

tools ⁴music

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THE THIRD GENERATION

Dynacord PowerMate 1600-3 Powered Mixer

By Frank Pieper

Robust, reliable, indestructible! If, on the vast and volatile music electronics market there is anything so indomitable it could be described as "a rock in the storm", that accolade belongs – indisputably – to the range of Dynacord powered mixers. Even with the introduction of their first PowerMate, the Straubing-based manufacturer had already given a powerful boost to the image of the powered mixer

The idea of packing a mixing desk, power amplifier and effects device plus all the requisite cabling into a single device was, and still is, a cogent one, as there can scarcely be a small PA configuration faster to set up and make operational at a venue than a powered mixer plus two stand-mounted speakers. With the appearance of the first PowerMate in the year 1997, the mixing section was already well enough developed for the device to win acceptance not only among musicians but gradually too among sound engineers and PA firms. But it is possible to improve on even the most consummate of designs, which is why gracing the starting blocks today is none other than the third PowerMate generation. And, like the first generation, the new series comprises three models that are identical aside from the number of mono channels they offer and, of course, their size: the PowerMate 1000-3 can be accommodated in a 19" rack and offers six mono channels plus four stereo inputs, whilst the largest model in the series boasts an 18 + 4 (mono + stereo) channel configuration. It is the medium-sized

model, however, the 1600-3, with its 12 mono and 4 stereo channels, that forms the subject of this test.

New technology

It's a lot lighter, the new PowerMate. The device we tested tipped the scales at a mere 17 kg and yet is capable of outputting 2 x 1,000 watts (into 4 ohms, 1 kHz THD 1%, both channels driven to the full). This is only made possible through the use of energy efficient Class D power amplifiers and a space- and weight-saving switched-mode power supply. This technology is also what lies behind the menu entry that allows you for the first time to throttle back the output power (down to 300 watts / 4 ohms) without this having a negative effect upon the operating performance of the power amplifiers. The PowerMate 1600-3 is therefore capable of driving without risk anything from small 8"/1" boxes for the reproduction of speech to subwoofer and 15"/3" combinations when it's party time. By the same token, the LPN filter also offers a choice of three settings and by influ-

encing the transient response of the loudspeakers makes it possible to obtain a punchier performance from smaller speakers.

The production quality, workmanship and robustness of the device are all of the very high level we have come to expect from Dynacord. Two very quiet fans expel heat from the interior via ventilation louvers on the rear panel. In addition to the two Speakon sockets for the connection of loudspeakers, we find here two MIDI ports as well as one of the new-style, blue IEC sockets with a locking mechanism. The torsion-resistant housing of the new PowerMate is made entirely of sheet steel with flange-mounted plastic grip-plates on the side. To protect the surface of the desk, the older models were equipped with a slide-in metal lid. This has been replaced by a plastic lid with an ergonomic handle. Once in place, this transforms the PowerMate – at the flick of the two latching clips – into an easy-to-carry suitcase.

Channels

There are some interesting new features to report on the surface of the desk. To begin with the most important: All the new PowerMates boast six auxiliary busses, of which "FX1" and "FX2", as before, ply the two halves of the integrated effects processor directly with post-fader signals. "Aux1" and "Aux2" can also supply additional external effects devices or else function as monitor sends, which is why they can be switched globally either pre- or post-fader. The bottom pair, "Mon1" and "Mon2", are dedicated monitor sends and switched permanently pre-fader. For these, two sweepable notch filters are provided that can be used, if needed, to combat feedback; and to facilitate the connection of powered monitors, Dynacord has installed, alongside the usual pair of jack sockets, balanced XLR outputs that are switched parallel to them. Sensitive and intuitive control of the sum level of all auxiliary and monitor busses, incidentally, is provided by faders. The clear colour-coding of the knobs also serves for clarity, reducing the risk of slip-ups. The second good news is that at last the PowerMate offers Mute switches with LEDs, not only in all channels but also for the Aux and Monitor signal paths and the Master bus. This means it is now possible during a performance to switch off and back on again, in a swift and secure manner, channels that are only in use part of the time. In other respects, the twelve mono and four stereo channels of the new 1600-3 model offer familiar, tried-and-tested features.

Each mono channel boasts one XLR microphone input and a Line jack socket, as well as an Insert loop for an external compressor or noise gate. These are followed by a Gain control, a switchable low-cut filter and the tried-and-tested Dynacord "Voice" filter (also switchable). The asymmetrical frequency response of this filter cannot be achieved by conventional parametric EQs. It produces a gentle attenuation across a very wide band of the lower midrange that begins

at 200 Hz and has already reached its greatest intensity of just under 6 dB at 530 Hz. There follows then a gentle rise that only comes to an end in the high frequency range at around 8 kHz. The result? Voices sound noticeably leaner, with gains in terms of the intelligibility of both speech and lyrics. Further adjustments can be undertaken later using the three-band parametric equalizer, of which the centre frequency of the Mid band is adjustable.

Data

Manufacturer	Dynacord
Product	PowerMate 1600-3 Powered Mixer
Channels	12 x mono XLR mic/jack line 2 x stereo jack L/R, RCA L/R + XLR mic 2 x stereo jack L/R + XLR mic
Low-cut-filters	80 Hz, 18 dB/oct. switchable
Channel EQ mono	Hi 12 kHz, ± 15 dB shelving Mid 100 Hz...8 kHz, ± 12 dB Lo 60 Hz shelving, ± 15 dB
Channel EQ stereo	Hi 12 kHz, ± 15 dB shelving Mid 2,4 kHz, ± 12 dB Lo 60 Hz shelving, ± 15 dB
Graphic EQ	11 bands, switchable
Mute switch	all channels, all aux, master
Standby switch	all muted, except 2TRK
Faders	60 mm
FX/Aux/Monitor busses	2 x post, 2 x pre/post switchable, 2x pre
Aux/Mon master controls	4 x fader, 60 mm
Feedback filters	-9 dB notch, 70 Hz -7 kHz
PFL/AFL functions	all channels, all aux, master
Phantom power P48	switchable in groups
Inserts	all mono channels
Additional inputs	CD 1-2/3-4, 4 x RCA 2TRK jack PowerAmp In L/R
Outputs	FX1/FX2, Aux1/Aux2, jack Mon1/Mon2, XLR & jack Master A, L/R XLR Master B, L/R jack RecSend L/R RCA 2TRK, L/R RCA phones, jack 2 x Speakon
LEDs	Master chain 2 x 12, -24/+16 dBu all Mutes all PFLs FX-On&Peak, Aux1/2 Pre/Post Feedback Filter On EQ On EQ-Routing Standby On Protect Limit
Effects processors	2 engines, 100 presets, 20 user, editable, Tap button
Digital ports	USB 2.0, MIDI In/Out
Lamp connector	XLR socket 4-pin, 12 V/ 5 W
Dimensions (W x H max x D)	664 x 165 x 572 mm
Weight	17 kg
Special features	Plastic lid with suitcase handle
Prices RRP	
PowerMate 1000-3	2,430 euros
PowerMate 1600-3	2,815 euros
PowerMate 2200-3	3,370 euros
Info	www.dynacord.com



pro & contra

- + comprehensive user manual
- + 2 independently editable FX processors + tap key
- + weight / power ratio
- + power limiting programmable via software
- + LPN loudspeaker management
- + Master B outputs
- + mute switches in the channels and aux busses
- + power cable with latching mechanism
- + phantom power switchable in groups
- + Cubase LE-5 recording software included
- + six auxiliary busses
- + USB-to-MIDI function (and vice versa)
- + USB port
- + production quality / workmanship

The four stereo channels are remarkable for the fact that each offers a doubly equipped input section: line level signals from external playback devices can enter the device via pairs of jack sockets. Switched parallel to these, the first and second stereo channels are also equipped with RCA inputs (CD 1-2, CD 3-4). Each stereo channel also offers an XLR microphone socket plus an extra preamp. This means users have at their disposal, should they require them, four additional signal paths for microphones. If you ever are short of channels, as a last resort you can always connect line and microphone sources to the same channel simultaneously, as it offers separate gain controls for each. The sole compromise is that the sweepable Mid filter of the EQs has been replaced in the stereo channels by a simpler implementation in which the centre frequency of the band-pass is fixed. Naturally all the XLR microphone inputs offer phantom power (48 volts). In the new models, this is switchable in three groups: Groups 1 & 2 serve six mono channels each, whilst the four stereo strips form the third group. At the end of the day, you would hardly expect a powered mixer to lack a graphic equalizer, and here Dynacord – ever aware of the practical needs of musicians – has departed in its band assignments from the rigid octave design of earlier days: the 500 Hz and 2 kHz filters, for example, are gone, but instead, thanks to the provision of two additional faders, we can intervene at 400 and 630 Hz as well as at 1.6 and 2.5 kHz, for which – as

The third generation of the PowerMate family (on the right, the plastic lid that transforms the PowerMate swiftly into an easily carried suitcase)

experience has proved – the need is a far greater. The same is true in the high frequency range, where the frequencies 8 and 16 kHz have been replaced by 6.3 and 12.5 kHz. As regards routing, the equalizer can be applied with identical settings to either or both of the monitor sends (MON 1 and/or MON 2) as an alternative to the factory setting, which routes it to the final master sum (Master L/R).

5-55

True Dynacord fans will know at once what these digits signify: the starting configuration of the effects processor upon power-up. The new PowerMate is no exception, although the seven-segment display of earlier years has given way to a chic and contemporary OLED display. Bright and rich in contrast, its yellow characters on their black background are easily legible at all times from any angle. Even outdoors in sunlight this technology offers advantages over conventional LCDs. Complemented by one rotary encoder and four function keys, the user interface in the effects section facilitates not only the choice and editing of effects but also selection from among a wide variety of signal routing options. One hundred works presets are provided, as well as twenty additional memory locations in which users can store their own creations. We find here a large choice of reverb programs that sound very good as well as chorus, flanger and the like, plus mono and stereo delays, naturally, with sensible preset time intervals.

The desired delay interval can also be entered in real time by pressing the TAP button; a LED flashes in sync with the current setting. As you would expect from a device of this calibre, effects return faders are provided to determine the level in the master mix of the signals from each processor. The PFL buttons above each Effects Return fader route the wet (processed) signal to the headphones bus so you can hear it in isolation, and eight rotary controls higher up determine how much of the signal from each processor is added to the AUX 1, AUX 2, MON 1 and MON 2 channels. The effects processors can be switched on and off independently using either FX1 and FX2 buttons above the effects return faders or the optional footswitch.

USB

A USB interface? You bet! This allows you to connect your notebook and create digital live recordings without an additional interface. Good idea, but Dynacord has even more to offer: the new PowerMates are capable of outputting in digital form via their USB ports not only the Master L / R stereo mix but also simultaneously those of the two AUX busses. Furthermore, if, using the display in the effects section, we select instead of "Live" the setting "Studio", instead of the Master bus it's the two monitor busses that join Aux 1 and Aux 2 to make up the four channels. For recording purposes, the computer connected must naturally be equipped with multi-track recording software, such as Cubase LE-5, which is included along with the drivers on the accompanying DVD. But the USB interface permits not only the recording but also the playback of digital audio streams. Here, too, up to four tracks (two stereo signals) can be transferred simultaneously, with the USB interface of the Dynacord mixer performing the digital-to-analogue conversion and playing the resulting audio signals back using the third and fourth stereo channels. This makes the new PowerMates ideal partners for all laptop DJs. While a title is playing back via USB 1 through the PowerMate's third stereo channel, they can set up the next title (on Virtual Player 2 of the DJ software running on the computer) and audition it as they do so by pressing the PFL button in the PowerMate's fourth stereo channel. If the computer is simply being used to play back interval music, the menu option "Play USB to 2TRACK" should be selected, as then the music will continue to be heard even when the global STANDBY switch is activated.

Conclusion

With the new PowerMate series, Dynacord has raised the proverbial bar in the powered mixer sector a long way, enhancing and extending into new areas the capabilities of such devices through its sovereign mastery of the technology. Class D power amplifiers and switch-mode power supplies have simultaneously increased the power output whilst reducing both power dissipation and the overall weight of the de-



Graphic EQ and display for the internal effects section

vice, whilst in the mixing section, with the Mute switches and additional aux busses, precisely those features have been added that users missed in the past. Dynacord has also taken account of the increasing demand for the convenient integration of digital audio even into the analogue environment of the "powered mixer" through the introduction of a USB interface. The robustness and quality of workmanship of this "power plant" are also on the high professional level we have become accustomed to expect from Dynacord. ■

INVITED TO COMMENT

Helmut Seidl, Public Relations/Marketing Services, Bosch Security Systems GmbH (Dynacord):

"Our team of developers in Straubing invested a great deal of energy and know-how in the further development of the PowerMate. After all, the bar for one of the most successful series of powered mixers in the world was already very high: more than 100,000 units of the earlier models had been sold – a level of success hitherto unseen in this segment of the market. Expectations were accordingly high when the new series made its international debut at the PLASA Show in London; and, to cut a long story short, no one was disappointed! In Germany, too, there was tremendous enthusiasm. The feedback from the 250-odd visitors attending the parallel Dynacord Road Show that visited various German cities was unequivocally positive. And there, the new products had the most competent and critical audience imaginable to convince: experts whom no pretty facade will ever impress but for whom only first class performance and an economically sound concept count. Despite the major improvements and numerous additional features, we have succeeded, too, in leaving the retail price unchanged.

"The good test result is naturally very gratifying and proves that the new PowerMate is capable of withstanding even the critical scrutiny of the tools4music editorial team. We believe that the new models will write a new chapter of the PowerMate success story and are looking forward to the reactions of tools4music readers, whom we warmly invite to join the Dynacord Community on facebook."