



Acoustic Energy

AE500

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Excellent Potential; Extraordinary Performance

AE500 is the new bookshelf speaker being launched from the British company Acoustic Energy. Its size is not big but it is also not a compact size of bookshelf speakers, and it is similar to the size of general monitor speakers. You may either put it on a speaker stand or on top of your work desk. Although it is a bookshelf loudspeaker, it utilizes the expensive carbon fiber speaker driver diaphragm, and this type of drivers has high rigidity and is not easily deformed, activity response is fast and also very light. Since there are so many advantages of the carbon fiber speaker driver diaphragm, it should be widely adopted by many other loudspeaker brands. However, the manufacturing cost of the carbon fiber speaker driver diaphragm in fact is still very high. The production process takes time, softening the fiber and bending it in shape can't go wrong, otherwise the carbon fiber will be scrapped. Thus, any loudspeaker brands utilizing carbon fiber diaphragm drivers to make their loudspeakers, which is equivalent to a quality guarantee. In fact, in this test, no matter playback from CD or the high format digital music file, I can feel the refreshing and clean and also accurate sound characteristics. To me, the AE500 has the potential to act as a monitor speaker. In this article, I have used it just as a monitor speaker, and the effort is also enjoyable!

Conquered by the Vacuum Tube Amplifier

AE500 has been delivered to us for almost a month, and we have been using the PrimaLuna EVO400 Vacuum Tube to drive it. For a long time, I think that the vacuum amplifier and the bookshelf loudspeaker are a perfect match system. The usual linear amplification of the vacuum amplifier can bring out the characteristics of the speaker drive units. Just like the effect in this test, the vacuum tube acclimates the high rigidity of the carbon fiber drive units.; not to mention, the carbon fiber diaphragm is mostly used for making the bass drivers, for example, those big diameter voice coil

subwoofers, due to its advantage of the quick response and reproduce huge volume of bass. In fact, looking at the current carbon fiber drive units, most of them have mixed with other fiber materials, so as to avoid the sound being too harsh. It is rarely like the AE500 that the tweeter also utilizes the carbon fiber diaphragm. If we look from the good side point of view, it is for the sake of ensuring the drive unit has linear performance, and it is worrying whether the high frequency will be too sharp that may hurt the ears? In this test, I do not hear any harsh sound from the AE500, and I think it is mainly due to the low damping control of the vacuum amplifier that it does not control the tweeter diaphragm too tightly, so as to easily create a calming effect. Followed by the reason that majority vacuum tube amplifiers of which the output current is through the output transformer and the driving power as well as the output stability are better. In general, the AE500 through the domestication of the vacuum amplifier, the sound is still favorable. Thus, it can be imagined if it was driven by a digital amplifier or high damping control amplifier, it may sound blunt. According to my viewpoint, the rigid drive unit cannot be forced. Otherwise, it'll just hurt your ears.

Potential Show Off

There is another advantage of using the vacuum tube amplifier to drive the speakers is that the extension of high and low frequencies can be very exhaustive. This is not judged solely by listening, but by the result of the test with the playback a signal test CD. When I playback the Nordost tool disc "System Set-up & Tuning Disc", the track #28 which is also a 24Hz signal test, both the left & right channels of the mid-bass drivers actually burst into bursts of energy. According to its specifications, the frequency response of this pair of loudspeakers should be down to 45Hz only and its crossover filter should cut off any signal frequency below 45Hz. In order to find the fact to understand, I also tested with the tracks of 18Hz and 21Hz from this test disc, and try to hear if there is any response from these mid-bass drivers.

Imitate Monitor

The result is nothing can be heard, even my skin and pores also cannot feel any of the low frequency energy. This has already proven that the AE500 does have the ability to reproduce the low frequency below 30Hz. My intuition tells me that the AE500 should be capable to reproduce the dynamic of the HD digital music. Therefore, I decide to use JRiver 23 as my digital music player, and the DAC is my recent favorite – Mytek Manhattan II, what charm it has made me fascinated? Meanwhile, I'll not mention in this article, but I'll explain why I chose to playback the CAS digital music file instead of using the CD. It is all because of the DSP Studio menu

inside the JRiver 23 allowing me to do all the detailed playback settings; for example, the distance between the loudspeakers and the listener's position, to use the high pass or the low pass filter, to select the listening environment etc. I do the 2 settings according to my actual situation and select the Level 2 Studio for the listening environment, while the maximum is Level 10 and the higher the number, the larger of the room. As the AE500 is not placed too far away from my listening position, I therefore select the smaller room effect.

Isometric Placement

Just using the JRiver 23 along is not enough to reproduce the big dynamic, I decided to use the AE500 as the near field monitor speakers. What is the difference between this and the usual loudspeakers placement? The first is that the loudspeakers will show a fat pyramid shape. The middle position of the tweeter is pointing to the ears. When sitting in the king's seat (the best listening seat), both eyes are horizontally looking at the loudspeakers, which should not be able to see the two sides of the loudspeakers. At the same time, you can only see a little bit of the top of the loudspeakers. In this way, the sound heard at the king's seat areas is directly come from the driver units and the reflected sound is relatively less, so the total sound interference received by both sides of ears is also minimal. In short, I will hear the pin-point focusing effect, which makes it easy to identify the loudspeaker's phase response and overall clarity. Of course, to achieve the desired result, I refer to the instructions on the user manual before the implementation. According to the manufacturer's suggestion, the ideal distance between the left and right channels and the back wall should be 30cm – 60cm. It is actually too narrow for such distance range at the listening room. Therefore, I decided to change the distance to be 120cm, and the distance between the tweeter and the king's seat is 150cm, so as to make it an equilateral triangle. Originally, I did think that the distance to the king's seat should also be 120cm, but I found it way too closed to the loudspeakers when I sit at the seat. Thus, I moved the chair a little bit away. After all, the placement of the loudspeakers has to be in line with the reality. In some environments, it is necessary to compromise. It is not bad to be able to make basic requirements!

Near Field Power

After finish the settings, at first, I played the vocal to listen and I picked Lily Chan's new album "Sky Ladder", as the playback of the violin, I can't think of the sound is actually as smooth and slippery as the silk. When Lily starts to sing, the precise and delicate focus plus the well separation from the accompaniment instruments, and at that moment, the sound becomes exquisite and embossing. On the other hand, I did

not expect that the AE500 can playback the vocal with such moist texture, capable to express the feelings of the whole song, the level of details in the pronunciation and breathing, and even the singing technique, are all clearly reproduced. This is what makes me feel that this AE500 is very wonderful. Honestly speaking, except for the two drive units are kind of special, the rest of the loudspeakers' specification and construction are actually pretty basic. For example, the crossover network is the most common one order filter crossover. There is only one crossover point, that the midrange to the low frequency should not have high interpretation performance. However, the actual listening is able to distinguish the violin pull action, and the strings and vocals are clearly defined, which makes me feel that this is a pair of very good loudspeakers that emphasize high precision, which is quite different from the other high end loudspeakers that tend to sound elegant. For the audiophiles who are pursuing the high clarity sound, the AE500 is their ideal choice; but the audiophiles who love the L3/5A type of loudspeakers, they may feel that the AE500 is not musical/emotional enough!

Reshape Stable Sound

So called the emotional sound is varied from person to person. In this listening test, I am sure that the carbon fiber dome tweeter really has a strong energy. During the playback of the albums "Three Kingdoms" and "Sound of China", I can really feel it. For example, the sound of the flute in the "Three Kingdoms" and the sound of Pipa from "Ambush On All Sides" will clearly feel the intensity of the performance; especially Zhao Cong playing the Pipa, the strength of the fingers is so powerful to make you feel that as if the sound were straightly shooting into the ears. Under the near field monitor speakers placement, the performance of this force is undoubtedly an increase in excitement, but also slightly feel that the high frequency is a little bit bright. As I do not want to change the placement of the loudspeakers, I therefore put the grill on the loudspeakers so as to slightly reduce the energy of the high frequency. I can obviously hear that the decrease of the high frequency energy, which is just like using a high pass filter, that the sound is no longer straightly shooting into the ears. It is very suitable to be used under this near field situation. In contrast, if the distance between the loudspeakers and the king's seat is more than 150cm, it may not be suitable. I continue to playback all types of music and I discover the AE500 always performs very accurately in constant rhythm and micro-weak parts of sound. For example, to playback the song "Dragon and Tiger" from the CD album "AV Show 2008 The Perfect Sound", as the music content is rich and there is a section of many drums playing together. Each drummer repeatedly beats with a constant force. The effect of the AE500 reproduction is very stable. The positioning of the imaging is

nailed in the sound field, and the sound forms a line from left to right. The loudness and rhythm of the drum sound are consistent and unified. At the same time, the depth and positioning of the big bass drum is also very clear. In terms of the volume of this bookshelf loudspeaker, it can reproduce such intensity and distinctive instruments positioning. The effect is already good, not to mention the width and depth of the soundstage reproduced by it, it is truly extraordinary.

Conclusion

Before finishing this review, I tried to change the amplifier and connected it to be driven by the Marantz PM-KI Ruby Integrated Amplifier. The result is the same as I imagined that the sound is more solid and the control of the bass is also more compact, but the vacuum tube amplifier can offer better low frequency extension easily. In addition, it can also offer deeper bass. In conclusion, the AE500 is a great potential bookshelf speaker. The response of the drivers is quite agile and the sound is quite linear. Those audiophiles like delicate listening with details would definitely fall in love with it!