

**Torus Power  
AO24-ACB-A1AB 20  
Amp/120 Volt Power  
Conditioner  
Sugg. Retail:  
\$2800.00US  
Weight: 95 pounds  
Manufacturer: Torus  
Power, PO Box 30030,  
Toronto, ON M3J 3L6  
(416) 667-8473  
Marketing: Bryston  
Limited, 677 Neal  
Drive, PO Box 2170, Peterborough ON K9J 7Y4  
(705) 742-5325 FAX 742-0882 [www.bryston.ca](http://www.bryston.ca)**



(metal oxide varistors). Also, unlike MOV-based protection, voltage surges are not shunted to ground."

Isolation is combined with proven proprietary technologies from

PLITRON in the oversized toroidal transformer. NBT works as a low pass filter using the controlled leakage inductance and capacitance within the transformer to cancel common mode and differential mode noise. LoNo technology has been used for years by high-end audio companies who demand silent transformers. Imin technology reduces inrush currents. UST provides additional common mode filtering using a highly efficient faraday screen."

"Low-impedance output with balanced high-power primary input provides the most unconstrained, yet protected, energy source available to your equipment."

Well, now that we've been buried in acronyms, we'll just have to go a little deeper to find out what they all mean, and do! According to the *Torus* section of the *Bryston* web site, NBT stands for Narrow Bandwidth Technology, which "substantially attenuates differential and common-mode noise without external circuits such as low-pass filters. NBT also starts to attenuate noise at lower frequencies, starting at 1 kHz."

The power conditioner market seems to be quite highly populated these days, and new players, one would hope, will have a real story to tell, rather than just a smoke-and-mirrors exercise like some players currently out there. We've seen the giant capacitors that come out of the swamp defying physics, and other approaches that themselves approach fraud. Close encounters of this kind we don't need.

We want protection that doesn't self destruct, like that provided (usually just once) by MOVs (Metal Oxide Varistors), which tend to die for the cause, leaving you powerless. We want isolation that doesn't introduce hum, buzz, or power limiting and compression. We also want all of this without any audible effects on sound quality. An AC signal should be free of any riders on the 60 Hz waveform, as well having its power factor correct, that is, current and voltage in phase to prevent nasty harmonics.

The *Torus* approach is firmly based in physics. Here's how it is described in the manual of the model reviewed here: "Torus PIUs (Power Isolation Units) combine the best surge suppression with unique toroidal transformer technologies from PLITRON to provide the ultimate in AC power conditioning and protection for sensitive audio and video equipment applications."

"Units are available in either 120V input, or dual 120V (balanced) input. Balanced input power from two standard 120V phases provide high input power and noise cancellation. Using balanced input power provides the benefits of symmetrical power without the requirement to use GFCI (ground-fault circuit interruption) outlets. GFCIs are prone to nuisance-trips. The toroidal isolation transformer steps-down the 240V input to 120V to power equipment"

"PIUs use ZeroSurge R patented series-mode surge removal filters to absorb dangerous voltage surges and safely dissipate them without using failure-prone MOVs



"UST (Ultra Screen Technology) is a highly efficient and effective means for further attenuating noise. Torus products use triple screens for extreme performance."

"Inrush currents are usually a concern in large transformer applications. Imin technology dramatically reduces inrush to a quarter of standard toroids. This eliminates the need for series current limiting devices such as PTCs (positive temperature coefficient resistors) or soft-start circuits."

"LoNo technology eliminates audible noise in the power transformer regardless of line conditions, including DC offset and overvoltage. Noise is quantified and specified to (noise criterion) [sic] curves. Torus products are all less than NC 10."

"Toroidal transformers are typically 1/10th the magnetic field of standard EI transformers. PLITRON's LoStray technology further reduces magnetic emissions from the transformer without the requirement for additional shielding."

Acronyms always lead to jargon (or is it vice versa?), and we've probably had enough of either, but it does underline the level of design thought behind the *Torus* products. Their surge suppression techniques are directly licensed from *Surgex*, another Canadian company, whose products I have seen withstand 6000 volts repeatedly, and easily survive, during research for a series on the subject that never saw the light of day for a variety of reasons beyond my control.

The only aspect of AC power control missing from current *Torus* products is the UPS (here we go again!) Uninterruptible Power Supply) aspect, where a battery takes up power supply duties in the event of a power outage, usually for an hour or less. I wouldn't be surprised to see this approach, common with computers, to applied in the next generation of products, or offered in separate models. After all, the current ones are very heavy already, and the addition of large batteries to large transformers might just make them physically unmanageable.

Whatever the future, we are dealing with the here and now, and what this unit gives to or takes away from audio or video system performance. It may be the latter lack of contribution that's more important.

I connected the *Torus AO24-HCB-A1AA* (I think they need to work on the model nomenclature here: I'll never be able to remember this one for the rest of my life; we'll call it the *AO24*, or is it the *AO24* [as in zero, as opposed to the letter O; oh, the ambiguities of modern life!]. As I was saying, I connected it to my direct-to-the-breaker-box outlet closest to my amplifiers, this outlet being about 4 feet from the box. All my 120V circuits are 15 amp, and this has always provided more than necessary current delivery. Into the *Torus* I plugged the *3B SST*, my normal reference, and the *B-100DA*, and my pair of *Sunfire* subwoofers. This covered all the major current-draw intensive items in the audio system, with the exception of the *Nitty Gritty* record cleaning machine, which probably doesn't need purified power to clean records better (but then, you never know!)

I also attempted to integrate power for the sources part of the system with amplification, but this proved unworkable, as it has in the past, loud ground-loop hum being the result. I don't know why this is, but there are grounded audio links between my two rooms, the studio/listening room and the home theatre one. I've always felt it's just as well to have the AC for power and sources separated, anyway, and that tradition continued with the *AO24*. The sources are all powered through a *Chang Lightspeed* filter.

This particular *Torus* model can be used with either a 20- or 15-amp outlet, the power cords differing in plug

type for each. It has 12 hospital grade 3-prong AC outlets, all filtered and treated equally. Some other brands boast specific filtering for particular kinds of inputs, which is, I think part of the hype that's been thrown about for these kinds of products by some manufacturers attempting to differentiate and justify their own offerings. Clearly, the same type and grade of filtering should be provided for all outputs, and what is more important by far is their electrical isolation from each other.

In initial listening tests I found the *Torus* sound to be essentially unchanged from what I'd been experiencing with the UPS, which is an audiophile oriented model that costs at least as much as the *AO24*, and is no longer being made, as far as I know. This lack of sonic difference is a good thing, indicating that the *Torus* approach is completely unobtrusive. I should also confess that I've been using a *Kimber Palladian* power cable on the *3B SST*, and continued the practice with the *Torus* in circuit.

The overall result was an expected ease and purity of sound that unfailingly astonishes those who hear my system for the first time. The source doesn't seem to matter, since FM (*Onkyo T-4*, *Channel Master Stereo Probe 3025*, foam-shielded low-loss 300 ohm cable), phono (*Heybrook TT-2* w/outboard power supply, *Dynavector DV-20X*, *SAEC 403/27*), and numerous upsampled (*Assemblage D2D 1/DAC 2.7*) digital sources are pretty much as good as I can afford to make them.

Bypassing the *Torus* amply demonstrates its improvement of AC, as does doing the same for the *Kimber Palladian*. Both used together give the *3B SST* its full diet of clean power, with all line junk removed, and the difference is very audible: in a broadening of soundstage width, much greater depth, and an airy freedom in the ambient field that was palpable. Going back to the regular power cord simply closed things down, all the remaining resolution being more squeezed towards the centre, as well as less clear overall.

Of course, to achieve the benefit of spending this much money on processing power, you have to have invested concomitantly in the rest of the system to hear the results. And this includes speaker cables, which, whether single, bi- or tri-wired, make a tremendous difference in ultimate system resolution.

However, it all starts at the source. And we can't forget that there are two sources, or more properly, two *categories* of source in any audio or video system: the audio signal itself, and the AC power which allows its amplification. Without the effective combining and separation of these two (a seeming paradox), ultimate audio performance is not possible.

I haven't yet tried the *Torus* in my A/V system, so this will have to wait until I can get some help in moving it to the other room (85 pounds, the weight of my *Yamaha* 9.9 horse outboard motor is my limit). That will be a follow-up report. But as far as audio is concerned, the approach taken in the *Plitron/Bryston* partnership is the expected combination of superb parts and engineering adding up to unimpeachable performance, a major step in improving any already good audio system.

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