



POWERMIXERS

SIGNAL PROCESSING

POWER AMPLIFIERS

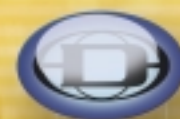
LOUDSPEAKERS



PRO  
Music 2002

E N G L I S H

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**NOTE:** The **APP>>** symbol is linking to a system configuration which is listed in the APPLICATION GUIDE. There you can find the ideal DYNACORD System and all related components for different sound environments.



## *Milestones – Chronicle of our Success*

Music has long been recognised as one of the best ways to entertain and distract people from the cares of everyday life. Engineer Werner Pinternagel would have been well aware of this when in 1945 he founded a radio repair workshop in the Bavarian town of Pilsting. Indeed, the Thuringia-born and raised visionary was busy from the outset, which prompted him to expand his horizons and test out new theories. Within a year, Pinternagel started to experiment with amplifier engineering - which makes the company one of the world's oldest designing manufacturers in this market segment. Early results were the KI cinema amplifier offering an output capacity of 25 watts. Providing work for just four employees, the company meanwhile moved to Landau and their appliances carried the trademark "Dynaphon".

In 1948 the growing number of customers bought the first portable mixing amplifiers, which by then already carried the name DYNACORD. This brand - a combination of the syllables "Dyna" (from "dynamic") and "cord" (building the link to musicality) - quickly turned out to be prophetic. Within just a few years, the rapidly expanding company became one of the world's leading enterprises in the still young field of orchestral electronics and electrical engineering. In 1954 the handicraft company had been transformed into a small industrial enterprise, which showed its high-performance, trend-setting and often visionary products at every international fair of importance, a move which enabled Dynacord to establish a significant export market from the outset.

In order to satisfy the increasing demand, DYNACORD moved to Straubing in 1958. At that time, the company employed 80 people producing a turnover of 1.27 million German Marks with an outstanding export rate of 10 percent. DYNACORD's history of success is inseparably connected to the expansion of the German and international entertainment industry. Looking into the company's reference archives reveals that virtually every top-selling artist or act wanted to perform with the legendary "Sound by DYNACORD": Tom Jones, Donovan, James Last, Lale Anderson, the Original Oberkrainer, The Lords, Udo Jurgens, etc. (the list goes on and on). They all celebrated their greatest successes using DYNACORD-equipment. Representing the immense repertoire of the rapidly growing

array of products, which includes many milestones in the history of professional audio gear, here are some of our worldwide recognized innovations:

- "Echocord" (at that time the ultimate reverb and delay unit, '59)
- "Bassking" (the style-coining bass amp, '63)
- "Eminent" (the legendary mixing amp, '62)
- "Echocord-Mini" (built in the years between '66-'80, sold over 26.000 times)
- "Gigant" (large scale amplifier)
- VRS 23 (fully electronic reverb / reverb system, '80-'88)
- DRP 16 (digital stereo delay unit)
- DRS 78 (gold medal for the stereo reverberation system, '78)
- PSX Power Mixer
- ADDone
- PowerMate
- LittleMax

There is no doubt that with these products Dynacord has made its own unique mark on the audio industry, as it will continue to do in the future.

Mathias von Heydekampf, managing director since 1997, and his dedicated team of over 500 individuals are there to see to that. The focus for any innovation remains the same as it was from the start, and that is the musician; the user himself. The latest evidence of this philosophy comes in the form of the COBRA system, the world's first compact line array system. Designed with the wisdom of experience yet with the future in mind, Cobra represents the kind of technical innovation that will keep Dynacord at the forefront of the audio industry for many years to come.



Power  
Mate

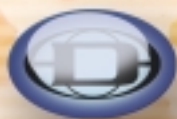
**MORE** POWER  
EFFECTS  
EXTRAS



ER  
POWERMIXERS  
MIXERS

POWERMIXERS





# POWERMIXERS

## PowerMate Series



Features and performance of the PowerMate mixers are truly unique, offering more power, more effects and more extras. Compared to conventional power mixers, the Power Mates offer substantially higher output power and dynamic reserve. The power amps employ dynamic limiters and additional protection- and processor functions. DYNACORD's patented LPN-filters eliminate faults in the transient response of typical PA-speaker systems. Extremely fast audio processors constantly monitor the internal operational status.

All PowerMate models furnish two separately operating digital effect units with 32-bit algorithm processing. They provide high-quality sound and performance, which is comparable to what is usually only found in high-end studio effect equipment! The following effects are right at your fingertips: room, plate, echo reverb, chorus reverb, mono/ stereo delays, modulated delay effects like chorus and flanging and many other exciting effects. The 2 x 99 presets are conveniently activated using the UP/DOWN keys.

The Mic/Line channels provide extensive features including a huge number of useful extras:

- Phantom Power
- Inserts, Gain Control
- Signal-Present/Peak LEDs
- 3-fold Tone Control with parametric mids control
- AUX Busses 1, 2 and 3
- Prefade-Listen.

Another unique specialty of the MIC/ Line channels is the Vocal Voicing Filter. This switchable 80 Hz Lo-Cut filter attenuates unwanted subsonic sound. The Mic/ Stereo Line channels offer some different features: individual gain controls for Mic and Line signals instead of Lo-Cut and vocal voicing switches, 3-fold tone control and balance control instead of PAN-controls.

The AUX 3 monitor bus incorporates a switchable anti-feedback filter with sweepable center frequency between 80 Hz and 7.7 kHz.

The master section of the PowerMates also embodies a wide selection of useful features:

- Effect Returns
- AUX 3 Send via Fader
- Additional Mono Master
- 2 x 7-Band Equalizer
- 2 x 10 LED Master-Display
- Stereo-Return
- 2-Track-Return Standby Switch

To ensure quick and easy operation even with dimmed ambient lights, an optionally available (12V/2.4W) XLR-gooseneck-Litlite can be fitted onto the PowerMates.

The shipped supplies also include a rigid metal protective cover.

Ease and handling comfort is gained through the recessed carrying handles on both sides.





## PowerMate 600

The PowerMate 600 carries on the tradition of manufacturing power mixers that DYNACORD started about 50 years ago. Integrating mixer, power amplifier and FX-unit into a single, compact en-closure without jeopardizing the performance of each individual part reaches a new peak in the PowerMate 600.

Never before such compact size offered such power, features and sound for only such little money. Despite the fact that the PowerMate 600 is extremely compact and small, it delivers 2 x 300 watts into 4 ohms offering immense dynamic reserve at absolutely low distortion.



6/8 MIC/Line channels  
(2 stereo)



## PowerMate 1000

The PowerMate 1000 can already be called a classic amongst power mixers. One year after being introduced to the market, the GDM (Gesamtverband deutscher Musikalienhändler) awarded it to be product of the year 1999. Until today, the PowerMate 1000 received numerous other awards.

Offering lots of features, effects of outstanding quality and 2 x 500 watts output capacity, the PowerMate 1000 is the ideal choice for a wide range of applications, starting with the one-man-band keyboarder, to the small ensemble, to the permanent installation application.

Super sound, very flexible and compact in size – the perfect plug&play problem solution.



10 MIC/Line channels  
(4 stereo)





**POWERMIXERS**

**PowerMate Series**



## *PowerMate 1600*



16 MIC/Line channels  
(4 stereo)

The user who needs more than those 10 channels the PowerMate 1000 has to offer, should take a closer look at the PowerMate 1600. While offering 16 channels in the mixer section, where each of the four stereo channels are designed for the connection of microphones, its entire master section including the integrated FX-unit as well as the 2 x 500 watts power amp, the LPN filters and all the embodied protection circuitry is identical to the PowerMate 1000.

## *PowerMate 2200*



22 MIC/Line channels  
(4 stereo)

Ideally suitable for bigger sound reinforcement applications, the PowerMate 2200 offers more power and 22 channels; enough to meet more demanding requirements while still relying on the operational comfort and sound of the PowerMate Series.

Next to 18 microphone channels and 4 stereo inputs, the truly compact mixer frame also houses two digital multi-FX-units, an stereo equalizer, a litlight connector, and it comes with a useful transportation cover lid. Up to 22 mics can be connected since the four stereo channels also accept mic level sources.

The newly designed integrated power amp, which of course employs all the protection and limiter circuitry that the PowerMate Series is famous for, provides an output power capacity of 2 x 700 watts.



## MP7 Entertainment System

*Multi-flexible entertainment system including stereo mixer, digital double-effect unit and 2 x 300 watts power amp!*

ENTERTAINER

MOBILE DJ

YOU AND ME

CLUB & BISTRO

ADMINISTRATION

RENTAL

Stereo mixer amplifier. Highly versatile, little effort, multitude of functions – highest dependability. This puts an end to obscure and space consuming technical instruments! Everything is integrated and protected: special dynamic limiters provide loud-speaker protection plus the usual protection circuitry. Well-known Dynacord-quality with 3 years warranty. 2 x 300 watts output power are offered on a width of 18.11 inches times 13.39 inches depth with a weight of merely 28.66 lb. LPN-processing – warranty for powerful sound with a massive bass-punch!

### Mixer

- 3 Mic inputs (channel 1 incl. talkover function)
- 2 x 4 stereo inputs (incl. 2 phono cartridge)
- Crossfaders are individually assignable
- Killer-EQ (low, mid, high, from -30 to +9 dB)

### Effects

- 2 x 99 stereo effects (presets) for the Mic inputs. The two 18-bit digital processors ensure high-quality effect combinations in renowned Dynacord-quality but with improved 32-bit algorithms.

### Patch-Bay

- Master A and B, monaural, Subwoofer-Out with Lo-Pass filter, record send

### Control

- Perfect headphones monitoring through PFL/PGM/Mix switching (with exclusive 20 mm Transition-Fader)



### Power Amplifier

- 2 x 300 watts/4  $\Omega$  · LPN-processor · up to three 8  $\Omega$  speakers can be connected to a single channel
- 7-band graphic Master Stereo-EQ

### Case

- Lightweight (only 28.66 lb)
- stable carrying handles and metal cover (no flight-case needed)





### SPECIFICATIONS

	PowerMate 600	PowerMate1000	PowerMate 1600	PowerMate2200	MP7
<b>Maximum Midband Output Power,</b> 1 kHz, THD≤1% into 4 Ω	2 x 340 W	2 x 570 W	2 x 570 W	2 x 760 W	2 x 340 W
into 8 Ω	2 x 200 W	2 x 340 W	2 x 340 W	2 x 430 W	2 x 200 W
<b>Rated Output Power,</b> 20 Hz ... 20 kHz, THD≤0.2% into 4 Ω	2 x 300 W	2 x 500 W	2 x 500 W	2 x 700 W	2 x 300 W
into 8 Ω	2 x 150 W	2 x 250 W	2 x 250 W	2 x 350 W	2 x 150 W
<b>Maximum Output Voltage</b> of power amplifier, no load	43 Vrms	58 Vrms	58 Vrms	63 Vrms	43 Vrms
<b>THD</b> at 1kHz, MBW=80kHz					
MIC input to Main L/R output, +16 dBu	< 0.006%	< 0.006%	< 0.006%	< 0.006%	< 0.006%
Power amplifier input to Speaker L/R output	< 0.08%	< 0.05%	< 0.05%	< 0.05%	< 0.08 %
DIM 30, power amplifier	< 0.03%	< 0.015%	< 0.015%	< 0.015%	< 0.03 %
IMD-SMPTE, power amplifier, 60Hz, 7 kHz	< 0.2%	< 0.15%	< 0.15%	< 0.15%	< 0.2%
<b>Frequency Response,</b> -3dB ref. 1kHz					
Any input to any Mixer output	15Hz ... 60kHz	15Hz ... 60kHz	15Hz ... 60kHz	15Hz ... 60kHz	15Hz ... 60kHz
Any input to Speaker L/R output	30Hz ... 40kHz	30Hz ... 40kHz	30Hz ... 40kHz	30Hz ... 40kHz	30Hz ... 40kHz
<b>Crosstalk Damping,</b> 1kHz					
Fader and AUX-Send attenuation	> 80 dB	> 80 dB	> 80 dB	> 80 dB	> 90 dB
Power amplifier L-R	-	> 60 dB	> 60 dB	> 60 dB	-
Channel to channel	> 70 dB	> 70 dB	> 70 dB	> 70 dB	> 70 dB
<b>CMRR,</b> MIC input, 1kHz	> 80 dB	> 80 dB	> 80 dB	> 80 dB	> 80 dB
<b>Input Sensitivity,</b> all level controls in max. position					
Mic Input	-74 dBu (155μV)	-74 dBu (155μV)	-74 dBu (155μV)	-74 dBu (155μV)	-74 dBu (155μV)
Line Input (Mono)	-54 dBu (1.55mV)	-54 dBu (1.55mV)	-54 dBu (1.55mV)	-54 dBu (1.55mV)	-54 dBu (1.55mV)
Line Input (Stereo)	-34 dBu (15.5mV)	-34 dBu (15.5mV)	-34 dBu (15.5mV)	-34 dBu (15.5mV)	-24 dBu (49mV)
Power Amplifier Input	+6 dBu (1.55V)	+6 dBu (1.55V)	+6 dBu (1.55V)	+6 dBu (1.55V)	+6 dBu (1.55V)
<b>Maximum Level,</b> mixing desk					
MIC inputs	+ 11 dBu	+ 11 dBu	+ 11 dBu	+ 11 dBu	+ 11 dBu
Line inputs	+ 30 dBu	+ 30 dBu	+ 30 dBu	+ 30 dBu	+ 30 dBu
All other inputs	+ 20 dBu	+ 20 dBu	+ 20 dBu	+ 20 dBu	+ 20 dBu
Record Send output	+ 14 dBu	+ 16 dBu	+ 16 dBu	+ 16 dBu	+ 14 dBu
All other outputs	+ 20 dBu	+ 20 dBu	+ 20 dBu	+ 20 dBu	+ 20 dBu
<b>Input Impedances</b>					
MIC	1.8 kΩ	1.8 kΩ	1.8 kΩ	1.8 kΩ	1.8 kΩ
Insert Return	-	2.2 kΩ	2.2 kΩ	2.2 kΩ	
EQ Input and 2 Track Return	10 kΩ	8 kΩ	8 kΩ	8 kΩ	
All other inputs	> 15 kΩ	> 15 kΩ	> 15 kΩ	> 15 kΩ	> 10 kΩ
<b>Output Impedances</b>					
Record Send	1 kΩ	1 kΩ	1 kΩ	1 kΩ	1 kΩ
Phones	47 Ω	47 Ω	47 Ω	47 Ω	47 Ω
All other outputs	75 Ω	75 Ω	75 Ω	75 Ω	75 Ω
<b>Equivalent Input Noise,</b>					
MIC Input, A-weighted, 150 Ω	-130 dBu	-130 dBu	-130 dBu	-130 dBu	-130 dBu
<b>Noise,</b> Channel inputs to Main L/R outputs, A-weighted					
Master fader down	-90 dBu	-92 dBu	-92 dBu	-92 dBu	-104 dBu
Master fader 0 dB, Channel fader down	-89 dBu	-89 dBu	-87 dBu	-85 dBu	-91 dBu
Master fader 0 dB, Channel fader 0 dB, Channel gain unity	-83 dBu	-83 dBu	-81 dBu	-79 dBu	-84 dBu
<b>Signal/Noise-Ratio,</b> power amplifier, A-weighted	105 dB	104 dB	104 dB	106 dB	105 dB
<b>Equalization</b>					
LO Shelving	± 15 dB / 60 Hz	± 15 dB / 60 Hz	± 15 dB / 60 Hz	± 15 dB / 60 Hz	+9/-30 dB / 60 Hz
MID Peaking, mono inputs	-	± 15dB/100Hz...8 kHz	± 15dB/100Hz...8 kHz	± 15dB/100Hz...8 kHz	± 12 dB / 2.4 kHz
MID Peaking, stereo inputs	± 12 dB / 2.4 kHz	± 12 dB / 2.4 kHz	± 12 dB / 2.4 kHz	± 12 dB / 2.4 kHz	+9/-30 dB/12 kHz
HI Shelving	± 15 dB / 12 kHz	± 15 dB / 12 kHz	± 15 dB / 12 kHz	± 15 dB / 12 kHz	+9/-30 dB/12 kHz
Master EQ, 2x7-band	± 10 dB	± 10 dB	± 10 dB	± 10 dB	± 10 dB
<b>Power Consumption</b> at 1/8 maximum output power, 4 Ω	450 W	600 W	670 W	1100 W	450 W
<b>Dimensions, (mm)</b>					
Width	455.5	508.5	667.5	826.5	455.5
Height	175.8	210.3		210.3	175.8
Depth	340.6	478.7	478.7	478.7	340.6
<b>Weight,</b> including lid	13 kg	20 kg	24 kg	29 kg	13 kg
<b>Optional</b>					
Rack-Mount-Kit PM600 (NRS90239); Wall-Mount-Kit PM600 (NRS90242); Rack-Mount-Kit PM1000 (NRS90220); Gooseneck Lamp; 12V/2.4W; 12"; XLR; (112700); Footswitch FS11(110693); MP7: Transition Fader (NRS 90261)					

Technical Specifications: Mixing Section in rated condition, Unity Gain ( MIC Gain 20 dB ), all faders position 0 dB, all pots in mid position,  
Master fader +6dB, Amplifier rated output power into 8 ohms, one channel driven, unless otherwise specified.



**SIGNAL PROCESSING**





## DSP 244

*Providing 48-bit algorithms, 24-bit AD/DA conversion and a dynamic range that exceeds 115 dB, the DSP 244 sets new standards in digital loudspeaker controlling and loudspeaker signal processing.*



### Universal "Tool-Box"

Its 2-in-4-design and a dynamic range that exceeds 115dB, the DSP244 is the ideal controller and manager in any active 2-, 3- or 4-way audio system installation. The freely configurable routing allows assigning a single input or the summed signal of both inputs to each of the 4 outputs. Together with its extensive filtering capabilities, which can also be applied to the input signals, the DSP244 represents the convincing toolbox for the classical management of any loudspeaker system set-up. Whether in theatres or concert halls and no matter if used in mobile or fixed installations, the DSP244 represents always the optimum solution.

### Comprehensive Signal Processing

Each input signal can be affected by 5 EQ-filters that can be individually utilized as parametric EQs, Lo/Hi-shelving EQs or Lo/Hi-Cuts. It is possible to divide and assign the maximum overall delay time of 5.4 sec. to either input signal, the summed signal or to all 4 outputs.

Each output provides separate Hi- and Lo-Pass filters, offering the choice between the following characteristics: Linkwitz-Riley, Butterworth or Bessel filters (6, 12, 18, 24 dB/oct. slope). Each output channel offers 4 additional filters, which can be configured as parametric EQs, Lo/Hi-shelving EQs, Lo/Hi-Cuts but also as All-Pass filters. Next to matching output level and polarity, each output is controlled by a compressor/ limiter with editable threshold, attack and release times.

### Reliable Operation

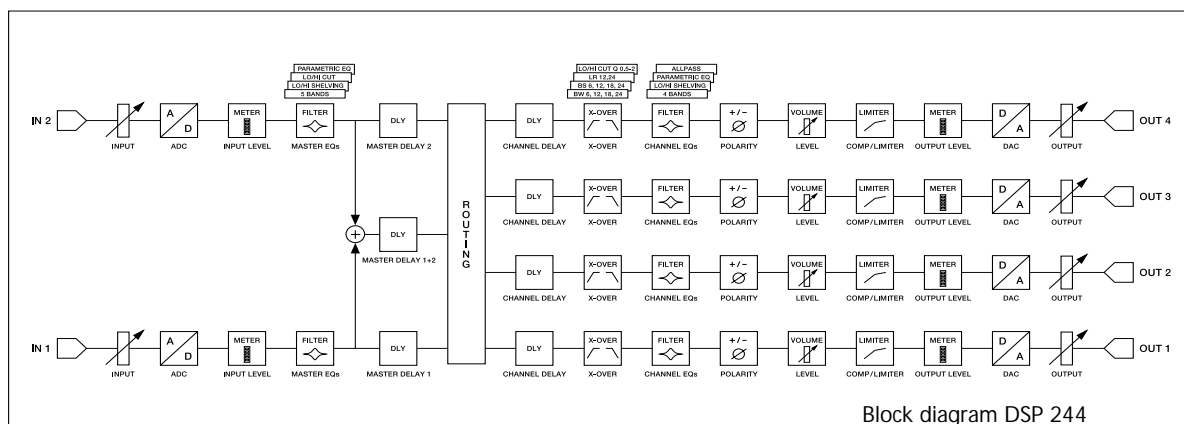
Comprehensive controls and a large-scale graphic display (120 x 32 dots) ensure convenient editing and control over all parameters. The status-LEDs in each output continuously indicate the momentary configuration of the corresponding channel (sub, low, mid, hi or full range). Backlit muting switches, convenient rotary controls and a 5-segment LED-chain allow "hardware-based" controlling the outputs. In addition to the 50 Dynacord loudspeaker system configuration presets, it is possible to store 30 user presets. The DSP244's locking function offers convenient protection against unallowed operation.

### Optional Extensions

The DSP244 comes with RS-232 and a complete MIDI-interface. The latter allows linking up to sixteen DSP244s and to easily save and load presets. The RS-232 interface provides the possibility to remote control and configure the DSP244 via supplied PC editing software program (WIN95/98/NT/WIN2K).

Additionally, these interfaces also allow installing new software and presets.

Optionally available for retrofitting are a RS-485 interface or control inputs which allow to remotely control program changes and mute commands.



## SPECIFICATIONS

### DSP 244

Mains Voltage	90 - 250 VAC / 50 - 60 Hz
Power Consumption	20W
Safety Class	I
Inputs	2 x XLR IN, electronically balanced, transformer optional 2 x XLR OUT (Direct Out)
Nominal Input Voltage	1.55 V / + 6 dBu
Max. Input Voltage	24.5 V / + 30 dBu
Input Impedance	20 kΩ
Common Mode Rejection	> 40 dB
A/D Conversion	24-bit, Sigma-Delta, 128 times oversampling, linear phase
Outputs	4 x XLR OUT, electronically balanced
Nominal Output Voltage	1.55 V / + 6 dBu
Max. Output Voltage	8.7 V / + 21 dBu
Output Impedance	< 100 Ω
Min. Load Impedance	600 Ω
D/A Conversion	24-bit, Sigma-Delta, 128 times oversampling
Frequency Response	20 Hz - 20 kHz (-0.5 dB)
S/N Ratio	115 dB (typical)
THD without transformer	< 0.01 %
THD with transformer	< 0.05 %
X-over	6, 12, 18, 24 dB/oct. slope; Butterworth, Bessel, Linkwitz-Riley
Filters	26 parametric equalizers low-shelving equalizer, switchable for LPN (Lowpass-Notch-Filter) operation, hi-shelving equalizer, switchable to 6 / 12 dB slope, lo-cut filter (B-6 alignment switchable), hi-cut filter, all-pass filter
Compressor / Limiter	4 digital compressors / 4 digital limiters
Delay	3 master delays (2 ms - 900 ms) 4 channel delays (0 ms - 900 ms) delay - increment 21 μsec
Data Format	24-bit linear A/D - D/A conversion, 48-bit processing
Sample Rate	48 kHz
MIDI IN / OUT / THRU	data dump, master / slave operation / remote control
RS-232	data dump, remote control, firmware upgrade
Display	122 x 32 dots, graphic LC - Display with LED - backlight
Dimensions	483 x 43.6 x 374 (W x H x D in mm), 19", 1 RU
Weight	5 kg
Protection Function	password lock
Accessories	PA 1 fiber glass - cover lid 1 RU
Options	RS-485 Interface (NRS 90247) Contact Closure Interface (NRS 90246) Input Transformer (NRS 90244)





## CrossMax Controller Software

The CrossMax software is a unique audio-tool for creating DSP244 preset-configurations, offering clear graphic indication of all utilized filter, delay and level parameters and additionally allows integrating acoustic frequency and phase responses for the controlled DYNACORD loudspeaker system per output. These "sheer" component-values result from DYNACORD's own free-field measurements, without any room acoustics influence. CrossMax calculates the complex sum of the actual filter, level and delay parameters in relation to the original speaker data. Thus, not only that the filter parameters are presented on the screen, but, for the first time ever in real-time, the acoustic frequency response of the controlled speaker system is also displayed; any minor change in a filter's or delay's setting becomes instantly visible and audible. Even though the desired combination is not included, being one of the 50 factory presets, loudspeaker presets are of course available for any current DYNACORD speaker system.

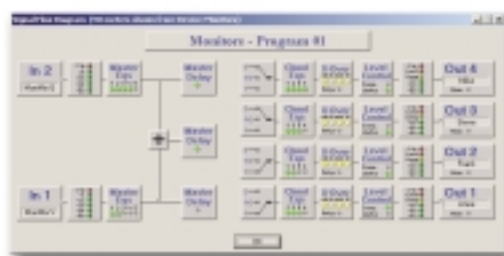
### CrossMax – a network for controlling 124 outputs

In combination with the RS-485 option, the CrossMax also allows controlling and monitoring complex, large-scale loudspeaker systems. Next to displaying all parameters and the frequency response of a DYNACORD speaker system, input and output levels plus compressor and limiter thresholds of all DSP244s are indicated in real-time as well – total control of up to 124 controller outputs.



### Block Diagram Indication

Most editable DSP244 parameters are clearly displayed in a block diagram. Following the input level indication are five individual filters per input, which can be used as Hi- or Lo-Pass (6dB/12dB-Peaking), Hi- or Lo-Shelving (6/12dB-LPN), or fully parametric EQs.



The Master-Delay offers delay times till up to 900 ms. The summed signal of the two inputs is handled as virtual third input and has its own delay time setting. The flexible routing allows assigning any input signal, including the sum-signal to each output. Four filters are provided for each output. A selectable All-Pass filter for matching group delay times that occur with overlapping frequency bands complements the filters of the Master-EQ. Following the crossovers (Hi- and Lo-Pass filters per output, each) and the output delay is a discrete compressor and a limiter for changing the audio signal's dynamic, which provides additional overload-protection for the connected loudspeaker components. Output level indication is provided in real-time – equivalent to the editor – while level control and mute-function complete the user interface.

### Clearly Structured Configuration

Next to versatility, it is especially the easy and reliable handling that is vital for a software product's success.

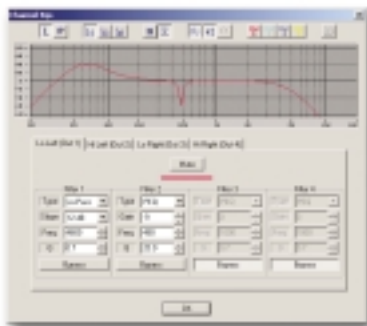
In network operation (RS-485), the user can choose from two screen-modes. Live mode provides display of all units with their relevant level indication. Output levels and mute-function can be adjusted, likewise to the functionality that an appliance installed in a side-rack shelf would offer. All other functions, like altering parameters or loading different presets are only available in the password-protected "Set-Up" mode.





### Speaker SPL

To be able to display the sonic frequency response of the entire system, allocating the data records (phase and frequency response) of the connected speaker systems to their individual outputs is necessary. On a similar page it is also possible to assign the data for the employed DYNACORD power amps. CrossMax displays the actual sonic performance of a loudspeaker system in real-time, without characteristic spatial influence and in dependence to all used DSP244 parameters. This indication is exclusively provided for DYNACORD speaker systems, offering a unique way to be one hundred percent sure of optimally using the digital filters.

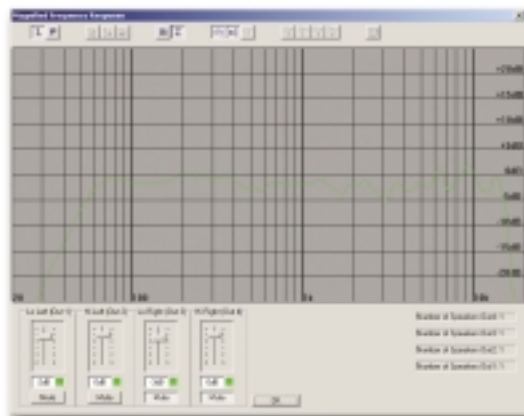


### Filter Functions

Clear and comprehensive display of filter function per output channel including master and channel EQs is provided. The resolution can be changed from  $\pm 12$  dB to  $\pm 24$  dB or  $\pm 48$  dB. Displaying phase and frequency responses and fading out loudspeaker outputs that are not included in the overall system is also possible. Adding the sonic data of loudspeaker systems and power amps to the electrical transfer function reveals the sound system's actual sonic performance. Any parameter change is immediately visible and audible, while spatial independence represents the major advantage of display mode.



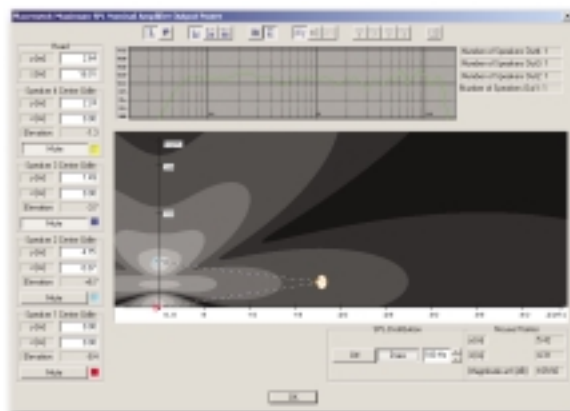
CrossMax is the only editor software that is capable of displaying the frequency response of a DYNACORD speaker system in real-time – exactly the way, the system would behave in the free-field. Any parameter change, like volume, filters, or delay times is immediately indicated: even complex



set-ups can be easily accomplished. Fine-adjustments "on the spot" are mostly reduced to  $\pm 1$  dB for each frequency band.

### Placement Function

The CrossMax Placement Window offers additional assistance to determine the optimum positioning. All CrossMax data refers to a speaker's centre of the front grille. Different from the real frequency and phase indication, in this case a spherical radiation pattern of low-frequency sonic signals is presumed. Moving the "listener's head" on the loudspeaker system axis results in the display of the heard frequency response at that position. Display of the level distribution for frequencies up to 150 Hz and depending on the actual speaker position is additionally possible.







## PowerMax 230 Controller

*"PowerMax" - a crossover-function that provides improved SPL in the frequency range around the crossover frequency, making it the ideal solution for systems with relatively compact dimensioned full-range speakers plus sub woofer.*



Meeting the highest requirements of modern audio applications is only possible when using active multi-component loudspeaker systems which provide the possibility to separately amplify and reproduce the audio signal's individual frequency ranges. Active 2-way installations with additional sub woofer systems probably offer the best price/performance ratio. The low frequency range of the audio signal is reproduced by the sub woofers while high-quality full-range cabinets take care of the Mid/Hi frequencies and vocals.

One essential advantage of active 2-way systems with additional sub woofers is the fact that the vocals are not divided between different speaker systems. This, in return, offers more convenience when adjusting the sound system. Opposite to active 3- or 4-way configurations, difficult analysing and measuring of sound fields is unnecessary.

Using individual sub woofer systems for each side is essential on wider stages. Otherwise, the level differences between bass and treble would result in audible degradation of the overall sound. Of course, adding a centrally located sub woofer might additionally improve the sound quality.

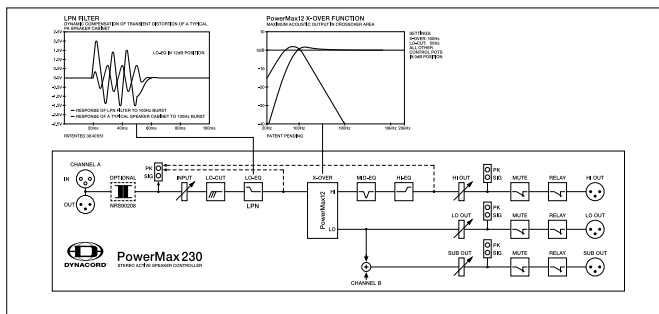
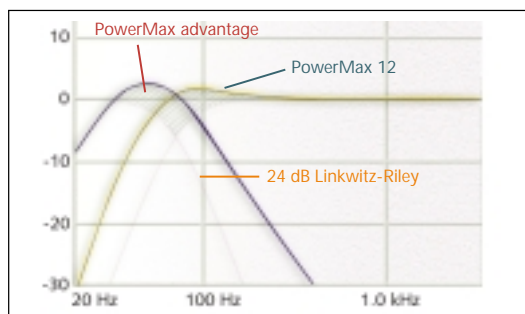
The PowerMax230 Controller has been designed for use in high-performance installations that employ active 2-way systems plus sub woofers. Applications like these also mostly incorporate professional linear power amplifiers like DYNACORD LINEAR- or STANDARD PRECISION power

amps. Installing and operating the PowerMax230 Controller is easy as can be, since the user does not need to know any complex detail about crossover functions and equalization. All controls for matching the sound to different acoustic conditions and loudspeaker systems are located on the front panel. Difficult tasks - like electronic signal routing and settings for instance - are automatically carried out inside the appliance. The PowerMax12 crossover function optimally utilizes amplifier output power and loudspeaker transmission capacities. Compared to conventional crossovers or controllers, this results in an improved overall sound quality, which is achieved with less effort.

The PowerMax230 Controller is also most suitable for integration in active 2-way instrument reinforcement applications for keyboards, E-bass and drums. The PowerMax12 x-over function eliminates the often complained about "lack-of-punch-and-definition", like it is common for conventional active musical instrument reinforcement systems. The EQ-section provides additional tools:

The Lo-EQ is an adjustable LPN-filter for controlling the "punch" while the Mid-EQ's 4 kHz dip-filter can be used to reduce the sometimes aggressive sound of a horn system. The Hi-EQ allows increasing the "clarity" depending on the desired degree of brilliance.

Its excellent dynamic range of more than 117dB, the extremely low noise level and the outstanding price/performance ratio makes the PowerMax230 Controller an advantageous alternative to conventional crossover and controller solutions - even in the critical field of permanent installation.



Block Diagram PowerMax 230



## SPECIFICATIONS



### PowerMax 230

Crossover Type	2-way Stereo + Sub mono
Crossover Frequency (sweepable)	45-160 Hz
Crossover Filter type	PowerMax 12
Filter Options (adjustable)	Lo-Cut /EQ-Section
Frequency Response -3dB @ 1 k Hz	16 - 150 kHz
Nominal Gain	0 dB
Maximum Gain	+ 12 dB
Dynamic Range (+20 dBu, A-weighted)	117 dB
THD + N (20-20 kHz, + 6 dBu)	< 0.02 %
THD + N (typical, + 6 dBu)	0,003%
Crosstalk Attenuation	> 80 dB
Mute Switch Rejection	> 90 dB
Level Control Attenuation	> 80 dB
Input Impedance	20 k $\Omega$
Maximum Level (Input: A, B)	+ 20 dBu
Rated Level (Input: A, B)	+ 6 dBu
Gain Range (Input: A, B)	- $\infty$ to + 6 dB
Output Impedance (HI, LO, SUB)	75 $\Omega$
Maximum Level (Outputs: HI, LO, SUB)	+ 20 dBu
Rated Level (Outputs: HI, LO, SUB)	+ 6 dBu
Gain Range (Outputs: HI, LO, SUB)	- $\infty$ to + 6 dB
In-/Output Connectors	XLR (active balanced), Inputs with parallel out
Power Consumption	17 W
Power Requirements 50-60 Hz (switchable)	100-120 V / 220-240 V
Dimensions mm (W x H x D) 19" width	483.0 x 43.6 x 226.5 / 1 RU
Weight, net	3.2 kg





## DDL 240

### DDL 240 - Professional Signal Delay Line 2 x In / 2+2 x Out

The DDL240 is the perfect solution for multi-speaker system set-ups. Provided tools are: freely configurable delay lines, graphic EQ's, parametric EQ's and limiters.

- 24-bit sigma-delta A/D-converter with 128- times oversampling
- 24-bit sigma-delta D/A-converter with 128-times oversampling
- 48 kHz sampling rate
- 5,400 msec max. delay time
- 21 µsec increment
- Dynamic range > 115 dB
- Frequency response 20 Hz - 20 kHz
- Data format 24-bit linear AD/DA conversion, 48-bit processing
- Freely configurable: e. g. in-2 stereo or in-4 mono
- Operation and configuration via PC-software (Windows 95/98/NT/WIN2K)
- MIDI and RS-232 interfaces
- RS-485 interface or switching contacts are optionally available
- Signal processing: dual 10-band octave EQ per input, Low Cut/Hi Cut filters, 4 parametric EQ's, limiters
- All inputs and outputs are electronically balanced via XLR-type connectors, Input transformer balancing is optionally available
- 36 months warranty



#### SPECIFICATIONS

#### DDL 240

Mains Voltage	90 - 250 VAC / 50 - 60 Hz
Power Consumption	20W
Safety Class	I
Inputs	2 x XLR IN, electronically balanced, transformer optional 2 x XLR OUT (Direct Out)
Nominal Input Voltage	1.55 V / + 6 dBu
Max. Input Voltage	24.5 V / + 30 dBu
Input Impedance	20 kΩ
Common Mode Rejection	> 40 dB
A/D Conversion	24-bit, Sigma-Delta, 128 times oversampling, linear phase
Outputs	4 x XLR OUT, electronically balanced
Nominal Output Voltage	1.55 V / + 6 dBu
Max. Output Voltage	8.7 V / + 21 dBu
Output Impedance	< 100 Ω
Min. Load Impedance	600 Ω
D/A Conversion	24-bit, Sigma-Delta, 128 times oversampling
Frequency Response	20 Hz - 20 kHz (± 0.5 dB)
S/N Ratio	115 dB (typical)
THD without transformer	< 0.01 %
THD with transformer	< 0.05 %
Dimensions	483 x 43.6 x 374 (W x H x D in mm), 19", 1 RU
Weight	5 kg
Options	RS-485 Interface (NRS 90247) Contact Closure Interface (NRS 90246) Input Transformer (NRS 90244)



## Equalizer EQ 2215

- 2 x 15-band
- Switchable between  
±6 dB or ±12 dB Cut / Boost
- Lo-Cut (switchable)
- Phone jacks for In/Outputs
- Peak LED
- Bypass function
- Ground-lift switch
- 36 months warranty

Using only a single height unit, this equalizer makes economic use of rack space.

Boost/cut-characteristics can be switched between (± 6 or ± 12 dB) and each channel features a switchable Lo-Cut filter, a ground-lift switch, electronically balanced In/Outputs, and unbalanced phone jacks.



### SPECIFICATIONS

#### EQ 2215

<b>Input</b> balanced/unbalanced	1 V / 22 k ohms
<b>Output</b> balanced/unbalanced	1 V / 60 ohms
<b>Frequency Bands</b>	2 x 15
<b>Frequency Response</b>	6 Hz - 50 kHz
<b>Distortion (THD)</b>	≤ 0,1%
<b>Signal-to-Noise Ratio</b>	101 dB (A)
<b>Dimensions (W x H x D)</b>	483 x 44 x 235 mm
<b>Weight</b>	3,4 kg
<b>Power Consumption</b>	7 W
<b>Safety Class</b>	II





## Equalizer EQ 3310

- 1 x 31-band
- Switchable between  
 $\pm 6$  dB or  $\pm 12$  dB Cut / Boost
- Lo-Cut (switchable)
- Phone jacks for In/Outputs
- Peak LED
- Bypass function
- Ground-lift switch
- 36 months warranty

Using only a single height unit, this equalizer makes economic use of rack space.

Boost/cut-characteristics can be switched between ( $\pm 6$  or  $\pm 12$  dB) and each channel features a switchable Lo-Cut filter, a ground-lift switch, electronically balanced In/Outputs, and unbalanced phone jacks.



### SPECIFICATIONS

#### EQ 3310

Input balanced/unbalanced	1 V / 22 k ohms
Output balanced/unbalanced	1 V / 60 ohms
Frequency Bands	31
Frequency Response	6 Hz - 50 kHz
Distortion (THD)	$\leq 0,1\%$
Signal-to-Noise Ratio	102 dB (A)
Dimensions (W x H x D)	483 x 44 x 235 mm
Weight	3,4 kg
Power Consumption	5 W
Safety Class	II

# AMPS AMPS



**POWER AMPLIFIERS**

STANDBY





## PRODUCT LINES

Linear Precision Series



Standard Precision Series



Modular X-Amps



Controller Amp PowerMax Systems



Controller Amp Xa Systems



## Amp Guide

### PHILOSOPHY

Outstanding audio-performance and non-compromise reliability as a result of DYNACORD's more than 50 years of engineering experience and manufacturing excellence.

***Buy it. Plug it. Rely on it.***

- All DYNACORD amplifiers are CE approved and CSA/UL tested including IEC 65065
- All DYNACORD amplifiers are manufactured in the ISO 9001 certified factory in Straubing, Germany.
- All DYNACORD amplifiers feature 36 months of warranty.

### BASIC FEATURES

Generously dimensioned power supplies making for 30% headroom on top of rated output power for continuous audio program. In addition complex loads with phase angles up to  $\pm 90^\circ$  can be driven without problem.



- *Outstanding Audio Performance*
- *Sophisticated Protection Package*
- *Unique Dynamic Limiters*

All amps are equipped with inrush-current-limiters and power-on-delay.

Relays at the power outputs keep the speakers disconnected during power up and in case that any of the most complete and reliable protection circuits is activated.



## Thermal Overheat Protections

Temperature sense for both, power transistors and transformer(s). Front-to-rear cooling system by means of extremely quiet 3-speed fans.

## High Frequency Protection

High frequencies, significantly exceeding the human audio spectrum may damage the connected speaker's voice coils. All DYNACORD amplifiers are equipped with reliable HF protection circuits.

## Peak Current Limiters

keep the amplifier reliably within safe operating conditions. In addition they activate the dynamic audio limiters in case that the peak current threshold is exceeded and thus keep the signal fed into the speakers at a level of maximum 1% THD. This protects the speakers from being blown due to clipping amplifier signal.

## Short Circuit Protection

A short circuit in the speaker cable or the speaker itself may damage the power transistor of the amplifier. All DYNACORD amplifiers are equipped with respective short circuit protections that reliably protect the amplifier even under full load or in bridged operation.

## DC - Protection

DC voltage at the output will kill the connected speaker's voice coils. All DYNACORD amplifiers feature reliable DC protection.

## Back-EMF Protection

By nature of physics loudspeaker systems represent a complex reactive load and feed a significant portion of the energy back into the amplifier. This EMF {Electro Motive Force} phenomenon is permanently existing regardless the type or brand of the amplifier and speaker. In the standard situations where the speaker cabinets work properly. The EMF-phenomenon does not cause any damage to the amplifier. In case of a faulty speaker or crossover however, the amount of energy fed back into the amplifier may significantly exceed normal levels resulting in damage of the amplifiers power transistors.

All DYNACORD power amplifiers are equipped with a unique back-EMF protection that reliably protects the amplifier against such conditions even in case of cabling faults when somebody i.e. connects output A with output B by mistake.



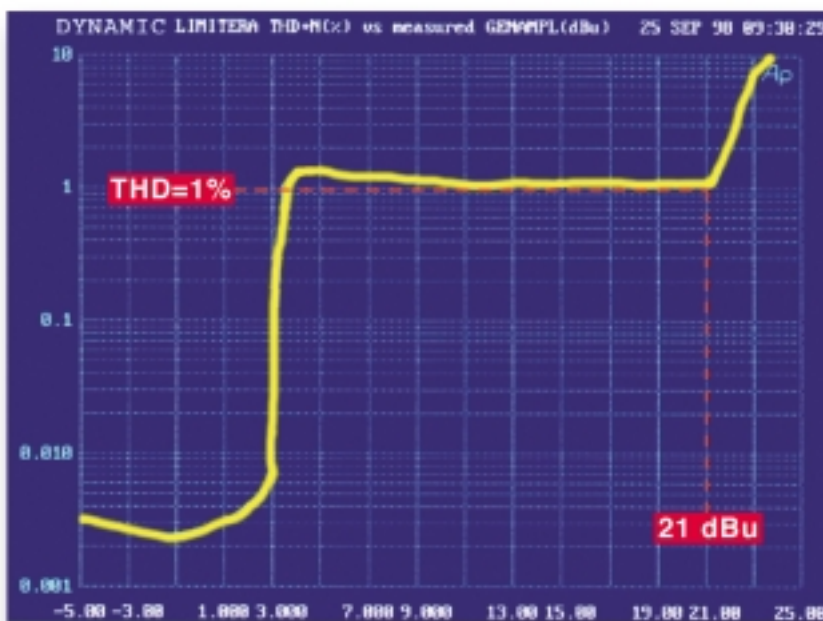




## Dynamic Limiters

Most of the competitive amplifiers do not feature onboard limiters. Other provide threshold triggered limiters which cause audible compression effects.

DYNACORD amplifiers constantly monitor the input- versus the output-signal by means of super-fast audio processors (APC = Audio Processor Control). In case of non-linear operation APC sends control parameters to the limiters.



The APC controlled limiters are operating dynamically and do not affect the amplifiers dynamic capabilities as they control the input gain level. So even to/beyond the limits DYNACORD amplifiers will keep their dynamics and will thus not affect the sound, clarity and transparency in audio performance.

In 'cooperation' with the 30% headroom of the power-supply the dynamic limiters make for unrivalled dynamic performance.



## Linear Precision Series

<b>L 300</b>	<b>2 x 150 W</b>
<b>L 500</b>	<b>2 x 250 W</b>
<b>L1000</b>	<b>2 x 500 W</b>
<b>L1600</b>	<b>2 x 800 W</b>
<b>L2400</b>	<b>2 x 1200 W</b>

into 4 ohms,  
both channels driven,  
20 Hz - 20 kHz, THD = 0,1%



- Excellent audio performance
- Symmetrical topology
- Ultra-low distortion
- Generously dimensioned power supply units
- Suitable to be operated on loads down to 2  $\Omega$
- Suitable to drive complex loads with phase angles of  $\pm 90^\circ$
- Extensive protection circuitry
- Unique Back-EMF protection

- Switchable limiters
- Switchable Hi/Lo-Cut filters
- Robust steel chassis
- Exceptional low noise front-to-rear air-flow
- XLR-type inputs and direct-outs
- LED display shows On, In, Out, Limit and Protect
- DUAL-MONO power supplies in the L1600 / L2400
- Highly reliable operation
- 36 Months Warranty

There are two main approaches in designing high-performance power amplifiers: get as many watts as possible for as little money as necessary or set the designing standards without compromise to the highest achievable audio performance at the threshold of the physically attainable, ensure highest reliability and go for the best in professional audio equipment that today's technology can accomplish. It is doubtless, that combining these two apparently conflicting design-profiles would offer the best solution: due to their advanced topology, Linear Precision Series power amps combine excellent audio performance, modern and innovative circuit design, meticulous and exceptionally rigid construction, and the highest levels of operational integrity and reliability with an appropriate and more than realistic price. So, why pay more for leading edge technology "Made in Germany"? Well, on the other hand – it cannot be done for less.

The robust steel chassis provides outstanding torsional strength through L-shaped side panels reaching under the

thick aluminium front panel. Thermal breakers prevent the power supply units from being damaged by thermal overload. Electronically controlled fans provide sufficient front-to-rear airflow and a special cool air diverter takes care of thermal stability. The fans' noise-level is extremely low which provides the possibility for studio use. If necessary, a supplied air-filter can be mounted behind the front panel ventilation louvres.

Delayed switching the power outputs during a soft-start is accomplished via relays and an initial inrush current limiter prevents the mains fuses from being blown.

Extensive protection circuitry includes the relay-switching of the speaker-terminals in cases of short-circuit and prevent the occurrence of DC or RF at the power outputs. A selectable Hi-/Lo-Cut filter limits the amplifier's response to the audible spectrum, preventing the amplification of extreme LF and HF out of band signals. Additionally, a



special protection circuit – the Back-EMF Protection – protects the Linear Precision power amplifiers from damages resulting from high-level, high-energy feedback from a faulty loudspeaker system. Comparator circuits continuously monitor the amplifier's input and output signals and activate internal limiters whenever a non-linear operational state is detected. These limiters have acoustically optimised time constants and can also be switched to the appropriate speed according to the application they are used in; from FAST (e. g. for use as a Mid/Hi amplifier) to SLOW (e. g. when driving sub woofers). This serves as a

protection for the connected loudspeaker systems against overload caused by clipping in the power amplifier's output stages.

The L-1600 and L-2400 embody separate and fully independent DUAL-MONO power supply units. The toroidal mains transformers are custom-produced at our very own manufacturing site in Germany and possess particularly low magnetic field radiation characteristics. All components are of selected quality and are generously rated for unrivaled quality.

## SPECIFICATIONS

	L 300	L 500	L 1000	L 1600	L 2400
<b>Max. Output Power</b> at 1 kHz / THD = 1.0%					
into 8 ohms	2 x 120 W	2 x 180 W	2 x 370 W	2 x 560 W	2 x 850 W
into 4 ohms	2 x 190 W	2 x 280 W	2 x 550 W	2 x 900 W	2 x 1300 W
into 2 ohms	2 x 220 W	2 x 320 W	2 x 650 W	2 x 1200 W	2 x 1800 W
into 8 ohms bridged	1 x 380 W	1 x 560 W	1 x 1100 W	1 x 1800 W	1 x 2600 W
into 4 ohms bridged	1 x 440 W	1 x 640 W	1 x 1300 W	1 x 2400 W	1 x 3600 W
<b>Rated Output Power</b> at 20 Hz - 20 kHz / THD = 0.1 %					
into 8 ohms	2 x 100 W	2 x 175 W	2 x 350 W	2 x 500 W	2 x 750 W
into 4 ohms	2 x 150 W	2 x 250 W	2 x 500 W	2 x 800 W	2 x 1200 W
into 2 ohms	2 x 210 W	2 x 300 W	2 x 600 W	2 x 1000 W	2 x 1500 W
into 8 ohms bridged	1 x 300 W	1 x 500 W	1 x 1000 W	1 x 1600 W	1 x 2400 W
into 4 ohms bridged	1 x 420 W	1 x 600 W	1 x 1200 W	1 x 2000 W	1 x 3000 W
<b>Frequency Response</b>			0 dB ..... -1 dB/ 20 Hz - 20 kHz		
<b>Phase Angle Response</b>			± 30°/20 Hz.....20 kHz		
<b>Maximum Output Level</b> before clipping, no load, ref. 1 kHz / THD = 1 %	34 V / RMS	45 V / RMS	66 V/RMS	72 V / RMS	91 V / RMS
<b>Voltage Gain</b> ref. 1 kHz			26 dB (constant gain option)		
<b>Input Sensitivity</b> at rated output / 4Ω ref. 1 kHz			0 dBu / 0.775 V		
<b>Maximum Input Level</b>			+6 dBu / 1.55 V		
<b>Input Impedance</b> active balanced			+21 dBu / 8.7 V		
			20 kΩ		
<b>THD</b> at rated output MBW = 80.0 kHz, f = 1 kHz			< 0.05 %		
<b>IMD - SMPTE</b> 60 Hz, 7 kHz, at rated output			< 0.01 %		
<b>Signal-to-Noise Ratio</b> at rated output into 4Ω, A-weighted, RMS, input sensitivity +6 dBu			>105 dB		
<b>Attenuation</b> at rated output, f = 1 kHz				> 70 dB	
<b>Damping Factor</b> internal 1 kHz			> 300		
<b>DIM 30</b>			< 0.01 %		
<b>DIM 100</b>			< 0.01 %		
<b>Slew Rate</b> internal	> 20 V / μs	> 25 V / μs	> 30 V / μs	> 35 V / μs	> 40 V / μs
<b>Power Consumption</b> 1/8 rated output into 4 Ω	200 W	300 W	600 W	1100 W	1650 W
<b>Dimensions</b> in mm					
Width	483	483	483	483	483
Height	88.1	88.1	88.1	132.5	132.5
Depth	426	426	426	426	426
<b>Weight</b>	13 kg	14 kg	17 kg	27 kg	29 kg
<b>Optional:</b> Input Transformer	90176	90176	90176	90176	90176





## Standard Precision Series

### S 900 2 x 450 Watts

(into 4 ohms, both channels driven, 1kHz / THD=1%)



Designed as "working horses" and based on the Linear Precision Series amplifiers, the STANDARD PRECISION Series power amplifiers' efficiency and dependability meet the extreme standards of any on-the-road application, offering reliable protection against thermal and capacitive overload, short circuit, and the occurrence of HF and DC at their outputs. In addition, special protective circuitry prevents the output-stage transistors from being damaged by Back-EMF. During power-on, delayed switching of the power amplifiers' power outputs is accomplished via relays. A limiter controls the initial current inrush (soft start), preventing the mains fuses from being blown during power-on operation.

Mechanical construction and manufacturing follow the industry's highest precision standards. The robust steel chassis is extremely rigid.

Guaranteeing thermal stability are two 3-Mode (off/slow/fast) silently running fans that allow using the amplifiers even in sound recording studio environments without any annoyance.

Extensive comparator circuitry constantly monitors the input and output signals and activates the internal limiters whenever a non-linear operational state is encountered. Thus ensuring reliable protection of the connected loud-speaker systems against overload and clipping.

The sound quality of STANDARD PRECISION SERIES power amplifiers is absolutely outstanding. Using comprehensive dimensioned power supply units with low-interference toroidal transformers gains a headroom that exceeds the nominal power handling capacity by far. No V/I-Foldback-Limiter circuits are employed within the power amplifiers, making it possible to operate the amps on complex loads up to  $\pm 90^\circ$  phase angles without a problem.

The db-calibrated level controls are located on the front panel. They are provided as detented potentiometers.

The easily readable LED display offers quick optical information on the power amplifiers' momentary operational mode.

The display shows for each channel independently, whether it is operational, a signal is present at the output, when the limiters are activated, and if one of the numerous protection circuits has been activated.

The input facilities are carried out as balanced XLR-type connectors while the Direct-Outs – on which the carried-through signals are present – come as XLRM-type connectors. Using the Input Routing-switches lets you determine if the STANDARD PRECISION SERIES amplifiers are operated in DUAL (stereo) or PARALLEL (mon-aural) mode while "mono-bridged" operation is possible as well. The power outputs CHANNEL A, CHANNEL B and BRIDGED OUT are provided as Speakon connectors.



## Standard Precision Series

### S 1200 2 x 600 Watts

Being located on the rear panel as well is a ground-lift switch that separates the enclosure from the ground potential of the appliance and therefore helps to eliminate ground noise loops.

In normal operation all STANDARD PRECISION SERIES power amplifiers can be used to drive loads down to 2Ω; in bridged mode the min. load is 4Ω.

All amps are equipped with extremely silent running fans that provide proper front-to-rear air-flow, guaranteeing the trouble-free operation even in smaller power amplifier rack systems.



#### SPECIFICATIONS

	S900			S1200		
Load Impedance	8Ω	4Ω	2Ω	8Ω	4Ω	2Ω
Maximum Midband Output Power, 1 kHz, THD=1%	280W	450W	650W	380W	600W	850W
Rated Output Power, 20 Hz ... 20 kHz, THD<0.2%	230W	350W	450W	300W	500W	650W
Max. Single Channel Output Power Dynamic-Headroom, IHF-A	340W	640W	720W	460W	880W	950W
Maximum Bridged Output Power 1 kHz, THD=1%	900W	1300W	-	1200W	1700W	-
Maximum RMS Voltage Swing 1 kHz, THD=1%	56 V			64 V		
Voltage Gain at 1 kHz	34 dB			35 dB		
Slew Rate	25 V/μs			30 V/μs		
Power Consumption at 1/8 maximum output power @ 4 Ω	690 W			870 W		
Input Sensitivity at rated output power @ 4 Ω, 1 kHz			0 dBu (775mV)			
THD at rated output power MBW=80kHz, 1 kHz			< 0.05%			
IMD-SMPTE, 60 Hz, 7 kHz			< 0.08%			
DIM 30, 3.15 kHz, 15 kHz			< 0.03%			
Attenuation ref. 1kHz, at rated output power			> -80dB			
Frequency Response, -1dB, ref. 1kHz			13Hz ... 45kHz			
Power Bandwidth THD=1%, ref. 1kHz, half power @ 4Ω			10Hz ... 50kHz			
Input Impedances 20Hz ... 20kHz, balanced			20kΩ			
Damping Factor at 100 Hz/1kHz			>300/> 200			
Signal to Noise Ratio A-weighted			103dB			
Power Requirements			230V, 50Hz ... 60Hz			
Safety Class			I			
Protection			Audio limiters, High temperature, DC, HF, Back-EMF, Peak current limiters, Inrush current limiters, Turn-on delay, Front-to-Rear, 3-stage-fans			
Dimensions (WxHxD), mm			483 x 132.5 x 385.5			
Weight		15kg			16kg	

Amplifier at rated conditions, both channels driven with 8Ω loads, unless otherwise specified.



## X-Amps

*A modular power amplifier concept.  
The flexible solution for any mobile application  
or fixed installation.*

The modular architecture of the X-Amps allows the flexible selection of filter/signal processing modules and input and output modules, offering the opportunity to easily modify the power amps to match any application and connection technique.

The concept of gapless protection circuitry not only protects the power amplifiers but also the connected loudspeaker systems. These protections include dynamic limiters, DC/HF-protection, Back-EMF protection, inrush current limiter, short-circuit protection, the Thermal Brain Circuit and of course the thermal overload protection for the power output stage transistors and transformers.

X-Amps Series power amplifiers couple outstanding audio performance with absolute reliability and operational stability. Their uncompromising topology was taken over from the Linear Precision Series power amplifiers, which in regard to their dynamic capacity and distortion rate guarantees extraordinary audio ability, that has been proven for a couple of thousand times.

An ample selection of different X-Amps modules is already available and more are about to come, like for instance remote monitoring and remote control modules.

X 1201



X 1202







## X-Amp Modules

The front panel of the X-Amps provides plug-in sockets for inserting several signal processor modules, which can be easily installed. Through integrating the signal processing into the power amplifiers, external crossovers and equalizers became excessive. The cabling effort is drastically reduced while with minimum extra cost, system reliability and operational stability is proportionally increased.

The modules Xm124 and Xm224 allow trouble-free configuration of active 2-way and 3-way systems. All filter slopes are realized as 24 dB Linkwitz-Riley filters.

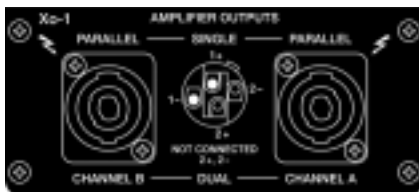
Individual, cabinet-related filter modules that optimally match each system component of the V-Systems are available. Using these filters reveals the cabinets' maximum

acoustic potential. The fully analogue, fine-tuned filter and equalizer functions ensure optimum transmission characteristics and first-class dynamics.

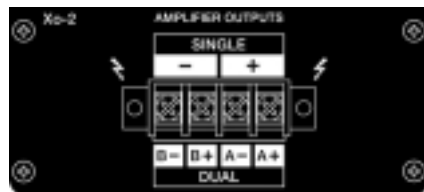
Even the inputs and outputs of the X-Amps are designed following a modular concept without compromise. This provides the user with the free choice of modules, e.g. to accommodate mobile "Concert-Sound" applications or to accomplish connection techniques in the field of fixed installation. And of course, DYNACORD is prepared to offer the right module for any future standard and application, ensuring that X-Amps will never be outdated. On the contrary, they can be easily and conveniently modified to match changing conditions and requirements – and most of all for a reasonable price.

### Output Modules

Xo-1 standard



Xo-2 optional



### Input Modules

Xi-11 standard



Xi-21 optional





## Multi Purpose Modules

Xm 224



Xm 124



## V-Systems Modules

Xm-2



Xm-15



Xm-12



Xm-17



Xm-14



Xm-18



## SPECIFICATIONS

	X1201			X1202		
Type	Single channel amplifier			Dual channel amplifier		
Load Impedance	8Ω	4Ω	2Ω	8Ω	4Ω	2Ω
Maximum Midband Output Power, 1 kHz, THD=1%	750W	1200W	1600W	2x380W	2x600W	2x850W
Rated Output Power, 20 Hz ... 20 kHz, THD<0.2%	500W	1000W	1300W	2x250W	2x500W	2x650W
Max. Single Channel Output Power	850W	1450W	1700W	460W	880W	950W
Dynamic-Headroom, IHF-A						
Maximum RMS Voltage Swing (1 kHz, THD=1%)	86 V			64 V		
Voltage Gain (at 1 kHz)	33 dB			30 dB		
Slew Rate	40 V/μs			30 V/μs		
Power Consumption	870 W			870 W		
at 1/8 maximum output power @ 4 Ω						
Input Sensitivity (at rated output power @ 4 Ω, 1 kHz)				1.4V		
THD at rated output power (MBW=80kHz, 1 kHz)				< 0.05%		
IMD-SMPTE (60 Hz, 7 kHz)				< 0.08%		
DIM 30 (3.15 kHz, 15 kHz)				< 0.03%		
Frequency Response (-1dB, ref. 1 kHz)				13 Hz ... 45 kHz		
Power Bandwidth (THD=1%, ref. 1 kHz, half power @ 4 Ω)				10 Hz ... 50 kHz		
Input Impedances (20Hz ... 20kHz, balanced)				20 kΩ		
Damping Factor (at 100 Hz / 1 kHz)				>300 / >200		
Signal to Noise Ratio (A-weighted)				106 dB		
Power Requirements	240V, 230V, 120V, 100V / 50Hz ... 60Hz, factory configured					
Safety Class				I		
Protection	Audio limiters, high temperature, DC, HF, Back-EMF, peak current limiters, inrush current limiters, turn-on delay					
Cooling				front-to-rear, 3-stage fans		
Dimensions (WxHxD), mm				483 x 132.5 x 385.5		
Weight				17 kg		
Optional	Input Transformer (NRS 90208) Rear Rackmount 15.5" (NRS 90235) Rear Rackmount 18" (NRS 90223)					

Amplifier at rated conditions, both channels driven, 8Ω loads, unless otherwise specified.



## *Xa2600 / PM 2600*

The heart of any Xa-system, PowerMax system or of a freely configured 2-way system is one of our 2600 Series Controller Amps.

Based on the topology of the "LINEAR PRECISION" Series power amps, these system power amplifiers offer an output power capacity of 2,600 watts (RMS) each, when operated in active 2-way mode. Both models provide integrated active frequency crossovers, several processor-controlled functions and extensive protection circuitry.

The provided output power is:

2 x 700 watts Lo

2 x 600 watts Hi

The multitude of processor functions includes our patented LPN-filters, the "Thermal Brain Circuit" protection, and an APC-controlled limiter for each amplifier channel. Additional protection circuitry prevents thermal overload, HF, DC or short-circuit in the output stage. The Linear Precision Series' Back-EMF-protection circuitry contributes to the overall operational stability.

The integrated bass equalizer is meant to be used for live concerts. The 4 kHz Dip-switched EQ allows the adjustment of several different cabinets to match varying acoustical environments. A 12 dB/oct. Lo-Cut filter attenuates ultra-low frequencies.

- **LPN Processor Function**

The patented LPN-Processors (Low Pass Notch Filter) electronically neutralize speaker-typical transient response distortion already within the power amp.

- **APC Processor Function**

Four super-high-speed audio processors continuously monitor the amplifier's internal and external operational state, activating the four internal dynamic limiters on the occurrence of any non-linear operation.

- **TBC Processor Function**

Four Thermal-Brain circuits simulate the thermal model of a typical voice coil and limit the energy fed to the speaker components during impending overload.

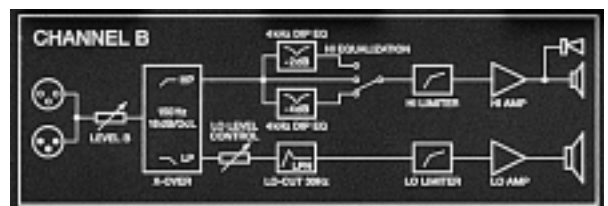


Originally designed for the Xa-Systems, this system power amplifier offers various adjustment features and reveals its true versatility when being used with any other Hi/Mid/Sub woofer speaker system combination.

The Mid/Hi-Equalizer with integrated horn-equalization at 12 kHz can be optimally used with medium or long-throw Mid/Hi speaker systems.

Separating the LF-range from the rest of the audio signal, an active Butterworth/Constant-Power-Response-Crossover provides a crossover frequency at 160 Hz with 18 dB/oct. slope. A 12 dB/oct. Lo-Cut filter cuts ultra-low frequencies below 30 Hz.

### *Dual Active 2-Way Processed Precision Power Amplifier 2600 Watts*







## PM2600

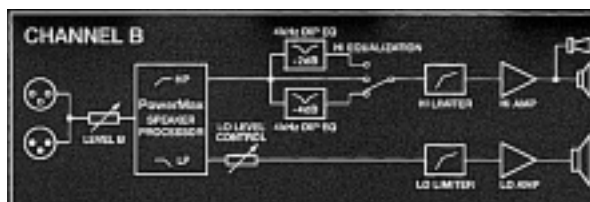
### PM2600

#### Dual Active 2-Way

#### "PowerMax" Controlled Amplifier

#### 2600 Watts

Basically, the PM2600 can drive any active 2-way system that consists of full-range cabinets and sub woofers. The integrated frequency crossover operates in PowerMax function mode and has been optimised for those combinations. Intelligently configuring system components leads to outstanding results. For more details, please refer to the PowerMax Systems and PowerMax230 Controller descriptions.



### SPECIFICATIONS

Crossover Section	Xa2600	PM2600
Crossover Type	3rd Order BU, Constant-Power-Response Stereo active 2-way	PowerMax12*, Stereo active 2-way
Crossover Frequency	160 Hz	110 Hz
Lo-Cut	12dB/octave, 30Hz at -3dB ref. 1kHz	12dB/octave, 25Hz at -3dB ref. 1kHz

\*Patent pending

### Xa2600, PM2600

	HI-Channels		LO-Channels	
	8Ω	4Ω	8Ω	4Ω
Load Impedance	8Ω	4Ω	8Ω	4Ω
Maximum Midband Output Power, THD = 1%, 1kHz, 60Hz	380W	700W	380W	700W
Rated Output Power, THD < 0.1%	300W	600W	350W	700W
Maximum Single Channel Output Power, Dynamic-Headroom, IHF-A	400W	750W	400W	750W
Maximum RMS Voltage Swing, THD = 1%	58.7V			
Frequency Response, -3dB, ref. 1kHz, Lo-Cut	25Hz ... 45kHz			
Minimum Load Impedance	2.5 Ω			
Input Sensitivity at rated output power @ 4Ω	0dBu (775mV)			
Maximum Input Level	+21dBu (8.7V)			
THD at rated output power, MBW = 80kHz	< 0.05%			
Crosstalk Attenuation	> 60dB			
Slew Rate	30V/μs			
Power Bandwidth, THD = 1%, ref. 1kHz, half power @ 4Ω	10Hz ... 50kHz			
Input Impedance, 20Hz ... 20kHz, balanced	20kΩ			
Damping Factor	> 300			
Signal-to-Noise Ratio, A-weighted	> 100dB			
Power Requirements	230V, 50Hz ... 60Hz			
Power Consumption at 1/8 maximum output power @ 4Ω	1800W			
Protection	Audio limiter (APC), TBC, High temperature, DC, HF, Back-EMF, Peak current limiter, Inrush current limiter, Turn-on delay			
Cooling	Front-to-rear, 4-stage-fans			
Safety Class	I			
Dimensions (W x H x D), mm	483 x 177 x 426			
Weight	30kg			

Amplifier at rated conditions, all channels driven, 8Ω loads, HI-Channel rated at 1kHz, LO-Channel rated at 60Hz unless otherwise specified. Note: 0dBu = 0.775V



LOUDSPEAKERS

LOUDSPEAKERS





**LOUDSPEAKERS**

**V-Systems**

## V-Systems

### PHILOSOPHY

The V-System results from joining forces with companies providing professional sound reinforcement solutions that meet the requirements of medium-sized rental companies and typical Top 40 show acts.

### REQUIREMENTS

1. a basic set that provides trouble-free sound reinforcement in average multi-purpose halls, huge festival tents and at urban Open-Air concerts with approx. 2,000 to 3,000 people attending.
2. efficiently separable for smaller events and galas of approx. 500 attendants.
3. easily expandable to cover areas of approx. 10,000 sqm with audiences of approx. 15,000 people.
4. professional outfit and rigging capabilities.

### STARTING SITUATION

Conventional audio systems mostly offer wide coverage but insufficient SPL (typically 100 dB) over wider ranges. Major PA-systems provide sufficient SPL (typ. 106 dB), but their horizontal "dispersion" (typ. 30°), mostly lacks from a dramatic drop in performance over wider areas when employing "less wood".

V-Systems are designed for high SPL (>106 dB), wide radiation angles (> 60°), long-throw coverage, and wide horizontal dispersion.

This design philosophy allows to provide sound reinforcement at smaller events using "less wood", resulting in less transportation and less adjustment effort which saves precious time and money.

V-Systems are only available from authorized dealers. For additional information as well as a list of authorized dealers, please contact TELEX EVI Audio GmbH. For further information, please visit us in the Internet under: [www.telex.de](http://www.telex.de)







## V-Systems Live on Stage



The V-SYSTEM is DYNACORD's answer to the increasing challenge of the professional sound reinforcement business:

Uncompromising Hi-End performance and outstanding output capacity are combined with solutions that have been optimized for practical use for system configuration and rigging. Innovative technology enables V-SYSTEM to achieve higher acoustic output with less

spatial volume and less weight, thus saving on precious loading space at the same time. Installation is quick and easy, and once in place provides safe and reliable operation.

Despite being "the new kid on the block" V-SYSTEM has proven its effectiveness time and time again in the highly competitive audio market:

Starting with the world's longest open-air festival - the Theatron in Munich - and spectacular film premieres like "Air Force One" in Munich or "Mulan" in the Cologne Arena up to events like the Berlin Love Parade and other street parades, as well as music festivals such as Roskilde, or tours including Status Quo's Scandinavian tour and the Scorpions, V-SYSTEM has performed flawlessly.

In fact, it is hard not to be impressed with V-SYSTEM's outstanding performance and extraordinary road-ability. If you're still not convinced, try it for yourself and see what we're talking about.

**V-SYSTEM : audio at it's finest!**



Roskilde festival, Denmark



Status Quo tour, Scandinavia



"AIR FORCE ONE" premiere, Munich



"LOVE PARADE", Berlin



Theatron Open Air, Munich



Scorpions concert at the Expo 2000



**LOUDSPEAKERS**

**V-Systems**



V12-60 P  
12"/2"  
High Cabinet

V24-60 P  
2x12"/2x2"  
High Cabinet

V17 PWH  
18" Low Cabinet

V18 PWH  
18" Subwoofer

V28 PWH  
2 x 18" Subwoofer



V14  
Nearfield Cabinet

V2-30 P  
2 x Farfield Cabinet

VM 15  
Floor-Monitor

VCA 12  
V-Case Amping

VCC 12  
V-Case Cable



X 1201 / X 1202  
Single / Dual Channel  
Basic-Amp

Xm 2 / 12 / 14 / 15 / 17 / 18  
X-Amps Controller modules

PSS 8448 8-pole > 4 x 4 pole 8m  
PSS401-415 1,5/4/8/15m  
PSS801-815 1,5/4/8/15m

CP 84 - CP 84 MC  
Connector Panel  
V - Rack - Multicore



TC 04  
2" Truss Clamp



CH 07 / 24  
7/24 link chain



WS 04 - WS 08  
5to strap 4m / 8m



VCW 15  
15° pedestral



RK-3  
Rigging Kit / Cab.



RP-5B / RP-1B  
Reparatur Lack, 5l / 1l



 **Cobra System**



# The Friendly Weapon

World's First Compact Line-Array System Pat. Pend.



- Line-Array Performance
- "Hornloaded" SPL
- Easy Handling

**cobra**  
 **DYNACORD®**







## Cobra Compact Line Array System

### COBRA FAR



### COBRA TOP



### COBRA SUB



### The Friendly Weapon

For ambitious Concert Sound applications Line Arrays have established themselves during the recent years as first choice. Line Arrays are inherently better suited for high-quality sound projection to large, mainly horizontal audience areas than classical narrow-coverage speakers. As a matter of fact, customary Line Arrays are relatively big, quite heavy, extremely expensive and difficult to set-up. Despite their inherent sound quality advantages, customary Line Arrays therefore are only infrequently used for small and medium-sized sound reinforcement applications.

The brand-new DYNACORD COBRA Compact Line Array System is extremely compact, comparably light-weight, easy to set-up and has an excellent price-performance ratio. So it is now possible to have Line Array Sound Quality for all applications which cannot be served economically with existing large-format Line Arrays. The DYNACORD COBRA Compact Line Array System has an extremely wide horizontal coverage due to the cylindrical wave characteristic of the radiated sound without the annoying comb-filter characteristics of horizontally splayed narrow-angle speakers. The vertical coverage of the DYNACORD COBRA Compact Line Array System is precisely defined and prevents any pronounced vertical "side lobes" which would project sound energy into the diffuse field through reflections at the ceiling and the floor.

The basic set of the COBRA SYSTEM includes four COBRA TOP and four COBRA SUB cabinets plus a pre-cabled rack-shelf that houses the Digital Controller DSP244, two L2400 power amps for the sub and mid-high ranges and a connector panel for system cabling, LF and mains connection. For longthrow applications exceeding 40 m the COBRA FAR cabinet is used in addition. It is identical to the COBRA TOP but features a special 5°-HF-Waveguide.

A stack consisting of two COBRA TOPs produces a maximum SPL of 137 dB/1m at a horizontal splay angle of more than 120° and a vertical focussing of 15°. In the sub frequency range the basic set of the COBRA SYSTEM delivers a maximum SPL of 141 dB/1m.

Every transducer component of the DYNACORD COBRA Compact Line Array System is fully protected against thermal overload of the voice coils with sophisticated electronic circuitry. The VOICE COIL TRACKING PROTECTION circuits are exactly matched to the thermal characteristics of the respective transducers, so even extremely powerful amplifiers up to 1200W/8Ohms can be used without any danger of accidental damage of transducers. Even in cases of abuse or tampering, the VOICE COIL TRACKING PROTECTION circuitry reduces the drive levels to safe values.

The housings of all COBRA speaker components feature 4 castors at the rear side and are Polyurethan-coated in a special process making for extraordinary roadability.



# cobra

*World's first  
Compact Line Array System*



- *Line-Array Performance*
- *"Hornloaded" SPL*
- *Easy Handling*



## SPECIFICATIONS

	<b>COBRA-FAR</b>	<b>COBRA-TOP</b>	<b>COBRA-SUB</b>
Design	Farfield Cabinet	Standard Cabinet	Subwoofer
Impedance	8Ω	8Ω	8Ω
Rated Power Capacity RMS	600 W	600 W	600 W
Program Power Capacity	1200 W	1200 W	1200 W
SPL (1W/1m)	100 dB	100 dB	98 dB
max. SPL (calc.)	131 dB	131 dB	129 dB
Frequency Range (-10 dB)	50 Hz - 15 kHz	50 Hz - 15 kHz	38 Hz - 300 kHz
Components			
HI	3*EV DH2T	EV DH2T	
MID	C8 Line Array	C8 Line Array	
LO	EV DL 15Y	EV DL 15Y	EV EVX180B
Dimensions			
Width:	600 mm	600 mm	600 mm
Height:	495 mm	495 mm	615 mm
Depth:	720 mm	720 mm	720 mm
Weight	66 kg	56 kg	53 kg



## Forum Line



### F12

The demands on modern high-performance systems regarding their long-throw capability, low distortion, and intelligible sound are constantly growing. The introduction of DYNACORD's patented Planar Waveguide technology marks a quantum leap in the field of high-efficiency, direct radiating subwoofer systems.

Typical long-throw systems offer extreme throw on the cost of a comparably small directivity angle, so that several cabinets need to be employed to provide coverage of the entire audience area.

The Conical Waveguide horn F 12 CWH is a very compact Mid/Hi-component offering an immense SPL and a comparably wide radiation pattern. The speaker components are coaxially mounted, which provides a smooth extended frequency response within the entire radiation range.

In the Mid-Bass range works an ELECTRO-VOICE DL12 ST high-performance transducer mounted on a Conical Waveguide horn. The high-frequency range above 800 Hz is reproduced by an ELECTRO-VOICE DH6-8 driver, firing into a coaxially mounted 80°x55° wide coverage horn.

This coaxial design ensures extreme linear transmission, without the occurrence of Dead-Spots as they are usually found with conventional systems.

#### FREQUENCY RESPONSE

The sound of the F 12 CWH provides is marked through its noticeably high dynamic range with comparably low distortion. The linear frequency response between 100 Hz – 19 kHz (-10 dB) is as excellent as its SPL of 106 dB 1W/1m and the cabinet's off-axis sound is still impressively neutral and uncoloured.

#### THROW CAPABILITY

Because of its exceptional level of efficiency and outstanding power handling capacity of 350 W (EIA RS-426A), Even when employed as stand-alone cabinet, the



F 12 CWH offers excellent long-throw coverage, stable intelligible sound and superb performance.

The F 12 CWH represents a truly economic solution for a wide range of applications in festival tents, halls and at medium-size open-air events when compared to conventional long-throw systems (e.g. 35° x 35°) and because of its wide radiation angle of 80° x 55° and its superior medium and long-throw capability. Despite its wide coverage, the Conical Waveguide design awards the F 12 CWH with an on-axis sound pressure level that is identical to that of a typical long-throw component.

#### USAGE

Integrated in the cabinet is a passive horn-EQ, which allows using the F 12 CWH for vocal reproduction when directly connecting it to any common linear power amplifier. Only employing a 160 Hz Lo-Cut filter is recommended to protect the 12" horn system against low-frequency overload.

#### PROTECTION

Multi-stage protection circuitry guards the F12CWH driver systems from being damaged by thermal overload.





## F9

The F9CWH is an extremely powerful and yet compact Mid/Hi-cabinet that has been designed for medium and long-throw applications. The Constant Directivity horn HT94 is coaxially aligned in a conical mid-frequency horn and offers a nominal radiation angle of 90° x 40°, which provides extremely smooth transmission without distressing interference in the x-over frequency range between the mid and high-frequency horns.

The mid-frequency range is reproduced by an Electro-Voice DL 12ST speaker system, while high frequency reproduction is taken care of by an Electro-Voice DH2T driver with titanium diaphragm, which is renowned for his excellent vocal definition and crystal-clear treble sound. The SPL of 105dB/1W/1m allows almost doubling the throw-capability of conventional direct-radiating loudspeaker cabinets.

Employing at least two Lo-cabinets per side – e.g. two F5 or two F118 – for bass sound reproduction is recommended to match bass-SPL to the exceptionally high efficiency of the F9CWH.

(also refer to “Xa5-System” in the Application Guide on page 54).



## F120

By designing its 2-way speaker system F120, DYNACORD set a new standard for professional 12" 2-way cabinets. A sound pressure level of 100 dB, wide coverage and its excellent sound quality make the F120 equally suitable to be used as full-range cabinet or as Mid-Hi component in active 2-way applications. When comparing the F120 to conventional 12" 2-way speaker systems, it provides nearly double the throw and power as well as a convincingly natural reproduction of vocals. An Electro-Voice DL12 ST 12" speaker serves as a woofer system while an Electro-Voice DH2T driver with titanium diaphragm and HT94 Constant Directivity horn provides exceptionally powerful mid-range sound and crystal-clear trebles. The newly designed frequency x-over is furnished with halogen lamps and thermal-breakers, which provide reliable protection against overload. The system-switch on the connection board allows easily configuring the F120 for full-range operation or connection to DYNACORD system power amps like the PM 2600 or Xa2600. The carrying handles are prepared for retrofitting a TÜV-approved rigging-kit to allow trouble-free “flying” applications.





### F150



A professional 15" 2-way cabinet offering optimal sound, low weight and an outstanding price-performance ratio – that was the challenge for our engineering. A sound pressure level of 102 dB, wide coverage and its excellent sound quality make the F150 equally suitable to be employed as full-range cabinet or as Mid-Hi component in active 2-way applications offering an convincingly natural reproduction of vocals. An Electro-Voice DL15Y 15" speaker serves as a woofer system.

An Electro-Voice DL12 ST 12" speaker serves as woofer system while an Electro-Voice DH2T driver with titanium diaphragm and HT94 Constant Directivity horn provides exceptionally powerful mid-range sound and crystal-clear trebles. The newly designed frequency x-over is equipped with halogen lamps and thermal-breakers, which provide reliable protection against overload. The system-switch on the connection board allows easily configuring the F150 for full-range operation or connection to DYNACORD system power amps like the PM 2600 or Xa2600. Frontal protection is provided through a robust steel grille that is covered with acoustic foam. The carrying handles are prepared for retrofitting a TÜV-approved rigging-kit to allow trouble-free "flying" applications.



### F5



The F5 is a compact, but yet high-efficiency subwoofer system. An EV DL15Y woofer works in the optimally vented cabinet, ensuring highest power handling, efficiency and low distortion. The integrated passive PowerMax x-over (x-over frequency 160Hz) features a parallel output and an additional crossover output offering trouble-free parallel or x-over operation when combined with professional full-range or Mid-Hi cabinets. Reliably protecting the woofer against critical peak levels and thermal overload are a thermal breaker and professional halogen lamps. The 4-pole SPEAKON-type connectors wired-through, allowing active system installations that employ DYNACORD system power amps PM2600 or Xa2600 for instance can be set up using 4-pole SPEAKON-type cables, without the risk of inadvertent mismatching. Four extremely robust castors are located on the cabinet's rear and four ergonomically optimised recessed handles facilitate handling and transportation. Frontal protection is provided through a robust steel grille that is covered with acoustic foam.





## F8

The F8 subwoofer marks DYNACORD's consequent further development of the meanwhile legendary F118. The highly efficient Electro-Voice EVX180B 18" woofer is capable of handling a continuous program power capacity of 500 W offering a peak-SPL of 130dB and lowest non-linear distortion. The integrated passive PowerMax x-over (x-over frequency 160Hz) features a parallel output and an additional crossover output offering trouble-free parallel or x-over operation when combined with professional full-range or Mid-Hi cabinets. Reliable protection of the Electro-Voice EVX180B woofer against critical peak levels and thermal overload is guaranteed through a thermal breaker and professional halogen lamps. The SPEAKON-type connectors wired-through, allowing active system installations that employ DYNACORD system power amps PM2600 or Xa2600 for instance can be set up using 4-pole SPEAKON-type cables, without the risk of inadvertent mismatching. Four extremely robust castors are located on the cabinet's rear and four ergonomically optimised recessed handles facilitate handling and transportation. Frontal protection is provided through a robust steel grille that is covered with acoustic foam.



## F17 PWH

The F17PWH is a highly efficient bass-cabinet with optimally matched dimensions an enclosure geometry to perfectly complement the F12CWH Mid-Hi cabinet. Its compact size, castors on the rear as a standard and low weight make the F17PWH the first choice for medium and long-throw on-the-road applications. Through its high efficiency of 99 dB (1 W/1 m) and a power handling capacity of 500 watts, the F17PWH accomplishes coverage distances of 60 m – 80 m in two-stack operation and of 120 m – 160 m when stacked in four. The recommended transition frequency to Mid-Hi cabinets is 160 Hz/18 dB/oct. Butterworth or 24 dB/oct. Linkwitz-Riley.



## F18 PWH

The F18 PWH is mostly used serving as high-performance subwoofer. Especially its supreme long-throw ability and mid-bass range directivity make the F18PWH the predestined subwoofer to be employed in basically any system configuration. Both Planar Waveguide™ bass-horns are equipped with an ELECTRO-VOICE EVX180B 18" high-performance chassis with a power handling of 500 watts RMS / 1,000 watts program into 8 Ω.







### SPECIFICATIONS

Type	F 12 CWH	F9 CHW	F120	F150
Design	2-way Cabinet	Waveguide Horn	2-way	2-way
Components				
LO:	1 x 12" DL12 ST OEM	1 x 12" DL12 ST	1 x 12" DL12 ST	1 x 15" DL15 Y
HI:	DH 6-8 HP 8055	DH 2T HT 94	DH 2T HT 94	DH 2T HT 94
Nominal power rating RMS	350 W*	300 W	300 W	400 W
Program power capacity	700 W	600 W	600 W	800 W
Frequency response (-10 dB)	100-1900 Hz	140 Hz - 1900 Hz	75 Hz-18 kHz	70 Hz-18 kHz
Nominal SPL (1W/1m)	106 dB	105 dB	100 dB	102 dB
Max. SPL*	134 dB	133 dB	128 dB	131 dB
Crossover Frequ. (passive)	800 Hz			
Impedance:	8Ω		8 Ω	8 Ω
Crossover frequencies	800/7 kHz	1.6 kHz	1.6 kHz	
Dimensions				
Width	606 mm	436 mm	436 mm	522 mm
Height	625 mm	517 mm	629 mm	755 mm
Depth	792 mm	471 mm	339 mm	395 mm
Weight	54 kg	28.5 kg	21.5 kg	26.5 kg

\* EIA RS-426A

### SPECIFICATIONS

Type	F5	F8	F 17 PWH	F 18 PWH
Design	Subwoofer	Subwoofer	18" Planar Waveguide Horn	18" Planar Waveguide Horn
Impedance	8Ω	8Ω	8Ω	8Ω
Rated Power Capacity RMS	400 W	500 W	500 W	500 W
Program Power Capacity	800 W	1000 W	1000 W	1000 W
SPL (1W/1m)	100 dB	100 dB	99 dB	103 dB
max. SPL (calc.)	129 dB	130 dB	129 dB	130 dB
Frequency Range (-10 dB)	48-280 Hz	40 -300 Hz	39-255 Hz	40-2000 Hz
Crossover Frequ. (passive)	160 Hz	160 Hz		
Components				
LO	1 x 15" DL15 Y	1 x 18" EVX 180B	1 x 18" EVX 180 B	1 x 18" EVX 180 B
HI				
Dimensions				
Width:	436 mm	522 mm	606 mm	606 mm
Height:	617 mm	737 mm	625 mm	760 mm
Depth:	674 mm	674 mm	792 mm	1176 mm
Weight	30.5 kg	38.0 kg	42.5 kg	53.0 kg



## CORUS PRO

The CORUS PRO Line is the consequent further development of the CORUS-Line loudspeaker series. Specially revised frequency x-overs and optimised protection circuitry result in superb sonic performance and electric dependability.

The extremely hardwearing lacquer-finished surfaces and stable steel front-grilles of all CORUS PRO components as well as the straight frontages and castors of the two big woofer cabinets ensure ultimate transportability. All CORUS PRO Line full-range models are furnished with pole-mount stand sleeves on the bottom while all woofer

cabinets have pole-mount threaded flanges for the insertion of top-part connection poles on the top. Electrical connection is established via two Speakon-type NL4 IN/OUT-connectors that are connected in parallel.

All CORUS PRO Line bass cabinets employ passive frequency crossovers that guarantee the trouble-free parallel operation with the full-range cabinets. The transition frequencies between top-part and woofer cabinet are carried out in PowerMax technology, so that even smaller sound system installations provide exceptionally powerful bass-performance.

### SUB 800 A

#### *Active 15" Subwoofer, Optimally Vented Cabinet Design, 800 W*

The active subwoofer SUB 800 A houses a 15" transducer, an active PowerMax stereo x-over, and an integrated power amplifier. Using the SUB 800 A together with a PowerMate or a mixer/power amp combination provides the possibility to easily expand a full-range system into an active stereo 2-way system with subwoofer. On the other hand, operating the SUB 800 A connected in parallel with an existing system set-up to provide an extended sub-bass response is possible as well.

The integrated electronic stereo 2-way frequency crossover in PowerMax technology divides the audio signal into Mono-Sub and stereo Mid-High range.

When operated in active 2-way mode, the mid-high signal is outputted via the SUB 800 A's Mid-High outputs from where it is fed to the Master Return connectors of the mixer or PowerMate, where it gets amplified. The summed L/R-Mono-Sub signal is directly fed to the integrated power amp. The recessed mounted High Efficiency power amplifier provides an output power capacity of 800 watts, is realised in "Class H" topology and drives an Electro-Voice DL 15 Y 15" woofer system. This combination provides a maximum sound pressure level of 128 dB/1m. Of course, all well known protect circuitry like audio limiters, TBC, Back-EMF, DC, HF, Short-Circuit and Thermal Protection are integrated. The enclosure of the SUB 800 A comes in a black, extremely hardwearing structure lacquer finish. Four large-scale castors on the rear panel and two recessed metal carrying handles ensure easy handling and comfortable transportation.



SUB 800 A Connection Board



## CP 12-2

### 2-Way Full-Range or Mid-High Cabinet, 150 W

The extraordinary compact, optimally vented cabinet houses a 12" Dynacord woofer and a Constant Directivity Mid-Hi horn with a nominal radiation angle of 90° x 40°. The CP 12-2 is universally suitable for small or medium-sized stage sound reinforcement systems. The asymmetrically shaped enclosure also allows using this cabinet in monitor applications, which require extended bass range sound reproduction.

Furthermore, the CP 12-2 delivers impressive results when combined with a CP 12-1 SUB 12" subwoofer cabinet or a CP 15-1 SUB 15" subwoofer cabinet. The subwoofers can be connected in parallel without the need for additional frequency crossovers.

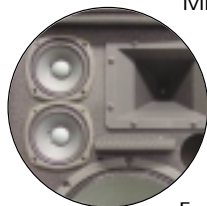


## CP 12-3

### 3-Way Full-Range or Mid-High Cabinet, 200 W

The CP 12-3 is the ideal all-round cabinet. It employs a 12" Dynacord woofer, two 4.5" Mid-Hi transducers in CMD-configuration (Columnar Midrange Design) and a Constant Directivity Mid-Hi horn with a nominal radiation angle of 90° x 40°. The CP 12-3 offers outstanding intelligibility and precise resolution even in the critical mid range. The CMD-Design allows for an extremely wide horizontal splay angle of 160°. Combining the CP 12-3 with a CP 15-1 SUB or CP 18-1 SUB in parallel operation is possible without a problem.

Especially when used together with a CP 18-1 SUB and additionally employing a PowerMax 230 frequency crossover and STANDARD or LINEAR PRECISION Series power amps, creating active 2-way sound reinforcement installations has never been easier.



## CP 15-3

### 3-Way Full-Range Cabinet, 400W

The "fifteen-three" is a true classic among 3-way full-range loudspeaker systems. It is equipped with an Electro-Voice DL 15Y 15" woofer, a 10" Mid-range transducer and a Constant Directivity horn with a nominal radiation angle of 90° x 40°. This combination provides fundamental bass and powerful mid-frequency reproduction as well as precise and uncoloured treble. Ideal partners for establishing active 2-way systems are the subwoofers CP 15-1 SUB and CP 18-1 SUB in combination with a PowerMax 230 x-over and STANDARD or LINEAR PRECISION Series power amps.





## **CP 12-1 Sub**

**12" Add-On Bass Cabinet, 300 W**

This bass cabinet in an optimally vented cabinet design provides extended, powerful low-frequency reproduction and is the ideal add-on-solution for the CP 12-2, the CP 12-3 or any other small top-parts. It houses a LFT 6008 12" woofer system and a passive crossover (12 dB Lo-Pass/100 Hz) in PowerMax technology, providing trouble-free parallel operation with CP 12-2 Mid-Hi cabinets. Despite its compact dimensions, the CP 12-1 SUB provides a remarkable power handling capacity of 300 watts that delivers impressive low-frequency sound reproduction.



## **CP 15-1 Sub**

**15" Direct-Radiating Subwoofer,  
Optimally Vented Cabinet Design, 400 W**

The CP 15-1 is furnished with a high-performance Electro-Voice DL 15Y 15" woofer system making it the ideal choice to supplement CP 12-3 or CP 15-3 in passive system configurations. The integrated passive frequency x-over (12 dB Lo-Pass/100Hz) in PowerMax technology provides powerful and precise bass sound when combined with the previously mentioned top-parts.



## **CP 18-1 Sub**

**18" Direct-Radiating Subwoofer,  
Optimally Vented Cabinet Design, 500 W**

Employing an Electro-Voice EVX 180 B 18" woofer chassis, this direct-radiating optimally vented subwoofer design provides fundamental reproduction of ultra-low frequencies in exceptionally precise sound quality. Its integrated passive frequency crossover (12 dB Lo-Pass / 100 Hz) makes the CP 18-1 SUB the ideal choice for passive system set-ups (together with CP 12-3 or CP 15-3) but also for any active 2-way application when combined with a PowerMax 230 crossover and STANDARD or LINEAR PRECISION Series power amps.





## AM 12

### Active 2-Way Universal Speaker System, 360 W

The perfect Plug 'n' Play monitor-solution for almost any application – the AM 12 is equipped with a LFT 3008 12" Dynacord woofer system and a Constant Directivity Mid-Hi horn. The integrated full-range power amp in class "H" technology comes with an ample 300 watts for the Lo-channel and additional 60 watts amp for Hi-channel. Its versatile connections and settings ability (Mic, Line, and Aux) and in addition to the passive monitor-box M 12 makes the AM 12 perfect choice for any complete monitoring solution as well as for smaller PA- and multi-media reinforcement applications. Additional tools are offered in the ACOUSTIC PROCESSING section: The Lo-EQ is an adjustable LPN-filter controlling the "punch", the MID-EQ as a 4kHz DIP-filter allows to adjust the aggressivity of the horn, while the HI-EQ gives you the control on the "clarity" of the Highs.



AM12 Connection Board

#### SPECIFICATIONS

#### AM12

#### M12

##### System Specifications

Design	2-way Active Speaker Cabinet	2-way Passive Monitor
Sound Pressure Level 1W/1m	100 dB	100 dB
Maximum Sound Pressure Level 1m (calculated)	125 dB	125 dB
Frequency Range	55Hz - 18kHz	80Hz - 18kHz
-10dB (AM12: LO Control in max. pos.)		
<b>Components</b>		
High Frequency Transducer:	HFT 3008	HFT 3008
12" Woofer:	LFT 3008	LFT 3008
Power Consumption at 1/8 maximum output power @ 4 W	180 W / 230V, 50Hz	
Dimensions (W x H x D), mm	530.5 x 355 x 344	530.5 x 355 x 344
Weight	21 kg	16 kg

##### Amplifier Specifications

Fullrange Amplifier Design	High Frequency Amplifier	
	Class H (High Efficiency)	Class AB
Maximum Midband Output Power	300W	60W
THD=1%, 1kHz, 10kHz		
Rated Output Power	250W	40W
THD<0.2%, 30Hz - 20kHz, 3kHz - 20kHz		
Maximum Output Power	450W	70W
Dynamic-Headroom, IHF-A		
THD+N at rated output power, MBW=80kHz, 1kHz, 10kHz	< 0.1%	< 0.1%
Signal to Noise Ratio, A-weighted	104 dB	105dB
Protection	Audio limiters, High temperature, DC, HF, Back-EMF, Peak current limiters, Inrush current limiters, Turn-on delay, Speaker Protection for HF-Driver	

##### Input and Mixing Section

Inputs	Mic Input (XLR), Phantom Power Line In & Out (1/4" Jack Sockets) AUX Input (Cinch L/R)
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##### Acoustic Processing Section

Indicators	HI: - EQ, MID: - Notch 4kHz, LO: - LPN* variable Power, Limit, Protect
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Unless otherwise specified: Amplifiers at rated conditions, 4W load on fullrange- and 8W load on hf-amplifier, Acoustic Processing controls in 0-position, Line Trim in max. position, MIC & AUX Level in min. position.

\*patented



## SPECIFICATIONS

	CP 12-2	CP 12-3	CP 15-3	CP 12-1 Sub	CP 15-1 Sub	CP 18-1 Sub	SUB 800A
<b>Power capacity:</b>							
RMS	150W	200W	400W	300W	400W	500W	800 W
Cont.Program	300W	400W	800W	600W	800W	1000W	540 W
<b>SPL (Sound pressure level):</b>							
1W/1m (IEC 268-5)	97dB	98dB	102dB	96dB	100dB	98dB	100dB
Max. SPL (calculated Cont. Prog.)	122dB	124dB	131dB	124dB	129dB	128dB	128dB
<b>Impedance:</b>							
Nominal	8 Ohms	8 Ohms	8 Ohms	8 Ohms	8 Ohms	8 Ohms	8 Ohms
<b>Frequency range:</b>							
- 10 dB	70Hz - 18kHz	50Hz - 18kHz	50Hz - 18kHz	60Hz - 280Hz	48Hz - 280Hz	40Hz - 280Hz	45Hz - 150Hz
<b>Crossover frequencies:</b>							
Int. Passive X-Over Freq.	4kHz	700Hz/4kHz	400Hz/4kHz	100Hz, 12dB/Oct.	100Hz, 12dB/Oct.	100Hz, 12dB/Oct.	100Hz, 12dB/Oct.
Rec. Active X-Over Freq. - dB/oct	100Hz, 12dB/Oct.	100Hz, 12dB/Oct.	100Hz, 12dB/Oct.	100Hz, 12dB/Oct.	100Hz, 12dB/Oct.	100Hz, 12dB/Oct.	PowerMax12*, 100Hz
<b>Components:</b>							
Components HI	HFT 3008	HFT 3008	HFT 3008				
EDV #	347 489	347 489	347 489				
Components MID		2x MFT 8004	MFT2008				
EDV #		337 757	330 983				
Components LO	LFT 3008	LFT 3008	DL15Y	LFT 6008	DL15Y	EVX180B	EV DL15Y
EDV #	330 499	330 499	343 949	358 499	343 949	349 397	(361142)
<b>Connectors:</b>							
Input - Output	2x NL4MP Pin 1+/-	2x NL4MP Pin 1+/-	2x NL4MP Pin 1+/-	2x NL4MP Pin 1+/-	2x NL4MP Pin 1+/-	2x NL4MP Pin 1+/-	2x NL4MP Pin 1+/-
<b>Dimensions:</b>							
B x H x T (mm) incl. Füße	357x511x335	412x617x322	502x727x362	357x511x410	431x601x664	512x721x664	431x601x664
<b>Weight:</b>							
Net weight (kg)	17,5	24,5	35	20	34,5	44,5	43,0
<b>Outfit:</b>							
Material	Mediapan 16mm	Mediapan 16mm	Mediapan 16mm	Mediapan 16mm	Mediapan 16mm	Mediapan 16mm	Mediapan 16mm
Design	varnished black	varnished black	varnished black	varnished black	varnished black	varnished black	varnished black
Pole-mount-threaded-flange				1	2	1	1
Pole-mount-stand-adapter	1	1	1				
Handles	1	1	2	2	2	4	2
Grille	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Wheels					4	4	4 transport castors
<b>Warranty</b>	36 month	36 month	36 month	36 month	36 month	36 month	36 month

\* patents pending





## LittleMax



### LM 8-2

LM 8-2



The top-cabinet LM 8-2 employs an 8" woofer and a powerful horn-driver combination, which makes it also suitable as full range system for smaller sound reinforcement purposes without additional sub woofer. The cabinet's enclosure is slanted on one side, allowing its use as monitor system as well.



### LM 10-1

LM 10-1



The LM 10-1 10" sub woofer's low-frequency response and unparalleled dynamic range is truly amazing. So far, nobody would have anticipated those features from a system of such compact size. When used together, the LM 8-2 and the LM 10-1 are simply operated parallel, without additional electronics. The system-pack includes Speakon loudspeaker cables and stand poles.



### LM 10-2

LM 10-2



The LM 10-2 full range cabinet employs a 10" woofer and an Electro-Voice DH2010A/HPT94 HF-horn/driver combination. The enclosure is slanted on one side, which allows the cabinet to be also used as monitor speaker.



### LM 12-1

LM 12-1



The LM 12-1 sub woofer houses an Electro-Voice DL12SX, offering a power handling capacity of 300 watts. All system components are protected against thermal overload.

Both subwoofers, LM 10-1 and LM 12-1, are equipped with a built-in PowerMax-12 crossover which allows the simple parallel operation with fullrange loudspeakers.



## LM 15-1 SUB

The LM 15-1 subwoofer has been specially designed for users who want to combine a passive monaural subwoofer with an existing small satellite system installation, without the need for additional power amps or active frequency crossovers.

The admissible power handling capacity of the LM 15-1 is 2 x 400 watts RMS respectively 2 x 800 watts cont. program with a nominal impedance of 8 ohms. The LM 15-1 is capable of providing a maximum SPL of 126 dB/1 m (cont. program) within a transmission range of 55 Hz to 200 Hz (-10 dB).

The LM 15-1 Subwoofer employs an integrated passive PowerMax stereo frequency crossover, which sums up the L/R-low-frequency audio signals. The summed signal is output via the subwoofer. The satellite speaker systems, like for example LM 8-2 or LM 10-2, are simply connected to the corresponding outputs on the LM 15-1 subwoofer. An integrated switch also allows using the LM 15-1 as stereo subwoofer in bigger installations. The LM 15-1 sub-

woofer is furnished with an Electro-Voice DL 15 Y high-performance 15" speaker, which houses in an optimally double-vented band-pass design cabinet. A professional halogen protector with additional thermal breakeer protects the speaker system against thermal overload; even in most demanding applications.



The enclosure comes in a black, extremely hardwearing structure-lacquer finish. Four full-size castors on the rear-panel and two stable metal carrying handles plus the pole-mount threaded flange on the top ensure easy and comfortable handling and transportation.



### LittleMax 1 & LittleMax 2 Systems

Please also refer to LittleMax Systems on pages 62/63

### LittleMax 1

- 2 x LM 8-2
- 2 x LM10-1
- 4 x Speakon system cables
- 2 x Speaker-stand poles



### SPECIFICATIONS

	LM8-2	LM10-1	LM10-2	LM12-1	LM15-1
Design:	2-Way	Subwoofer	2-Way	Subwoofer	Subwoofer
Components: LO:	1 x 8"	1 x 10"	1 x 10"	1 x 12"	
HI:	Dynacord HFT3008	Dynacord 357794	Dynacord 357793	EV DL12SX	EV DL15Y
Nominal power rating RMS:	150 W	200 W	200 W	300 W	400 W
Program power capacity:	300 W	400 W	400 W	600 W	800 W
Frequency response (-10 dB):	80 Hz-18 kHz	80 Hz-250 Hz	80 Hz-20 kHz	70 Hz - 280 Hz	55 Hz - 200 Hz
Nominal SPL (1W/1m):	95 dB	97 dB	97 dB	98 dB	97 dB
Max. SPL*:	120 dB	123 dB	123 dB	126 dB	126 dB
Impedance:	8 Ω	8 Ω	8 Ω	8 Ω	8 Ω
Crossover frequencies:	7 kHz	150 Hz	7 kHz	150 Hz	100 Hz
Dimensions:					
Width:	250 mm	297 mm	297 mm	357 mm	430 mm
Height:	425 mm	425 mm	457 mm	495 mm	600 mm
Depth:	280 mm	280 mm	280 mm	280 mm	510 mm
Weight:	11.0 kg	13.5 kg	14.0 kg	17.0 kg	31.5 kg

\* calculated with program power



## Acus Line

*This speaker series represents a line of products which sets standards in price and performance.*

### A122



Compact speaker systems at a more than attractive price.

- TLC-4 Hi-frequency horn
- 12" woofer
- Power handling capacity: 200 W program, 100 W RMS
- Excellent efficiency (97dB 1W/1m)

### A151



The A151 is the ideal partner for an extended sub-bass reproduction. It embodies a DYNACORD 15" high efficiency woofer.

- Power handling capacity: 400 Watt program, 200 W RMS into 8 ohms
- Excellent efficiency: 97dB (1W/1m)

### A152



Low in price - but unrivaled in its class and its performance throughout the whole frequency range! The DYNACORD 15" high efficiency woofer system within this compact 2-way cabinet design provides an impressive low-end sound while the higher frequencies are reproduced by a ferro-electric TLC-4 Hi-frequency horn system with polycarbon diaphragm.

- Excellent efficiency
- High power handling capacity

### A153



The A153 employs DYNACORD 8" midrange transducer which improves the sound intelligibility even over wider distances.

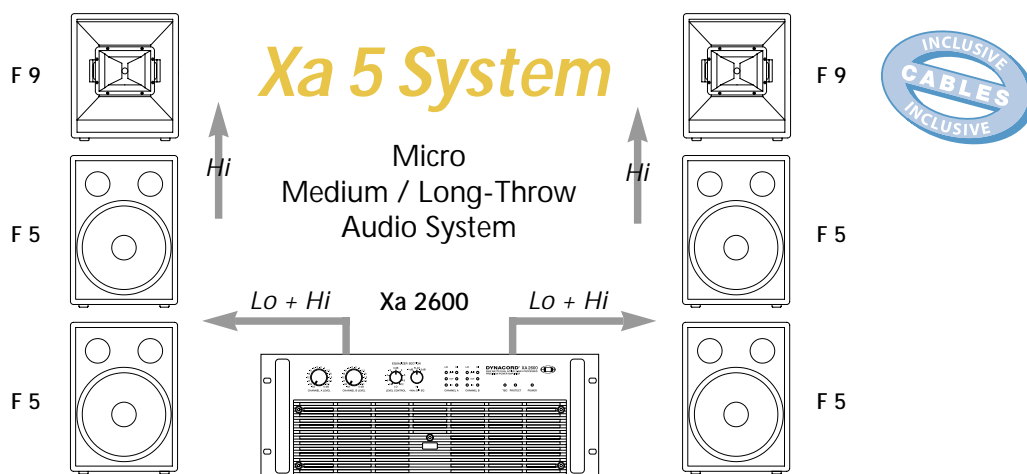
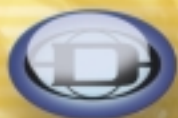
#### SPECIFICATIONS

	A122	A151	A152	A153
Impedance	8 $\Omega$	8 $\Omega$	8 $\Omega$	8 $\Omega$
RMS	100 W	200 W	200 W	200 W
Program Capacity	200 W	400 W	400 W	400 W
SPL (1W/1m)	97 dB	98 dB	98 dB	98 dB
Frequency Response (-10 dB)	65 Hz - 18 kHz	55 Hz - 400 Hz	55 Hz - 18 kHz	55 Hz - 18 kHz
Crossover Frequency	5 kHz	300 Hz	5 kHz	500 Hz / 5 kHz
Drivers LO/MID	LFT 2008	LFT 4008	LFT 4008	LFT 4008/MFT1508
HI	HFT 1008	-	HFT 1008	HFT 1008
Connections	2 x Speakon	2 x Speakon	2 x Speakon	2 x Speakon
Dimensions (WxHxD) mm	372x459x322	513x649x408	513x649x408	513x649x408
Weight	13,5 kg	26,0 kg	25,0 kg	28,5 kg





APPLICATION GUIDE

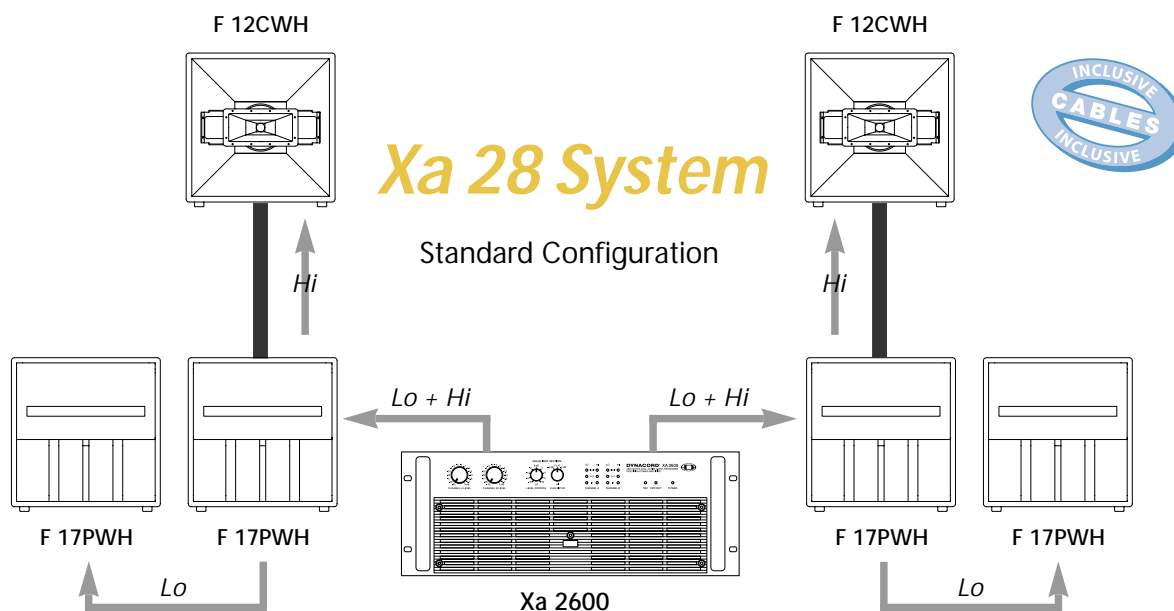


The Xa 5 System is a truly powerful, outstandingly compact loudspeaker system offering superior efficiency in medium and long throw applications.

The system is meant to be used in an active 2-way installation, i. e. together with the XA2600 system power amplifier, or in a passive configuration, i. e. directly connected to a PowerMate 1000, or together with any regular power amplifier. Because of the horn-loaded system's tremendous SPL of 105 dB/1W/1m it is possible to achieve spectacular dynamic results and – compared to conventional direct

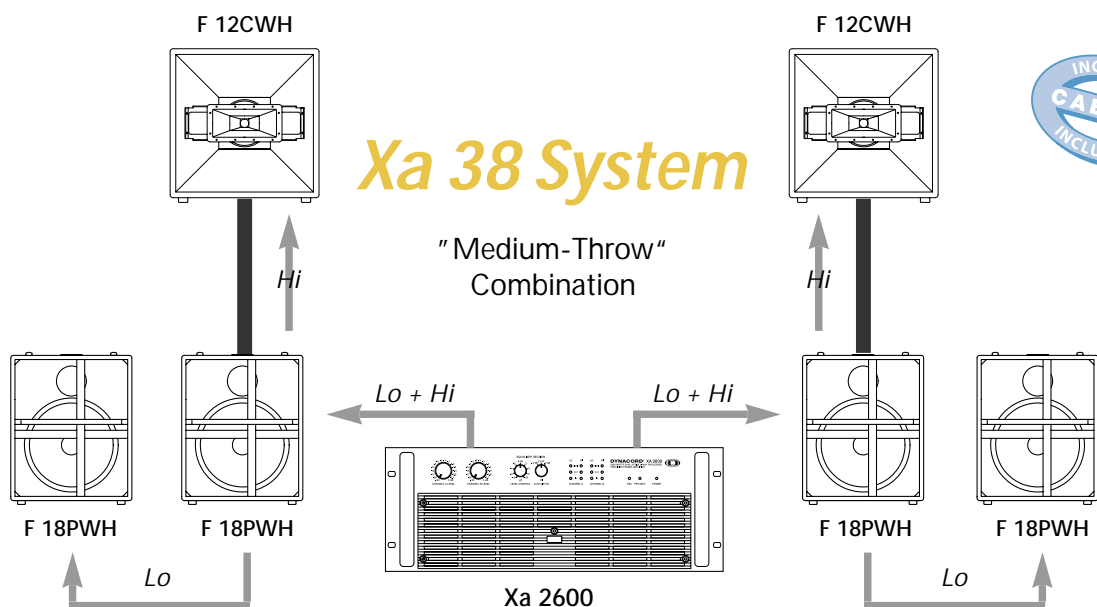
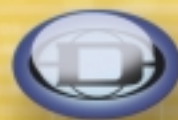
radiating speaker systems – nearly double the long throw capability. The Xa 5 System includes a F9CWH Mid/Hi cabinet and two F5 sub woofers, on each side. When operating the Xa5 system in active 2-way configuration, the recommended crossover frequency between the F5 sub woofers and the F9CWH Mid/Hi cabinet is 160 Hz with a slope of 18 dB/octave and Butterworth characteristics.

The DYNACORD XA2600 system power amplifier provides these filter parameters as a factory preset.



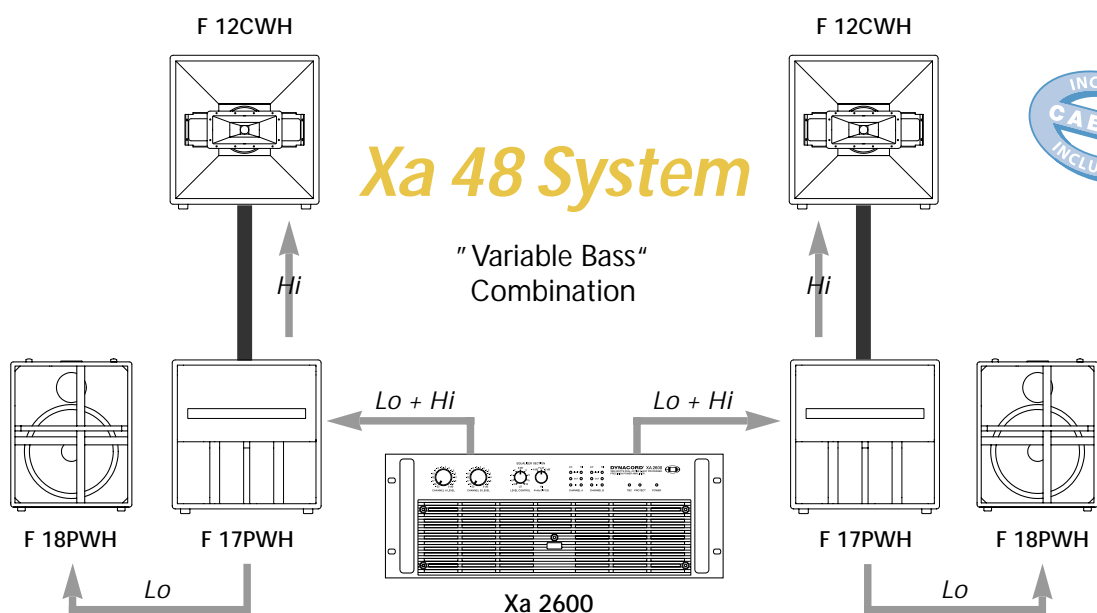
Super-compact, horn-loaded system meant to be used for medium throw applications with identical dispersion capabilities. The Xa28 System is ideally suitable for medium halls or clubs. Being equipped with two F17PWH Planar

Waveguide bass-horns, it is equally appropriate to provide the sound reinforcement at pop/rock live concerts, delivering "fat" bass drum and "slappy" bass guitar sound.



The artist that calls hip-hop, techno and similar music styles his domain, where energetic ultra-low bass sounds are an absolute "must", will simply love the Xa38 System. Employing a total of four FORUM LINE F18PWH sub woofers together with two FORUM LINE F12CWH Mid/Hi-cabinets, this configuration provides outstanding dispersion capabili-

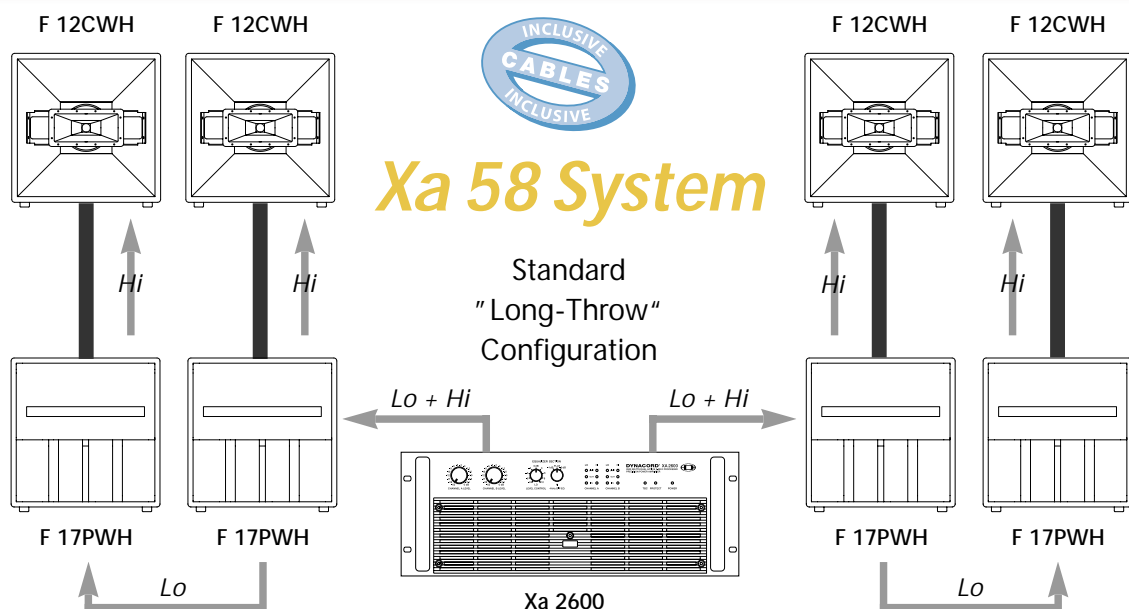
ties that are universally suitable for any medium-throw application. Compared to the Xa28, this system offers extended bass response allowing to re-produce extremely low "techno bass sounds" without a problem. Besides, when using the Xa38 for jazz or rockabilly, the upright bass sounded never more powerful and voluminous.



For medium-throw applications you need a system that is capable of handling any musical style? The extended bass-performance of the Xa48 System configuration with its combination of FORUM LINE F18PWH and FORUM LINE F17PWH speaker systems covering the bass range provides the listener with the bass impact that makes any live

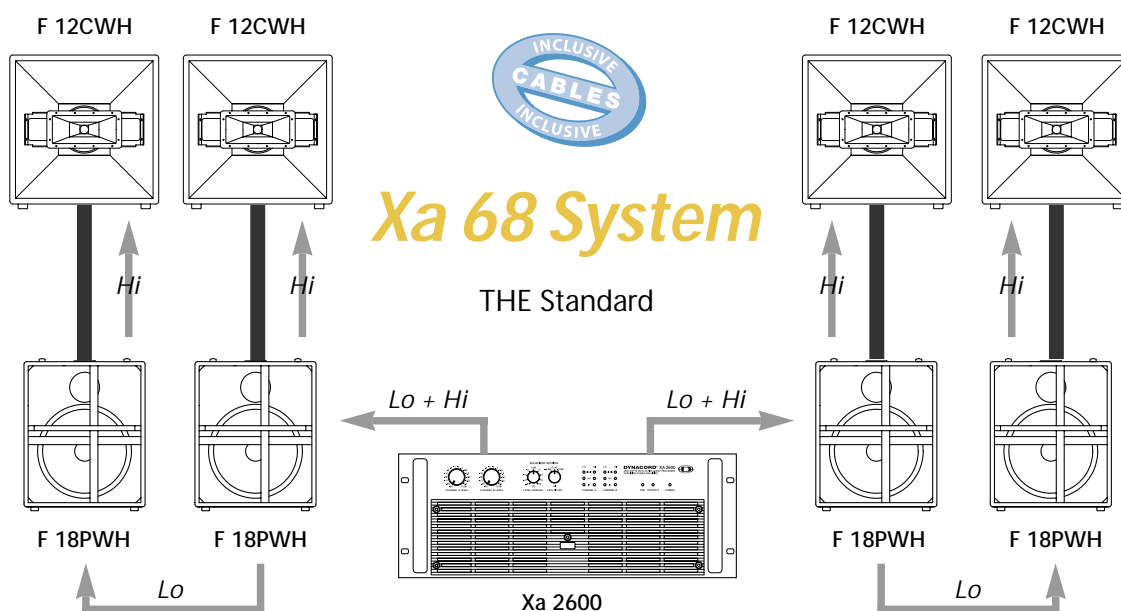
concert a long-lasting experience. For smaller events only the F 17 PWH sub woofers are necessary. In case you will need a system for halls where the coverage has to exceed 100m, "upgrading" the Xa48 is no problem at all. You just supplement the configuration with additional loudspeaker systems.





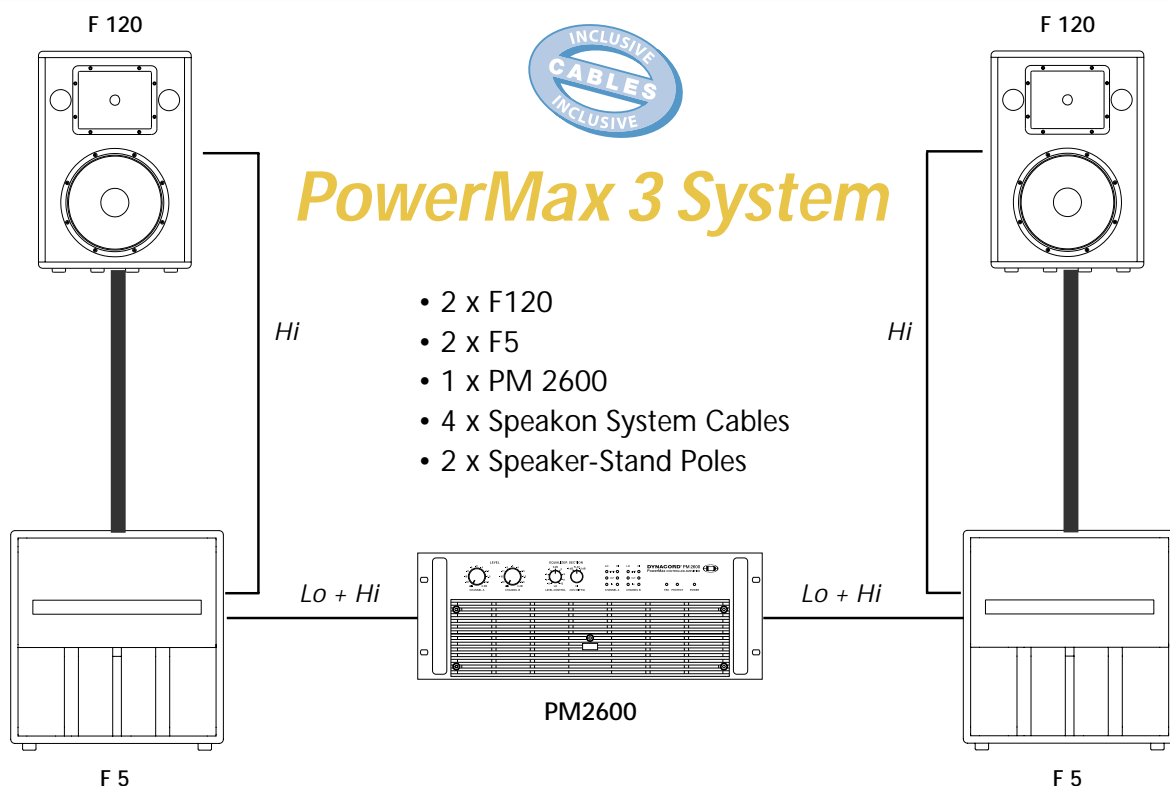
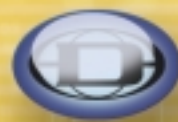
There is a perfect solution for long-throw applications with coverages between 120m - 160m – i. e. huge halls or tents that at the same time require wide dispersion: the Xa58 System. Utilizing a total of four F12CWH for the Hi/Mid-range provides the opportunity to cover an extremely wide area, when

their cabinets are turned slightly against each other. And another four F17PWH provide low frequency sound with tremendous impact. Non matter which musical style or how big the event, the Xa58 is capable to deliver sound reinforcement at its finest - in any location and even in the furthest corner.



Open-air heavy-metal, rave event at an industrial estate or pop-festival in a huge hall – the powerful bass performance at these long-throw events mostly means lots of watts and even more wood. The Xa68 is the ultimate solution for any major live application employing a minimal amount of material and most of all at unbeatable low cost. The Xa68 System provides

very clear and outstandingly intelligible Hi/Mid-sound reproduction and, by incorporating the Planar Waveguide Technology, fundamental impact and directivity in the bass and sub-bass range. If necessary, each stereo-side of the Xa68 can be enhanced by a F18PWH and a F12CWH cabinet, each; without the need for additional power amplifiers.

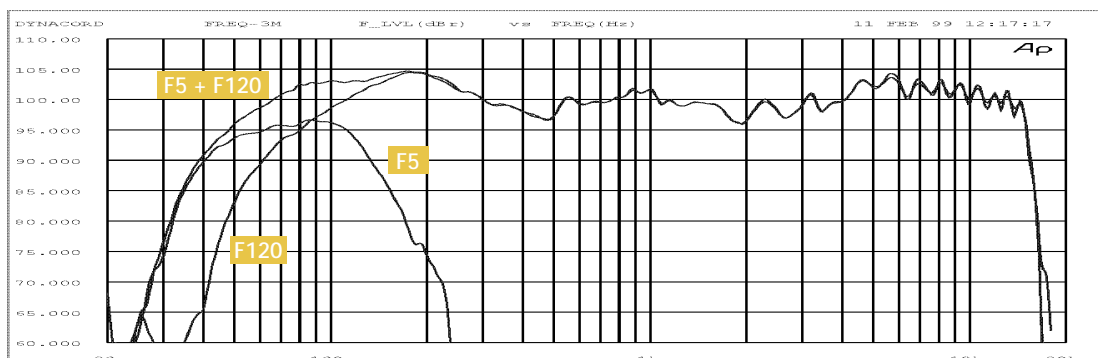


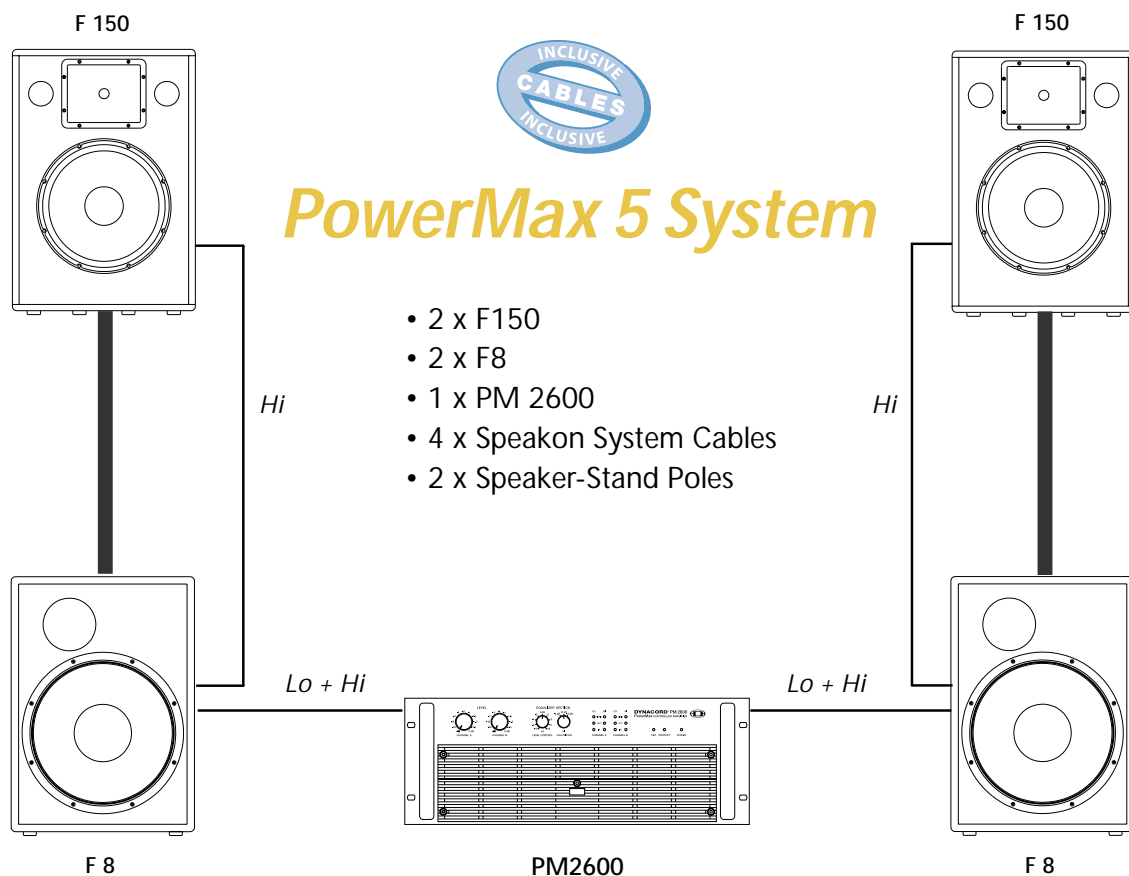
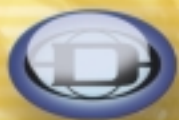
Highest requirements for advanced audio installations regarding their sound pressure level, coverage and sound quality can only be achieved using active multi-component loudspeaker systems that amplify and reproduce the audio signal's individual frequency ranges separately.

Active 2-way installations with additional sub woofer systems probably offer the best price-performance ratio. The low frequency range of the audio signal is reproduced by sub woofers while high-quality full range cabinets take care of the Mid/Hi frequencies and vocals.

The PowerMax 3 System consists of two 12" 2-way cabinets F120, two 15" sub woofers F5, one system power amplifier PM2600, four system cables and two loudspeaker stand poles. In other words, this compact, active 2-way system is ready for operation. The system power amplifier includes the PowerMax controller and provides 2 x 700W in the bass and 2 x 600W in the Mid/Hi range. The system cabling ensures quick and easy installation and highest operational reliability. Using only a single PM2600, it is possible to drive two Mid/Hi cabinets and two sub woofers per stereo channel.

PowerMax System 3: F5 + F120 over PM2600

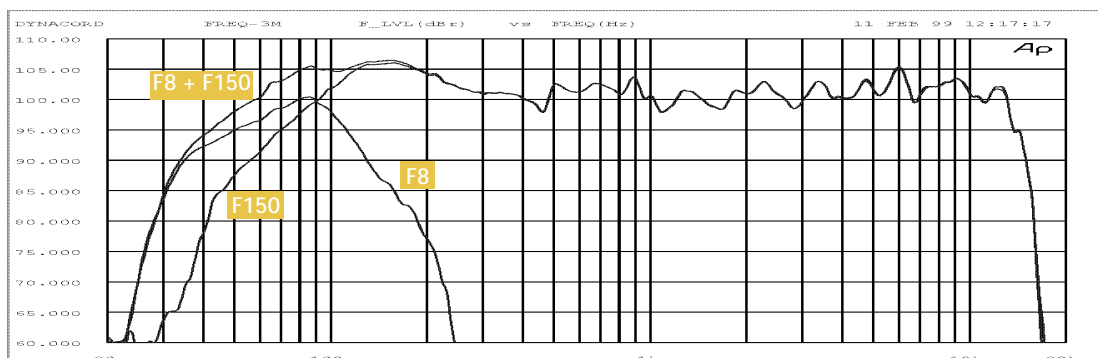




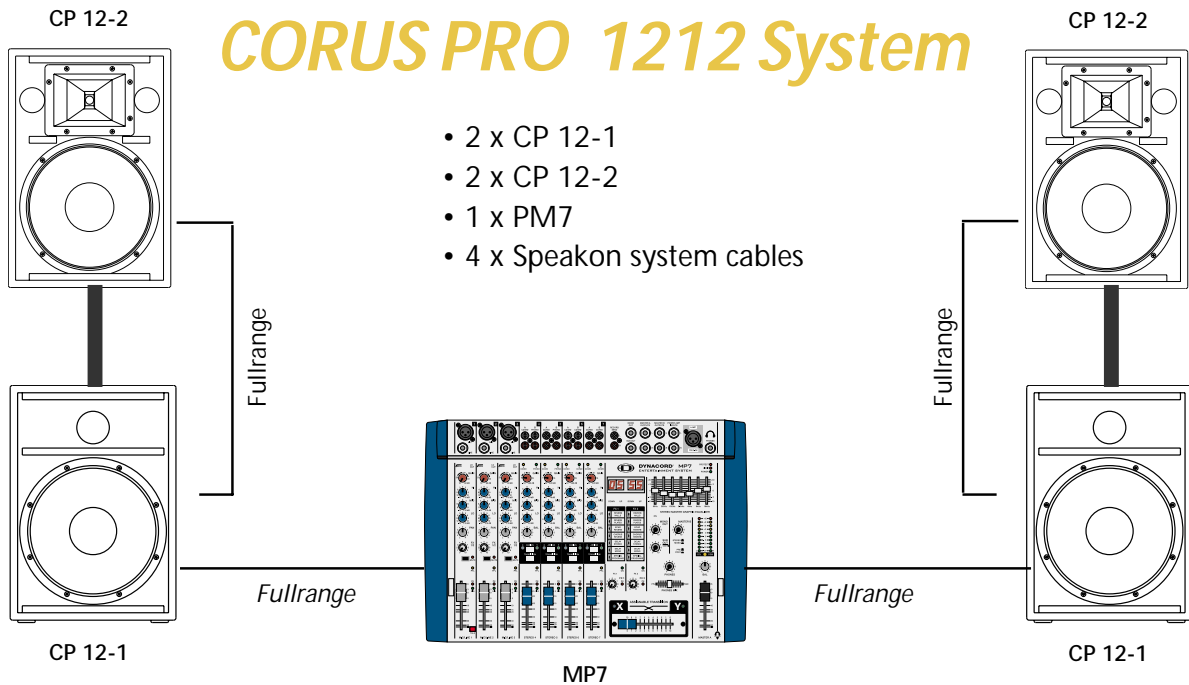
The PowerMax 5 System includes two 15" 2-way cabinets F120, two 18" sub woofers F8, one system power amplifier PM2600, four system cables and two loudspeaker stand poles, making it a ready for operation, high-performance sound reinforcement system in active 2-way configuration that provides truly powerful sound.

The system power amplifier includes the PowerMax controller and provides 2 x 700W in the bass and 2 x 600W in the Mid/Hi range. The system cabling ensures quick and easy installation and highest operational reliability. Using only a single PM2600, it is possible to drive two Mid/Hi cabinets and two sub woofers per stereo channel.

PowerMax 5 System: F8 + F150 over PM2600

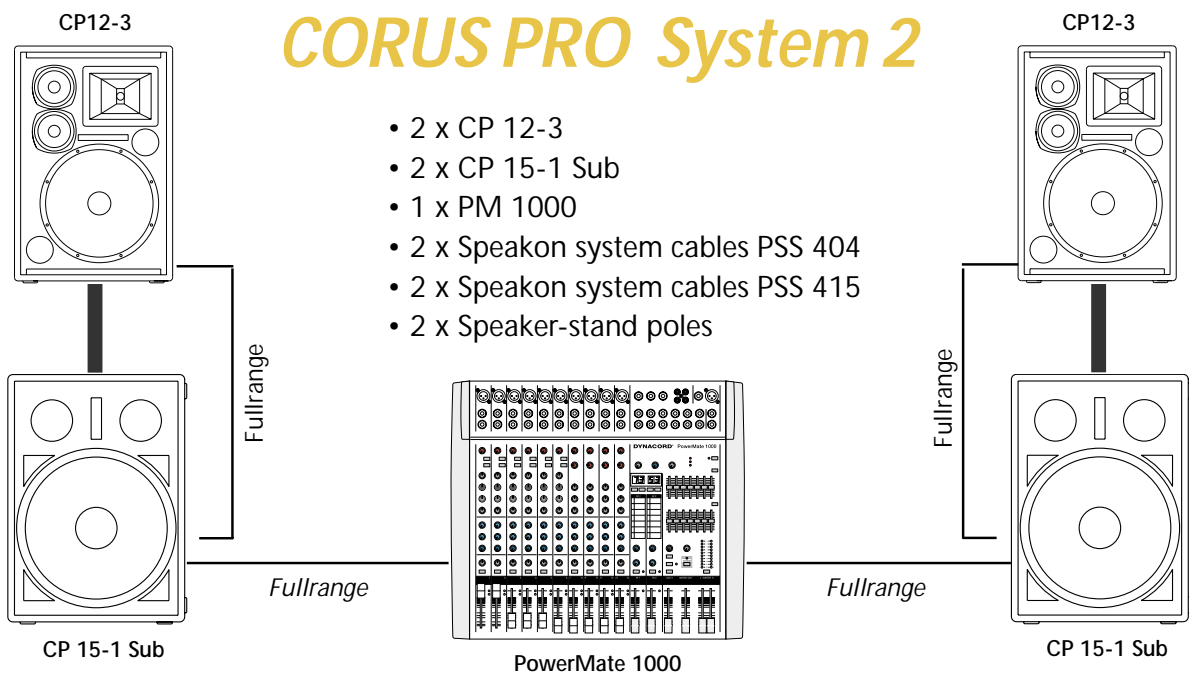






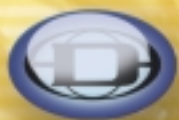
MP7 with 2 x CP12-2 and 2 x CP12-1 –

Passive configuration with 600 watts amplification power for "Mobile DJ" and small sound reinforcement applications.



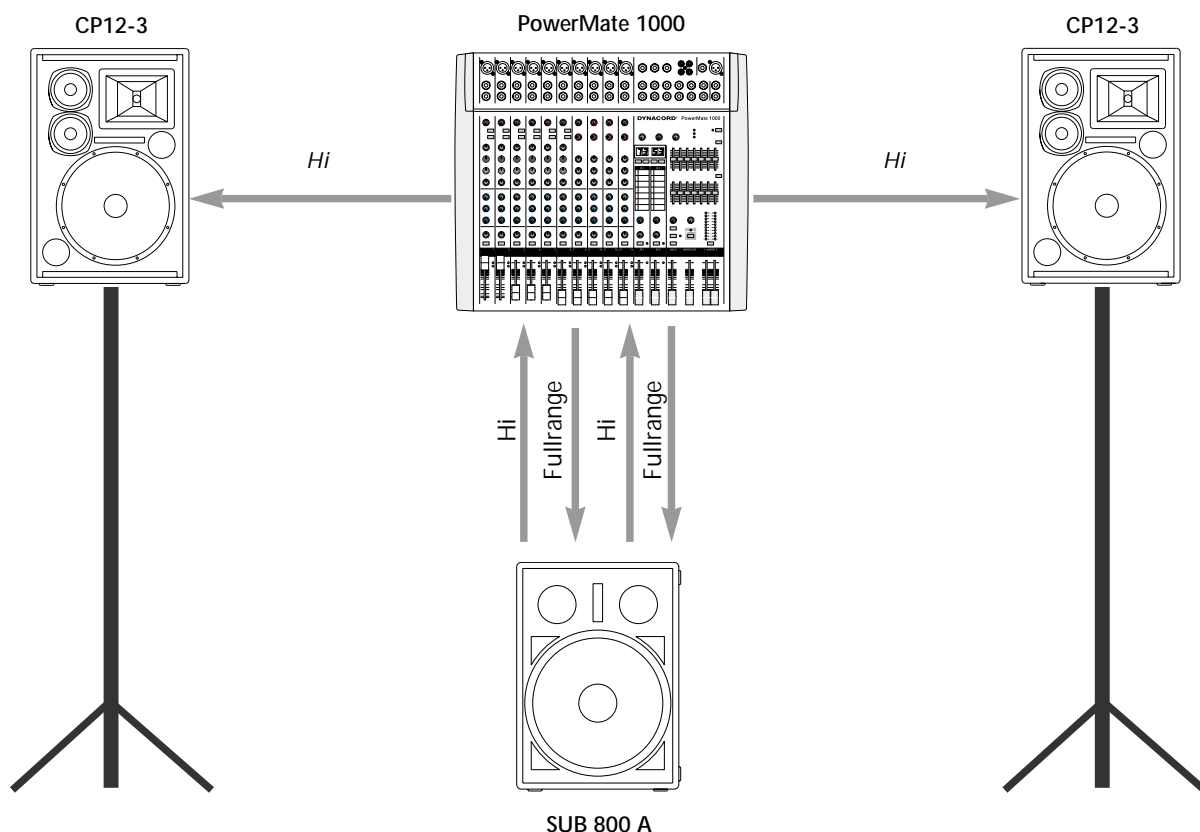
PowerMate1000 with 2 x CP12-3 and 2 x CP15-1 Sub –

Passive configuration with 1000 W amplification power and add-on subwoofers for medium-sized events.



## CORUS PRO System 3

- 2 x CP 12-3
- 1 x SUB 800 A
- 1 x PowerMate 1000
- 2 x Loudspeaker stands



The desire to extend low-frequency sound reproduction of existing full-range systems with as little effort as possible is often heard. The most efficient way to accomplish this task is to include the active subwoofer SUB 800 A. The SUB 800 A gets its audio signal feed from the PowerMate stereo sum-breaks and, by employing the integrated stereo PowerMax x-over, splits the signal into Hi and Lo components. The two Lo-signals are summed up to form a

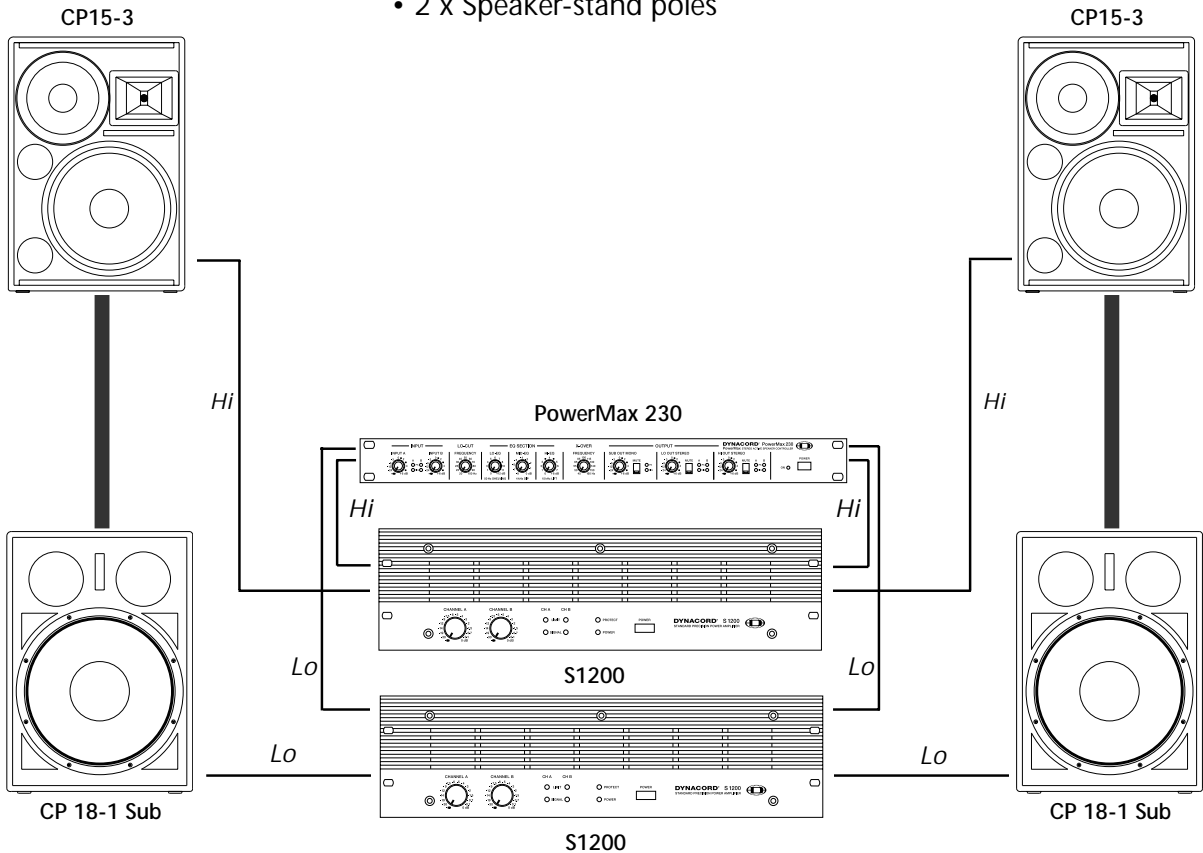
monaural signal that is reproduced from the SUB 800 A. The Hi-band audio signals are sent back to the PowerMate to be amplified by the PowerMate's integrated power amps.

The CORUS 3 system therefore represents an active 2-way system offering exceptional sound quality in a truly compact configuration that is suitable for small to medium-size applications.



## CORUS PRO System 4

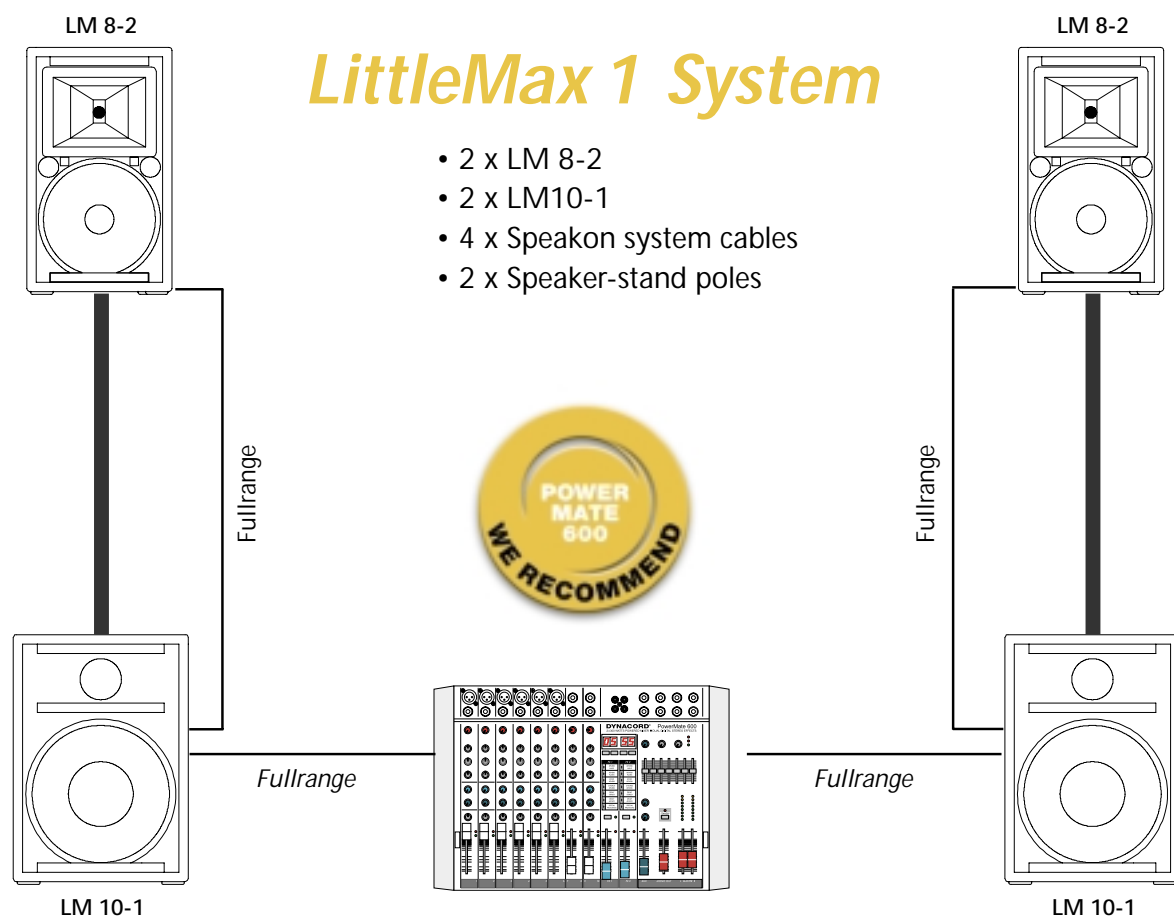
- 2 x CP 15-3
- 2 x CP 18-1 Sub
- 1 x PowerMax 230 Controller
- 2 x S1200 Amps
- 4 x Speakon system cable PSS 415
- 2 x Speaker-stand poles



The "full-size" CORUS Pro System is based on CP 15-3 cabinets and the CP 18-1 subwoofer. PowerMax 230 and 2x S1200 Amp – active 2-way configuration with 2400 watts amplification power for major events and long-throw

applications. The system's dynamic and powerful sound exceed by far any expectations on a compact-class sound reinforcement system.



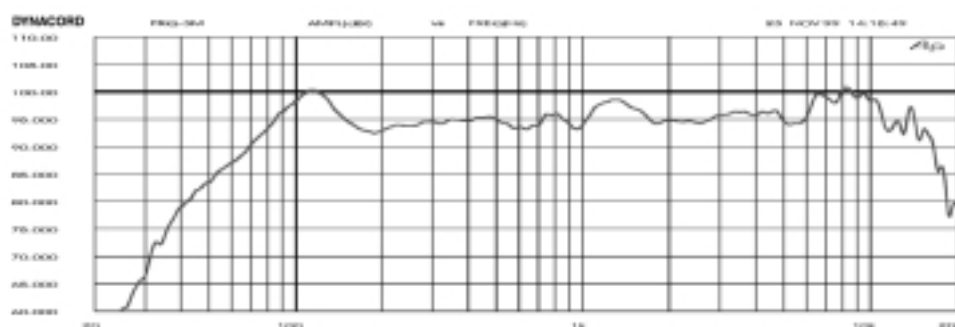


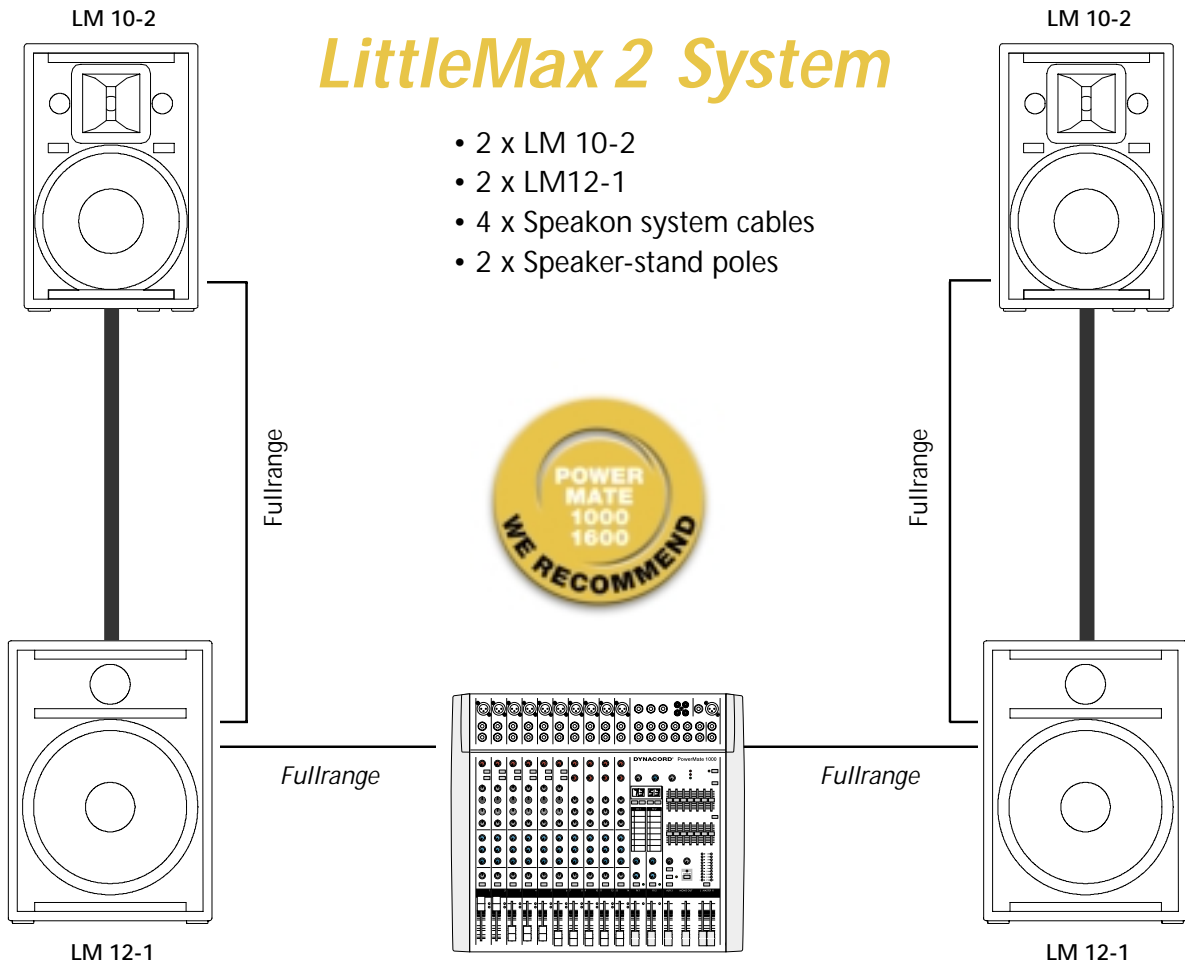
Room always matters in the Pro-Audio business, which is especially true when it comes to transportation. Here, the lack of space can easily turn into a serious problem. By providing all necessary electronics and without compromising a truly superb sound, DYNACORD's power mixers –

the PowerMates – are the ideal solution for any space related or handling problem.

The LittleMax systems add to this concept by offering excellent sound quality at an ultra-compact size.

Frequency Range LittleMax 1

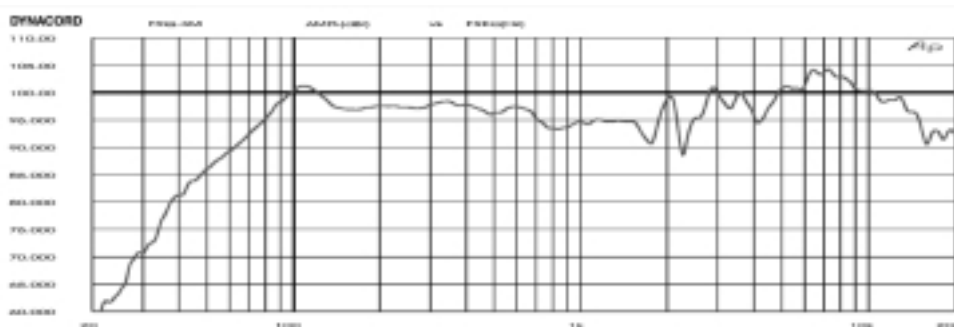




The LittleMax1 system sets new standards in technical achievement for the 2 x 300-watts-class while the Little Max2 system is a true multi-talent in sound reinforcement

applications offering a power handling capacity of 2 x 500 watts, which is plenty even for events with an audience of 300 people and more.

Frequency Range LittleMax 2





## ACCESSORIES

### PowerMate

NRS 90239 Rack-Mount-Kit PM600  
NRS 90242 Wall-Mount-Kit PM600  
NRS 90220 Rack-Mount-Kit PM1000  
Gooseneck Lamp, 12V/2.4W, 12", XLR

### MP7

NRS 90242 Wall-Mount-Kit  
NRS 90259 19" Rack-Mount-Kit  
NRS 90261 Transition-Fader  
Gooseneck Lamp, 12V/2.4W, 12", XLR

### LittleMax

SH LittleMax 1 Set Protective Case  
SH LittleMax 2 Set Protective Case

### Signal Processors

NRS 90244 Input Transf. for DSP 244 / DDL 240  
NRS 90208 Input Transf. for PowerMax 230  
NRS 90246 DSP 244 Control Contact  
NRS 90246 DSP 244 Contact Closure Interface  
NRS 90247 DSP 244 RS-485 Interface  
DCN 485 RS 232/485 Converter

### Power Amps

NRS 90176 2 x Balanced inputs for Linear Precision  
& Processed Precision Series Power Amps

### Speaker Systems

100 BK Aluminium Cabinet-Stand  
PCL 880 Speaker Stand Pole, threaded  
RK-2 Rigging-Kit for Xa-Systems

### 19" - Blinds

LB 01 19" - Ventilation Blind 1 HU  
LB 02 19" - Ventilation Blind 2 HU

### Footswitch

FS 11 Footswitch with LED

### Speakon

NL 4 FC Speakon plug  
NL 4 MM Speakon connector  
NL 4 MP Speakon socket  
NL 4 MP-R Speakon socket, round  
NL 8 FC Speakon 8-pole plug  
NL 8 MM Speakon connector  
NL 8 MP-R Speakon socket

### Cable

PSS 401 Speakon-Speakon 4 x 2.5 mm, 1,5 m  
PSS 404 Speakon-Speakon 4 x 2.5 mm, 4 m  
PSS 408 Speakon-Speakon 4 x 2.5 mm, 8 m  
PSS 415 Speakon-Speakon 4 x 2.5 mm, 15 m  
PSS 801 Speakon-Speakon 8 x 2.5 mm, 1,5 m  
PSS 804 Speakon-Speakon 8 x 2.5 mm, 4 m  
PSS 808 Speakon-Speakon 8 x 2.5 mm, 8 m  
PSS 815 Speakon-Speakon 8 x 2.5 mm, 15 m  
PSS 4248 1x4-pole > 2x4-pole, 8m  
(Xa2600 > other cabinets)  
MXX 8 Microphone Cable XLR, 8 m  
MKX 8 Microphone Cable XLR > Jack, 8 m  
VKK 0.6 LF-cable, mono, 0.6 m  
VKK 2 LF-cable, mono, 2 m  
VKK 4 LF-cable, mono, 4 m





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