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Velodyne

Digital Drive Plus 10

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**Velodyne Digital Drive Plus 10**

# STAGE FOR THE ART

**By Stefan Gawlick. Photography: Ingo Schulz**

**MUSIC NEEDS A FOUNDATION. AND THAT'S DOWN,  
EVEN IF IT DOESN'T USE LOW FREQUENCIES AT ALL. SO  
IT'S TIME TO FIND A COMPETENT, SKILLED PERFORMER.**



A thoroughly intelligent power plant. And we don't just mean the DSP that embeds Velodyne's subs perfectly in the surround sound field. The 1250-watt amp performs to 3 kilowatt peaks, movements of the beefy driver measured a mere 16,000 times per second.



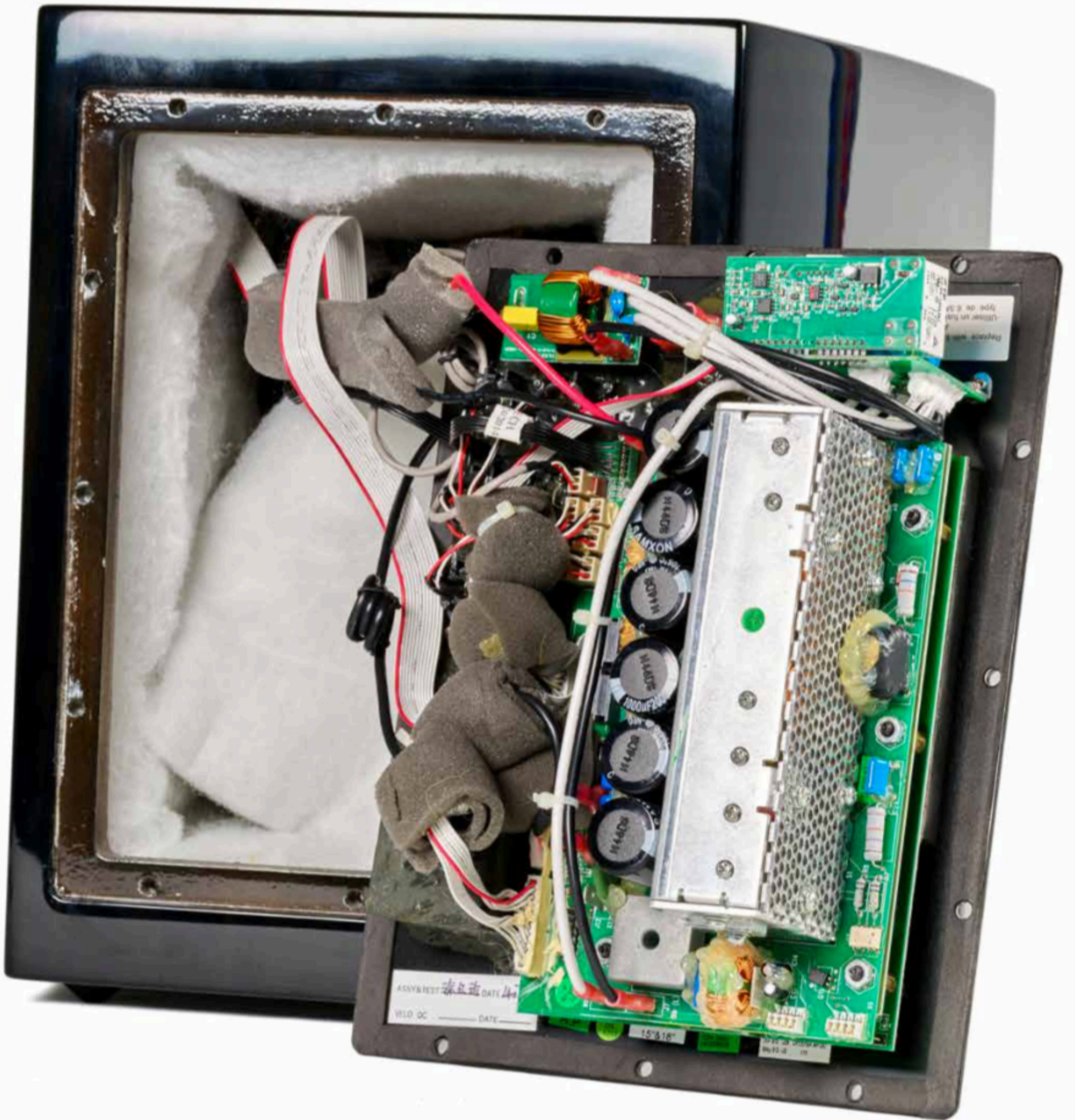
There was a realization long before the subwoofer: the basis is the music. If you listen carefully to good orchestras whose vocal groups work perfectly interlocked, it is always noticeable that the lower registers (i.e. second and third voices) sound a tad stronger than the upper parts. That's because a first voice that also has to provide fullness sounds quickly pressed and flat, although the opposite is desired. Rather, it should be possible for the lower colleagues to create such a secure and immovable foundation that the soloist can relax, "lay on top", to take care of phrasing and beauty of sound without pressure. This shows how important a clean foundation was, well before the fifteen-inch driver was invented: If it wobbles around underneath, no clean overtones can develop. It is not for nothing that experienced conductors keep checking the intonation of the lower

registers when the violins or flutes sound strange.

My personal experiences with subwoofers go back 35 years. After my first construction project—called "subwoofer" because of its supposed simplicity—could not make me happy, I did not invest in deep bass for quite a while. Later I made isolated attempts with different models, of which only the original Ripol by Axel Ridtaler was memorable. Finally, my subwoofer system from Sky-Audio, which was adapted to the room, was able to dispel my last concerns. Since then, however, I have only experienced one other woofer that could perform in my room with similar conviction, but which cost a multiple of my system. Velodyne always interested me, but because of the proud price list I was left out, and our paths did not cross professionally.

So now the Velodyne Digital Drive Plus 10, with which I am particularly pleased because I consider individual adaptability for subwoofers to be indispensable. Woofers with the general setting options are okay to kick your stomach, but for fine music playback, however, they sail past an estimated 90 percent of all listening rooms. The Velodyne DD-10 + comes—though terribly heavy—on a small footprint and is amazingly easy to integrate into most living situations. As the housing tapers towards the rear, it overcomes the visual challenges of many other subwoofers. On the front, a fabric cover hides the connections for the computer and microphone, a small display and the controls for volume and crossover frequency. The back is richly appointed. I cannot imagine a case for which the DD-10 + offers too few or wrong connections.

... So the "hardest-hitting subwoofer" from Velodyne is self-regulated, counteracts distortions effectively and remains accurate and clean at high loads. By the way, you shouldn't be concerned about its compact size. According to the Americans, output over its entire working range (20 to 120 Hertz) is up to 115 decibels. That can really feel like a punch in the stomach.



Velodyne's DD Plus 10 detects in-room performance with the help of Windows software via the included measurement microphone. You can have the program calculated automatically or—as in Screenshot —create your own by hand: up to eight EQ bands can be programmed in quality, center frequency and amplitude. The green line in the lower window shows the characteristics of the filter, the blue line below illustrates the acoustic effect in the room. The subwoofer can manage a whole smorgasbord of presets that can be switched via remote control.



It is also gratifying that the scope of delivery is comprehensively complete: All cables, batteries, the microphone, even a small table stand, CDs for signals and software are included. If I had a wish, an instruction manual in German would be included, not just the English version. Since you can download the native (and current) version from the Audio Reference page, this is only a small question of convenience. So that there is no generally incorrect set-up, the DD-10 + offers three types of individual configuration, for which you should also invest a little time. In case of doubt, the dealer will take over this work after the purchase, which would be almost a shame for a hobbyist like me.

Freshly switched on, you can use the remote control to call up presets that are optimized for different applications (rock, jazz, gaming, cinema, etc.). However, they are only a rough throw in the right direction in principle, since they do not know the crucial components—the room and the system involved. For a quick start and a kick in the stomach as soon as a dinosaur stomps in the film, the presets are always good. You can adjust them quickly by setting the volume and crossover frequency, but this doesn't do the least justice to the potential of this subwoofer. So let's have a good time and configure it without the help of a specialist dealer. To do this, a TV or Windows computer must be

connected; Mac is not supported. Fortunately, you don't have to take the operating system information in the written instructions literally. Since I don't have a Windows 7 or Vista computer, I tried Windows 10 and had no problems.

The simplest version of the set-up offers the "Self-EQ" function. To do this, the supplied microphone is plugged in, set up at the listening position and the automatic process activated. The subwoofer itself generates the required sweeps, "hears" what arrives in the room via the microphone and calculates correction curves. The result is far better than the presets. The screenshot shows that some "dials" were turned here. The room is now included, the sub withdraws from the nasty resonances, but supports other areas. You can quickly hear this improvement in music with a very tight bass and short impulses, such as the CD *Paint It Blue* by Nils Landgren and his Funk Unit. The bass and the bass drum no longer sound bumpy through the room, but play together with the band, and the whole sound is clear and stable because it now has a solid foundation.

The next step is the "Auto EQ" function. The output comes from a CD with test signals, which is in the player and is played through the system. For a few sweeps, the sub only listens to what the system is doing and then clicks-in for further measurements. This

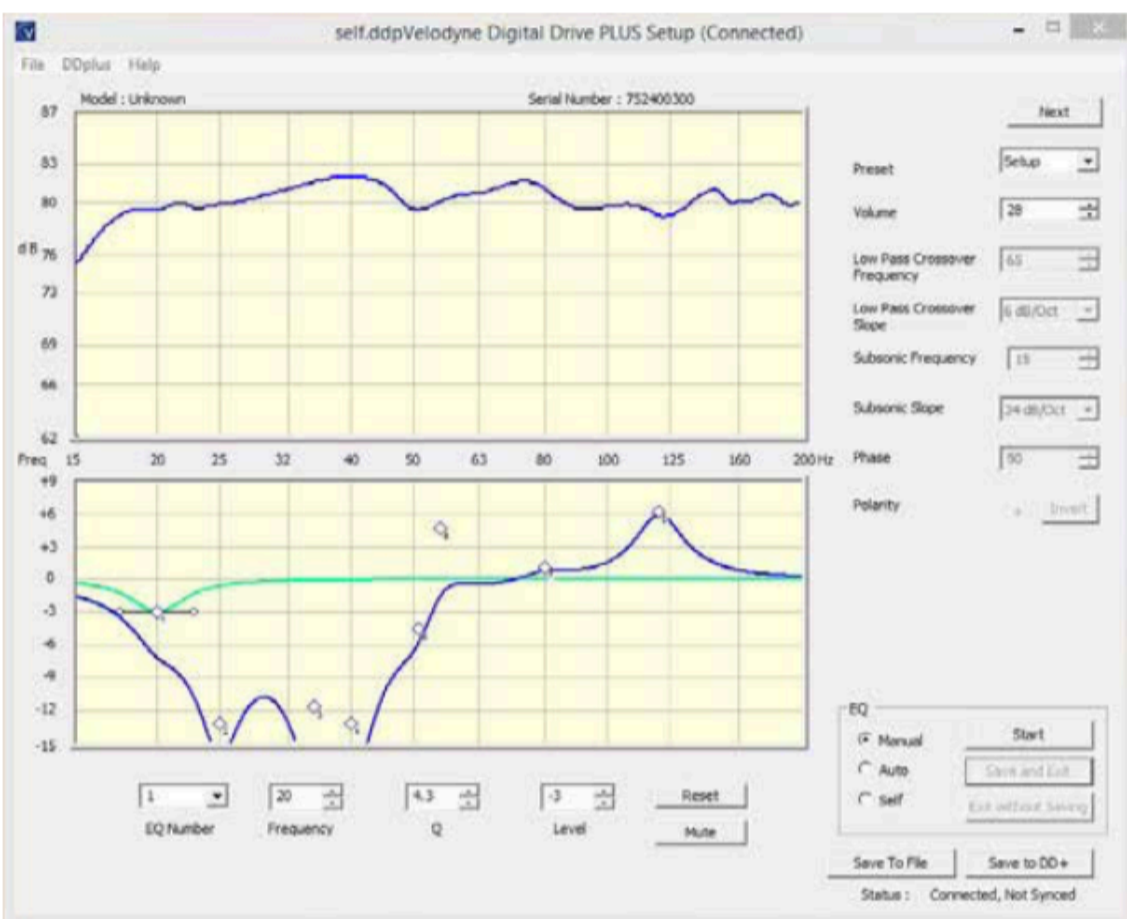
brings a decisive advantage: Not only the space is taken into account, but also the acoustic environment. If, for example, a loudspeaker is already exaggerated at 80 Hertz, the DD-10 + takes it out of the way right here, while it would continue to work in Self-EQ mode because the measurement of its own signals alone did not reveal this problem.

The Auto EQ function is particularly valuable in the sensitive transition area between sub and satellites. This is already audible in Nils Landgren's recording, since the bass can suddenly act much more differentiated. It was clear and present after the first automatic process, now different colors come into play, and the range between 80 and 200 Hertz wins enormously, especially when it comes to music that sometimes sounds "flat". The prelude of the *Parsifal* (Vienna Philharmonic under Christian Thielemann, DGG) is now lighter and more transparent, important shading in the middle voices now evident because there are no more overlaps. In this configuration, the Velodyne DD10 + turns from a good subwoofer into a subtle, classic expert. You can really only attest to a few of your colleagues—compliments and all of that—despite connecting a computer with a manageable amount of effort, which you can spend alone for the fun of it, and an improved understanding of the settings and connections.

If you actually want to go one step further, the path to manual configuration remains open. Even if this is presented very clearly on the screen, you can get lost quite thoroughly in the interaction of the individual parameters. Because such a coordination behaves like a very complex mobile: You

cannot change any side or sub-area in isolation, even if the clearly delineated frequency ranges of the virtual sliders suggest it. Everything plays together again in the room, and before you know it, you get tangled up in the thicket of correction, and correction of correction. Professional

assistance is indicated here if you want to hear a really excellent result. But then the DD-10 + delivers performance that you rarely get. A first-class basis for music, on which everything can unfold ...



**Velodyne Digital Drive Plus 10**  
 With little effort, but pretty much thanks to the automatic processes, it is easy to get a first class result.

CHALLENGING = A component is 100% intuitive when you immediately reach its full potential with very little effort  
 INTUITIVE =

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There's no such thing as impossible: the connector panel allows direct control via loop-through and remote control of all types of bass reproduction. Most brilliantly we have the most important parameters, volume and crossover as well as Auto EQ and calibration easily accessible at the front. The developers seem to really use their subs themselves.

**Subwoofer | Velodyne Digital Drive Plus 10**  
 Concept: front-facing subwoofer, closed housing  
 Inputs: LFE (mono) RCA and XLR, stereo RCA, LS level (pole terminals)  
 Outputs: line level RCA and XLR (via high pass)  
 Equipped with: 10" woofer Amplifier: Class-D with up to 3000 W power  
 Frequency response: 20-120 Hz low pass: 40-199 Hz, adjustable in 1 Hz steps high pass: 80/100 Hz (6 dB / oct) | phase: 0-180 ° in steps of 15 Hz Special features: Room calibration  
 Dimensions (W/H/D): 36/33/42 cm Weight: 30 kg  
 Guarantee period: 2 years (3 years after registration) | Price: around \$3300  
 Audio Reference GmbH  
 Alsterkrugchaussee 435  
 22335 Hamburg, Germany  
 Telephone +49 40 53320359  
[www.audio-reference.de](http://www.audio-reference.de)

**EQUIPMENT**  
 Record player: Transrotor Apollon TMD with SME V, SME 3012 u. a. | CD-Player: Mark Levinson No. 390s | DAC: Merging Technologies | Full strength Lavardin IT | Preamplifier: rane song Avocet | Power amplifier: digital power amplifier on ICE Power based, Accuphase P-4200 | Speaker: Spendor Classic 3/5, Vimberg Tonda, Wilson Audio Sasha DAW, Sky-Audio 2.2 System | Cables / Accessories: Vovox, AudioQuest, Audio Note, Creaktiv