

ESX VX PRO Series – 4 SPL power amps under test



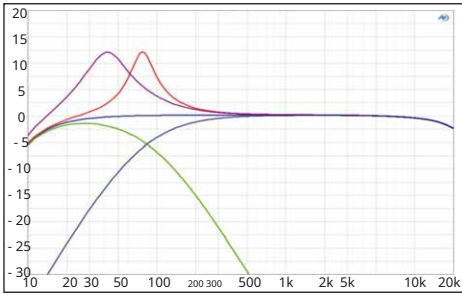
mono power amplifiers with performance

► ESX stuns the editors with a "Brazilian-style" amplifier series. Four powerful monos with 2 to 8 kilowatts sound the alarm.

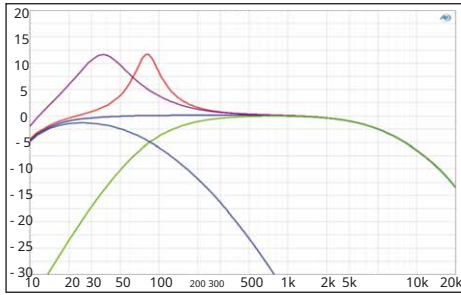
When sitting peacefully in the park, then suddenly the earth trembles. But it's not a dino that breaks through the trees like in Jurassic Park, but a delivery truck that almost jumps to the beat and you can still hear it when it's two blocks away. This is a scenario for the VX PRO amplifiers

from ESX. There is a whole series of them, from which the four middle models are already available. For VX2000 PRO, VX3000 PRO, VX5000 PRO, and VX8000 PRO, the names mean the RMS power into 1 ohm. And it gets even bigger, because a VX13000 PRO has already been announced, as well as a matching four-channel power amplifier. The special thing about the VX PRO power amplifiers is that they are not pure subwoofer amplifiers, all power amplifiers run at least up to 5 kHz and can therefore also drive low-midrange speakers. Of course more than one per amplifier –

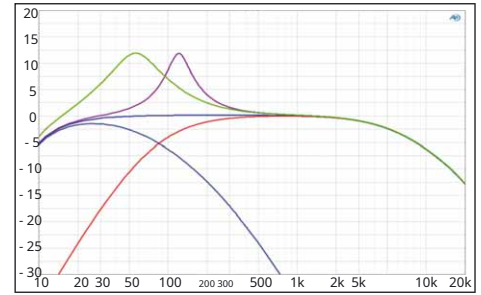
with 1 ohm stability no problem. This is also the "Brazilian style". Because you don't just listen to samba at home with headphones, you let others participate and dance on the street. For this purpose, one likes to build a hi-fi or PA system on the back of the pickup to provide sound reinforcement for the neighborhood, and for that you need kilowatts of full-range power. This is a technical challenge for the developers, because the large frequency bandwidth requires a high clock frequency, which means that the times when current flows are correspondingly short



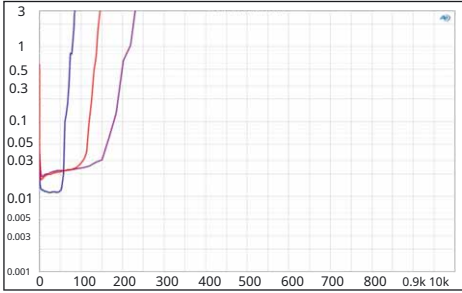
The VX2000 PRO even runs full range up to over 20 kilohertz. The filter equipment is the same for all power amplifiers



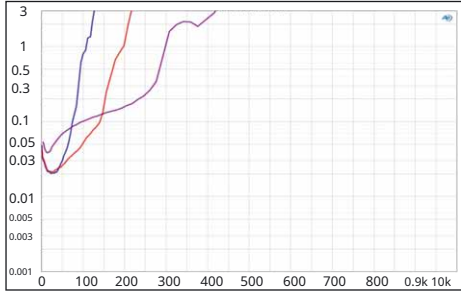
The amplitude responses of the VX3000 PRO, VX5000 PRO and VX8000 PRO are identical. They run up to 5kHz and offer subsonic and a fully adjustable boost



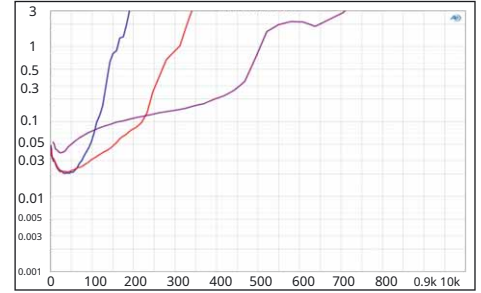
With the VX PRO, even the boost frequency can be adjusted



The fact that the curves of the VX2000 PRO look rather measly in the diagram is due to the scaling up to 10 kilowatts, which creates significantly more than 2 kilowatts at 1 ohm



The VX3000 PRO generates 2 kilowatts at 2 ohms, and exactly 3 kilowatts at 1 ohm



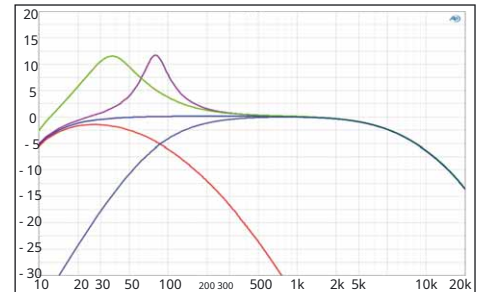
The VX5000 PRO only produces minimally increased distortion at 1 ohm. At the 1% mark, it makes its 5 kilowatts, if you allow 2%, it is 6.5 kilowatts



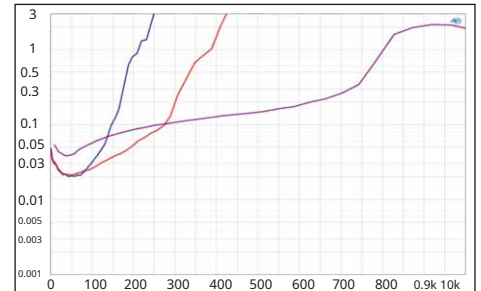
The smallest VX PRO is only 20 centimeters long with an output of 2 kilowatts

become. The higher the current flow, the trickier the situation - and with the VX PRO a lot of current flows. Speaking of electricity: If you give out a lot, you also have to get a lot in. You can already see that in the huge power terminals of the VX PRO power amplifiers, which all accommodate cables of 70 square millimeters - on the VX8000

PRO even twice. And many power amplifiers would be happy if they had the speaker terminals as current terminals. The interior of the VX PRO is impressive in more ways than one. In contrast to the SPL power amplifiers of South American origin, the VX PRO has a lot in it. Nevertheless, the power output is impressive: The VX3000 PRO is a handy power amplifier and is only 23 centimeters long, but it still produces 3 kilowatts. And the VX8000 PRO is less than twice as long, but has far more than twice the power. The interior structure naturally shows family resemblance. For example, transformers with cup-shaped ferrite cores are used in the power supply units, while the usual toroidal cores are used in the VX PRO in the filter coils of the class D amplification. The two large models 5000 and 8000 have two XXL copies of the filter coils and three fat storage electrolytic capacitors each. While the VX PRO (at least from a European point of view) from the concept



Subsonic filter and low pass work with a slope of 12 dB/octave



The VX8000 PRO reaches dimensions that hi-fi amplifiers can only dream of. Already at 4 ohms over 2 kilowatts and the 1 ohm curve does not stop at 10 kilowatts



Dual power clamps on the VX8000 PRO (left), single clamps on the others (right). The front panels have two mono low level connections, one up to 3.6 volts and one DSP connection up to 9 volts

They look like dinosaurs, they are made quite modern and they stand out clearly from the classic "bass only" digital power amplifier, which has been built almost unchanged for decades. With the VX PRO, the consistent structure of the reinforcement catches the eye. Half-waves are amplified and then at the end "together-

built. Therefore, there are two Class-D driver chips and two low-pass coils in the larger models. Instead of the usual power supply PWM chips like the TL494 from Texas Instruments



The VX3000 PRO performs at 23 centimeters Length 3 kilowatts

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PERFORMANCE TIP
Absolute top class
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mono power amplifiers	ESX VX2000 PRO	ESX VX3000 PRO	ESX VX5000 PRO	ESX VX8000 PRO
Price	around 400 euros	around 550 euros	around 800 euros	around 1,000 euros
distribution	Audio Design, Kronau	Audio Design, Kronau	Audio Design, Kronau	Audio Design, Kronau
hotline	07253 9465-0	07253 9465-0	07253 9465-0	07253 9465-0
web www.	esxaudio.de	esxaudio.de	esxaudio.de	esxaudio.de

Evaluation

▶ sound	20%	1.0-----	1.0-----	1.0-----	1.0-----
draft	5%	1.0-----	1.0-----	1.0-----	1.0-----
Print	5%	0.5-----	0.5-----	0.5-----	0.5-----
cleanliness	5%	1.5-----	1.5-----	1.5-----	1.5-----
dynamics	5%	1.0-----	1.0-----	1.0-----	1.0-----
▶ laboratory	55%	0.7-----	0.5-----	0.5-----	0.5-----
Performance	40%	0.5-----	0.2-----	0.2-----	0.2-----
damping factor	5%	0.5-----	0.5-----	0.5-----	0.5-----
signal-to-noise ratio	5%	2.0-----	2.0-----	2.0-----	2.0-----
distortion factor	5%	1.0-----	1.5-----	1.5-----	1.0-----
▶ Practice	25%	1.5-----	1.5-----	1.5-----	1.5-----
Furnishing	15%	1.5-----	1.5-----	1.5-----	1.5-----
processing electronics	5%	1.5-----	1.5-----	1.5-----	1.5-----
processing mechanics	5%	1.5-----	1.5-----	1.5-----	1.5-----

Technical specifications

	1	1	1	1
channels	1	1	1	1
power 4 ohms	797	1082	1621	2124
power 2 ohms	1425	1981	3119	3883
power 1 ohm	2198	2995	5066	8061
Sensitivity max mV	480	500	470	470
Sensitivity min. V	3.8	3.8	3.7	3.7
THD+N (<22kHz) 5W	0.021	0.031	0.032	0.022
THD+N (<22 kHz) half load	0.014	0.035	0.035	0.035
Signal-to-noise ratio dB(A)	79	77	77	77
Damping factor 20 Hz	4472	4472	4472	4472
Damping factor 40 Hz	4472	4472	4472	4472
Damping factor 60 Hz	4472	4472	4472	4472
Damping factor 80 Hz	4472	4472	4472	4472
Damping factor 100 Hz	4472	4472	4472	4472
Damping factor 120 Hz	4472	4472	4472	4472

Furnishing

low pass	50-20kHz	50-5kHz	50-5kHz	50-5kHz
high pass	10-100Hz	10-100Hz	10-100Hz	10-100Hz
bandpass	10-20kHz	10-5kHz	10-5kHz	10-5kHz
bass boost	0-12dB/40-75Hz	0-12dB/35-80Hz	0-12dB/55-120Hz	0-12dB/55-120Hz
subsonic filter	via HP	via HP	via HP	via HP
phase shift	-	-	-	-
High Level Inputs	-	-	-	-
automatic switch-on(Autosythe)	-	-	-	-
RCA outputs	-	-	-	-
start-stop capability	• (6.8V)	• (7.0V)	• (6.8V)	• (6.8V)
Dimensions(L x W x H in mm)	201x191x66	230x191x66	270x191x66	340x191x66
Miscellaneous	-	-	-	-

top class1.0
CAR & HiFi 1/23
Value for money: excellent
"Power to the limit (not only) for subwoofers."

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ments we find variable CPUs in the VX PRO amps that control the whole thing. ESX then serves long rows of MOSFETs to handle the exorbitant currents, 8 for the 8000 or 6 for the 5000 - each per half-wave. We also find nice things in the signal processing. Except for the phase control, all the filters of the analog world are available here, and the strength and frequency of the bass boost can even be adjusted. But there are no high-level inputs, because nobody will probably drive such power amplifiers as an OEM upgrade on the factory radio. There are two low-level inputs with different levels of sensitivity: one from 0.4 to 3.6 volts, as usual, and one that accepts a signal from 1 volt to 9 volts. The latter is thus optimized for the output of DSPs, which can usually output more voltage than a car radio.



In contrast to the VX2000 PRO (above), the VX3000 Pro has two mains transformers