which allows to remotely mute all output signals (Stereo Master, Zone A/B/C) by simply shortening the contacts. Please note that the unit can be set to include or exclude the microphone signals from this muting process, please section "microphone routing".
- Emergency input. This is an auto-sensing, balanced terminal block input which allows the connection to an emergency evacuation system. Once a signal is present on this input, all output signals (Stereo Master, Zone A/B/C) will be muted and the emergency message/signal from this input will become audible instead. Please note that the unit can be set to include or exclude the microphone signals from this muting process, please section "microphone routing".
- Emergency volume control. This control allows to set the level with which the signal fed into the emergency input (21) will be replayed at the two master outputs (2)/(3)/(4) and (8)/(9).

■ Front Panel



- 23. Microphone input for MIC1. This is a balanced Combo (XLR+TRS) connector without phantom power provision, hence only suitable for dynamic microphones. Please note that MIC2 can only be connected from the rear panel connector (19).
- 24. Microphone Equalizer. Allows the adjustment of the tonal balance for the microphone inputs in three voice-specific frequency bands with an adjustment range of $\pm 12\text{dB}$. Please note the setting will affect both microphone inputs simultaneously.
- 25. Level control for microphone inputs. Allow the individual adjustments of the levels for MIC1 and MIC2.
- 26. On/Off (ON AIR) switch for the respective microphone.
- 27. Talkover on/off switch. Enables or disables the talkover circuit. Once enabled, the parameters can be set independently for every output by means of the rear-panel controls (7/12).
- 28. AUX Input for INPUT1. This is a 3.5mm Mini-TRS stereo socket which allows to connect sources like MP3 players etc. without removing the mixer from its mounting position.
- 29. Enable/Disable switch for AUX Input (28). Pressing this switch will disable the LINE1 input on the rear panel and will route the signal of the AUX Input (28) to INPUT1.
- 30. Gain control of input channels. Allows adjustment of the input sensitivity to compensate for different source volumes. To facilitate proper setting of input gain levels, the stereo inputs INPUT1/2/3/4/5/6 have an additional SIGNAL/PEAK LED (34)
- 31. Signal/Peak LED. This LED will illuminate green when an input signal with more than -30dB of signal level is present, and will turn to orange-red once the input signal reaches 0dB . This facilitates to see which channels have a signal present, without using the CUE function. It further helps to set the gain controls (30) correctly for proper gain balance.

- 32. Channel fader for input channels. A high-grade dual rail 45mm fader determines the volume of the respective channel.
- 33. CUE switch for stereo channels. Assigns the respective channel to the headphone bus for pre-fader-listening (CUE) by means of the headphone output (43). A LED indicates the pressed position.
- 34. FOH input. This is a $\frac{1}{4}$ " TRS balanced stereo input specifically designed to allow the connection of the output of a stage mixer, in order to use the connected sound system for the replay of the stage mixer's signal. This is useful in applications where apart from stereo source replay also live music is performed over the same sound system. The FOH input is routed to input channel 6 and will replace the LINE6 signal once the relative switch (35) is set to "ON". This front-panel FOH input is in parallel to the rear-panel FOH input (16) but has priority over the rear-side input; thus, once a jack is inserted into the front-side FOH input, the rear-side FOH input (16) is disabled.
- 35. On/Off switch for FOH input. Enables and disables the FOH input. This switch applies to both the front-side and rear-side FOH input.
- 36. Stereo Master output level control. Determines the main output level present at outputs (2)/(3)/(4).
- 37. Stereo Master output level meter. Displays the output level of the stereo master output (2)/(3)/(4). Note that the level limitation applied by means of the rear-side maximum level control (6) is not displayed on this meter.
- 38. Mono Zone output level controls for zones A/B/C. Determine the main output level present at outputs (8)/(9).
- 39. Mono zone source selection switches for zones A/B/C. These rotary switches allow to either use the master mix bus [same signal as carried by the stereo master output (2)/(3)/(4)] or any of the individual, assigned source signals to the Inputs 1/2/3/4/5/6, to be used as a source signal for the respective zone.
- 40. Mono Zone output level meters. Display the output levels of the mono zones A/B/C respectively. Note that the level limitations applied by means of the rear-side maximum level controls (11) are not displayed on these meters.
- 41. Mono zone Cue switches. Pressing these switches will assign the respective zone signal to the headphone bus for pre-fader-listening (CUE) by means of the headphone output (43).
- 42. CUE level. Determines the signal volume at the headphone output (43). Always set this control to minimum before putting on headphones, as sudden high-volume impact may damage your ears. See further health advice below.
- 43. Headphones output. A $\frac{1}{4}$ " TRS connector to connect a headphone. Turn the CUE level (42) down before plugging in any headphones.
- 44. Power switch. Switches the unit on and off. Make sure to switch the unit off when not in use.
- 45. Power LED. Indicates whether the unit is switched on or off.