

SVS PC-Ultra Subwoofer

Manufacturer: SV Subwoofers LLC, 6420 Belmont Ave., Liberty, OH 44420; www.svsubwoofers.com; 703/845-1472

Price (factory direct): \$1,149

Source: Manufacturer loan

Reviewer: Howard Ferstler

Right off the bat I am going to tell you that this is one sensational subwoofer, particularly at the price. Up ahead I will explain why I believe as I do, but first some basic info.

This "Ultra" model is similar in concept to the other cylinder-shaped SV subs (driver on bottom, facing down; ports on top, facing up), and it looks very much like the lower-priced 20-39 models. Like those 20-39 units, it has a height of about 40 inches and a diameter of about 16 inches, and there is a bottom plate (separated from the cabinet bottom by three, two-inch spacers) that allows the driver to radiate via a 360-degree slot. However, unlike the more basic 20-39 it has a bigger driver (huge, actually), more ports (three instead of just one), and a very powerful built-in, BASH amplifier (525 watts, instead of the 320 used by some of the other SVS powered models).

The 68-pound sub has the usual spate of hookups and features on its rather large amplifier panel. There is a level control, a low-pass frequency control (40-120 Hz), a bypass feature for that control, a variable phase control, and a subsonic filter control.

The latter works at 12, 16, 20, or 25 Hz, and the two lower settings require that the user install one or two supplied foam plugs in one or two of the three ports on top of the enclosure. (Doing this requires temporarily removing the metal protection screen on top, which is a snap.) The unit also has a standard power on/off switch, plus the now common auto/on feature that allows the sub to be turned on by the input signal and turned off several minutes after any input signal is removed. The subwoofer also has speaker-level inputs for those who do not have a surround receiver or processor that features a

sub-out connection.

In addition, the Ultra has one feature not found on the cheaper SVS cylindrical jobs (and most other brands of subs, either, for that matter) that I like very much indeed: an on-board, single-band parametric equalizer. The equalizer has but one function: to level out any major peak that might be the result of a standing wave building up at the listening position. It cannot boost; it just cuts. And that is why it is so good, and why this sub is a notch above the super-sub norm.

Standing waves, you see, can be a real problem when they generate a bloated peak at a specific frequency at the listening position. No matter how good a sub (or regular pair of woofers) might be (how anechoically flat, how low in distortion, how able to plunge to the depths, how max-output potent, etc.), if there is a peak at the listening position it is not going to work the way it should. The on-board equalizer allows one to deal with the worst of any standing wave peaks the listener would encounter.

The equalizer has three adjustments. First, there is a level control that runs from "min" to "max." At the min setting the filter is not operating at all. At the max setting it is applying maximum cut. Second, there is a "Q" control that determines the width of the applied cut. This is important, because, depending on room structure and acoustics, a standing-wave peak may be broad or narrow.

Third, there is a frequency control that determines just where you can apply the cut. It runs from 20 to 80 Hz, which pretty much covers the range a subwoofer might span.

The owner's manual that comes with the sub (a booklet that is one of the better of its kind, complete with a list of bass-potent recordings and movies) notes that to use the control properly one must use some sort of measuring device. It is nearly impossible to do the job correctly by ear, even with a test disc. SVS recommends the one that Radio Shack sells (with the analog version preferred over the more expensive digital model), and that should be able to do the work just fine. A good, but admittedly more expensive, RTA would be even better (or at least be quicker to use), provided it has 1/3-octave resolution.

One also needs a good test disc, and SVS

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recommends both the well-known *Video Essentials* and *Avia* test DVD releases. Two others that I can suggest are the *Sound & Vision Home Theater Tune-up* DVD (done by the same people who produced the *Avia* disc) and the *Delos Surround Spectacular 2-disc* set. The latter (stock number DE3179) is a CD, but it has the requisite test sequences, as well as some surround matrixed musical excerpts from the Delos catalog on the second disc.

During my test series I put the equalizer to use and found it to be very beneficial. If one looks at the curve I ran of my Allison IC-20 main systems and Velodyne F1800RII in issue 95, as well as most of the other system curves I illustrated in that article, you will see peaks of varying sizes at 50 Hz. With my Allison/Velodyne combo that is not a subwoofer problem. Rather, it is a standing-wave problem. It exists along the axis at the prime couch listening position in my room. The peak is no huge deal, but it is there and a purist might wish it to not be there.

When I substituted the Ultra for the F1800RII and then did the same measurement (after adjusting the parametric equalizer in the SV sub) I got a curve in the bass range that looked just like that IC-20/F1800RII curve – but with 2 dB lopped off the peak at 50 Hz. The slope angles smoothly downward from 25 Hz as the frequency climbs toward the midbass. While this would not be a big deal with systems that have choppy looking response curves over the full audible range, I believe that it is significant with one that is as full-bandwidth smooth above the bass range as the one shown in that curve. The closer you get to perfection, the more important the nuances become.

Now an equalizer like that can still be a mixed bag. Remember, the noted artifact was a room-related peak and not a subwoofer problem. If there is a peak at one location at a specific frequency there is probably no peak, or even a dip at other locations at the same frequency. So, if you equalize for one prime listening position you might cause problems at other positions. Equalizers are great, but they do require some finesse to make them work for you. The strength of the SVS equalizer is that it is very flexible and allows you to work with genuine finesse.

OK, the sub has a great equalizer, and that is mainly why I am sold on it. However, what about its other

attributes?

Well, those are pretty impressive, too. As noted, the sub has a huge driver, and in combination with the powerful amp the thing can generate some impressive output levels. In my main room, at my usual measurement location, 17 feet from the corner-located sub, I got a maximum reading of 114 *clean* dB at 31.5 Hz and a reading of 106 *clean* dB at 20 Hz. The unit could go louder at 20 Hz, but there was an increase in port/grill noise as a result.

This surpasses the 110 and 104 *clean* dB I got from a Velodyne HGS-15 I reviewed for *The Audiophile Voice* some time back. (The Velodyne's servo would not let the unit play louder, due to its distortion limiting.)

Admittedly, at high levels that Velodyne, like all of their other servo models, was “super” *clean* with test tones. However, with music such super-clean nuances are not really a big deal.

The Ultra's *clean* max-output abilities do not quite match the 110 dB at 20 Hz I achieved with my Velodyne F1800RII (reviewed in issue 67). Nor does it achieve the 110 dB at 20 Hz of the “modified” 16-46 SV sub I reported on in one of my *Skeptimania* columns. (I reviewed the original, pre-Ferstler-modified version of this 16-46PC model in issue 88, and the Ultra surpasses that original, which hit 113 and 102 dB at 31.5 and 20 Hz, respectively, in every way.) Nor does it quite match the same 110 dB

at 20 Hz I achieved with the Paradigm Servo 15 in issue 71. However, it equaled or bettered all of them at 31.5 Hz.

To be sensible, we need to put this subwoofer max-output thing into perspective. When doing my measurements I have to remove all the pictures from the walls of my main listening room and also stash away some of the knickknacks on the bookshelves. Things are this way, because if I leave the items in place they rattle so much that I cannot aurally

pinpoint any negative artifacts coming from really powerful subs at maximum output. The whole place just buzzes. At lower output levels the pictures and trinkets can be left in place and it is easy to hear the important qualities of a really good sub.

Yep, to be truthful, all a sub has to do to perform in a *practical* state-of-the-art manner and sound realistic in a given-sized room (music realistic or movie realistic) is



cleanly and effortlessly hit maybe 105 dB at 31.5 Hz and maybe 100 dB at 20 Hz. Going above those points is, well, gilding the lily for anyone who is interested in the solid reproduction of good music.

Checking the maximum clean output of subwoofers and woofers is fascinating business and I mainly do such measurements as an academic and test-article exercise. However, as long as a subwoofer (or woofer pair in a stereo system, too, for that matter) can work comfortably at the levels noted above, in whatever room it occupies, it is going to perform as well as any other - with music or even dynamic home theater. This is not to say that sound-effects freaks and wall-banger types would be satisfied with such subs, but *real* music lovers and movie lovers will almost certainly get all the performance they require.

So, from a basic subwoofer sound-performance perspective the PC-Ultra is a match (or better than a match) for any other sub I have ever reviewed, including the most super-duper models.

It goes as deep as even the best I have auditioned, and can go even deeper than some of the best if the supplied port plugs and low-end cut-off feature are engaged. (Going this deep is gilding the lily of another sort, in my opinion, and it has a zero function with just about any music and virtually all home-theater source material.) It is subjectively as clean with musical material as even the potent Velodyne servo models. (I own an F1800RII and an FSR-12, and nobody not working for the company is a bigger Velodyne fan than I am.) As an aside I should also note that the massively heavy, bottom-mounted driver results in the most tip-over-resistant tall speaker system that I have ever encountered.

I did some A/B careful test-tone and music comparing between the PC-Ultra, my own modified SV 16-46 (driven by an SVS 320-watt BASH amp), and a Hsu TN1220 (powered by the 250-watt Hsu amp), and for all intents and purposes they were identical musical and home-theater performers. (The satellite speakers in this case were a pair of Axiom M22Ti units). Two of the music selections I used were track number four of Respighi's *Pines of Rome* (London 410 145) and track number eight of Mendelssohn's *Organ Works* (Argo 414 420). With this music, as well as any less bass-potent stuff I tried, they all sounded the same. With test tones, at least at super-high levels at different frequencies, one unit might slightly edge out the others, but in practical terms they were performance clones of each other.

True, I had to use the Hsu Optimizer equalizer (issue 90) to get my modified SV unit to run as flat to 20 Hz as the Ultra. The BASH amp that I use with my modified unit is not equalized to compensate for low-end roll off and that single-port 16-46 system attenuates gradually below about 35 Hz. The Ultra, on the other hand, appears to roll off far less as the frequency drops. The Hsu amp has the Optimizer circuit built in, which allows the TN1220 to also run as flat to 20 Hz as the others. Such electrical compensations notwithstanding, in terms of low-end extension with music and movies the end results were the same.

Now, the Ultra is smaller (well, at least shorter) than

the Hsu TN1220 and is certainly smaller than SV's own powered and non-powered 16-46 units. While still actually pretty large, it is not really a floor-space hog. More importantly, in spite of their feedback technologies (which admittedly give them a slight advantage with test tones at high levels) it is from a practical sound-quality standpoint as clean as any servo Velodyne or Paradigm model I have reviewed up to any sane musical or home-theater sound level one would require.

Where this PC-Ultra sub has an edge over the others involves that built-in equalizer. Sure, you can obtain a Rane THX-44 equalizer (issue 98) and use its two-band, parametric subwoofer-channel equalizer to get even better results. However, all by itself the Rane costs nearly as much as the Ultra, whereas with the latter you get the excellent built-in equalizer essentially for free. (Admittedly, the Rane also equalizes the three front satellite channels.)

In any case, it is not just your basic subwoofer performance that allows this PC-Ultra unit to stand out. Rather, it is that parametric equalizer that tips the balance, and the net result is probably the best and most sensible stand-alone "super" subwoofer I have ever reviewed.

It is a great sub, and that's a fact.

-HF

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