

# Liberty Audio B2B-1 Phono Stage

*As reviewed by John Hoffman in [www.positive-feedback.com](http://www.positive-feedback.com), Nov./Dec. 2010 Issue 52*

## **John Hoffman's System...**

### **LOUDSPEAKERS**

Sachiko Double Horn speakers with Fostex 208 Sigma drivers.

### **ELECTRONICS**

Electra Print Audio 300B Custom amplifier Electra Print Audio PVA pre-amplifier, Hagerman Coronet II phono stage with VCAP upgrades and a Hagerman Piccolo step up.

### **SOURCES**

EAD T-1000 transport, Audio Magic Kukama DAC, Galibier Serac with graphite platter, Rega RB 251 with Incognito rewire and Pete Riggle VTAF and Counterweight, for the Common Man. Note: Tone arm is only temporary, working on changes in this area. Accuphase AC1 cartridge.

### **CABLES**

Audio Magic Illusion 4D interconnects, speaker cable, and digital cable and Audio Magic Extreme series power cords.

### **ACCESSORIES**

Audio Magic Mini Reference power conditioner.

Vinyl playback components possess a distinctive and striking appearance that is rarely equaled by other components in an audio system. Playing records requires a greater degree of involvement from the vinyl hobbyists, and we form a strong attachment to our equipment, especially to the devices that spin our black discs.

Turntables grab our attention with beautiful plinths, exotic platters, and sophisticated motor systems. Moving coil cartridges are meticulously crafted, and often have a captivating story behind their creation. Tone arms are a comprehensive study in engineering principals, and audio junkies have a keen interest in the wide array of solutions that manufacturers have designed to solve alignment issues. We have an unwavering interest in arm geometry, whether it be an elegant uni-pivot design, or an exotic linear tracking air bearing arm. However, the phono stage can get overlooked, lost in the shuffle of components sitting in the audio rack. The audio hobbyist with limited means will often find the needed funds for a high quality table and cartridge, but reverts to the budget realm when it comes time to purchase a phono stage. My friends, this is a mistake! From my perspective, the phono stage is a component that is consistently undervalued by the typical hobbyist. The phono stage is the linchpin to the analog chain. When a person makes a compromise in choosing this component, the music inevitably suffers in a dramatic way.

Recently PBN Audio has established a direct-to-consumer line named Liberty Audio. The factory direct distribution model provides the opportunity for a higher quality of component to become available at a lower price point than what can be achieved by the traditional brick and mortar pipeline. The parent company for Liberty Audio is a well established member of the audio community, which provides a significant degree of credibility to this new product line. The B2B-1 phono stage is the first component being offered in the Liberty Audio product line; this is a moving magnet/moving coil phono stage that sells for \$1749. This component contains the basic circuit design that is used in the PBN Audio P and PX phono stages. These two products are an assault on the state of the art vinyl reproduction, and have a price tag of \$12,000 and \$20,000. This is an impressive pedigree for the Liberty Audio B2B-1, which has the possibility of bringing high performance analog reproduction to an affordable price point.

The Liberty Audio B2B-1 phono stage does not possess a striking appearance, as this component looks like every other modestly priced product offered by boutique audio manufacturers. This component certainly follows the engineering ideal of "form follows function", yet great care has been taken to make sure the resources allocated in its design are spent on the circuit. The chassis performs its function of isolating and protecting the internal components, and presents a respectable appearance. The case is a heavy gauge aluminum enclosure, and a black crinkle finish is baked on. The power supply is housed inside the case, and large aircraft grade aluminum shields are used to prevent AC contamination of the audio signal. This is a practical solution to an engineering issue, and the designers have made a pragmatic choice on how to implement the power supply design. (The trendy solution is to mount the transformer, and possibly other parts of the power supply in a separate enclosure. This solution has issues of its own, and certainly is a more expensive solution. The B2B-1 is about high performance and value, and this power supply design adroitly addresses both topics.)

On the top plate of the phono stage is a small panel that allows access to loading resistors, and the resistive jumpers. This is an old school method of cartridge loading, yet this arrangement offers superior sonic performance, and is a cost effective means of dealing with cartridge loading. I am not exactly enamored with this feature, but it gets the job done quite efficiently. Few people make constant loading adjustments to their vinyl system, so this is a task that probably will not be performed very often by most people. A single blue light adorns the aluminum face plate, along with the silk screened Liberty Audio logo. On the back of the phono stage are both single ended RCA and XLR connectors. The on/off switch is located next to EIC power connector. The B2B-1 phono stage

is a no nonsense design, and there is a distinct absence of creature comforts, or any other form of audio bling.

The appearance of the Liberty phono stage may be simple, but the circuit inside this black box is certainly not. The power supply is a dual mono design that uses separate transformers for each channel. This phono stage is a FET design, and there are quite a few JFETS sprinkled throughout the circuit. JFETS are known to have a neutral tonal balance, and a low noise floor. Both characteristics that are important for high end vinyl playback. The circuit topology in the B2B-1 phono stage is a two stage design, where one amplifier is cascaded into the second one. The benefit of this circuit topology is that the noise floor can be lowered, and the gain structure of the phono stage is optimized. This circuit also allows for mono operation, it is possible to buy two of these units and run them in differential mono mode. Use one B2B-1 for each channel, and you end up with the ultimate performance that this phono stage is capable of. (It should be mentioned that the XLR connectors are the only inputs capable of supporting differential mono operation. This cannot be done on the RCA inputs.) As you can see, the Liberty phono stage represents a significant degree of engineering expertise. And it's what is inside the black box that justifies the selling price of this phono stage.

My current cartridge is an Accuphase AC1 moving coil, which is a somewhat difficult load for a phono stage to accept. This cartridge has a .20 mv output voltage, and a load impedance of >50 ohms. In the past, I have achieved the best performance with a 100 ohm load, so this is the setting I configured the B2B-1 to. The turntable is a Galibier Audio Serac, which is fitted with an Audio Artisan tone arm (this is an interim arm for me, but it is capable of performing to an adequate level for this review). For comparison I have on hand two other phono stages; a Ray Samuels Audio Nighthawk, and a Hagerman Audio Coronet 2/Ortofon T-3000 combination. The Coronet 2 is based on vacuum tubes, while the Nighthawk is a solid state unit that has a battery fed power supply.

The defining characteristic of the Liberty phono stage is its ability to present a dynamic portrayal of music. This phono stage not only has plenty of gain, but more importantly, recreates the drive to music in a realistic manner. With this phono stage the music is vibrant and alive, with all the presence and impact that the record can impart. Throw a diverse array of material at the Liberty and watch it do its thing because it does not care if it's big band jazz, rock and roll, or a symphonic work. One evening, I listened to "Deedles Blues" (Diane Schuur and the Count Basie Orchestra; Diane Schuur. GRP Records GR-1039) is performed by Diane Schuur and the Count Basie Orchestra, and gained an appreciation for the ability of this phono stage to present the energy and immediacy of this song. The horns were bright and had the correct amount of bite, yet never cross the threshold into harshness. The bass section was solid and powerful, with an impressive degree of extension. The qual-

ity of the bass is first class, and the Liberty phono stage will keep pace with far more expensive units in this regards. The drum kit could clearly be heard, and the cymbals had a re-sounding splash. Finally, Schuur's voice stands out in front of the band, and is both powerful and articulate. The Liberty phono stage certainly excels at macro-dynamics, and in this aspect breathes life into the music.

In terms of dynamic expression, the B2B-1 phono stage is clearly the winner when compared to either the Coronet 2, or the Nighthawk. The Coronet 2 does a fine job of present micro-dynamic contrasts, but loses ground quite rapidly when the music demands large swings of energy. The Nighthawk surpasses the Coronet 2 in this regards, but still does not possess the drive of the Liberty Audio phono stage. While I have not heard every offering that can be found under the \$2000 price point, I would be willing to wager that the B2B-1 phono stage is going to be at the head of the pack in terms of recreating the dynamic impact of music.

Another notable attribute of the Liberty phono stage is how it handles the spatial characteristics of music. This phono stage certainly casts a large sound stage, and there is no shortage of space in any direction. While I appreciated the width and breadth of the sound stage, I also was impressed with how tightly focused the instruments are. Performers are clearly delineated in the sound stage, and also have a significant amount of weight and body to them. On "Gravity's Angel" (Mister Heartbreak; Laurie Anderson. Warner Bros Recording 25072-1) by Laurie Anderson a single bell opens the song, and is located slightly right of center in the sound stage. In a few moments Anderson begins singing, and can be found slightly left of center, and behind the bell. Various synthesized sounds enter the music at different times, and are spread across the rear portion of the sound stage. Further into the song Peter Gabriel accompanies Anderson, and is located in the right hand corner of the stage, about half way between her and the rear wall. This phono stage clearly presents the different layers of the studio mix, and keeps everything in its proper place, and correct size.

The Hagerman Coronet 2 is a tube phono stage, and one of the traditional strengths of this type of design is the presentation of space. The Hagerman phono stage keeps pace with the B2B-1, however it cannot eclipse it in this category. The tonal balance of the Hagerman is not as even as the Liberty, as the midrange band definitely has a forward character which creates anomalies in the sound stage. The Coronet 2 pushes vocalists a bit further out into the mix; however, this comes at the expense of focus. The tonal anomalies will also have an undesired effect on other instruments, creating an uneven presentation of music. As an example, the synthesized sounds located near the rear wall of the sound stage on Gravity's Angel are not as tightly focused with the Coronet 2, yet this diffuse image provides the feel of a larger sound. The Hagerman also locates Anderson farther out from the speaker, but once again the solidity of the presentation is compromised.

The Nighthawk phono stage has one notable limitation, which is the amount of front to rear depth that it can generate. While the Nighthawk is certainly a fine phono stage, especially in light of its \$795 price tag, it does lag behind both the Coronet 2 and B2B-1 in regards to how far it can project music into the room. The rear wall is placed in the same area as both the other phono stages, and the degree of height and width are also equal. However, the Liberty will project performers 4 to 6 feet out in front of my speakers, while the Nighthawk consistently places the same performers in the 2-3 feet range. The Nighthawk does not lose any ground in terms of focus, and outperforms the Coronet 2 in this category. In the end, the Nighthawk certainly acquits itself well when compared to the B2B-1 phono stage, but fails to produce the front to back depth that the Liberty phono stage has.

I would categorize the tonal balance of the Liberty phono stage as cool, with a slightly lean lower midrange. This is perhaps a bit of nitpicking, for this phono stage essentially has an even tonal balance, but it is lightly shaded to the lean side of the spectrum. This attribute is not readily apparent with rock and roll, or other forms of electronic music. To some extent modern acoustic music will hint at this point, but it does not become readily apparent until large scale classical music is played. For instance, in Beethoven's Symphony #7 (Symphony #7; South German Philharmonic Orchestra. Checkmate C-76007), the violin section does not sound as full and vibrant as I would expect. Also it becomes a little more difficult to hear the contrast between the various stringed instruments. The lower register woodwind instruments also appear to lack a final degree of weight, and do not have the richness that should be there. However there are no significant faults in terms of tonal balance with the Liberty phono stage and it what I am describing is a minimal degree of shading of the color of the B2B-1. In the analog chain, no component operates independently, and the contributions of the associated analog components must be taken into consideration. I suspect that the Liberty phono stage would prefer a cartridge with more body than my Accuphase, and this point alone can account for the slight leanness of tonal balance that I experienced.

The tonal balance of the Hagerman phono stage is diametrically opposed to the Liberty, as it presents music with a significant degree of warmth and texture. When replaying the Beethoven passages, the violins are fuller, and it is easier to hear the resonance of the instrument bodies. Woodwind instruments have a greater degree of weight, and improved texture. However, this phono stage imparts this type of warmth to all music, and this additive effect should not be present.

The Nighthawk has a tonal balance that is similar to the Liberty Audio phono stage, but it does possess a greater degree of body in the lower midrange. The defining attribute of the Nighthawk is its even tonal balance, and this is quite an accomplishment for a modestly priced component. On the

Beethoven piece, the violin passages had more warmth and body than with the Liberty, but do not have the euphoric personality that the Hagerman Coronet 2 has. What the Ray Samuels piece does lack is the final degree of transparency that the Liberty possesses, which gives it a slightly less detailed presentation. In the end, the Nighthawk and B2B-1 phono stages basically walk the same path in terms of overall tonal balance, and both pieces perform admirably in this regards.

In my book the Liberty Audio phono stage turned in quite a performance. There is a lot to admire about this component, as it does so many things incredibly well, yet is still priced within the reach of most audiophiles. I certainly appreciate the dynamic nature of this unit, for it brings music alive in a way that many other products simply cannot accomplish. The B2B-1 phono stage is also a treat for those people who value imaging, and spatial relationships of performers and instruments in music. The phono stage is evenly balanced in its portrayal of space and the focus of performers. The tonal balance is ever so slightly on the lean side, although this attribute can easily be dealt with by taking some care when choosing the associated analog equipment.

Once again, I want to emphasize the point that this degree of leanness may be attributed to the Accuphase AC1 cartridge. Actually, I suspect the combination of the AC1 and the Jelco tone arm. The Accuphase is a vintage moving coil cartridge, and many modern tone arms are no longer suited to these low compliance cartridges. I am waiting the delivery of the new Pete Riggle String Theory arm, which looks to be a better match for the AC1 phono cartridge. With that being said, the analog rig I use for this review is an improvement over the Townshend Rock I previously used, and provides greater insights into the character of the Liberty phono stage.

I believe that you would achieve the best results by using a cartridge from Shelter, Benz Micro, Denon, or one of the wood bodied Grado's. When I finished my listening sessions, I found the Liberty Audio phono stage to be the clear winner, with the Nighthawk coming in a very respectable second place. Anyone in the market for a phono stage should give the B2B-1 a listen-to, I think you will find it hard to walk away from the value it offers. *John Hoffman*

B2B-1  
Retail: \$1749

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