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### **REVIEW: Vacuum State Electronics VSE modified Sony SCD-XA5400ES with Terra Firma Lite SACD Player (Modded)**

24.219.30.145

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**Model:** VSE modified Sony SCD-XA5400ES with  
Terra Firma Lite

**Category:** SACD Player (Modded)

**Suggested Retail Price:** \$2500 (modifications only - approximate  
price)

**Description:** Sony SCD-XA5400ES with Terra Firma Lite clock  
and custom VSE output board

**Manufacturer URL:** Vacuum State Electronics

Review by Metralla on August 09, 2009 at 15:50:00  
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for the VSE modified Sony SCD-XA5400ES with Terra Firma Lite

### **Introduction**

Last Saturday I went to visit Allen Wright of Vacuum State Electronics at his office and workshop in Schaffhausen, Switzerland to listen to the newly modified Sony SCD-XA5400ES.

## How this Came About

I had visited Allen a few weeks prior to this to listen to a Sony SCD-1 that had been modified with the latest VSE mods (Level 7) including the Terra Firma Lite bit clock. I posted regarding my visit here at Audio Asylum on June 28

### **I listened to an upgraded Sony SCD-1 on Saturday ...**

and my listening impressions on July 21

### **SCD-1**

While at VSE I noticed the SCD-XA5400ES on his workbench which had the top removed and I could see the Terra Firma Light clock in place, although the leads had yet to be attached, and the new modification board was not in sight.

### **I was looking at the interior of a 5400 yesterday at Vacuum State Electronics in Schaffhausen**

If you recall, Allen posted on May 13 that VSE was interested in modifying the SCD-XA5400ES and that "the first person to send us one here in Switzerland will get the job for free".

### **RE: Sony 5400-Allen Wright**

Of course, someone took Allen up on his offer and that was the machine I was checking out.

Then, about 10 days ago, Allen emailed me while I was in Liechtenstein that the modifications to the SCD-XA5400ES were finished and asked me if I would like to hear it in his system. I was due to fly back to the USA (Zurich-Frankfurt-SFO) on the Saturday, but due to, shall we say Öimmigration issuesÓ I had to change my travel arrangements to the Sunday night train to Croatia, then Zagreb-London-Washington DC-Denver-San Jose; which gave me Saturday afternoon free, and I duly drove from Feldkirch, Austria where I had been staying to beautiful Schaffhausen.

## The Modifications

As I noted, the SCD-XA5400ES had the Terra Firma Lite fitted. This is a relatively easy modification, but it had been done very nicely with custom standoffs positioning the tan-coloured clock board above the main rectification board to the right of the transport mechanism, as you can see in the photo. The leads go to the power supply and a special warm-up switch that enables the clock on a lesser power supply while the capacitors in the main supply charge during initial turn on. After 30 minutes or so you can throw the switch and play music. The power to the clock does not go through the Sony power switch, so as long as your player is plugged in, the clock is

under power. You only need to use the warm-up switch if the unit has been unplugged from the mains.

Obviously, the switch will be mounted on the back panel when the unit is complete, but that had not been done at the time I listened to it.

The other modification that you cannot see is the newly developed VSE output board that is mounted at the back underneath the half-width Sony board visible in the photo. The VSE board is about a third the size of that board, and is neatly mounted underneath and quite close to the existing board. I really had to get down to eye level at the back of the unit to see the custom board that had been added. Again, a very professional installation with custom standoffs and mounting hardware.

Being quite used to the way my Ric Schultz modified Sony SCD-XA777ES looks (it's a bit of a science project in appearance), the VSE modifications are extremely neat and in keeping with the unit's architecture.

Although you can't see the VSE board, the red and black leads at the very bottom of the photo above are flying leads to the RCA jacks. These will, of course, be mounted on the back panel.

I can't say that much about the way the new board works, because although I asked questions, I get quickly lost when Allen starts describing all things digital. But the main point to take away is that this is a totally new board that is quite different to the VSE board that has been around for quite some time. As mentioned on the VSE web site and in reviews such as the one on Positive Feedback, the original modification was designed for certain Sony players (SCD-1, SCD-777ES, SCD-555ES EU, SCD-C333ES and DVP-S9000ES) that used the bitstream VC24 chip set. VSE did modify other players, but their modified Sony SCD-1 and Sony SCD-777ES get the most attention.

The digital processing in the SCD-XA5400ES is handled in a different way, by a monolithic DAC/filter and the DSD stream cannot be tapped in the same way. Now we have a current-based DAC, rather than a voltage-based DAC so Allen had to develop a new modification design, which was then turned into a circuit board manufactured externally, then stuffed by VSE technicians.

Given that Allen had raved in print on the ease in which the pure DSD stream could be tapped in the old models, I was skeptical that the sound of the modified SCD-XA5400ES could compete with the SCD-1 I had heard, or Allen's own SCD-777ES that was sitting in the equipment rack under the SCD-XA5400ES. But more of that later.

## **The System**

Apart from the front end, Allen's system was the same one I listened to previously. The next photo is a view from near the listening position.

It comprises the magnificent two-box Realtime RTP3D preamp, the differentially balanced DPA-300B monobloc power amps, VSE silver foil interconnects and VSE copper foil speaker cables. The speakers are

modified Acoustat Model 11s with Allen's DIY dipole bass unit, custom passive crossover set for 50Hz.

There was, of course, the SCD-XA5400ES with the top off and flying leads for the RCA sockets (the back panel had not been finished), and below that on the rack was Allen's own Level 7 Sony SCD-777ES fitted with the Terra Firma Uber clock which was sitting on the floor. Both sources were connected to the RTP3D preamp with identical foil ICs so that comparisons could be easily performed. Well, Murphy's Law had something to say about that.

The electronics are sited on a very sturdy skeletal cabinet which is pulled forward into the room allowing easy access to the rear of the units. Behind the cabinet are the power sockets and some associated power line stuff that I forgot to ask about. The power cords are nothing special. Mounted at one end of the rack is a custom-made turntable with a SEAC arm and Koetsu cartridge, but we did not listen to it.

The room itself is very well isolated from the surroundings, although Allen's workshop is in a very quiet outer part of Schaffhausen, almost in farm country. The walls and (quite low) ceiling appear to be of concrete construction and the dimensions are a lucky combination, right on the Golden Ratio.

The Acoustats are pulled quite a long way forward, around about a third of the length and are right against the side walls. I'd estimate that the room is 7.5 feet high, 12 feet wide and 20 feet long. There are a couple of light framed sling back chairs to listen from close to the far end of the room, and the usual mess of CDs, LPs and other stuff that seems to accumulate in the listening rooms of all but the most fastidious of audiophiles.

Here is a closer look at the equipment rack.

## The Music

I had heard this system previously with a SCD-1 that Allen had modified for a customer and it had made a huge impression on me with its musicality, realism and sense of life. I had brought with me the same SACD I listened to that day, the wonderful "Stardust" by Willie Nelson (Columbia/Legacy CS 65946).

I like using this disc for reviewing for a couple of reasons. It's an early Sony non-hybrid engineered by Joe Palmaccio and, although I don't know this for sure, I bet Sony pulled out their master tape for this transfer. It has quite a range of instrumental textures, a natural and precise soundstage, some stuff that is quite low in the mix, and the hillbilly himself doing some of my favourite songs. It is Willie's exquisite timing and phrasing that get me on this disc – when it's right, it's right and you know it. The recording from 1977 was done in a large ranch house in Southern California using a mobile recording studio, and has that holistic feel of a live session that hasn't been futzed with too much.

## SACD on the VSE Modified SCD-XA5400ES

When I arrived, the system was running and warming up, and Allen made me a cup of tea and we sat down and chatted for a while. Cello music was playing, and I recognized the Pieter Wispelwey disc as I also own it (made a mess of the pronunciation of his name). The SACD was Channel Classics CCS SA 16501 – containing Saint-Saens: Cello Concerto, Tchaikovsky: Andante Cantabile, Variations on a Rococo Theme and Bruch: Kol Nidrei. This was very expressive and lovingly rendered, with a smooth and deep cello sound filling the room, prompting occasional lapses in the conversation as we stopped to listen more closely. Since I had heard Allen's system previously, it did not disarm me as much as the first encounter, and this was even more apparent when I put on "Stardust".

From the opening notes as Willie fingers the strings on "Trigger" (his battered acoustic guitar), I knew this was going to be good. You could hear precisely the initial attack of his fingers on the strings, then as the song develops his left hand technique, bending the notes just so. Underneath, the low level organ of Booker T. Jones providing structure, and the understated drums – delightful; and Willie is right there in the room. This is much as I remembered it sounding a few weeks previously with the big SCD-1, but this was a new player.

When the harmonica comes in "Georgia On My Mind" like a howl from the distant prairies, Willie holding back on the beat, it was very impressive. The piano figure at the end of the song had just that percussive ringing of a real piano.

In "All of Me" we get a totally different guitar sound from Jody Payne on his electric semi-acoustic, and I could hear excellent transient detail as the plectrum hit the string.

Towards the middle of the song, the drummer gets a chance to work a few little frills that made me sit up a bit – that sounded better than my memory of the SCD-1, I thought. A similar thing happened in "September Song", where the drumming is mostly brush work and these just "popped" brilliantly, and we both went "wow". I did not get that same reaction when I heard this track on the SCD-1.

"On the Sunny Side of the Street" opens with the bass walking up and down with the drummer and the bass was really good, coming to the fore more than I recall. Again, a beautiful piano sound and really nice "swing" to the song – is this PRaT I'm referring to?

You can't get much better than Willie singing "Moonlight In Vermont", one of his favourite songs, and he gives it the old college try – immaculate timing. After a bit of fun we come to one of my all-time killer songs – "Someone to Watch Over Me". I got a huge rush of emotion listening to this on the SCD-XA5400ES – giant goose-bumps up my arms, and tears in my eyes. Holy smoke.

## Comparisons to the VSE Modified SCD-777ES

What we wanted to do was play the same disc on Allen's own player, but the Gods conspired against us, as when "Stardust" opened, it was obvious that there was only one channel.

The silver foil interconnects are a little fragile right where they join the RCA plugs, and this one had been through the mill, stepped on and otherwise mistreated and it decided to retire. So Allen had to hunt around for some other leads and needed some longer ones than were on the SCD-XA5400ES, so we could not use those. He found some silver wire interconnects (as opposed to silver foils) and we hooked them up.

So that put the VSE Level 7 SCD-777ES at a bit of a disadvantage compared to the newer player, since the foils are really good. But to balance the sheet, the SCD-777ES was fitted with the Uber Clock, and not the Terra Firma Lite. Hopefully, a wash, but slightly unsatisfactory since we were looking for a comparison between the SCD-XA5400ES and one of the best players around.

I observed a remarkably similar presentation though. Through the 777ES, the sound was a little smoother, maybe a little more expansive in the sound stage. Everything I heard through the SCD-XA5400ES I could hear through this different unit, but there were subtle differences – but nothing of note. But then I heard the brush work on "September Song" and it did not have quite the same "pop" and the bass line on "On the Sunny Side of the Street" did not make the same impression. The drumming seemed a little reticent. Could this be that the SCD-XA5400ES is actually better?

After playing the whole SACD, we replayed just a couple of songs, first on the 777ES and then on the 5400, and the differences I just mentioned were clear. The drumming and bass on the SCD-XA5400ES was, in my mind, better – tighter, more supple, more part of the timing, propelling the song forward with a little more excitement. These are small differences, for sure, but I would have to say, for the sort of music I listen to, the new Vacuum State SCD-XA5400ES had dethroned the king.

## CD on the VSE Modified SCD-XA5400ES

There have been a few posts on the various audio forums regarding the SCD-XA5400ES. I can't recall any posts that were critical of the sound on SACD, but I do recall a number of posters that were not impressed with RedBook, so I particularly wanted to listen to CD on the VSE SCD-XA5400ES.

Again, we played a disc that I had heard on my last visit to Schaffhausen when we used the Level 7 Sony SCD-1. The CD is Bill Morrissey and Greg Brown - "Friend of Mine" (Philo CD PH 1151 - Rounder Records 1993).

### Friend of Mine

This is one of Allen's favourite CDs, mainly because the recording and mastering is so good – but it's also a fun record. Two acoustic guitarists with

quite different voices singing some interesting songs in a folk style. I dug it last time and I enjoyed it again.

Was I expecting a huge drop off in sound quality as we changed from a high resolution source (SACD) to CD ? I think I was.

But it did not happen. The singing was expressive, the difference between the two voices obvious, the soundstage natural and the lack of grain and grit took me back a bit. The sound was pure and crystalline and very enjoyable. I listened to the whole CD, through great songs like "Little Red Rooster", "You Can't Always Get What You Want"(yes, The Rolling Stones number), and the fun "Duncan and Brady". Allen enjoyed it too.

I don't know what a bog-standard SCD-XA5400ES sounds like on Redbook, but the VSE modified 5400 with Terra Firma Lite sounded just terrific.

## **Conclusion**

I apologize that I did not hear any full-on orchestral music, or driving rock or frenetic electric jazz, so there are plenty of areas to be explored. But what I did hear of the VSE modified SCD-XA5400ES impressed the hell out of me. The owner of this unit is going to be a very happy audiophile when he or she gets the player home.

The base unit is not expensive (it lists at \$1500 and some astute shoppers have gotten deals as low as \$1100) and it's a current model, so reasonably easy to get.

The modification prices are not yet known to me, but according to the Positive Feedback review of the Uber Clock, the Terra Firma Lite is under \$900. And I'm guessing at the 5400 mods (using the Level 7 as a comparison) might be \$1600.

I reckon you could get the whole shebang for under \$4000. With that, you get a player that can compete with the best SACD players out there – the heavy-hitters like the Meitner two-box, the Playback Design, the big Esoteric and the APL. These are 3-8 times the price of the VSE modified SCD-XA5400ES.

I don't know who would win a shoot-out like this, but from what I heard at Schaffausen, I'd be happy to back the little guy. And count me in when it happens.

## **Disclaimer**

I have no financial involvement with Vacuum State Electronics. But I like Allen Wright, maybe because he comes from Down Under like me, though he's a Kiwi originally. He once worked for a number of years at HP, where I'm employed. He modified (actually – rebuilt) a Laurie Cohen preamp for me in 1983 out of his Sydney shop – but he doesn't remember.

He's a straight talker and a very talented designer and his preamp and power amp can mix it with the best in the world. I reckon he deserves to be noticed by the mainstream press like Stereophile and TAS. Hopefully, the modifications he can do to the SCD-XA5400ES will keep him in beer and chips for a while.

**Product Weakness:** waiting list

**Product Strengths:** very high performance / price ratio

#### **Associated Equipment for this Review:**

**Amplifier:** VSE DPA-300B monoblocs  
**Preamplifier (or None if Integrated):** VSE Realtime RTP3D  
**Sources (CDP/Turntable):** VSE modified Sony  
SCD-XA5400ES  
**Speakers:** VSE modified Acoustat Model 11s  
with subwoofer  
**Cables/Interconnects:** VSE silver ribbon i/c and  
VSE copper ribbon cables  
**Music Used (Genre/Selections):** see review  
**Room Size (LxWxH):** 20 x 12 x 7.5  
**Room Comments/Treatments:** see photo  
**Time Period/Length of Audition:** Saturday afternoon  
**Other (Power Conditioner etc.):** not sure - no special power cords  
**Type of Audition/Review:** Dealer Demo  
**Your System (if other than home audition):**  
<A HREF=%22http://cgi.audioasylum.com/systems/1178.html%22>My  
System</A>

Regards,  
Geoff