

**SVS SCS-01(M) satellite  
speakers and SB12-Plus  
subwoofer in a three-piece “stereo”  
package**

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**List prices** (factory direct):

SCS-01(M) Speakers: \$350 per pair

SB12-Plus subwoofer: Black-vinyl: \$699;

Maple, Oak, or Rosenut: \$749; Piano Gloss

Black: \$799

**Reviewer:** Howard Ferstler

First off, and before getting down to reviewing the above-listed items, while SVS started out as a top-tier subwoofer-building company, it has since expanded its horizons to include satellite speakers that can dovetail nicely with the outfit's line of deep-bass mechanisms. Other subwoofer-company operations have done this kind of evolving with varying levels of success, but let me wrap up this first paragraph by saying that SVS has managed to be very successful at making the transition, indeed.

OK, here comes another qualifier. The SCS-01(M) satellite started out as a center-channel speaker designed to complement the company's smaller SBS-01 left and right main speakers. The latter is a pretty traditional design, with a one-inch silk-dome tweeter and 5.25-inch midrange driver. The SCS-01 is also a pretty conventional center-channel speaker, with a silk-dome tweeter and two 5.25-inch midrange drivers, normally configured in a horizontal “MTM” array (with the tweeter

actually offset from the mid-to-mid axis slightly). Typically, an SVS 5.1 satellite package includes four SBS-01 units (for left, center, left-surround, and right-surround duty), one SCS-01 unit for the center, plus a subwoofer.

The company soon realized that the SCS-01 center speaker is really a very good item in its own right, and so they now offer it as a left and right channel option, in place of the SBS-01 – and in this case configured for vertical positioning. Because it uses two midrange drivers instead of just one, it has 3 dB more midrange headroom below about 1.5 kHz than the smaller SBS-01 unit, making it more suitable for larger rooms. And of course vertically mounting an MTM driver array delivers a potentially more focused soundstage and greater clarity than the usual “tweeter-above-midrange” arrangement found with the SBS-01. Orienting an MTM system vertically also delivers a much better wide-angle radiation pattern than with the

horizontal MTM arrangement. Yep, I am very enthusiastic about vertical MTM arrays.

Structurally, the reconfigured speaker remains its center-channel build. That is, other than a change in the location of

the SVS logo on the front panel (from center to the far end, and rotated 90 degrees), the speaker enclosure stays the same. It has fittings on one side (normally this is the bottom if horizontally positioned) for a base platform and the binding posts in the rear are still oriented for horizontal use. In addition, the key-hole hangers on the back of the enclosure are configured for horizontal hanging instead of a vertical oriented. So why do we have the somewhat schizophrenic design of this enclosure?

Well, the company is doing this as an experiment, since its normal left and right speaker is the SBS-01. If all goes well with this reconfigured SCS-01(M) (meaning a success-

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ful sales run), I'd suggest the next generation of this system could offer a somewhat modified enclosure, fully configured for a vertical MTM arrangement. In the meantime, the company provides small "patch covers" for the exposed mounting bass holes on the cabinet sides and the user will just have to find some other way to mount the speakers on the wall, should they choose to locate them this way. (Read on and you will probably pass on hanging them from the wall, anyway.) The binding post orientation should be no problem to deal with, although their European spacing arrangement precludes using double banana connectors. Single bananas work just fine, as will bare wires, pins, and spade connectors.

When you purchase a pair of these speakers for main-channels use, one of the first things you notice is that they are a dedicated left/right pair. That is, because the tweeter is offset, you vertically position them with either both tweeters inboard from the midrange drivers or with both tweeters posi-

tioned outboard. I tend to favor the inboard location, because driver overlap cancellations at and near the crossover point will reduce sidewall reflections at those frequencies. If the tweeters are oriented outboard from the midrange drivers, tight imaging may suffer a bit, but the speakers (depending on the distances to the room sidewall boundaries) may have a somewhat more spacious soundstage. Experimentation is called for, since the impact of the tweeter orientations will vary from room to room. And normally,

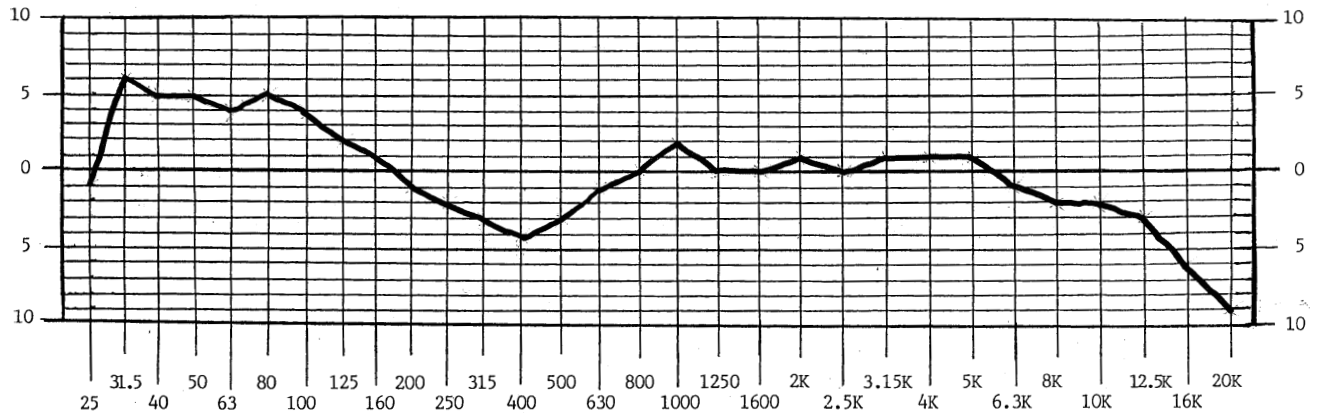
because of the way the offset tweeter works, you would face these speakers straight into the room, rather than toe them inward.

Outwardly, the speakers are pretty conventional. The enclosure is a sealed box, 20 inches high, 7 inches wide, and 8.5 inches deep, with a weight of 19 pounds. The rated impedance is an easy-to-drive 8 ohms, and the sensitivity is a very typical 87 dB (2.83 volts input, measured at one meter on axis). The drivers are magnetically shielded, the well-braced enclosure is made of standard MDF wood-product materials, and the finish is smooth-textured vinyl. Yep, pretty conventional.

What is not conventional is the room curve I ran on these satellites. After locating the speakers optimally (in this case, 10 feet apart, 2 feet out from the 22-foot long wall of my main listening room, and on 17 inch stands), I did my usual series of measurements with my AudioControl SA-3051 RTA and a stereo pink noise sound source.

The technique I normally use involves the

SVS SCS-01 satellites, with SVS SB12-Plus small subwoofer.



20-second averaging feature of the unit – in some cases using several sessions joined together up to a total of 120 seconds. This is done while slowly moving the measurement microphone over a 1 x 1 x 5 foot box-shaped area at roughly listener head height at the listening couch, and in this case roughly 12 feet from the axis between the speakers. (With this curve, I used slight variations within the measurement area and joined several sessions together to get a more representative average.) This procedure gives me a good idea of the ability of the systems to input flat power to the listening space. The curve shows the result with the speakers facing directly forward, instead of toed inward in the usual manner. Note that the curve also shows the bass response of the SB12-Plus subwoofer below 80 Hz (reviewed up ahead).

What matters with these satellites, of course, is the curve segment above 80 Hz. In this case we have the usual suck-out notch (Allison Effect) that results from mounting satellite speakers on stands and locating them some distance from room boundaries (floor, front wall, and side walls). Dips of this kind are not related to driver and crossover performance (which are excellent with this speaker), but instead are the result of boundary reflections arriving back at the midrange drivers at just the right time to generate a cancellation null in their power response.

Note that boundary cancellations like this are absolutely unrelated to standing waves,

and so their existence is unrelated to the listener or measurement position. They involve the ability of the system to *deliver flat power* to the listening room at a given location, and the usual “floor bounce” phenomenon mentioned by some reviewers is only a part of the full cancellation effect. Power-response boundary notches involve more than one boundary and impact the spectral balance of the speakers.

This particular notch is centered at 400 Hz, and is spread out somewhat. It is a classic case of the Allison Effect impacting the performance of a high-quality, stand-mounted speaker. With a different placement of the speakers it would center up elsewhere, and be either be more broad and shallow, or more abrupt and possibly deeper. Cancellation artifacts like this are impossible to avoid with stand mounting, no matter what speaker models are involved. (This also often goes for floor-standing, three-way speakers that have high mounted midrange drivers and low woofer/mid crossover points, and are located some distance from front and side walls.) One way to somewhat handle the problem is to position the speakers in such a way that each room boundary is a substantially different distance from the geographical center of the mid/woofer (or mid-woofer array), which would reduce the depth of the dip while making it broader in expanse.

However, placement of this kind is not always feasible and this is why I generally

recommend the use of a good equalizer with nearly any speakers. I did use a Rane THX-22 (reviewed by me in issue 83) experimentally with these units and it managed to absolutely flatten that notch. The thing to remember with equalization is that flattening a huge power dip will probably result in a peak in the direct-field response, so discretion is the order of the day with equalization. Try placement options first, and then do not equalize beyond a +/- 6-dB range.

Cancellation dips notwithstanding, the really notable thing about this response curve is the lack of a notch in what is usually the mid/tweeter crossover region. This is very unusual in a two-way speaker, since normally the midrange drivers would begin to beam near the top of their operating range and once the tweeter began to cut in the response would spread outward again. Normally, this causes a distinct tip in the power response at and near the crossover frequency. Nothing like this is evident at all with these speakers, as verified by several curves I ran at other speaker locations, including the room where I keep my second AV system.

I can attribute this superb midrange performance between 630 Hz and 6.3 kHz (with still impressively smooth performance out to 10 kHz, with a comfortable rolloff above that frequency) to two things.

First, we have the somewhat small size of the midrange drivers, which are less prone to beam near typical two-way crossover points than some larger-diameter designs. Second, we have a very low mid/tweeter electrical (second-order) crossover frequency of 1.7 kHz, resulting in an acoustic (fourth

order) crossover point of 1.3 kHz – being the result of the mechanical interactions of the driver with the electrical characteristics of the network. I measured the tweeter itself and it indeed is flat down to about 1250 Hz, with a very steep rolloff below that frequency.

The only concern one might have with a set up like this is the possibility of the tweeter being overheated and overdriven by frequencies that normally would be handled by the midrange drivers in competing systems. Fortunately, I had no problems with tweeter overload when I listened to the systems. The SCS-01(M) has a remarkable tweeter.

Above 6.3 kHz the tweeter response begins to slowly roll off. While some might be concerned by this downward slope, in most cases (certainly with most classical and acoustic-jazz recordings) the gradual attenuation in the top two octaves can work to make the sound more realistic in typical home-listening environments. Trust me: these speakers are more than ad-

equately crisp sounding in the treble range.

SVS could have shipped me any number of subwoofers to couple with the SCS-01(M) satellite pair. One good companion would be the PC-Ultra model that I reviewed in issue 102. The sub is potent and the satellites, although not large in size, are able to keep up with it in a large room – at least my 3,400 cubic footer. With a sub like that, a group of SCS-01 units (as LCR mains) and SBS-01 units (as surrounds) would make for a world-class speaker package. I'm not kidding.

Given that I had already reviewed the previous generation PC-Ultra model and that most of their other subs were in the same size/power category, the company decided



to send one of their new, small-box (13.5 inches on a side) SB12-Plus subs. While not in the big-room performance category of most of their other models, this little box would work very well indeed in a small or medium-sized room, and it dovetailed with the satellites (see the curve) quite well. The sub weighs in at 40 pounds and the grill assembly (which is held in place by magnets) adds another inch to the front-to-back depth.

While most of the other SVS subwoofers are vented designs, the SB12-Plus model is a sealed-box design. This saves space (no long port tube required), making the unit small enough to shoe-horn into a small area. Some other small subs do have ports, but their layout (with the port on a different surface from the drivers) often makes it impossible to squeeze them into tight spots. Not so with the SB12-Plus.

The driver is an in-house built 12 incher (the company now builds all of its own bass drivers), powered by an on-board 425-watt amp. The crossover, unlike many competitive models, is a full-filtering network, with a fixed, 80-Hz high-pass filter (second-order, 12 dB per octave) for the line-level inputs and a 100-Hz filter (first-order, 6 dB per octave) for the speaker-level high-pass inputs, should the user opt for that kind of hookup. (The line-level inputs and outputs offer *both* RCA and XLR connections.) The low-pass filter is variable, with 12dB/octave filtering anywhere from 40 to 120 Hz. This low-pass section allows one to dovetail the sub nicely with any number of satellites (which would roll off acoustically at an assortment of different frequencies) that are rolled off by the high-pass network.

I like this crossover situation. Most competitive models assume that the user will use the network built in to their surround preamp



or surround receiver, and most of the time this is the best option. However, SVS has decided that some users would prefer to use a more conventional hookup, including one that involves an old-fashioned (non-AV oriented) preamp and power amp combo. I also liked it because it allowed me to easily hook the three-piece package into my test network for A/B comparisons.

The sub comes with several typical controls, including a main power switch, an on/auto selector (that allows the unit to be automatically turned on by the input signal and off by the lack of it), a variable phase control, and a crossover on/off switch. The power cord is a two-prong detachable job.

Like the older PC-Ultra that I reviewed in issue 102, the SB12-Plus comes with a nifty parametric equalizer circuit. Basically, it allows one to eliminate one room-generated peak in the bass and does this with three controls. The first is a frequency-select knob that allows one to apply a cut centered at any point between 20 and 80 Hz. The second is a cut-level control. The third is a "Q" knob that al-

allows one to vary the width of the applied cut range. I found this EQ feature to be very useful, indeed, since there is a standing-wave peak at the favored listening position in my main listening room that the device easily eliminated. (See the illustration for a real-world performance curve.)

SVS (and I) recommend using a meter of some kind to properly use this control. Radio Shack has a nice analog SPL unit, and the sub's owner's manual recommends it, although they also note that it is not linear below 100 Hz. The owner's manual (perhaps the very best I have ever read dealing with subwoofer performance) includes a compensation chart that lets the user come up with usable results using that meter. Those of you with one-third-octave RTA units will be able to graphically see the results of this control in action.

There is also a room-size selector (small, medium, and large, with bypass) that allows one to more easily tailor the output of the subwoofer to the way room gain impacts bass

response. While you can compensate for room gain to some extent with any sub's basic level control, the room-size selector allows the sub to contour the output in line with the nature of room gain. The latter tends to pile up as the frequency goes lower and lower. I tried the control and its subtle effect can certainly be useful. The printed curve was done with the control set to large, as my 3,400 cubic foot main room falls into this category. For my max-power tests I set the control to bypass.

Needless to say, a subwoofer this small is not going to run with the company's big boys when it comes to maximum-power output. It also will not run with them when it comes to extreme low-end extension, although the unit is still no slouch in this department. As the printed curve shows, the sub is solid down to 30 Hz, and it has workable output down to 25 Hz in my main room. In other, generally smaller spaces, room gain will possibly flatten things out down deeper.

I did my usual max-output tests by putting the subwoofer in the left-front corner of my main room and locating my measurement microphone in the same spot where I have done all of my other max-output measurements. This put the microphone 17 feet from the room corner and somewhat to the side of the sweet-spot listening location. The inputs were the 20 Hz and 31.5 Hz signals from the *Hi-Fi News and Record Review* test disc number two. Measurements were taken by my AudioControl SA-3051 RTA in its digital SPL readout mode.

(The only time I do not do bass SPL measurements this way is when



testing the woofer sections of paired full-range speakers. In that case, I place the two systems in their optimal soundstaging locations and do the measurements with both systems operating together. As with corner-located subwoofers, the microphone always remains in the same spot.)

In my main room and at 31.5 Hz the SB12-Plus sub could hit 104 dB, cleanly. At 20 Hz it could hit 94 dB, cleanly. While this is not absolutely world-class performance, it is impressive for a sub this size, and we do have to remember that this is a small sub that is going to work at its best in small or medium-sized spaces. Those in need of hyper-grade bass output in combination with the SCS-01(M) satellites might seriously consider the still larger PC-Ultra model I reviewed in issue 102. That powerhouse could hit 114 and 106 dB, and like the SB12-Plus, it comes with an on-board parametric equalizer.

While the illustrated curve and woofer max-power testing were done in my main room, all of the serious listening tests and A/B comparisons were done in my 2,900 cubic foot second-system's room. While the 3,400 cubic foot main room is ideal in itself, the speakers in there, Allison IC-20 models, are just too wide dispersing (those triangular cross section cabinets, with angled-outward drivers) for speakers being compared to them to be positioned properly. I also do not like moving those heavy Allison models from their locations if I bring in other speakers to use as references.

The second-system's room normally has floor-standing Dunlavy Cantata main-channel speakers (reviewed by me in issue 87), and it was also easy to move my NHT ST4 systems (reviewed by me in issue 90) to that room from the living room. Both

of those speakers lend themselves to standard A/B comparison work better than the IC-20s. Just as importantly, the hookup and amp arrangements in that room also allow me to easily do level-matched (multiple amplifier) comparisons with any speakers being reviewed.

The SCS-01 speakers and SB12-Plus sub were moved to that room, with the satellites positioned on 28-inch stands next to the Dunlavy Cantatas. This got the tweeter heights about the same (the Cantatas also employ a vertical MTM array, but with a very different crossover-network philosophy) and I located the speakers in an AB - AB configuration in such a way that the systems within both pairs were roughly the same distances apart. Positioning speakers being compared AB - BA style does allow for a precise center image to be formed up in the same spot with each pair, but the closer-together pair always suffers by comparison to the wider-spaced second pair of systems. AB - AB positioning always keeps the speakers on a level playing field when it comes to soundstage width and spaciousness. The Cantatas were toed inward and the SCS-01 units were faced forward.

Against the Cantatas, the SCS-01(M) speakers were surprisingly competent. For most of my comparing I used the *Delos Engineer's Choice II* disc (DE3512), which was recorded by the legendary John Eargle. The disc has a grab bag of excerpts from a number of his transcriptions, ranging from solo instrument and solo vocalist on up to full orchestra.

With the guitar selections on the disc I thought the speakers were nearly in a dead tie, but with the Cantatas having tighter focus in the center and with the SVS models having a more diffuse and spacious presentation. Remark-



ably, given that the Cantatas are noted for their superb abilities, clarity was pretty much a draw.

With the quartet music, I thought the Cantatas had a better (meaning fuller) rendition of the cello parts, no doubt because of the previously discussed boundary-related suckout artifact in the mid bass we get with stand-mounted speakers. The Cantata's cross-over design and resulting driver overlap minimizes this artifact, at least as it relates to suckout reflections from the floor. On the other hand, with the other instruments within the ensemble I thought that the SCS-01(M) speakers held their own with the \$5500 per pair (at the time they were discontinued) Dunlavy models.

With full orchestra music we again had a technical tie. The Cantatas often had better central focus, but the SVS models were generally more spacious and in terms of clarity and detail it was a toss up. At times, the Cantatas had a slight edge in terms of low-string-sound richness, no doubt because of that suckout artifact showing up with the stand-mounted SVS units. For much of the material of this kind I still tended to prefer the SVS units to the Dunlavy models, since I sit off the central axis in this room when doing anything but speaker comparisons. Away from the sweet spot the Cantata's center-focus advantage is minimized.

With the solo-vocal selections the Cantatas had a more focused central image, but with the SVS models doing a better job of simulating the space surrounding the performer.

In the area of deep bass it was pretty much a draw (the Delos disc has an impressive solo-organ excerpt), with neither package getting the very lowest sections the way a bigger subwoofer would, but with each being able to handle the less extended organ pedals quite well. The Cantatas, by the way, employ two very high-quality, ten-inch ScanSpeak® bass drivers in a sealed cabinet (each driver has a list price greater than an entire SCS-01), and when paired up they measure as solid down

into the low-bass range as the SB12-Plus.

Against the NHT ST4 models (which listed for \$1000 a pair when I reviewed them) the result was a technical dead heat. With this comparison, the SCS-01(M) units were relocated to shorter 17-inch stands, thereby keeping the tweeter heights the same. (Although like the Cantata a floor-standing system, the considerably shorter ST4 has its one-inch dome tweeter located beneath its 6.5-inch midrange driver.) The remarkable ST4 tweeter measures flatter out to the top octave than the SVS tweeter, but in terms of practical performance with even the most demanding source materials the two systems are subjectively equal in this area.

The guitar tracks were almost identical and the full-orchestra sections had the ST4 units sounding closer up and with a bit more fullness in the mid-bass area. (The woofer-to-mid crossover section in the floor-standing NHT model does a good job of compensating for boundary related suckout artifacts, at least those involving the floor.) Above the mid bass, the SVS speakers had a bit more detail and clarity, no doubt because they do not exhibit a power dip near the crossover point between the midrange and tweeter drivers. This dip is something the ST4 system, with its large midrange driver and typical 2.5 kHz crossover point, does indeed have. Vocals and solo-instrument presentations were pretty much a draw, with both systems having identical focus and stability.

With the deep-bass comparisons, it was no contest. The ported ST4 systems are not exemplary low-bass performers (I use them with a subwoofer in my living room), and the SB12-Plus subwoofer just plain massacred the 8-inch woofers of the NHT units during comparisons that involved virtually all of the low-bass sections of the organ-work excerpt.

In summary, the printed curve and my listening comparisons, as well as extended single-presentation listening for pleasure, show this SVS sub/sat combination to be genuinely world class when it comes to smooth, broad-bandwidth performance,

soundstaging, clarity, and dynamics. Yes, we do have that boundary-related dip that tends to thin out the mid-bass somewhat, but remember that involves *speaker placement* and not speaker performance, per se. Any other stand-mounted speakers would have to deal with the same acoustic artifacts. Locating the speakers optimally and making use of moderate equalization for mid-bass corrections (in this case a Rane THX-22), delivered one of the most workable curves (not shown) and best sounding stereo packages I have encountered in my listening room – at any price. But even without outboard equalization the package was a sensational performer.

Indeed, I would have to rate this sub-sat stereo trio as near championship grade, particularly for the \$1050 total-package price (with the basic black-finish sub). If one needs more bass extension and power, they can happily (and still cheaply) opt for one of the company's larger subwoofer models. However, above the bass range, the satellites are just about able to run with the best within their maximum-output capabilities, and for \$350 a pair this is remarkable. Throw in a

third SCS-01, horizontally mounted for center-channel duty, and select the required number of SBS-01 smaller speakers (they sell for \$225 a pair) for surround-channel duty, and you would have a remarkably competent surround-sound speaker array.

Stick with just the basic package I reviewed (the satellites, by the way, were mostly engineered, and the crossover network entirely engineered, by SVS speaker-design guru Jim Farina), and two-channel enthusiasts will have a modestly priced system they can crow about when big-spending fellow audio buffs are psychologically paralyzed by the sound quality this ensemble can deliver in a good room.

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