

Mixer & Powermixer

MIXING CONSOLES AND POWERED MIXERS

Mobile Audio | Concert Sound | Fixed Installation | Pro Entertainment

DYNACORD
GERMAN ENGINEERING EXCELLENCE

English

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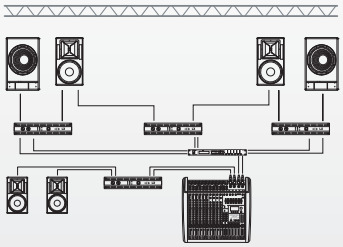
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DYNACORD

Perfection. Passion. **Power**Mate





PowerMate³

- PowerMate 600-3
- PowerMate 1000-3
- PowerMate 1600-3
- PowerMate 2200-3



„Always Best to be First“

WHEN DYNACORD IN 1997 LAUNCHED THE FIRST GENERATION POWERMATE, ITS WELL THOUGHT-OUT AND UNCOMPROMISING ‘ADDED VALUE’ CONCEPT CAUSED A CONSIDERABLE STIR, AND AN UNUSUAL—INDEED UNPARALLELED—SUCCESS STORY BEGAN.



PowerMate 1

PowerMate 2



NOW, WITH WELL OVER 100,000 UNITS SOLD, THE POWERMATE IS THE LIVING PROOF THAT IT ISN'T THE PRICE ALONE BUT, MORE IMPORTANTLY, THE TAILORING OF FEATURES AND EQUIPMENT TO THE PRECISE NEEDS OF THE PROFESSIONAL USER THAT DETERMINES THE SUCCESS OF A PRODUCT.



PowerMate 2

Innovation as Tradition

Dynacord can draw upon a 65-year tradition in the development and manufacture of mobile mixing amplifiers.

Its first innovatory step was the integration of signal mixing and power amplification with compact, portable devices; this was soon followed by models that brought echo and reverberation on board. Dynacord can therefore be considered the 'inventor' of the power mixer. To this day, nothing in the fundamental concept has changed, though, of course, ever since the PowerMate was first introduced, all the functional units have conformed to the highest professional standards. Never has there been the faintest suspicion of a compromise-based 'cheap solution'. Quite the reverse, in fact.

MORE POWER • MORE EFFECTS • MORE EXTRAS was the watchword of the developers of the 'original' PowerMate, and their exemplary realization of these aims set a new standard in mixing desks with integrated effects units and power amplifiers. In the PowerMate, the professional user has a mixing desk, multi-effects unit and power amplifier that is capable of delivering concert sound performance, that is compact and portable but nonetheless a very powerful system solution, and that as a small-PA leaves nothing to be desired.

The same spirit of innovation has dominated the further development of what was already an exquisite piece of technology and finds expression in a wealth of technical details, in its user-friendliness, its reliability and safety of operation, its efficient energy management and its superb styling. The perfection of every component reflects the passion of the developers.

PERFECTION. PASSION. POWERMATE.

THE IDEAL SOLUTION FOR AN ENORMOUS VARIETY OF APPLICATIONS

Whilst for a great many live music applications an integrated solution in the shape of a powered mixer has long been the proven and preferred alternative, PowerMates, with their flexible performance profile, soon found acceptance, too, in such places as hotels, churches, halls, music schools, clubs and restaurants as well, naturally, as in the rental business, being convenient, compact, light and very simple to operate systems for small to medium-sized events.





Third-generation success story: the **Power**Mate³

THE CURRENT POWERMATE GENERATION FEATURES A MULTITUDE OF INNOVATIONS AND OPTIMIZATIONS. DESPITE A CLEAR REDUCTION IN WEIGHT, IT OFFERS CONSIDERABLE GAINS IN TERMS OF BOTH POWER AMPLIFIER OUTPUT AND FEATURES, AS WELL AS BEING MORE COMPACT THAN EVER BEFORE.



PowerMate 600-3

THIS EXTREMELY COMPACT POWERED MIXER IS THE YOUNGEST MEMBER OF THE POWERMATE³ FAMILY.



With a total output of 2,000 watts, it is far and away the most powerful compact mixer on the world market, yet it weighs only 9kg!

With its very lavish feature set and exemplary versatility it is the ideal choice for all professional applications in which few channels yet very high audio quality are required.

PERFORMANCE WITHOUT COMPROMISES

- Intuitively operated mixing section
- 2 editable digital effects devices with 100 presets each and 20 user memories each
- Professional 4xIN / 4xOUT digital interface (USB) for the connection of a PC or Mac
- Stereo equalizer in the master section
- Large, contrast-rich OLED display
- class-D high-performance power amplifier delivering 2 x 1,000 watts RMS into 4 ohms

Exclusively high-quality brand components have been used; all faders and potentiometers are supplied by ALPS.

IN THE MIXER SECTION, A TOTAL OF 8 CHANNEL STRIPS ARE AVAILABLE

- 4 MIC / LINE channels
- 2 MIC / Stereo USB channels (‚Super Channels‘)
- 2 stereo LINE channels

MIC / LINE

The MIC / LINE channels offer extremely low-noise and low-hum electronically balanced XLR microphone inputs with an extremely low distortion factor (typ. < 0.002%) for the connection of low-impedance microphones.

For condenser microphones, phantom power (+48 volts) is centrally switchable. The LINE inputs are also electronically balanced and implemented as jack sockets. In addition to a GAIN control, a highly efficient 3-band equalizer, an FX send, an AUX send and a MONitor send as well as either Panorama or Balance controls are available. The four MIC / LINE channels boast, in addition, a switchable 80Hz Lo-Cut filter, whilst the Super Channels 5-6 and 7-8 are supplied by the USB inserts 1-2 and 3-4, in each case in stereo.

STEREO-LINE

The STEREO-LINE channels (9-10 and 11-12) offer electronically balanced jack inputs for the connection of electronic instruments such as keyboards, drum-computers, guitars and basses with active electronics, as well as all other high-level stereo signal sources such as additional mixers, effects devices etc.

CD or MP3 players can be connected to the additional cinch (RCA) inputs CD 1-2 and CD 3-4, which are switched in parallel. The tone controls and sends are identical to those of the MIC / LINE channels.

In all input channels, a Signal / Peak LED is provided to assist level control. The SIG LED illuminates at around 30 dB and the PK LED at 6dB beneath the distortion threshold. A MUTE button and a PFL button (in channels 5-12 in stereo) are further features found in all input channels.




DYNACORD
PowerMate 600
2 x 1000 W POWERED MIXER
STEREO MASTER GRAPHIC EQUALIZER
MIC 1
MIC 2
MIC 3
PHANTOM POWER
MIC 1-6
USB 2.0 DIGITAL AUDIO INTERFACE
REC SEND
MONITOR
AUX SEND
POWER AMP INPUTS
BRIGHT HALL
Large Hall 3
FX1
MONO DELAY
230 ms 40%
FX2
PARAMETER
MENU/ENTER
TAP
AUX PRE
AUX POST
AUX to FX 2
AMPLIFIER
PROTECT
LIMIT
FX 1
FX 2
AUX
MON
STEREO MASTER



DIGITAL AUDIO INTERFACE

The DIGITAL AUDIO INTERFACE supplies two stereo channels, present as USB 1-2 and USB 3-4 in Super Channels 5-6 and 7-8 respectively.

This interface is implemented professionally in 24-bit resolution and supports sampling rates up to 96 kHz, thereby satisfying studio requirements. The USB sends are supplied with the Master L and R, AUX and MON signals. The DIGITAL AUDIO INTERFACE can be used for input and output simultaneously.

Via the USB 2.0 port of your PC / Mac, four channels can be transmitted simultaneously in each direction. When a USB 1.1 interface is used, two channels can be transmitted simultaneously in each direction. The PowerMate is designed for the level of standard PCs / Macs; the gain level can easily be adjusted, if need be, from the computer connected.

Included in the delivery is a DVD containing the professional recording software Cubase LE and PC / Mac USB drivers.



PC-MIDI-INTERFACE

The PowerMate also makes available a fully-featured PC MIDI interface.

The MIDI input also supports the remote switching of both internal effects units using a master keyboard or MIDI footswitch.

MASTER-SECTION

In the PowerMate‘s Master Section are to be found the Master A L+R sends (on separate faders), an additional Master B send (switchable pre/post and mono/stereo), the stereo effects returns, and the send signals of the AUXiliary and MONitor busses. If the AUX buss is not used to supply FX 2, it can be switched pre or post and thereby used as an additional monitor send or to supply an external effects device.

The 9-band stereo equalizer in the master section allows you to adjust the frequency response to the acoustics of the room.

The REC SEND and USB OUT controls determine the level of the master L+R signal at the Rec Send sockets and in the output channels of the digital USB interface. The control below it allows you to adjust the volume in the headphones. Two ten-LED meters provide an overview of the power amplifier level. When the PFL switch is activated, the left-hand LED chain shows the internal level of the master buss in dBu.

STANDBY

The STANDBY switch mutes all outputs. For the playback of things like interval music, the DEVICE SETUP menu allows you to route stereo channel 11-12 for standby operation directly to the power amplifiers.

THE POWERMATE IS EQUIPPED WITH TWO VERY HIGH-QUALITY, 24-BIT STEREO EFFECTS PROCESSORS, FX 1 AND FX 2



These function independently and can therefore be mixed. The two effects units are fully identical in design. Each effects section offers 100 presets including high-quality reverb, delay and modulation effects selected by means of the display.

When a delay effect is active, the delay time can be synchronized to the beat of the music using the TAP key. The further possibility exists of modifying individual parameters of the presets and storing the results in the 20 each user memories provided.

Both effects units are supplied by the FX Send buss. Using the DEVICE SETUP menu, you can, if you wish, configure the AUX send buss to function as an FX 2 send, so that only the FX 1 effects unit is supplied by the FX 1 buss. In this way, the two effects devices can be controlled independently of one another.

The effects can be mixed separately in the master and monitor busses.

The large, high-contrast OLED display is easily read from a wide range of viewing angles—even in very bright surroundings. The operation of the effects units and processing menus is intuitive and made easier still through the use of soft keys and a rotary encoder.



DEVICE SETUP



LPN-PROCESSING



SPEAKER PROTECTION



PROCESSING-MENUS

Particularly valuable in making it possible to adjust the PowerMate perfectly to the selected loudspeaker cabinets, thereby optimizing the audio performance and maximizing the operating safety and reliability of the system, are the LPN Processing and Speaker Protection menus.

LPN-PROCESSING

Typical small to medium-sized loudspeaker cabinets, for physical reasons that have nothing to do with their make or quality, exhibit distortion in the transient response of the woofer. Since neither graphic nor parametric equalizers can do anything to alleviate this problem, the PowerMate offers a configurable LPN (low-pass notch) filter. Depending upon the size of the loudspeaker cabinet being used and also to adjust to problematic acoustics (such as those of bassy, boom-ridden rooms), the LPN filter can be set to either High or Medium. The result is considerably greater punch (e.g. from the bass drum), an extension downwards of the frequency response, and improved transparency in the bass and midrange.

SPEAKER PROTECTION

This menu allows you to match perfectly the continuous power output of the PowerMate's power amplifiers to the connected loudspeakers in the interests of greater operational safety and reliability.

Through dynamic limiting of the maximum power at the output, loudspeaker damage due to thermal overload can be avoided, without the wide dynamic range of the power amplifiers being sacrificed. For this purpose, the maximum permissible nominal power handling of the connected loudspeaker cabinet can be selected from the menu. Unlike the case with conventional voltage limiters, dynamic peaks of short duration are permitted, as loudspeaker cabinets can as a rule tolerate peak levels many times higher than their nominal sustainable loads (RMS).

The speaker protection supervises permanently the amount of energy being fed to the loudspeakers, only limiting it in the event of a threatened overload, and even then, doing so softly and inaudibly. For peak levels of short duration, the full output of the power amplifier remains available at all times, even when relatively small cabinets are being used. As a result, not only is the maximum dynamic range of the system maintained but also, and at all times, the highest degree of operational safety and reliability.



PROFESSIONAL DIGITAL HIGH-PERFORMANCE POWER AMPLIFIER

The PowerMate is equipped with a professional, extremely powerful, stereo power amplifier that uses modern and highly efficient class-D technology for audio performance of the highest quality.

What this means is that at a nominal output of 2 x 1,000 watts RMS into 4 ohms (or 2 x 1,350 watts RMS into 2.7 ohms) only a comparatively small amount of heat is generated within the device, which therefore consumes considerably less electricity than a conventional power amplifier. The minimal load impedance at the output is 2.7 ohms, making operation with up to three 8-ohm loudspeaker cabinets per channel, connected in parallel, possible with no problems.

The overall power supply is handled by an extremely stable, microprocessor-controlled, switching power supply, bringing massive gains in terms of weight-saving over a conventional toroidal transformer. Another advantage is the automatic mains voltage switching, which ensues that the PowerMate can be used without any problem anywhere in the world. Voltage surge protection is also integrated. A 'soft start' function prevents the mains fuse tripping when the device is switched on.

The PowerMate is equipped, naturally, with all the protective circuitry familiar from Dynacord power amplifiers and satisfies even the extreme demands of hard tour use. The power amplifiers are protected against thermal overload, short-circuit, back EMF and no-load operation as well as high-frequencies or DC at the output. Both outputs, here, are supervised independently so that, should a fault occur, only the channel affected is shut down. When the device is powered up, there is a delay before the power outputs are connected, to obviate the risk of noise.

The thermal stability of the PowerMate is assured by two very quiet fans the speed of which is continuously variable. The front-to-rear airflow allows the device to be used in large or small racks. Furthermore, the PowerMate is equipped with an intelligent thermo-limiter, so if ever the threat of overheating does arise, the clip limiter intervenes in a highly musical way, acting only upon the peaks. In this way, a total shut-down of the power amplifiers is effectively prevented, as is any obtrusive fall in the overall volume level. The PROTECT and LIMIT LEDs on the front panel indicate the current operating state of the power amplifiers.





To ensure safe transportation, the PowerMate 600-3 is supplied with a solid plastic lid that is held in place simply and securely, without the need for any locking mechanism, by magnets.

Available as an optional accessory, the carrying bag BAG-600PM not only accommodates the PowerMate with its lid but also offers an additional compartment for cables etc.

For rack installation, the RMK-PM600-3 rack-mount kit is available as an option.

Professional Live Mixers with Concert Sound Performance

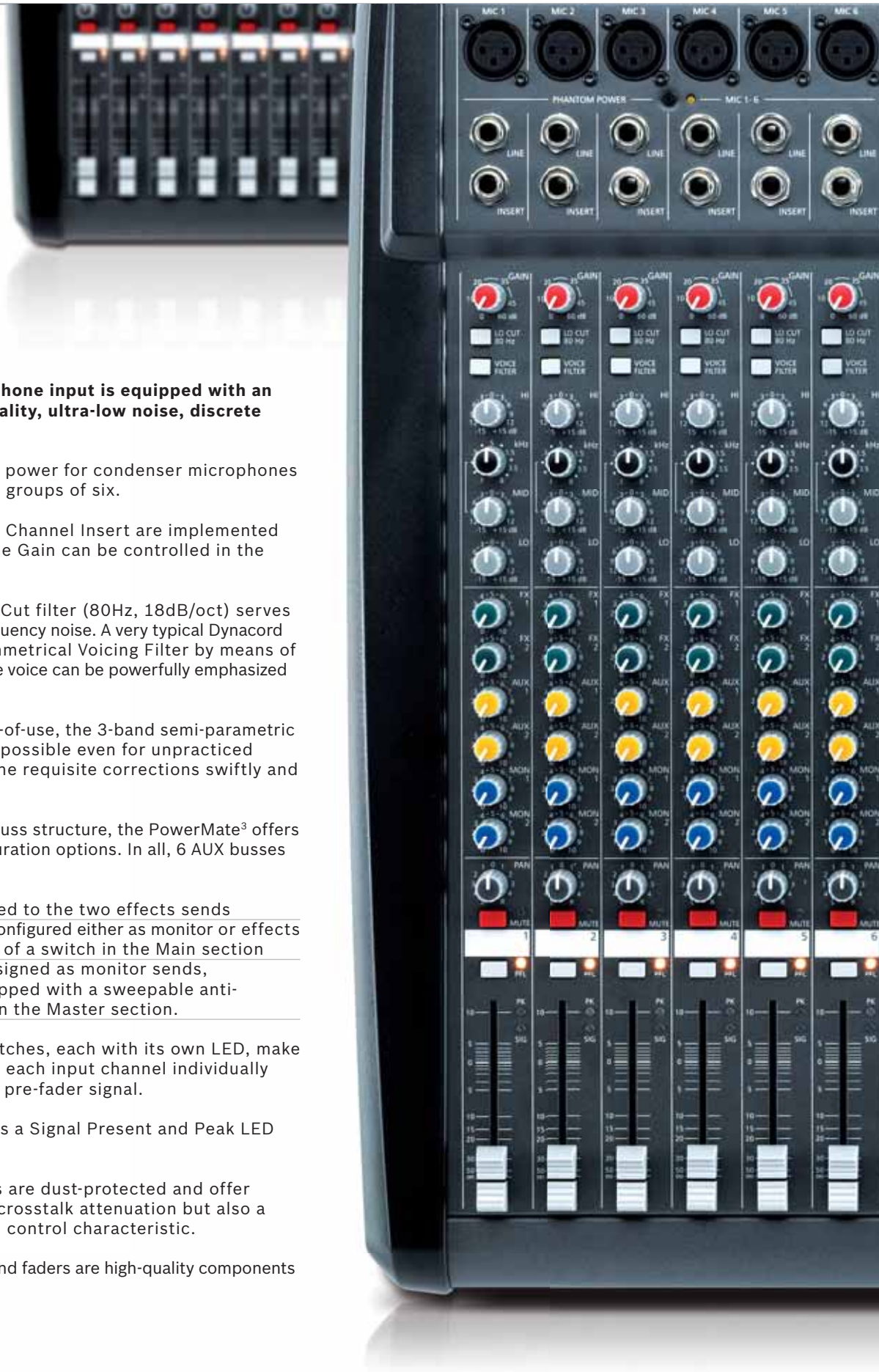
THE THREE MODELS DIFFER IN THE NUMBER OF MIC/LINE INPUT CHANNELS THEY OFFER BUT ARE OTHERWISE IDENTICALLY EQUIPPED.

Modell	MIC/LINE-Inputs	Stereo MIC/LINE-Inputs	Total Inputs
PowerMate 1000-3	6	4	10
PowerMate 1600-3	12	4	16
PowerMate 2200-3	18	4	22



FEATURES

- 2 x 1000W RMS / 4 ohms
- 6 aux busses
- 30% reduction in weight
- more compact dimensions
- more than 50% less energy consumption
- editable effects
- USB Digital Audio Interface + MIDI
- innovative transport and protection solution



MIC/LINE-INPUTS

The XLR microphone input is equipped with an extremely high quality, ultra-low noise, discrete preamp.

The +48V phantom power for condenser microphones can be switched in groups of six.

The Line Input and Channel Insert are implemented as jack sockets. The Gain can be controlled in the range 0-60 dB.

The switchable Lo Cut filter (80Hz, 18dB/oct) serves to eliminate low-frequency noise. A very typical Dynacord feature is the asymmetrical Voicing Filter by means of which, if desired, the voice can be powerfully emphasized in the mix.

Optimized for ease-of-use, the 3-band semi-parametric equalizer makes it possible even for unpracticed users to perform the requisite corrections swiftly and intuitively.

With its extended buss structure, the PowerMate^3 offers very flexible configuration options. In all, 6 AUX busses are available:

- 2 (FX) are assiged to the two effects sends
- 2 (AUX) can be configured either as monitor or effects sends by means of a switch in the Main section
- 2 (MON) are designed as monitor sends, each being equipped with a sweepable anti-feedback filter in the Master section.

MUTE and PFL switches, each with its own LED, make it possible to mute each input channel individually and/or listen to its pre-fader signal.

Each channel offers a Signal Present and Peak LED for level control.

The channel faders are dust-protected and offer not only excellent crosstalk attenuation but also a practice-optimized control characteristic.

All potentiometers and faders are high-quality components from ALPS.


DYNACORD
PowerMate 1000
2 x 1000 WATTS POWERED MIXER
STEREO GRAPHIC EQUALIZER
PHANTOM POWER
MASTER
MON 1
MON 2
STANDBY
PARAMETER
MENU
TAP



STEREO MIC/LINE-INPUTS

The stereo input channels are equipped in much the same way, but optimized, naturally, to carry stereo signals.

Two of the four stereo inputs of each model are additionally equipped with cinch (RCA) sockets switched in parallel for CD or MP3 players.

The two other stereo inputs receive in addition the four channels of the digital audio interface USB 1-2 and USB 3-4

Separate Gain controls are provided for the Stereo Line and Mic inputs to permit them to be used in parallel if desired.

Three-band tone controls are provided and a Balance control replaces the PAN control found in the mono channel strips.

MASTER

In the Master Section, too, the PowerMate is lavishly equipped.

The 11-band stereo equalizer can be routed to the Master channels or else to either or both of the Monitor Sends according to choice.

The FX1+2 Returns as well as the AUX1+2 and MON1+2 Sends are on faders just like the Master L/R signal, which makes for comfortable and intuitive operation.

The Master B signal is available pre or post Master L/R fader and can be mono-summed if desired.

The Master signal is also available on the REC SEND cinch (RCA) output with level control.

The level meters of the PowerMate comprise two LED chains of 12 LEDs each. The display range covers 40 dB; what is shown is the level in dBu at the master outputs. When the PFL switch is activated, the left-hand LED chain shows the internal level of the master buss in dBu.

The STANDBY switch mutes all channels e.g. during pauses, with only the 2TRACK-to-MASTER input remaining active for the playback of interval music.

A 4-pin XLR socket is provided for the connection of a standard 12V/5W gooseneck lamp.

DEVICE SETUP



USB RECORD ROUTING



EFFEKTE



EDITIERBARE EFFEKTPROGRAMME



DIGITAL USB 2.0 AUDIO INTERFACE

The USB 2.0 port serves as a digital audio interface between the PowerMate and a PC or Mac.

Four channels can be transmitted in either direction simultaneously. This interface can therefore be used either for the input of audio signals (e.g. for playback or interval music) or else for live- or studio-recording applications. It is configured by selecting the relevant setting in the menu.

For the use of the PowerMate with a PC or Mac, a free Cubase LE license as well as the requisite USB drivers are included free-of-charge on the supplied DVD.

PC MIDI INTERFACE

The PowerMate also offers a fully-featured PC MIDI interface.

The MIDI input also supports the remote switching of both internal effects units using a master keyboard or MIDI footswitch.

PROFESSIONAL EFFECTS, OLED DISPLAY AND PROCESSING MENUS

The PowerMate has two integrated stereo multi-effects processors that work independently of one another, each offering 100 effects algorithms optimized for live performance, the most important parameters of which are editable.

Linear 24-bit AD/DA converters and 48-bit double-precision processing guarantee the finest studio quality based on state-of-the-art technology.

The 100 program locations of each device are packed with high-quality reverbs, halls and plates that deliver professional results in live performance on stage as well as in both studio and home recording environments. Other presets include Echo/Reverb and Chorus/Echo combinations, a variety of delay, flanger, chorus and doubling algorithms, as well as special reverb and delay programs. When a delay effect is active, the delay time can be synchronized to the beat of the music using the TAP key.

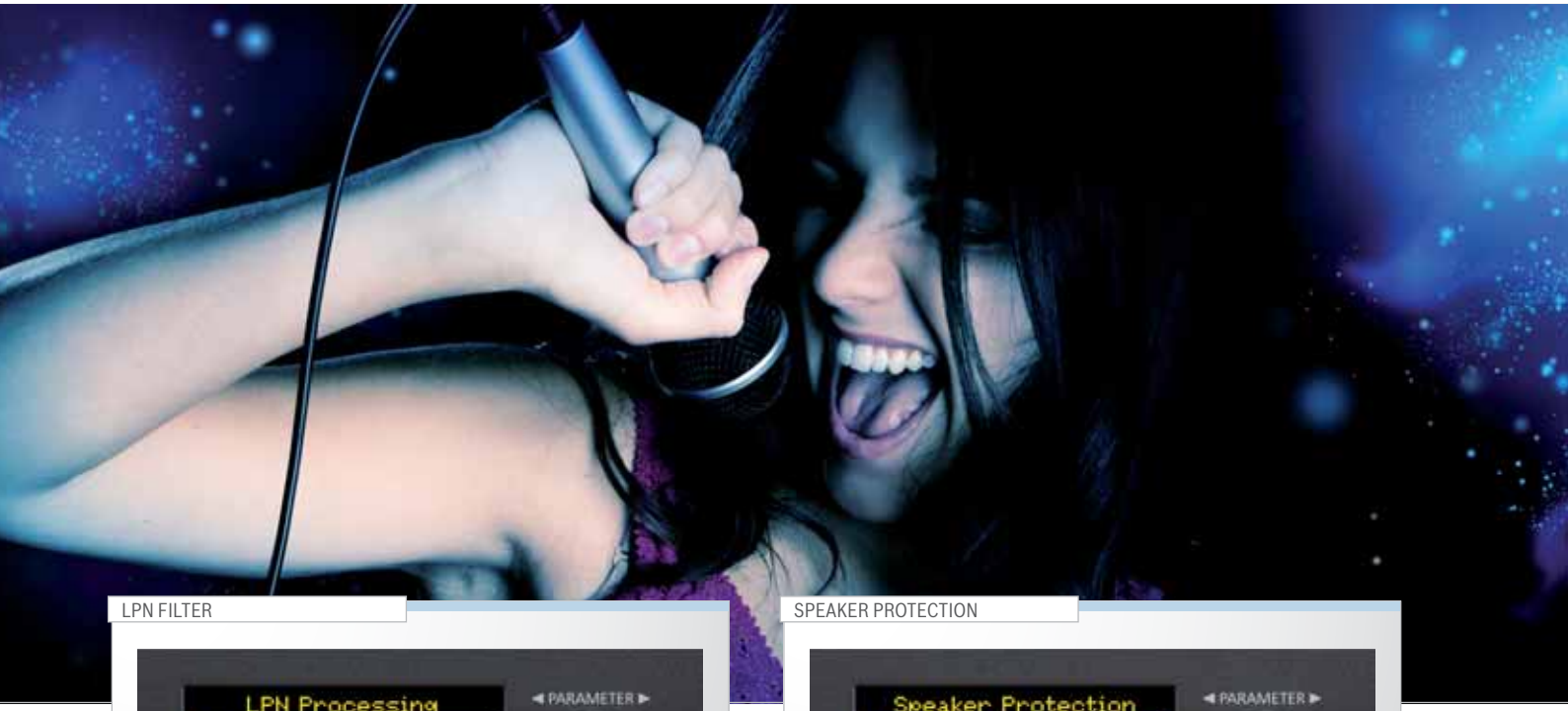
Edited effects programs can be stored in the each 20 User memories, assigned names, and later selected and used in the same way as the presets.

The large, high-contrast OLED display is easily read from a wide range of viewing angles—even in very bright surroundings. The operation of the effects units and processing menus is intuitive and made easier still through the use of soft keys and a rotary encoder.



OLED Display

THE LARGE, HIGH-CONTRAST OLED DISPLAY IS EASILY READ FROM A WIDE RANGE OF VIEWING ANGLES—EVEN IN VERY BRIGHT SURROUNDINGS.



LPN FILTER



SPEAKER PROTECTION



PROCESSING MENUS

For the basic settings, configuration, use of the effects and special functions, a wide variety of editing options can be selected from a multitude of menus.

Particularly valuable in making it possible to adjust the PowerMate perfectly to the selected loudspeaker cabinets, thereby optimizing the audio performance and maximizing the operating safety and reliability of the system, are the LPN Processing and Speaker Protection menus.

LPN PROCESSING

Typical small to medium-sized loudspeaker cabinets, for physical reasons that have nothing to do with their make or quality, exhibit distortion in the transient response of the woofer.

Since neither graphic nor parametric equalizers can do anything to alleviate this problem, the PowerMate offers a configurable LPN (low-pass notch) filter.

Depending upon the size of the loudspeaker cabinet being used and also to adjust to problematic acoustics (such as those of bassy, boom-ridden rooms), the LPN filter can be set to either High or Medium. The result is considerably greater punch (e.g. from the bass drum), an extension downwards of the frequency response, and improved transparency in the bass and midrange.

SPEAKER PROTECTION

This menu allows you to match perfectly the continuous power output of the PowerMate's power amplifiers to the connected loudspeakers in the interests of greater operational safety and reliability.

Through dynamic limiting of the maximum power at the output, loudspeaker damage due to thermal overload can be avoided, without the wide dynamic range of the power amplifiers being sacrificed. Once the maximum permissible power handling of the connected loudspeaker cabinet has been selected from the menu—the actual peak dynamic power handling capacity in audio applications of almost all loudspeaker cabinets is many times this nominal value—the speaker protection supervises permanently the amount of energy being fed to the loudspeakers, only limiting it in the event of a threatened overload, and even then, doing so softly and inaudibly. For peak levels of short duration, the full output of the power amplifier remains available, even when relatively small cabinets are being used. As a result, not only is the maximum dynamic range of the system maintained but also, and at all times, the highest degree of operational safety and reliability.

PROFESSIONAL DIGITAL HIGH-PERFORMANCE POWER AMPLIFIERS

The PowerMate is equipped with a professional, extremely powerful, stereo power amplifier that uses modern and highly efficient Class-D technology.

What this means is that at a nominal output of 2 x 1,000 watts RMS into 4 ohms (or 2 x 1,350 watts RMS into 2.7 ohms), comparatively little dissipation is generated within the device, and the power consumption is thereby dramatically reduced—by more than 55% compared with conventional power amplifiers! The minimal load impedance at the output is 2.7 ohms, making operation with up to three 8-ohm loudspeaker cabinets per channel, connected in parallel, possible with no problems.

The audio performance is on the highest professional level, as is shown by the PowerMate's exemplary figures for freedom from distortion, slew rate, and freedom from intermodulation.

The overall power supply is handled by an extremely stable, microprocessor-controlled, switching power supply, bringing massive gains in terms of weight-saving over a conventional toroidal transformer. Another advantage is the automatic mains voltage switching, which makes it possible to use the PowerMate virtually anywhere in the world without reconfiguration. Voltage surge protection is also integrated, whilst a 'soft start' function prevents the mains fuse tripping when the device is switched on.

The PowerMate is equipped, naturally, with all the protective circuitry familiar from Dynacord power amplifiers and satisfies even the extreme demands of hard tour use. The power amplifiers are protected against thermal overload, short-circuit, back EMF and no-load operation as well as high-frequencies or DC at the output. Both outputs, here, are supervised independently so that, should a fault occur, only the channel affected is shut down. When the device is powered up, there is a delay before the power outputs are connected, to obviate the risk of noise.

The thermal stability of the PowerMate is assured by two very quiet fans the speed of which is continuously variable. The front-to-rear airflow allows the device to be used in large or small racks; furthermore, the PowerMate is equipped with a processor-controlled thermo-limiter, so if ever the threat of overheating does arise, the clip limiter intervenes in a highly musical way, acting only upon the peaks. In this way, a total shutdown of the power amplifiers is effectively prevented, as is any obtrusive fall in the overall volume level. The PROTECT and LIMIT LEDs on the front panel indicate the current operating state of the power amplifiers.





Innovative Solution for Protection and Transportation

The PowerMate 1000 and 1600 are supplied with a very robust plastic lid with an integrated handle– a highly innovative solution that offers optimal protection for the device as well as greater carrying comfort.

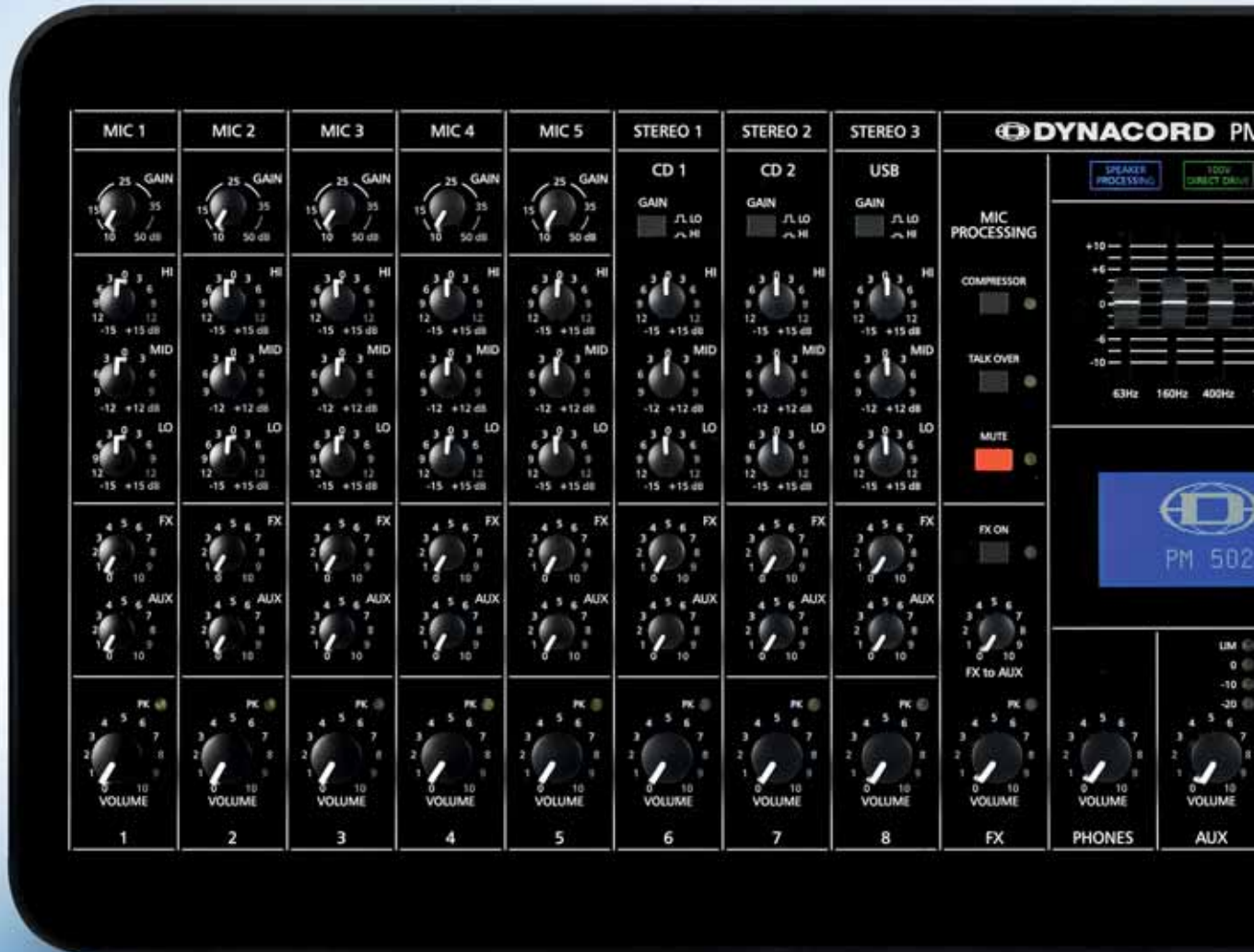
For the larger PowerMate 2200, due to its greater size, a flight-case solution is recommended (available as a further option is a dust cover: the DC-PM2200-COVER).



For rack installation of the PowerMate 1000 (or table installation of the models 1600 and 2200), the mounting kit RMK 1000-3 is available.

Other accessories include the gooseneck light DC-LITLITE-4P and the DC-FS11 ON/OFF footswitch for the effects units.

THE PM 502 IS AN EXTREMELY VERSATILE TOOL FOR A MULTITUDE OF INSTALL AND LIVE APPLICATIONS.




DYNACORD PM 502
M 502 POWERED MIXER
AMP LIMIT
AMP PROTECT
+10
+6
0
-6
-10
2.5kHz
6kHz
12kHz
◄ FX/PARAMETER ►
MENU/ENTER
LIM
0
-10
-20
VOLUME
MASTER B
MASTER A

PM 502

- PM 502



PM 502

POWER MIXER



This innovative product comes in a very modern and user-friendly design. It combines finest analogue input circuitry and operating surface with the advantages of its digital master and amplifier section, making for a new dimension of flexibility in its class. The acoustical performance meets everything that you have come to expect from a quality Dynacord product.

The PM 502 is an extremely versatile tool for a multitude of install and live applications. The input structure of the PM 502, along with the entire feature package and connectivity, positions this mixer at the heart of many installations ranging from bistros, small clubs, lounges, boutiques, hotel bars and lobbies to churches, mosques and a wide range of similar applications. The onboard MP3-Player on the front, allows the user to easily play pre-recorded music from a USB stick or a hard drive. Further it will be the ideal choice for entertainers, DJ's and small bands looking for a compact and light-weight solution for live applications or rehearsal venues. The digital USB interface also allows for basic recording.

KEY FEATURES

- 5 low noise / high gain MIC / LINE channels
- 3 Stereo Channels (Jack, RCA, USB)
- Switchable 48V phantom power
- Onboard MP3-Media-Player (USB Type A at the front)
- Onboard HQ 48bit Effects Section with 32 editable Presets (PowerMate Algorithms)
- All Master outs featuring individual 7 band graphic EQ
- Onboard 2 x 450W RMS / 2 x 600W Program (4Ohm) Class-D power amplifier
- Switchable to 100V (mono) operation including Low-Cut

IF NEEDED, THE PM 502 CAN BE SWITCHED TO OPERATE AS A “100V DIRECT DRIVE” DEVICE ALLOWING DIRECT CONNECTION TO 100V LOUDSPEAKER LINES.



INPUT SECTION

The Input section includes 5 MIC/Line channels providing high gain at low noise. For the use of condenser microphones, 48V phantom power can be switched on at the back of the unit. These channels feature easy to operate gain control, 3-band EQ, Effects-Send, AUX-Send, Peak-LED and level control. For these five inputs, there is a microphone processing function that is accessed in the Master Section.

It provides an editable Compressor / Limiter function in order to compensate for varying user microphone techniques. A variable low-cut can be set in the menu. The Talk-Over function applies a ducking facility for the microphone channels over background / foreground music from the Stereo channels. This function can be edited in the user menu and personalized for announcements, moderation or dance instructions. It can also be used to bring the lead vocals to the front of the mix. The Mute button mutes all of the microphone inputs. These controls affect all microphone inputs, globally.

In addition, the PM 502 offers 3 Stereo Channels. All of these channels feature jack socket inputs with 2 x Stereo RCA and USB (Type A+B) inputs in parallel. They are equipped with a gain adjustment switch, 3-band EQ, Effects-send, AUX-send, Peak-LED and volume control.


MIC 1
MIC 2
MIC 3
MIC 4
MIC 5
STEREO 1
CD 1
STEREO 2
CD 2
STEREO 3
USB
DYNACORD PM
GAIN
HI
MID
LO
FX
AUX
PK
VOLUME
MIC PROCESSING
COMPRESSOR
TALK OVER
MUTE
FX ON
FX to AUX
SPEAKER PROCESSING
63Hz
160Hz
400Hz
PM 502
1
2
3
4
5
6
7
8
FX
PHONES
AUX



MASTER SECTION

The digital Master section offers a wide variety of output busses for a product positioned in this category: Stereo Master A, Stereo Master B and AUX Master allow for up to 3 rooms or zones to have individual level control. The highly flexible routing options in the menu allow the master channels to be routed to the amplifiers as required. Each of these master outputs features a 4-segment level meter and a 7-band equalizer. The EQs for Master B and AUX are accessed in the menu while the EQ sliders on the front panel are directly linked to the Master A equalizer. In cases where it makes sense the EQs for Master B and AUX can be linked to the EQ of Master A. Master B can be switched Mono / Stereo and routed either pre or post Master A. In addition there is a delay line (up to approx. 150 msec) in Master B allowing for time alignment in a distributed system or installations up to a 50 meter distance. The AUX-bus can either be used for monitoring or as a 3rd master mix. Last but not least, there is a headphone output (3.5mm jack) with level control.

Another highlight of the PM 502 feature-set is the onboard audio player. Connecting a USB-stick or a hard drive allows for playback of MP3 or WAV audio files. A dedicated menu is making for easy control of this player and provides additional information on tracks and play times.



THE PM502 CREATES FASCINATING WORLDS OF SOUND IN CLUBS, LOUNGES, LOBBIES, HOTEL BARS, CHURCHES AND MOSQUES.

PLUG'N PLAY: THE AUDIO PLAYER RECOGNIZES USB DRIVES AND HARD DISKS AND PLAYS BACK MP3 AND WAV AUDIO FILES WITH VIRTUOSITY.



EFFECTS (FX) SECTION

In the Effects (FX) section the PM 502 provides 32 Stereo effects presets based on the the legendary PowerMate. These algorithms are 48 bit double precision processed. The presets can be selected and edited via the large easy to operate backlit LC-Display.

The selection of presets includes the most popular reverb, delay, chorus and mixed effects. If desired the effect signal can also be mixed to the AUX bus. The effects section can be switched ON/OFF on the front panel or by means of an optional footswitch. Selecting the MENU opens the door for a multitude of additional settings and functions.

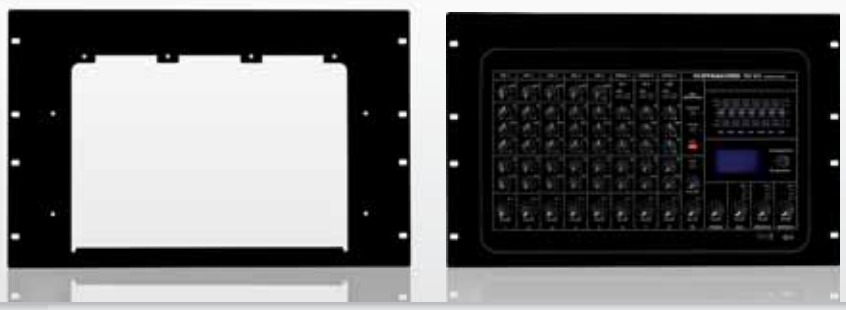
The user friendly system settings, routing and editing are easily adjusted via a single knob control.
In the Speaker Processing menu, the user has the choice to activate the legendary LPN filter for the improvement of transient response and low frequency performance of small to medium sized loudspeaker cabinets. Depending on the room and the speakers, this filter can be set to high, medium or flat operation.
The onboard class-D Power Amplifier supplies solid 2 x 450W (RMS / 4 Ohms) respectively 2 x 600W (IHF-A/ 4 Ohms). It is also possible to directly drive 100V loudspeaker lines without adding an additional output transformer. For such applications the option "DIRECT DRIVE" can be selected in the menu as a (bridged) single channel 680W / 12 Ohms amplifier output. When selecting this operation mode the LPN filter becomes deactivated automatically and 50 or 70 Hz Low-Cut filter gets switched on in the output circuitry.

The PM 502 comes with the full legendary Dynacord protection package including short circuit-, HF-, DC-, no load-, Back-EMF- and high-temp- protection, peak- and inrush- current limiters as well as a turn-on delay for the loudspeakers. In addition the output current limiters prevent shut-off even at a low load impedance.



CONNECTIVITY

The input and output sockets meet all the needs for live and install applications: Combi-XLR/Jack sockets for the MIC / Line channels, Jack, RCA and USB sockets for the stereo channels, Speakon or Phoenix connectors for the speaker outputs.



RMK 502 KIT

The optional RMK 502 kit allows for easy installation into 19” racks or surface mount applications.

Compact Mixing System





CMS3

- CMS 600-3
- CMS 1000-3
- CMS 1600-3
- CMS 2200-3

Unique

THE PRO AUDIO MIXER AMONG MIXERS





CMS 600-3

THE YOUNGEST MEMBER OF THE CMS FAMILY

This compact mixer appeals not only through its successful and high-quality design but above all through its ‚internal values'—through what constitutes in this device category outstanding audio performance.

With its very lavish feature set and exemplary versatility it is the ideal choice for all professional applications in which few channels yet very high audio quality are required. These characteristics also commend the CMS for the field of fixed installation.

PERFORMANCE WITHOUT COMPROMISES

- Intuitively operated mixing section
- 2 editable digital effects devices with 100 presets each and 20 user memories each
- Professional 4 x IN / 4 x OUT digital interface (USB) for the connection of a PC or Mac
- Stereo equalizer in the master section
- Large, contrast-rich OLED display

Exclusively high-quality brand components have been used; all faders and potentiometers are supplied by ALPS.

IN ALL, 8 CHANNEL STRIPS ARE AVAILABLE

- 4 MIC / LINE channels
- 2 MIC / Stereo USB channels (‚Super Channels')
- 2 stereo LINE channels

MIC / LINE CHANNELS

The MIC / LINE channels offer extremely low-noise and low-hum electronically balanced XLR microphone inputs with an extremely low distortion factor (typ. < 0.002%) for the connection of low-impedance microphones.

For condenser microphones, phantom power (+48 volts) is centrally switchable. The LINE inputs are also electronically balanced and implemented as jack sockets. In addition to a Gain control, a highly efficient 3-band equalizer, an FX send, an AUX send and a MONitor send as well as either Panorama or Balance controls are available. The four MIC / LINE channels boast, in addition, a switchable 80Hz Lo-Cut filter, whilst the **Super Channels** 5-6 and 7-8 are supplied by the USB inserts 1-2 and 3-4, in each case in stereo.

STEREO-LINE CHANNELS

The STEREO-LINE channels (9-10 and 11-12) offer electronically balanced jack inputs for the connection of electronic instruments such as keyboards, drum-computers, guitars and basses with active electronics, as well as all other high-level stereo signal sources such as additional mixers, effects devices etc.

CD or MP3 players can be connected to the additional cinch (RCA) inputs CD 1-2 and CD 3-4, which are switched in parallel. The tone controls and sends are identical to those of the MIC / LINE channels.

In all input channels, a Signal / Peak LED is provided to assist level control. The SIG LED illuminates at around 30 dB and the PK LED at 6dB beneath the distortion threshold. A MUTE button and a PFL button (in channels 5-12 in stereo) are further features found in all input channels.




MIC 1
MIC 2
MIC 3
MIC 4
MIC 5
MIC 6
LINE 9-10 STEREO
LINE 11-12 STEREO
L / MONO
R
PHANTOM POWER
MIC 1-6
LINE
GAIN
LO CUT 80 Hz
HI
MID
LO
FX
AUX
MON
PAN
BAL
MUTE
USB 1-2
USB 3-4
CD 1-2
CD 3-4
TRIM LINE CD
PFL
PK
SIG
1
2
3
4
5-6
7-8
9-10



MASTER SECTION

In the Master Section of the CMS 600-3 are to be found the Master A L+R sends (on separate faders), an additional Master B send (switchable pre/post and mono/stereo), the stereo effects returns, and the send signals of the AUXiliary and MONitor busses.

If the AUX buss is not used to supply FX 2, it can be switched pre or post and thereby used as an additional monitor send or to supply an external effects device.

The 9-band stereo equalizer in the master section allows you to adjust the frequency response to the acoustics of the room.



The REC SEND and USB OUT controls determine the level of the master L+R signal at the Rec Send sockets and in the output channels of the digital USB interface. The control below it allows you to adjust the volume in the headphones.

Two ten-LED meters provide an overview of the output level. When the PFL switch is activated, the left-hand LED chain shows the internal level of the master buss in dBu.

DIGITAL AUDIO INTERFACE

The DIGITAL AUDIO INTERFACE supplies two stereo channels, present as USB 1-2 and USB 3-4 in Super Channels 5-6 and 7-8 respectively.

This interface is implemented professionally in 24-bit resolution and supports sampling rates up to 96 kHz, thereby satisfying studio requirements. The USB sends are supplied with the Master L and R, AUX and MON signals. The DIGITAL AUDIO INTERFACE can be used for input and output simultaneously. Via the USB 2.0 port of your PC / Mac, four channels can be transmitted simultaneously in each direction. When a USB 1.1 interface is used, two channels can be transmitted simultaneously in each direction. The CMS 600-3 is designed for the level of standard PCs / Macs; the gain level can easily be adjusted, if need be, from the computer connected.

Included in the delivery is a DVD containing the professional recording software Cubase LE and PC / Mac USB drivers.

PC MIDI INTERFACE

The CMS 600-3 also makes available a fully featured PC-MIDI interface.

The MIDI input also supports the remote switching of both internal effects units using a master keyboard or MIDI footswitch.

THE CMS 600-3 IS EQUIPPED WITH TWO VERY HIGH-QUALITY, 24-BIT STEREO EFFECTS PROCESSORS, FX 1 AND FX 2

These function independently and can therefore be mixed. The two effects units are fully identical in design. Each effects section offers 100 presets including high-quality reverb, delay and modulation effects selected by means of the display.



When a delay effect is active, the delay time can be synchronized to the beat of the music using the TAP key. The further possibility exists of modifying individual parameters of the presets and storing the results in the 20 user memories provided.

Both effects units are supplied by the FX Send buss. Using the DEVICE SETUP menu, you can, if you wish, configure the AUX send buss to function as an FX 2 send, so that only the FX 1 effects unit is supplied by the FX 1 buss. In this way, the two effects devices can be controlled independently of one another.

DEVICE SETUP



EDIT FX



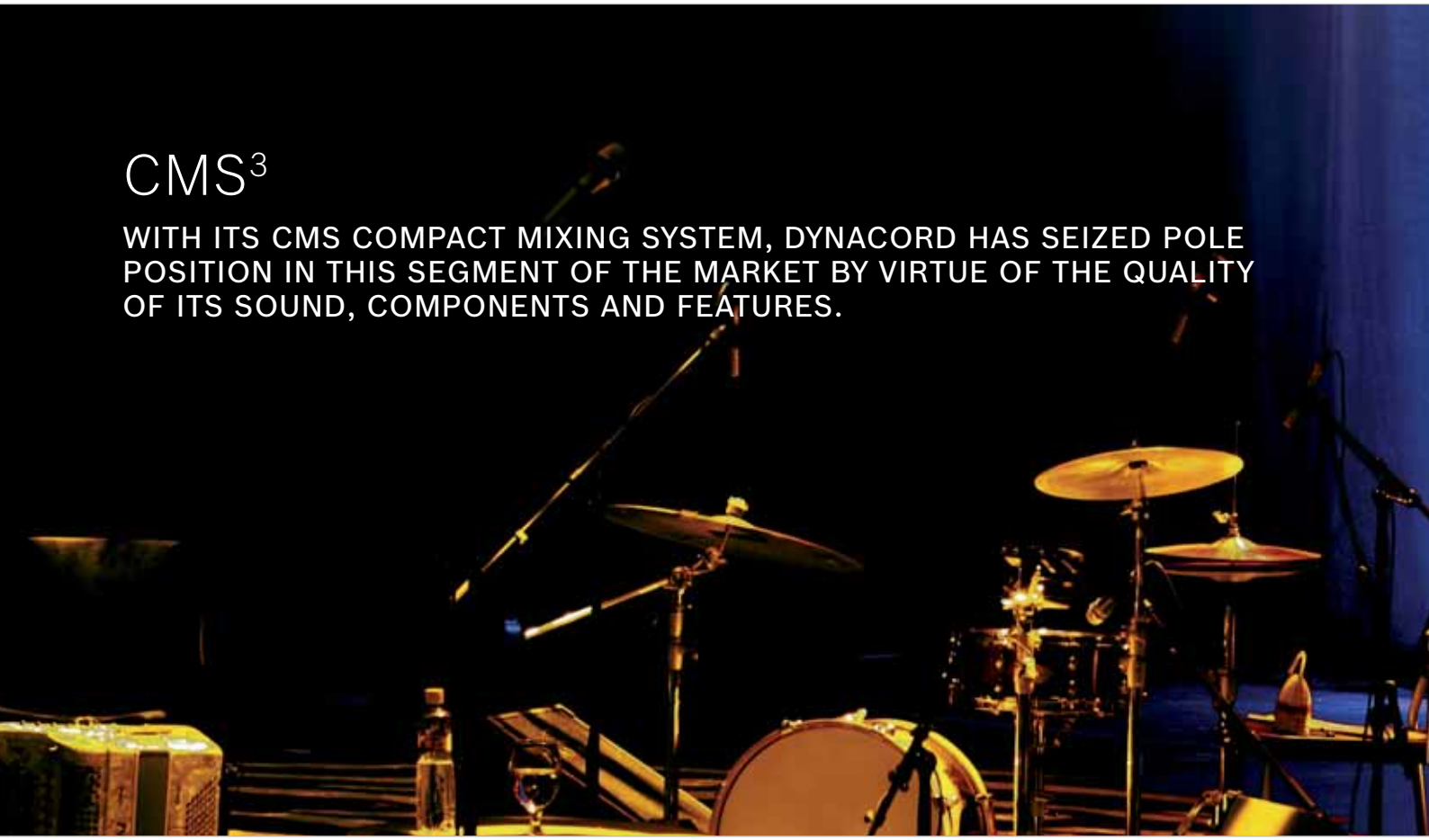
The effects can be mixed separately in the master and monitor busses.

The large, high-contrast OLED display is easily read from a wide range of viewing angles—even in very bright surroundings. The operation of the effects units and processing menus is intuitive and made easier still through the use of soft keys and a rotary encoder.



Available as an optional accessory, the carrying bag **BAG-600CMS** not only accommodates the device but also offers an additional compartment for cables etc.

For rack installation, the **RMK-CMS600-3** rack-mount kit is available as an option.



CMS³

WITH ITS CMS COMPACT MIXING SYSTEM, DYNACORD HAS SEIZED POLE POSITION IN THIS SEGMENT OF THE MARKET BY VIRTUE OF THE QUALITY OF ITS SOUND, COMPONENTS AND FEATURES.

Modell	MIC/LINE-Inputs	Stereo MIC/LINE-Inputs	Total Inputs
CMS 1000-3	6	4	10
CMS 1600-3	12	4	16
CMS 2200-3	18	4	22



By integrating a high-quality mixer, digital 24/48-bit effects processors of studio quality, and now also a professional digital interface to the PC and Mac, the latest generation of CMS mixers represent the ideal solution for a large number of demanding applications in the professional audio sector.



„Small – but exquisite“

The number of small compact mixers for the professional audio market is so vast that it‘s almost impossible to get a clear overview. The overwhelming majority of such products attempt to deliver as many features as possible at the lowest possible price. A select few, only, rise above the common herd by offering both audio performance and feature sets of professional quality.

**Lid = optional*



MIC/LINE-INPUTSCHANNNELS

The XLR microphone input is equipped with an extremely high quality, ultra-low noise, discrete preamp.

The +48V phantom power for condenser microphones can be switched in groups of six.

The Line Input and Channel Insert are implemented as jack sockets.

The Gain can be controlled in the range 0-60 dB.

The switchable Lo Cut filter (80Hz, 18dB/oct.) serves to eliminate low-frequency noise. A very typical Dynacord feature is the asymmetrical Voicing Filter by means of which, if desired, the voice can be powerfully emphasized in the mix.

Optimized for ease-of-use, the 3-band semi-parametric equalizer makes it possible even for unpracticed users to perform the requisite corrections swiftly and intuitively. With their extended buss structures, the CMS³ mixers offer very flexible configuration options. In all, 6 AUX busses are available in each case:

- 2 (FX) are assiged to the two effects devices;
- 2 (AUX) can be configured either as monitor or effects sends by means of a switch in the Main section;
- 2 (MON) are designed as monitor sends, each being equipped with a sweepable anti-feedback filter in the Master section.

MUTE and PFL switches, each with its own LED, make it possible to mute each input channel individually and/or listen to its pre-fader signal.

Each channel offers a Signal Present and Peak LED for level control.

The channel faders are dust-protected and offer not only excellent crosstalk attenuation but also a practice-optimized control characteristic.

All potentiometers and faders are high-quality components from ALPS.


MIC 1
MIC 2
MIC 3
MIC 4
MIC 5
MIC 6
MIC 7
MIC 8
MIC 9
MIC 10
PHANTOM POWER
MIC 1-6
PHANTOM POWER
MIC 7-12
LINE
INSERT
GAIN
LO CUT
VOICE FILTER
HI
MID
LO
FX
AUX
MON
PAN
MUTE
PFL
SIG
PK



MASTER

In the Master Section, too, the CMS³ mixers are lavishly equipped.

The 11-band stereo equalizer can be routed to the Master channels or else to either or both of the Monitor Sends according to choice.

The FX1+2 Returns as well as the AUX1+2 and MON1+2 Sends are on faders just like the Master L/R signal, which makes for comfortable and intuitive operation.

The Master B signal is available pre or post MASTER L/R fader and can be mono-summed if desired. The Master signal is also available on the REC Send cinch (RCA) output with level control.

The level meters of the CMS³ comprise two LED chains of 12 LEDs each. The display range covers 40 dB; what is shown is the level in dBu at the master outputs. When the PFL switch is activated, the left-hand LED chain shows the internal level of the master buss in dBu.

The Standby switch mutes all channels e.g. during pauses, with only the 2TRACK-to-Master input remaining active for the playback of interval music.

A 4-pin XLR socket is provided for the connection of a standard 12V/5W gooseneck lamp.

STEREO MIC/LINE-INPUTS

The stereo input channels are equipped in much the same way, but optimized, naturally, to carry stereo signals.

Two of the four stereo inputs of each model are additionally equipped with cinch (RCA) sockets switched in parallel for CD or MP3 players.

The two other stereo inputs receive in addition the four channels of the digital audio interface USB 1-2 and USB 3-4

Separate Gain controls are provided for the Stereo Line and Mic inputs to permit them to be used in parallel if desired.

Three-band tone controls are provided, and a Balance control replaces the PAN control found in the mono channel strips.


DYNACORD
CMS 1000
COMPACT MIXING SYSTEM
CMS
STEREO GRAPHIC EQUALIZER
MENU/ENTER
MASTER
MON 1
MON 2
AUX 1
AUX 2
FX 1
FX 2

DEVICE SETUP



USB RECORD ROUTING



EFFEKTE



EDITIERBARE EFFEKTPROGRAMME



DIGITAL USB 2.0 AUDIO INTERFACE

The USB 2.0 port serves as a digital audio interface between the CMS³ and a PC or Mac.

Four channels can be transmitted in either direction simultaneously. This interface can therefore be used either for the input of audio signals (e.g. for playback or interval music) or else for live- or studio-recording applications. It is configured by selecting the relevant setting in the menu.

For the use of the CMS³ with a PC or Mac, a free Cubase LE license as well as the requisite USB drivers are included free-of-charge on the supplied DVD.

PC MIDI INTERFACE

The CMS³ also offers a fully-featured PC MIDI interface.

The MIDI input also supports the remote switching of both internal effects units using a master keyboard or MIDI footswitch.

PROFESSIONAL EFFECTS, OLED DISPLAY AND PROCESSING MENUS

The CMS³ has two integrated stereo multi-effects processors that work independently of one another, each offering 100 effects algorithms optimized for live performance, the most important parameters of which are editable.

Linear 24-bit AD/DA converters and 48-bit double-precision processing guarantee the finest studio quality based on state-of-the-art technology. The 100 program locations of each device are packed with high-quality reverbs, halls and plates that deliver professional results in live performance on stage as well as in both studio and home recording environments.

Other presets include Echo/Reverb and Chorus/Echo combinations, a variety of delay, flanger, chorus and doubling algorithms, as well as special reverb and delay programs. When a delay effect is active, the delay time can be synchronized to the beat of the music using the TAP key. Edited effects programs can be stored in the 20 User memories offered by each device, assigned names, and later selected and used in the same way as the presets. The large, high-contrast OLED display is easily read from a wide range of viewing angles—even in very bright surroundings. The operation of the effects units and processing menus is intuitive and made easier still through the use of soft keys and a rotary encoder.

PROCESSING MENUS

For the basic settings, configuration, use of the effects and special functions, a wide variety of editing options can be selected from the clearly arranged menus.



For rack installation of the CMS 1000 (or table installation of the models 1600 and 2200), the mounting kit RMK 1000-3 is available.

Other accessories include the goose-neck light DC-LITLITE-4P and the DC-FS11 ON/OFF footswitch for the effects units.



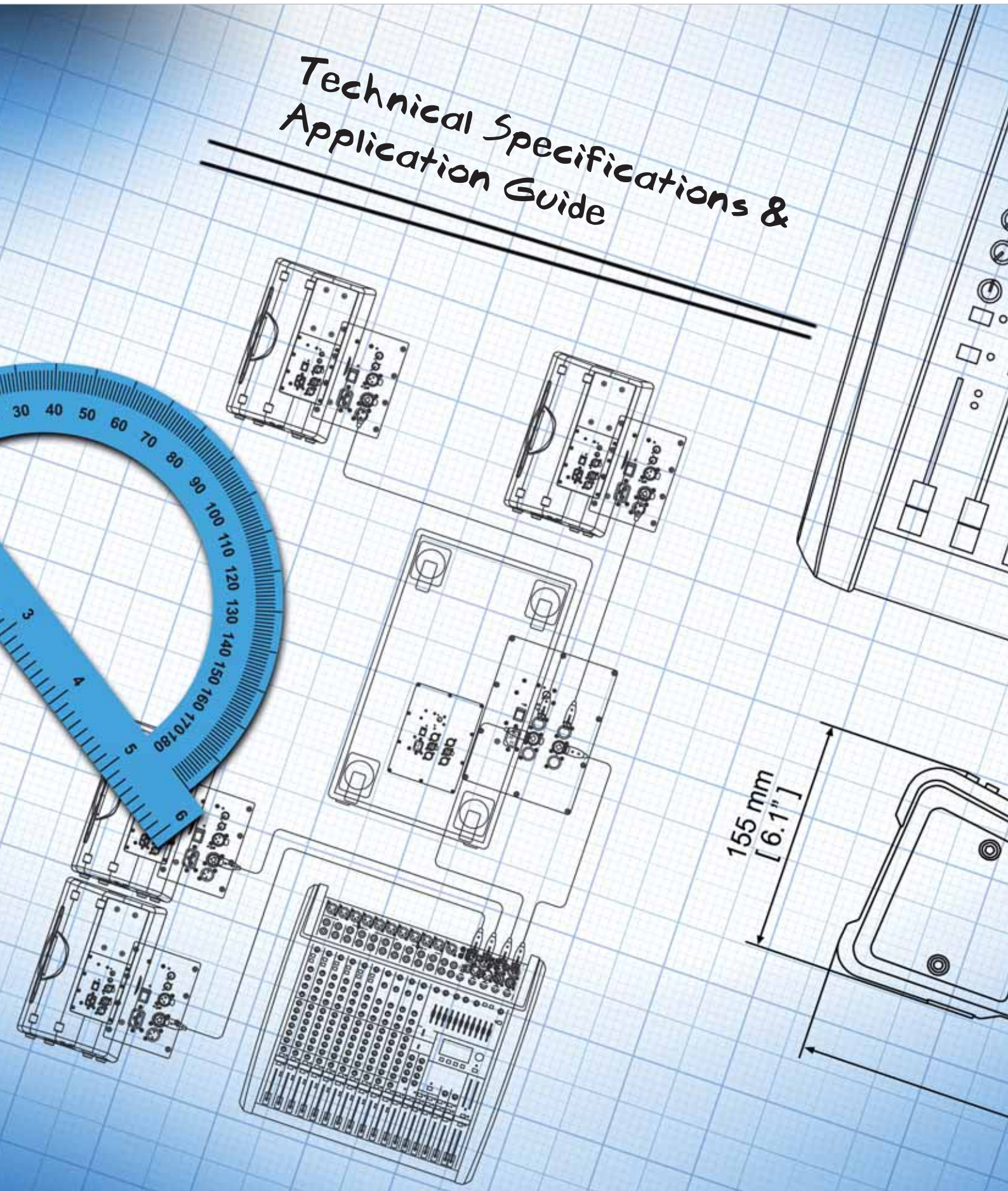
Innovative Solution for Protection and Transportation



Optionally available for the CMS 1000 and 1600 is a very robust plastic lid with an integrated handle—a highly innovative solution that offers optimal protection for the device as well as greater carrying comfort.

For the CMS 2200, due to its greater size, a flight-case solution is recommended (available as a further option is a dust cover: the DC-PM2200-COVER).

Technical Specifications & Application Guide




DYNACORD
498.5 mm
[19.63"]

PowerMate³

TECHNICAL SPECIFICATIONS

Property	PowerMate 600-3	PowerMate 1000-3	PowerMate 1600-3	PowerMate 2200-3
Order No.	F01U213899 DC-PM600-3-UNIV	F01U131113 DC-PM1000-3-UNIV	F01U131114 DC-PM1600-3-UNIV	F01U131115 DC-PM2200-3-UNIV
Channels (Mono + Stereo)	4 + 4	6 + 4	12 + 4	18 + 4
Mic Inputs	6	10	16	22
Auxiliarys (MON, FX, AUX)	1 Pre, 1 Post, 1 Pre/Post switchable	2 Pre, 2 Post, 2 Pre/Post switchable		
Maximum Midband Output Power, 1kHz, THD=1%, Dual Channel				
into 2.66 Ohms	2 x 1350 W			
into 4 Ohms	2 x 1000 W			
into 8 Ohms	2 x 600 W			
Rated Output Power, 20Hz...20kHz, THD<0.5%, Single Channel				
into 4 Ohms	2 x 900 W			
into 8 Ohms	2 x 450 W			
Maximum Output Voltage, of power amplifier, 1kHz, no loadw	74 V_{rms}			
THD, at 1kHz, MBW=80kHz				
MIC Input to Master A L/R Outputs, +16dBu, typical	< 0.005%			
POWER AMP INPUTS to Speaker L/R outputs	< 0.075%			
DIM 30, power amplifier, 3.15kHz, 15kHz	< 0.05%			
IMD-SMPTE, power amplifier, 60Hz, 7kHz	< 0.15%			
CMRR, MIC input, 1kHz	> 80 dB			
Equivalent Input Noise, MIC Input, A-weighted, 150 Ω	-130 dBu			
Signal/Noise-Ratio, power amplifier, A-weighted, 4 Ohms	105 dB			
Output Stage Topology, amplifier	Class D			
Equalization				
LO Shelving	± 15 dB / 60 Hz			
MID Peaking, mono inputs	±12 dB / 2.4 kHz	±15 dB / 100 Hz to 8 kHz		
MID Peaking, stereo inputs	± 12 dB / 2.4 kHz			
HI Shelving	± 15 dB / 12 kHz			
Master EQ ± 10 dB / Q = 1.5 to 2.5	9-band (63, 125, 250, 500, 1k, 2k, 4k, 6.3k, 12k Hz)	11-band (63, 125, 250, 400, 630, 1k, 1.6k, 2.5k, 4k, 6.3k, 12k Hz)		
Filter				
LO-CUT, mono inputs	f = 80 Hz, 18 dB/oct.,switchable			
VOICE FILTER, mono inputs	---	switchable		
FEEDBACK FILTER, MON1/2	---	70 Hz ... 7 kHz, Notch, -9 dB		
Speaker Processing	LPN, switchable			
Display	128 x 64 pixels, High Contrast OLED			

Property	PowerMate 600-3	PowerMate 1000-3	PowerMate 1600-3	PowerMate 2200-3
Effects				
Type	2 x Stereo 24/48-bit multi effects processors			
Effects presets	100 Factory + 20 User, Tap-Delay			
Remote control	Footswitch, MIDI			
Digital Audio Interface				
Channels	4 In / 4 Out			
AD/DA Conversion	24- bit			
Sampling Rate	44.1 / 48 / 88.2 / 96 kHz			
PC Interface	USB2.0, Female Type B			
MIDI Interface	5-pin DIN connector, In / Out			
Protections				
Mixer Outputs (Relay controlled)	AUX SEND, MONITOR, MASTER A L/R	MON1, MON2, MASTER A L/R		
Amplifier	Audio Limiters, High Temperature, DC, HF, Short Circuit, Back EMF, Peak Current Limiters, Turn-On-Delay			
Switching Mode Power Supply (µC controlled)	Inrush Current Limiters, Mains Over/Under Voltage, Mains Over Current, High Temperature			
Output Power Control	Adjustable longterm RMS Limiter			
Cooling	Continuous speed controlled Fans			
Phantom Power, switchable in groups	48V DC			
Power Requirements (SMPS with auto range mains input)	100 V to 240 V AC, 50 Hz to 60 Hz			
Power Consumption at 1/8 maximum output power, 4 Ohms	450 W			
Safety Class	I			
Ambient Temperature Limits	+5 °C to +40 °C (40 °F to 105 °F)			
Dimensions (W x H x D), mm				
PowerMate600, Rack-Mount	483.0 x 135.8 x 310.3			
PowerMate600, with lid	438.8 x 161.7 x 362.5			
PowerMate1000, Rack-Mount	483.0 x 135.0 x 443.7			
PowerMate1000, with lid	510.5 x 164.5 x 571.5			
PowerMate1600, with lid	663.5 x 164.5 x 571.5			
PowerMate2200, without lid	818.5 x 155.0 x 498.5			
Weight				
Net Weight, without lid	9.0 kg	12.5 kg	15 kg	18 kg
Net Weight, with lid	9.5 kg	14 kg	17 kg	---
Shipping Weight	12.0 kg	17 kg	20 kg	22 kg
Warranty	36 months			
Optional Accessories				
RMK-600-3 (Rack-Mount-Kit PowerMate600)	F01U214880 (DC-RMK-600-3)			
Carrying bag for PowerMate 600	F01U259014 (DC-BAG-600PM)			
RMK-1000-3 (Rack-Mount-Kit PowerMate1000)	F01U161506 (DC-RMK1000-3)			
Gooseneck Lamp, 12V/5W, 12“, XLR 4 pol.	F01U118983 (DC-LITLITE-4P)			
FS11 (Footswitch with LED)	F01U100598 (DC-FS11)			
Dust Cover for PowerMate 2200	F01U169467 (DC-SH2200-3)			

Device in rated condition, unity gain (MIC gain 20 dB), all faders position 0 dB, all pots in mid position, master fader +8 dB, LPN HIGH, amplifier load 8 ohms, dual channel, mains voltage 230 V/50 Hz or 120 V/60 Hz, unless otherwise specified. Measurements at other mains voltages may vary ±.

PM 502

TECHNICAL SPECIFICATIONS

Channels (Mono + stereo)	5 + 3
Microphone inputs (XLR)	5
Auxiliarys (FX, AUX)	1 Post, 1 Pre
Max. single channel output power, dynamic-headroom, IHF-A • into 4 Ω • into 8 Ω	 640 W 350 W
Max. dual channel output power, dynamic-headroom, IHF-A • into 4 Ω • into 8 Ω	 2 x 600 W 2 x 340 W
Max. single channel output power, continuous, 1 kHz, THD = 1% • into 4 Ω • into 8 Ω	 500 W 280 W
Maximum midband output power, 1 kHz, THD = 1%, dual channel • into 4 Ω • into 8 Ω	 2 x 450 W 2 x 270 W
Rated output power, 20–20000 Hz, THD < 0.5%, one channel loaded • into 4 Ω • into 8 Ω	 2 x 400 W 2 x 240 W
Max. output power, Direct Drive mode (bridge configuration), continuous, 1 kHz, THD =1% • into 12 Ω	 680 W
Maximum output voltage, power amplifier, 1 kHz, no load • Dual channel mode • Direct Drive mode	 52 V_{rms} 100 V_{rms}
THD, at 1 kHz, MBW = 22 kHz • MIC input to master A L/R outputs, +10 dBu, typical • MIC input to speaker output	 < 0.015% < 0.15%
DIM 30, MIC input to speaker output, 3.15 kHz, 15 kHz	< 0.05%
IMD-SMPTE, MIC input to speaker outputs, 60 Hz, 7 kHz	< 0.15%
Frequency response, -3 dB, ref. 1 kHz • Any input to any Mixer output • Any input to Speaker output	 15–22000 Hz 20–22000 Hz
Crosstalk, 1 kHz • Amplifier Ch1/Ch2 • Channel to channel	 < -85 dB < -78 dB
Microphone mute switch attenuation	> 100 dB
Channel VOL and FX/AUX-send attenuation	> 85 dB
CMRR, MIC input, 1 kHz	> 80 dB
Input Sensitivity, all level controls in max. position • MIC • LINE (mono) • LINE (stereo) • CD (stereo)	 -65 dBu (435 µV) -45 dBu (4.35 mV) -27 dBu (34.6 mV) -27 dBu (34.6 mV)
Maximum level, mixing desk, input VOL down, output VOL up • MIC inputs, GAIN at min. position • Mono line inputs, GAIN at min. position • Stereo line inputs • PHONES outputs • MASTER A, B, AUX outputs	 +11 dBu +30 dBu +26 dBu +21 dBu +11 dBu

Input Impedances • MIC • CD • All other inputs	 2 kΩ 10 kΩ > 15 kΩ
Output Impedances • Phones • All other outputs (impedance balanced)	 47 Ω 150 Ω
Equivalent input noise, MIC preamp, A-weighted, max. gain, 150 Ω	-129 dBu
Noise, Channel inputs to master A L/R outputs, MBW = 22 kHz, A-weighted • Master volume down • Master volume center, all channel volume down • Master volume center, all channel volume center	 -99 dBu -90 dBu -85 dBu
Signal/noise-ratio, power amplifier, A-weighted, 450 W, 4 Ω	104 dB
Output stage topology, amplifier	Class D
Equalization • LO shelving • MID peaking • HI shelving	 ±15 dB / 60 Hz ±12 dB / 2.4 kHz ±15 dB / 12 kHz
Master EQ 7-band (63, 160, 400, 1k, 2.5k, 6k, 12k Hz)	±10 dB / Q = 1.5
Filter • Low cut, microphone processing (switchable) • Low cut, amplifier (engaged in 100 V Direct Drive mode) • Speaker processing	 80 Hz, 18 dB/oct. or 150 Hz, 12 dB/oct. 50 Hz or 70 Hz, 18 dB/oct. LPN, switchable
Delay master B, selectable	0–145 ms (0–50 m)
Effects • Type • Effects presets • Remote control	 Stereo 24/48-bit multi effects processor 32 factory presets, user editable Footswitch
Display	128 x 64 pixels, LCD
Audio player (USB at front panel) • USB mass storage class, supported file systems • Supported audio file formats • Interface • USB power supply, max. rated current (short circuit proof)	 FAT 32 MP3, WAV USB2.0, female type A 5 V, 500 mA
Digital Audio Interface (USB at rear panel) • Channels • AD/DA conversion • Sampling rate • PC interface	 2 in, 2 out 16-bit, delta-sigma 32/44.1/48 kHz USB2.0, female type B
Protection • MASTER A, B, AUX outputs • Amplifier • Switching mode power supply (µC controlled)	 Adjustable peak limiters, -10 – +11 dBu Audio limiters, high temperature, DC, HF, short circuit, peak current limiters, turn-on delay, back EMF Inrush current limiters, mains over / undervoltage, mains over current, high temperature
Cooling	Continuous speed controlled fan
Phantom power, switchable	48 V DC
Power requirements (SMPS with auto range mains input)	100–240 V AC, 50–60 Hz
Power consumption, at 1/8 maximum output power, 4 Ω	180 W
Safety Class	I
Operating temperature	5° to 40° C (40° to 105° F)
Product dimensions (Width x Height x Depth)	395 x 244 x 241 mm, Rack-mount: 483 x 223 x 310.3 mm (7 HU)
Weight • Net weight • Shipping weight	 4.9 kg 6.4 kg

CMS³

TECHNICAL SPECIFICATIONS

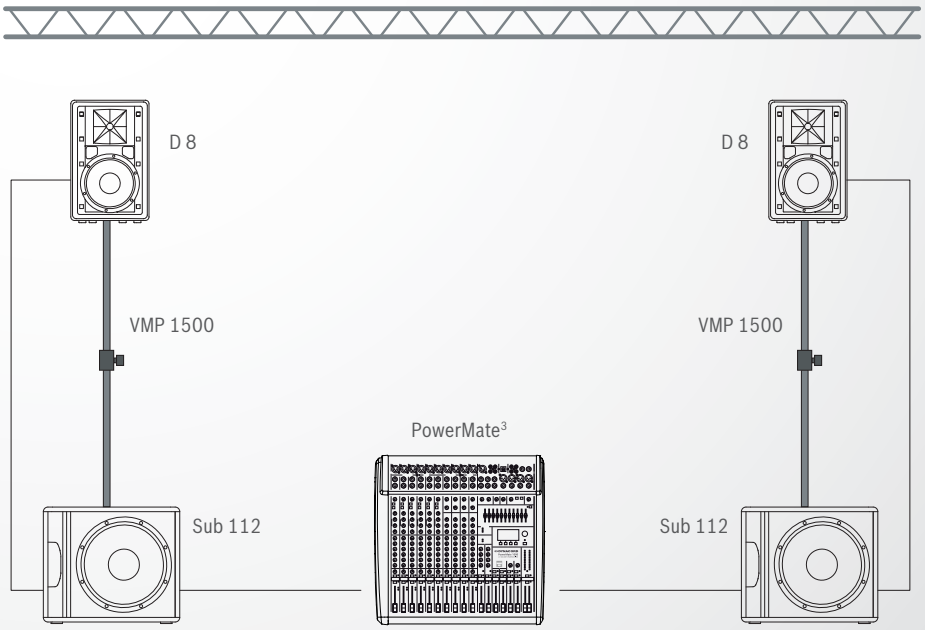
Property	CMS 600 -3	CMS 1000 -3	CMS 1600 -3	CMS 2200-3
Order No.	F01U213891 DC-CMS600-3-UNIV	F01U138112 DC-CMS1000-3-UNIV	F01U138114 DC-CMS1600-3-UNIV	F01U138115 DC-CMS2200-3-UNIV
Channels (Mono + Stereo)	4 +4	6 + 4	12 + 4	18 + 4
Mic Channels	6	10	16	22
Auxiliarys (MON, FX, AUX)	1 Pre, 1 Post, 1 Pre/Post switchable	2 Pre, 2 Post, 2 Pre/Post switchable		
MIC GAIN (Mono)	+10 to +60 dB	0 to +60 dB		
MIC GAIN (Stereo)	+10 to +60 dB	+10 to +60 dB		
LINE/CD/USB GAIN (Stereo)	-10 to +20 dB USB fix	-10 to +20 dB		
THD, at 1 kHz, MBW = 80 kHz				
MIC input to Master A L/R outputs, +16 dBu, typical	< 0.005%			
Frequency Response, -3 dB, ref. 1 kHz				
Any input to any Mixer output	15 Hz to 70 kHz			
Input Sensitivity, all level controls in max. position				
MIC	-74 dBu (155 µV)			
LINE (Mono)	-54 dBu (1.55 mV)			
LINE (Stereo)	-34 dBu (15.5 mV)			
CD (Stereo)	-34 dBu (15.5 mV)			
Maximum Level, mixing desk				
MIC inputs	+12 dBu	+21 dBu		
Mono Line inputs	+31 dBu	+41 dBu		
Stereo Line inputs	+30 dBu			
All other inputs	+22 dBu			
All other outputs	+22 dBu			
Equivalent Input Noise, MIC input, A-weighted, 150 ohms	-130 dBu			
Noise, Channel inputs to Master A L/R outputs, A-weighted				
Master fader down	-100 dBu	-97 dBu		
Master fader 0 dB, Channel fader down	-92 dBu	-91 dBu	-89 dBu	-87 dBu
Master fader 0 dB, Channel fader 0 dB, Channel gain unity	-82 dBu	-83 dBu	-82 dBu	-81 dBu
Equalization				
LO Shelving	±15 dB / 60 Hz			
MID Peaking, mono inputs	±12 dB / 2.44 kHz	±15 dB / 100 Hz to 8 kHz		
MID Peaking, stereo inputs	±12 dB / 2.4 kHz			
HI Shelving	±15 dB / 12 kHz			
Master EQ ± 10 dB / Q = 1.5 to 2.5	9-band (63, 125, 250, 500, 1k, 2k, 4k, 6.3k, 12k Hz)	11-band (63, 125, 250, 400, 630, 1k, 1.6k, 2.5k, 4k, 6.3k, 12k Hz)		

Property	CMS 600 -3	CMS 1000 -3	CMS 1600 -3	CMS 2200-3
Filter				
LO-CUT, mono inputs	f = 80 Hz, 18 dB/oct.			
VOICE FILTER, mono inputs	-	switchable		
FEEDBACK FILTER, MON 1/2	-	70 Hz to 7 kHz, Notch, -9 dB		
Effects				
Type	2 x Stereo 24/48-bit multi effects processors			
Effects presets	100 Factory + 20 User, Tap-Delay			
Remote control	Footswitch, MIDI			
Display	128 x 64 pixels, High Contrast OLED			
Digital Audio Interface				
Channels	4 In / 4 Out			
AD/DA Conversion	24-bit			
Sampling Rate	44.1 / 48 / 88.2 / 96 kHz			
PC Interface	USB2.0, Female Type B			
MIDI Interface	5-pin DIN connector, In / Out			
Protection				
Mixer Outputs (Relay controlled)	AUX, MON, MASTER A L/R	MON1, MON2, MASTER A L/R		
Switching Mode Power Supply (µC controlled)	Mains Over/Undervoltage, High Temperature			
Phantom Power, switchable in groups	48 V DC			
Power Requirements (SMPS with auto range mains input)	100 V to 240 V AC, 50 Hz to 60 Hz			
Power Consumption				
without lamp	35W	45 W	50 W	55 W
with lamp	-	50 W	55 W	60 W
Safety Class	I			
Ambient Temperature Limits	+5 °C to +40 °C (40 °F to 105 °F)			
Dimensions (W x H x D, without lid), mm	416.9 x 109.6 x 347.8 Rack-mount (7.5 HE): 483.0 x 99.1 x 332.6	510.5 x 155 x 498.5 Rack-mount: 483.0 x 135.0 x 443.7	663.5 x 155 x 498.5	818.5 x 155.0 x 498.5
Weight, without lid				
Net Weight	5.8 kg	9.5 kg (10.5 kg incl. Rack Mount Kit)	12 kg	14.5 kg
Shipping Weight	7.8 kg	12.5 kg	15.0 kg	17.5 kg
Warranty	36 months			
Optional Accessories				
Lid	-	F01U169707 (DC-LID1000)	F01U169708 (DC-LID1600)	-
Carrying Bag for CMS 600	F01U259015 (DC-BAG-600CMS)	-	-	-
Dust Cover for CMS 2200	-	-	-	F01U169467 (DC-SH2200-3)
Rack Mount Kit	F01U214881 (DC-RMK-CMS-3)	F01U169471 (DC-RMK1000CMS)	-	-
Gooseneck Lamp, 12V/5W, 12", XLR 4 pol.	-	F01U118983 (DC-LITLITE-4P)		
FS 11 (Footswitch with LED)	F01U100598 (DC-FS11)			

Device in rated condition, unity gain (MIC gain 20 dB), all faders position 0 dB, all pots in mid position, master fader +6 dB

APPLICATION GUIDE POWERMATE³

SMALL LIVE APPLICATIONS

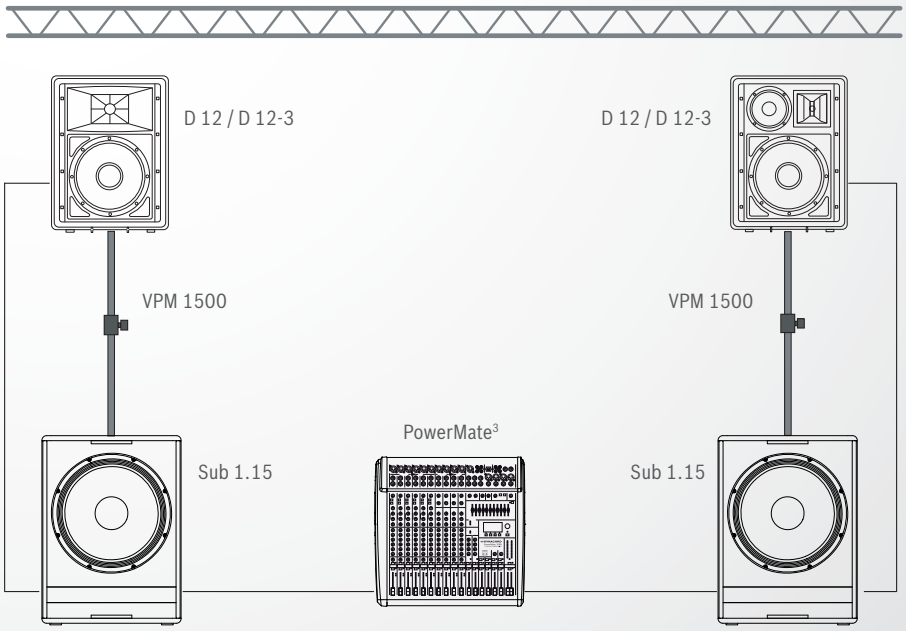


Configuration & Remarks

The minimum impedance for PowerMate³ Power Mixers is 2,6 Ohms.

Thus you can add a third element (Subwoofer or Satellite) of 8 Ohms to each channel.

SMALL TO MEDIUM LIVE APPLICATIONS

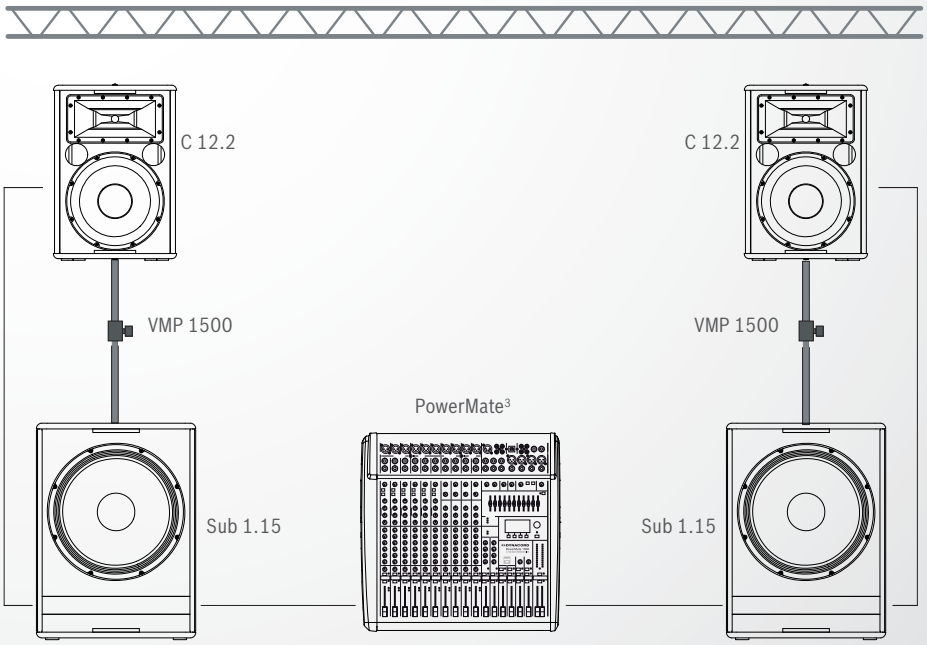


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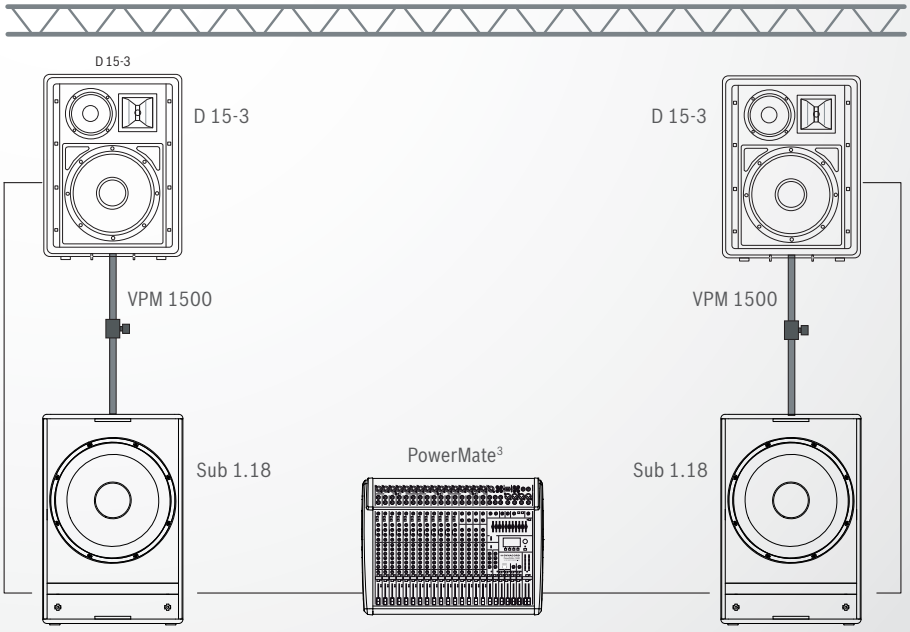


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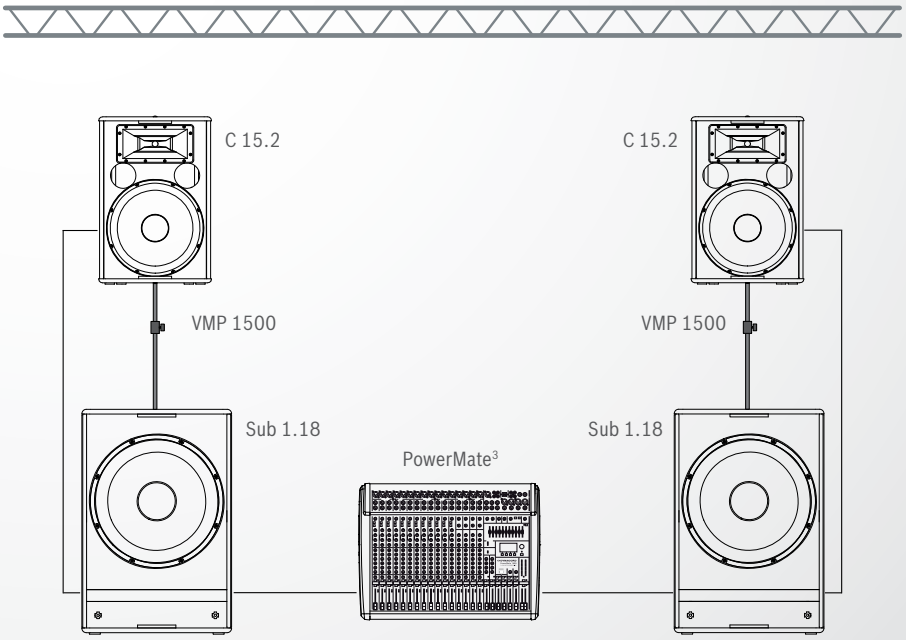


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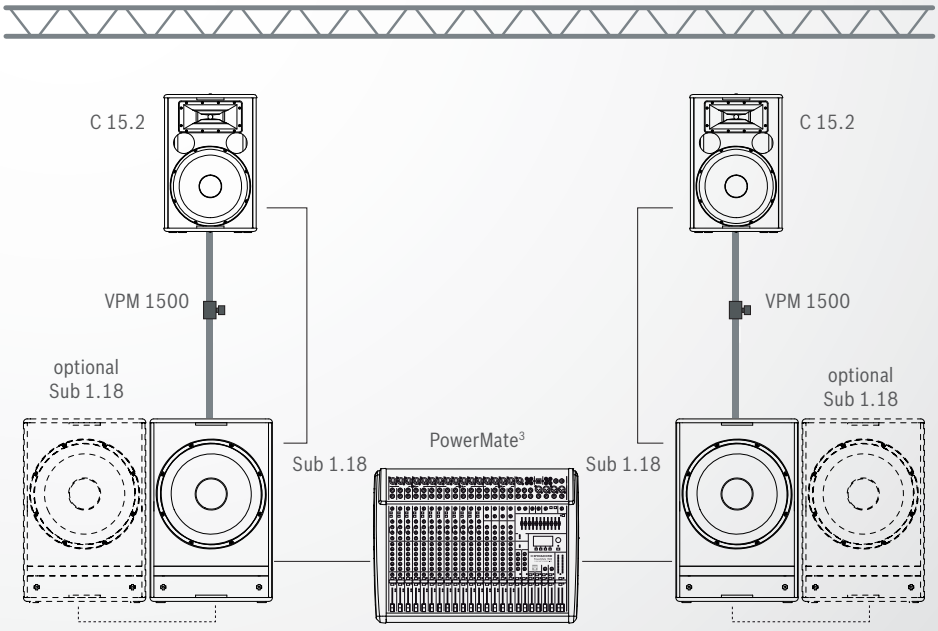


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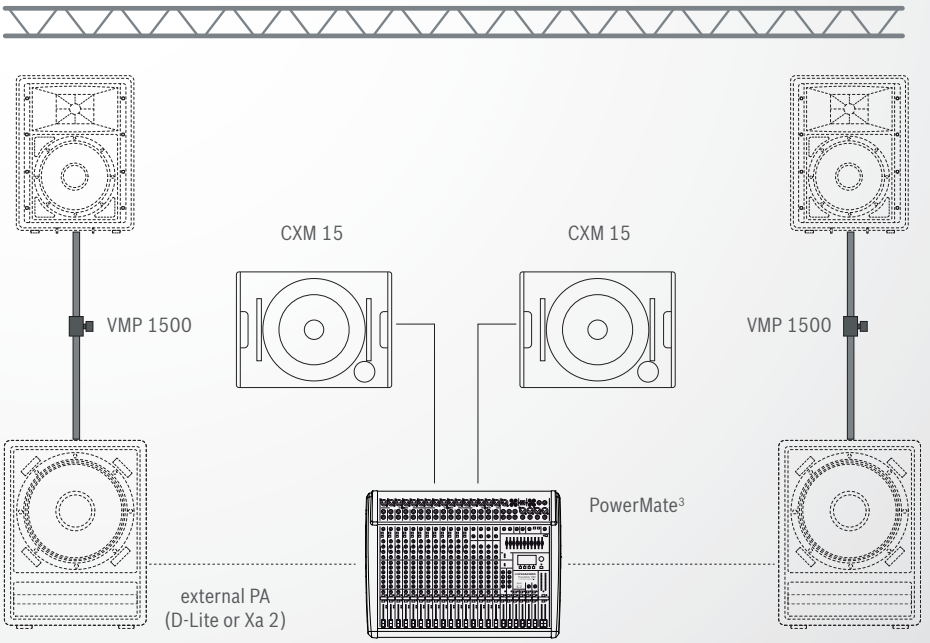


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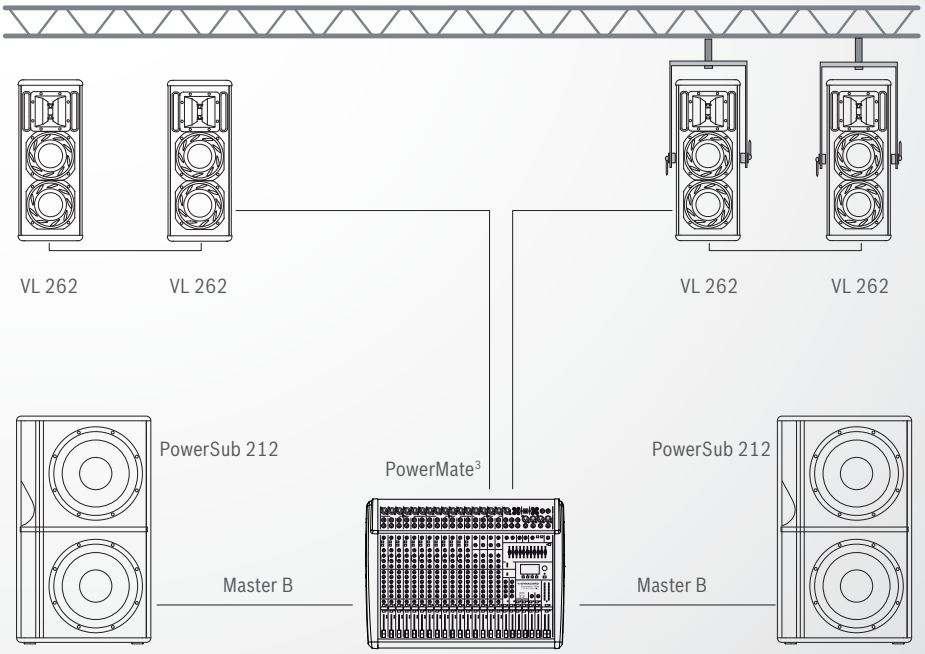


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MEDIUM LIVE APPLICATIONS

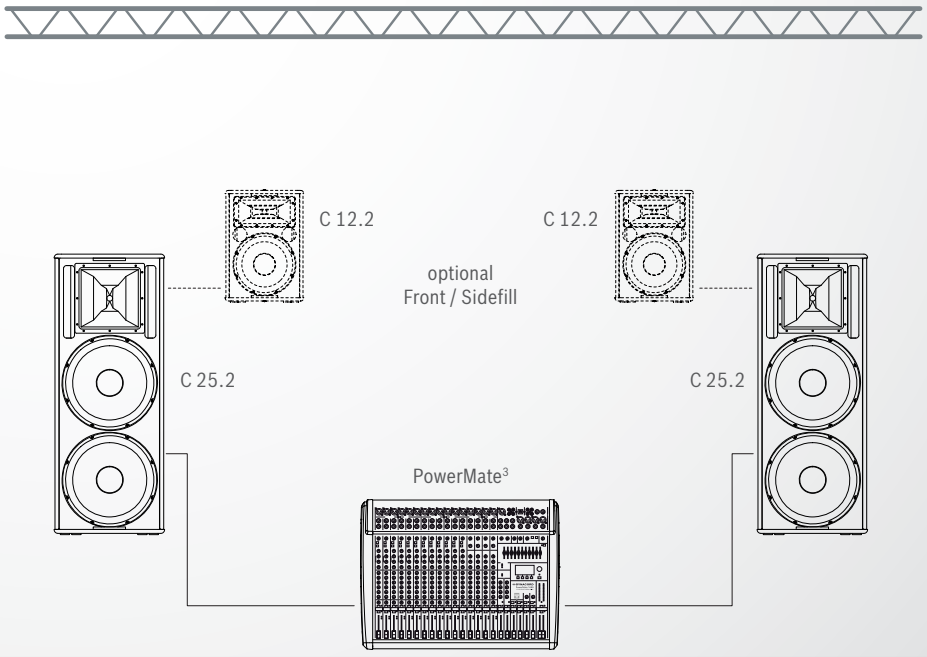


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MEDIUM HIGH POWER LIVE APPLICATIONS



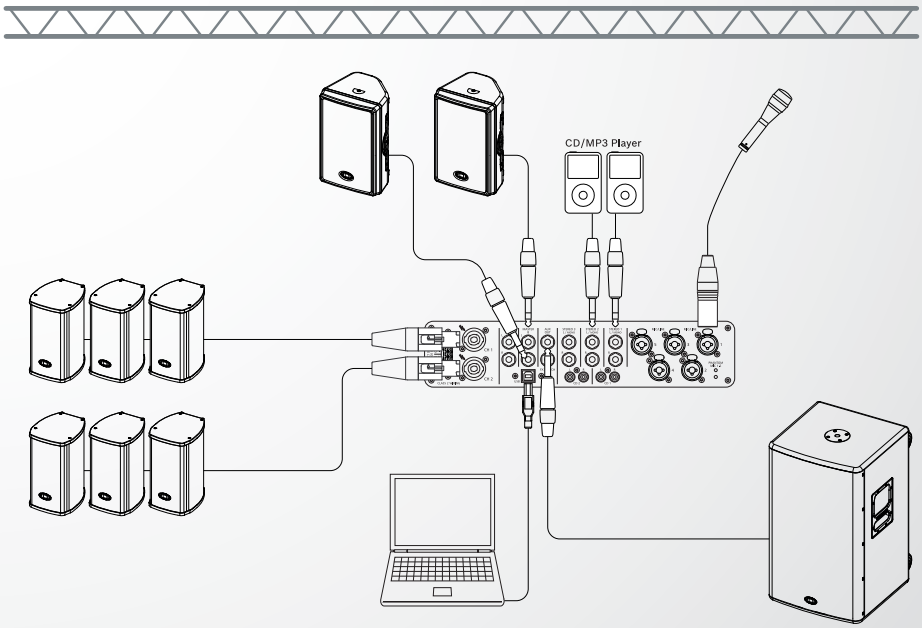
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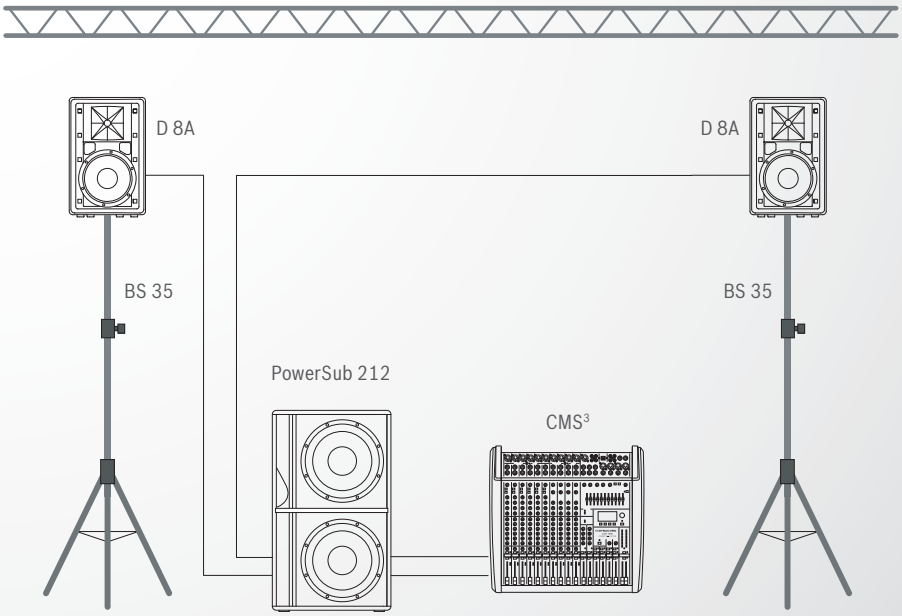
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SMALL LIVE APPLICATIONS

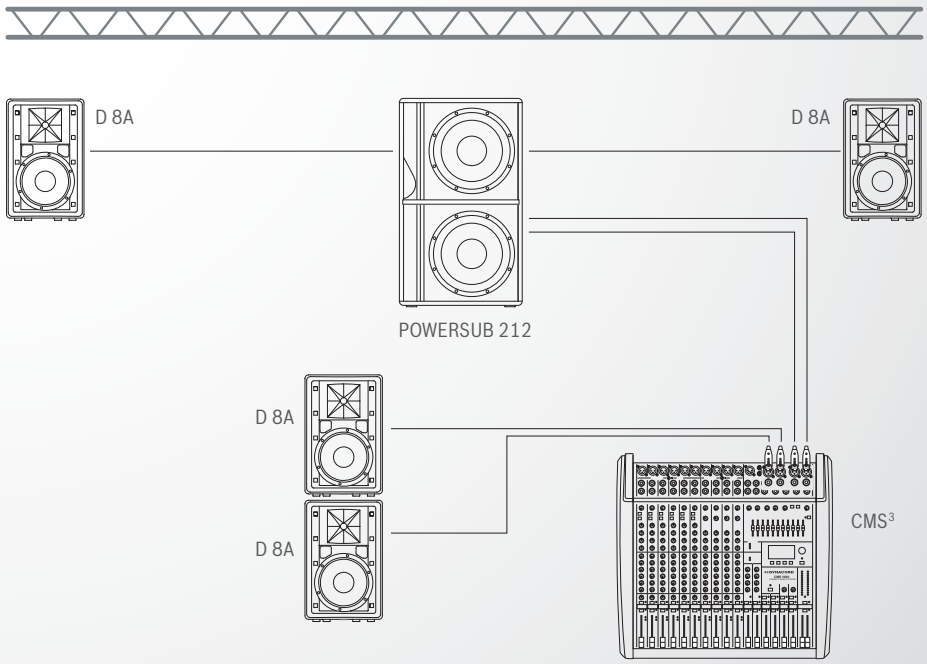


APPLICATION GUIDE CMS³

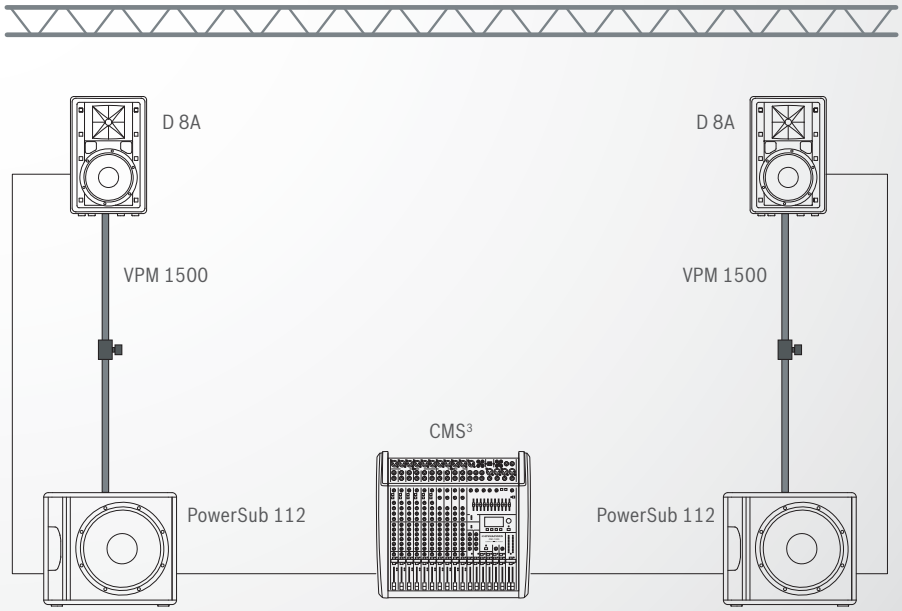
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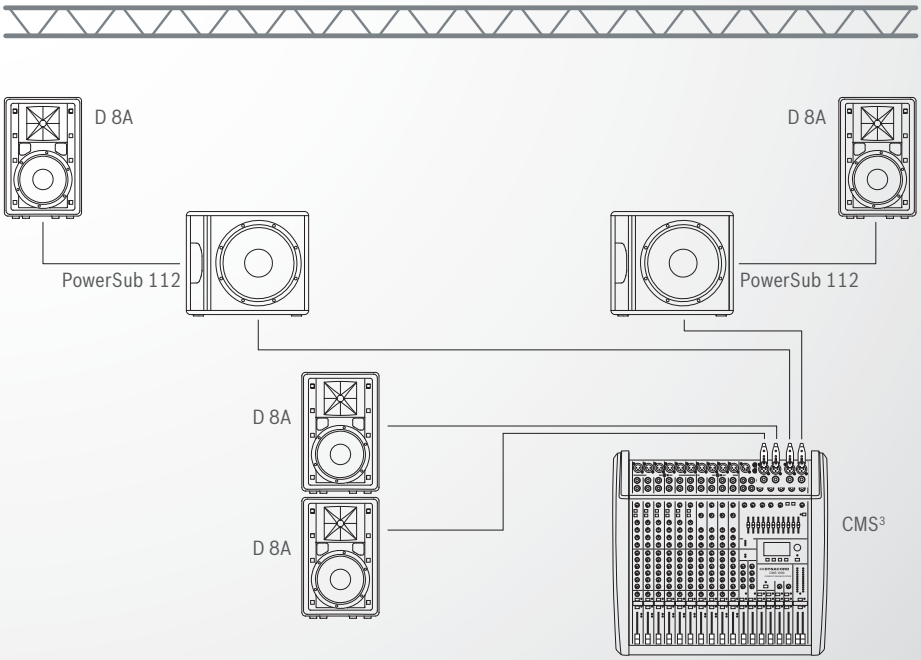
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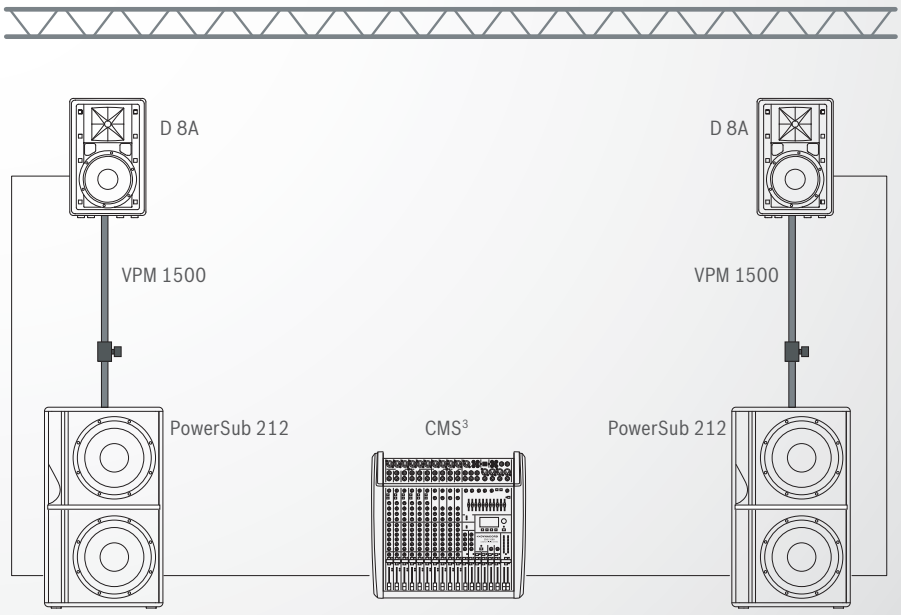
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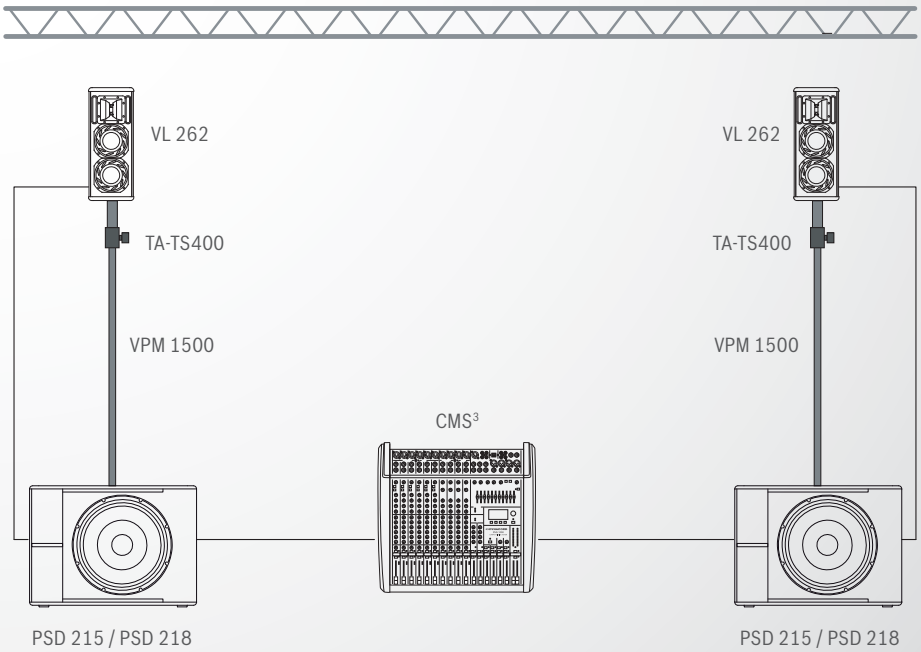
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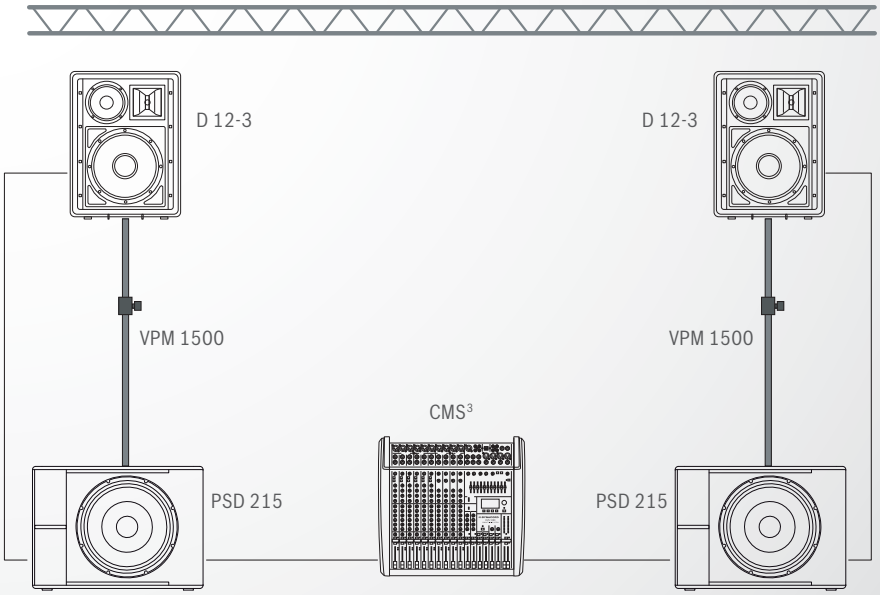
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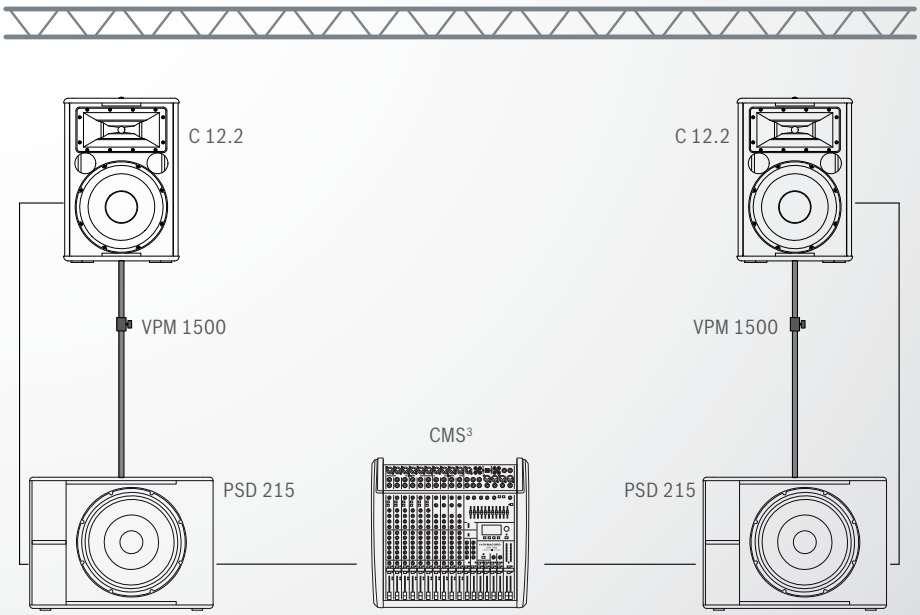
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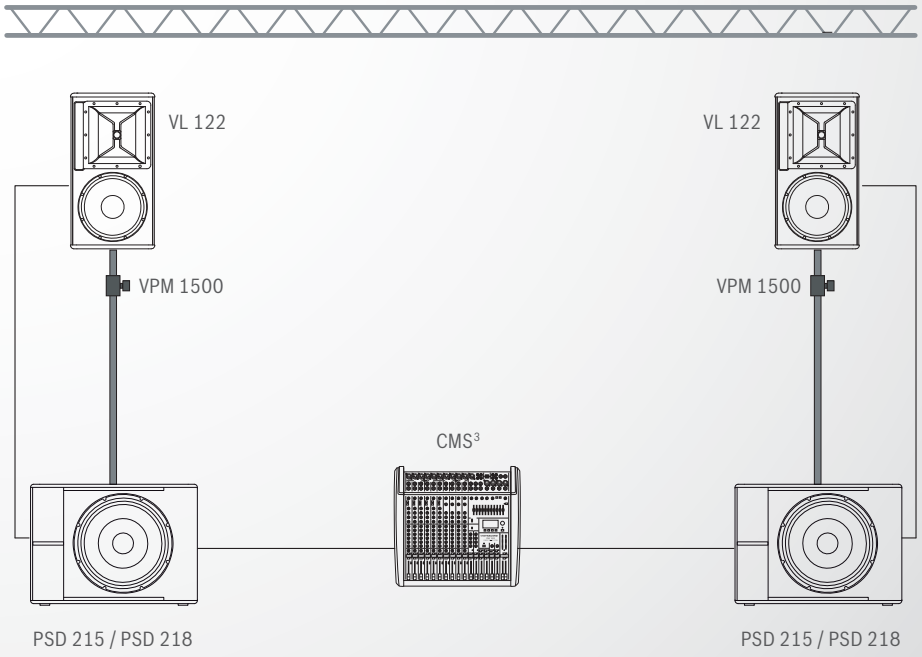
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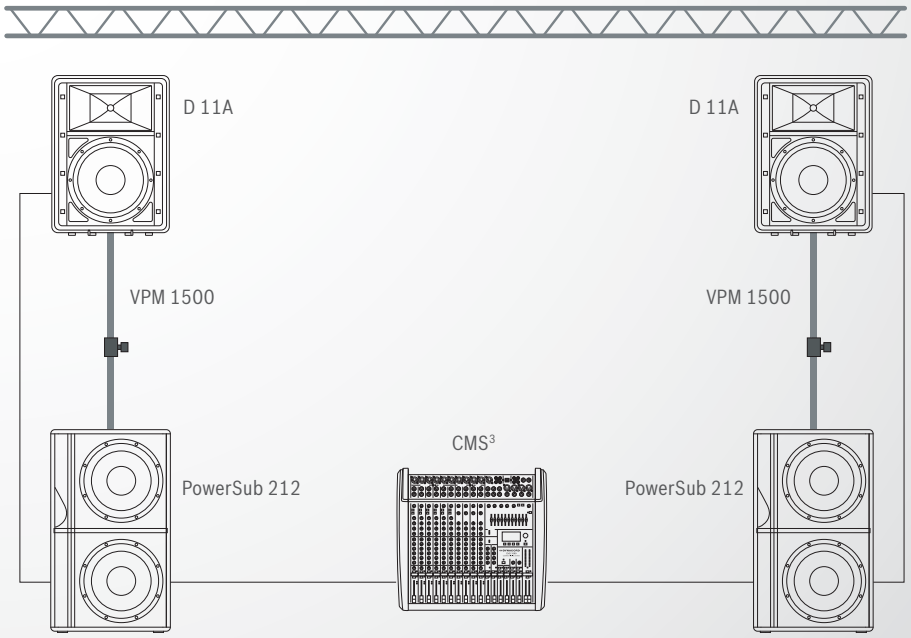
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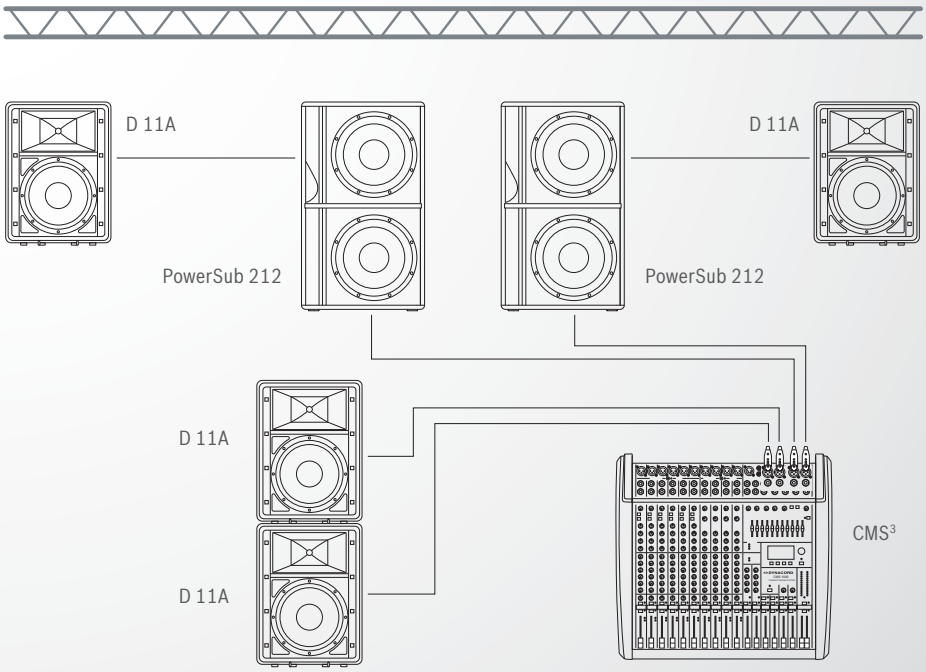
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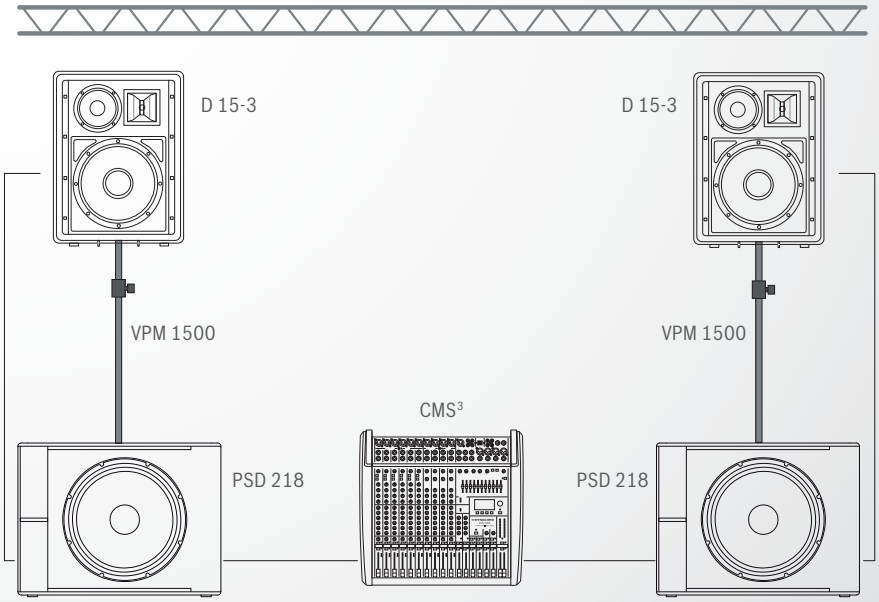
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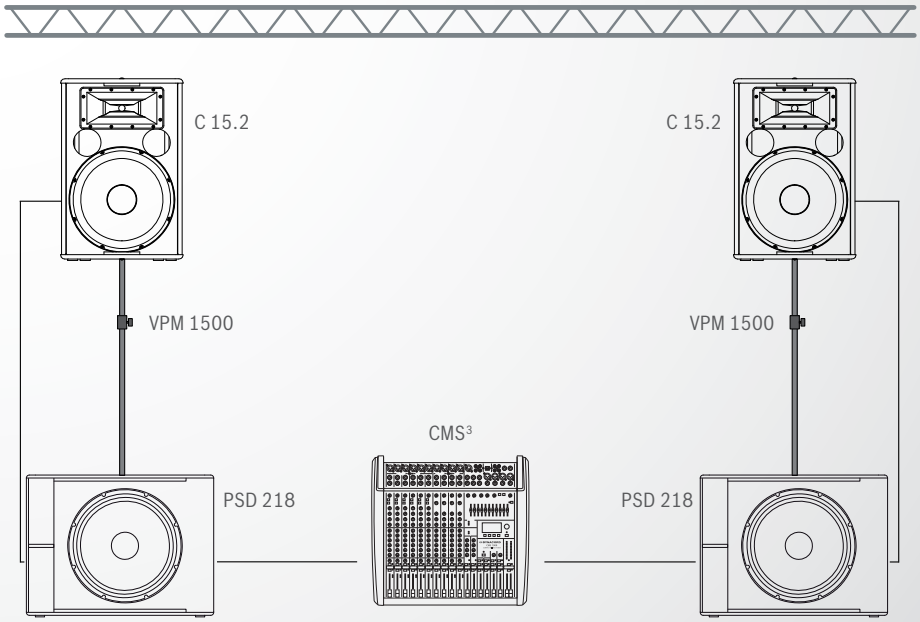
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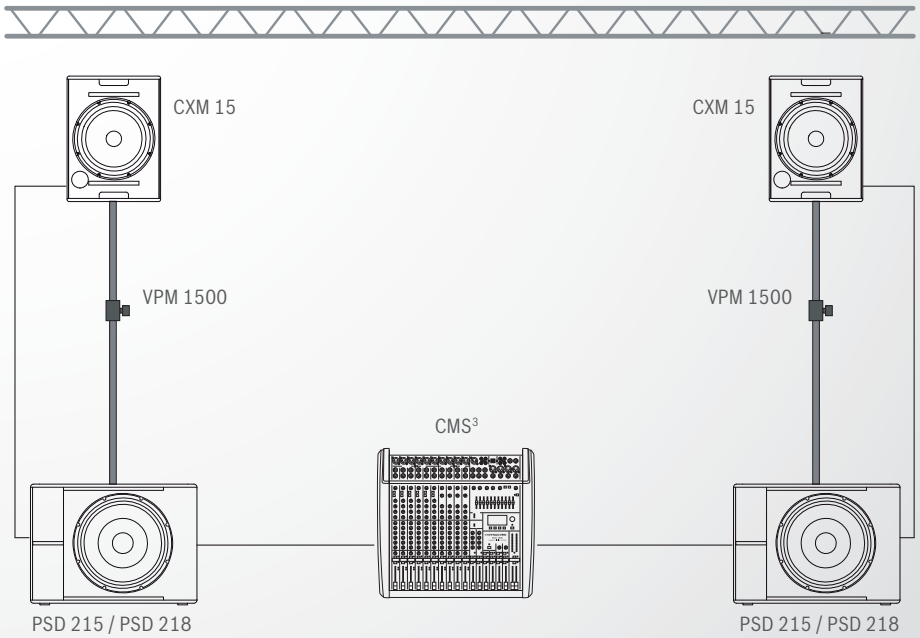
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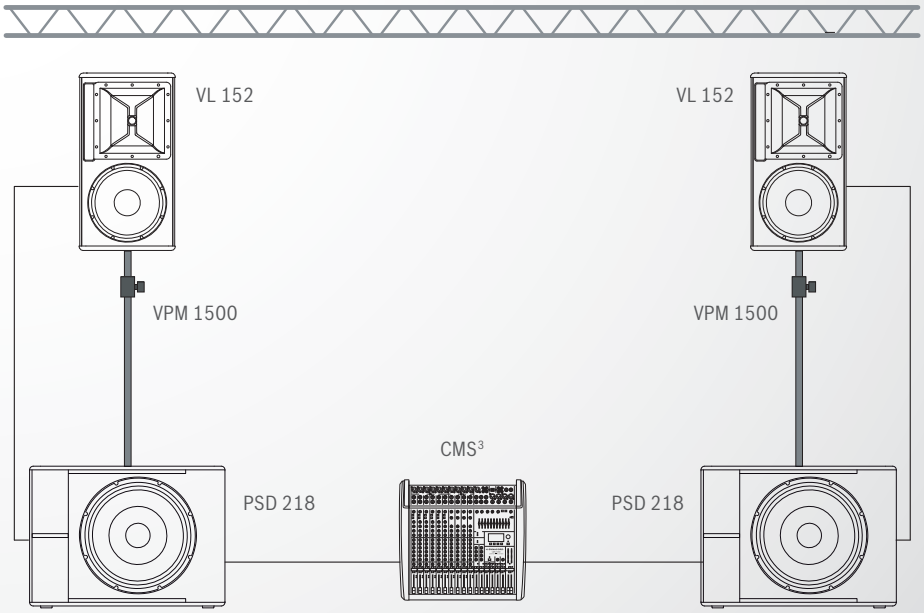
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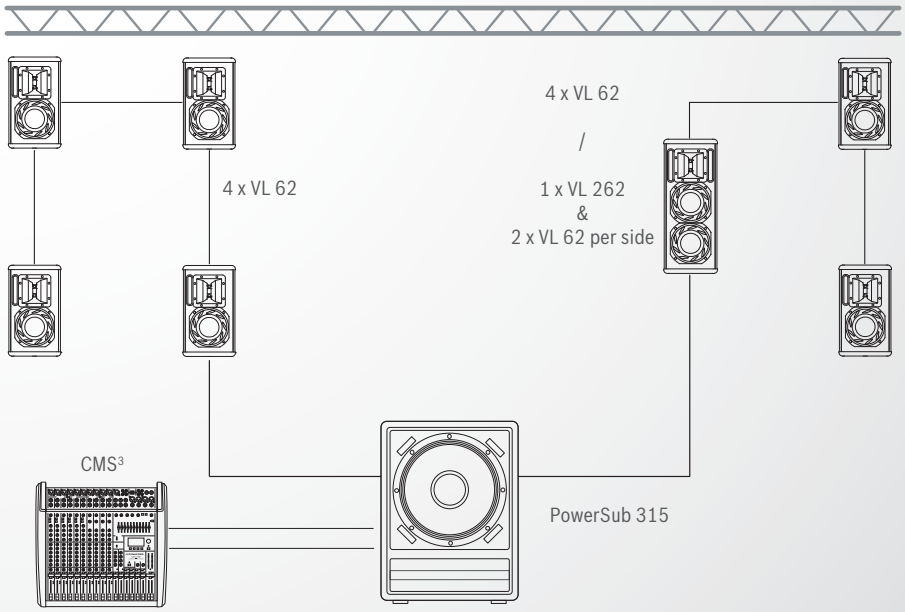
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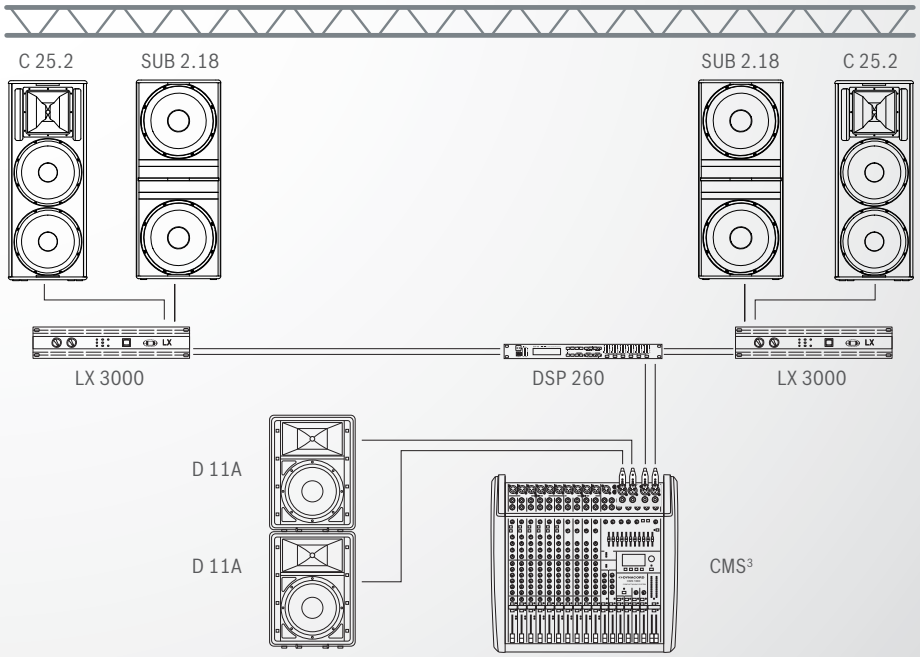
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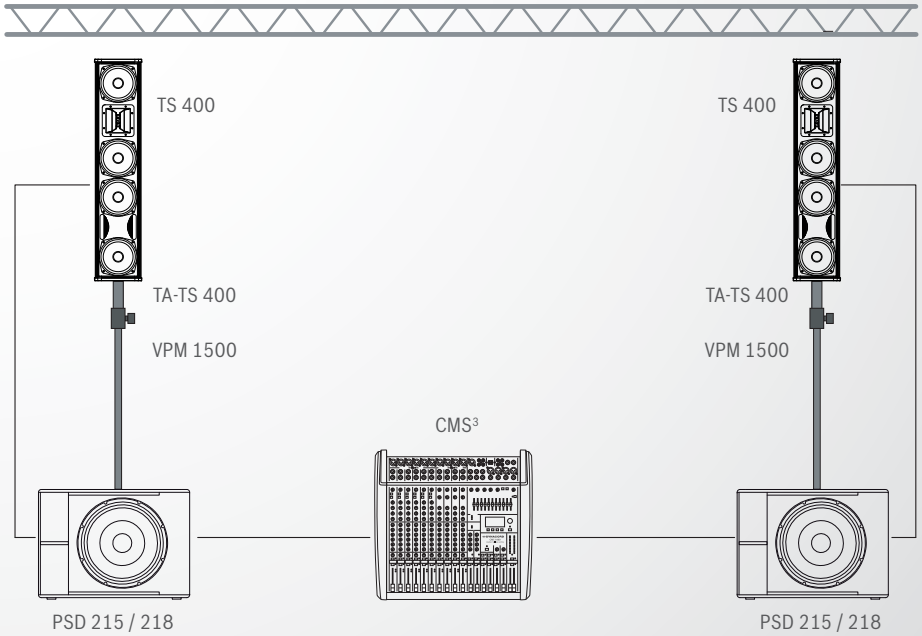
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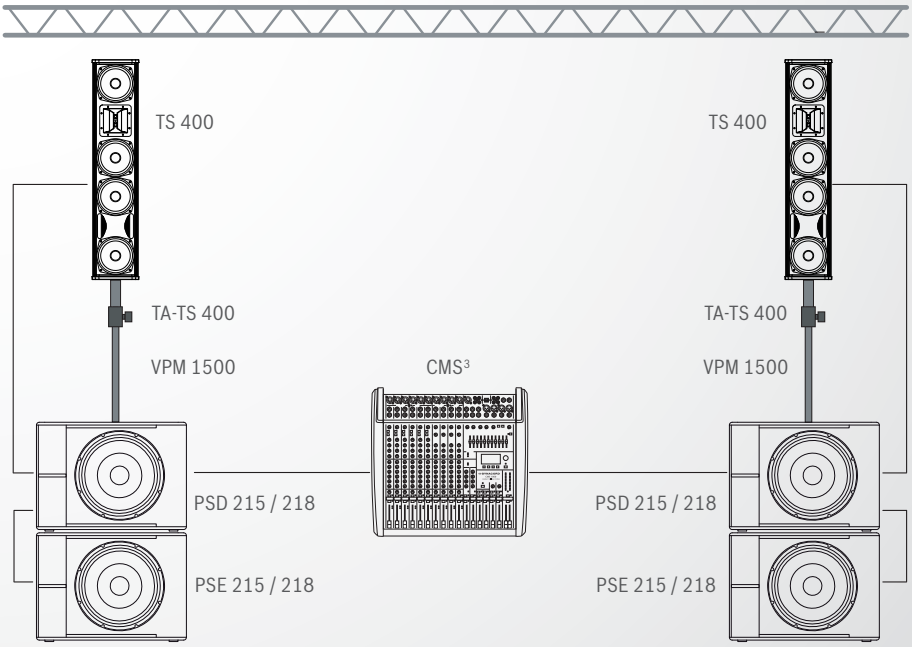
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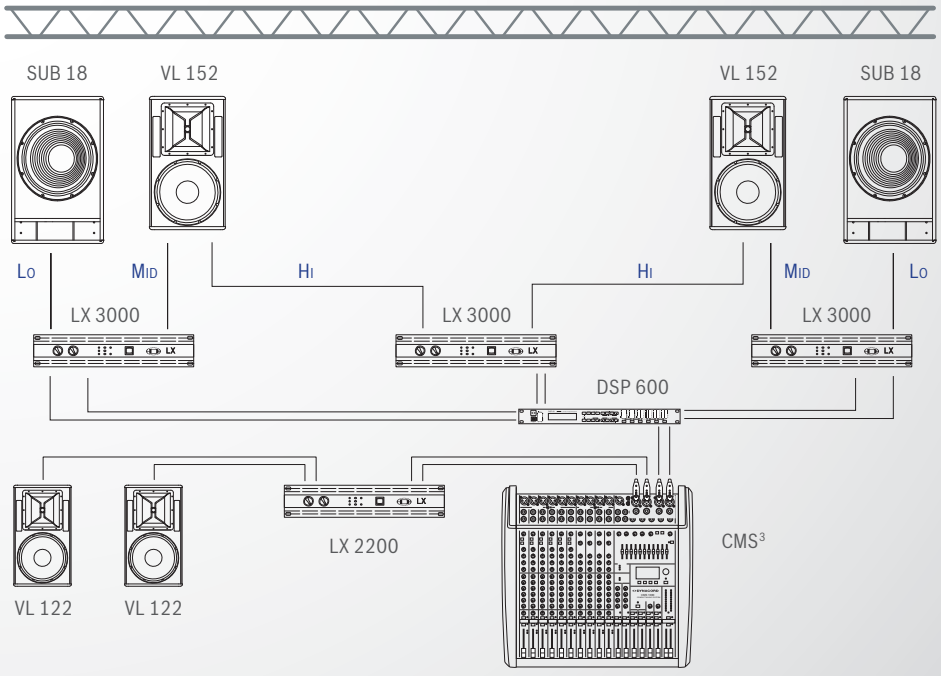
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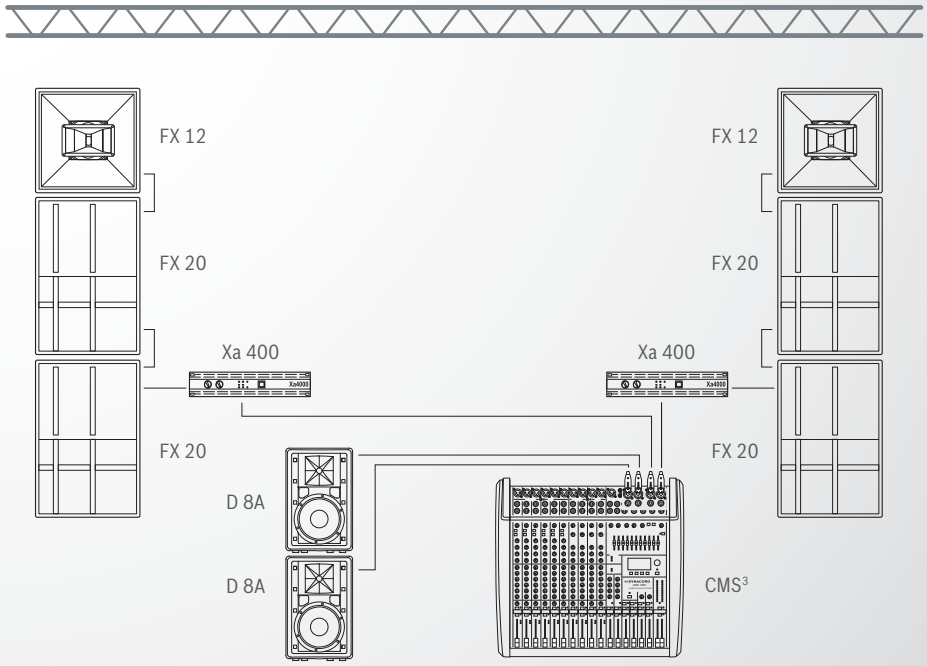
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MEDIUM HIGH POWER LIVE APPLICATIONS



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