인폴 회로의 독자성으로 이룬
하이엔드 사운드의 새 흐름

윤광준 /오디오 평론가
INPOWER의 대용량 트리앰프
동사의 제작 이념 분명히

1994년 북아메리카 미드시에서 창립된 페도스 아우스펙트 사는 첫 모델인 트윈 타워즈 인터그래픽 단말로 화려하게 세계 시장을 놓쳤었다. 이 제품은 이러한 이미지의 제품답게 늘어 오는 높은 디자인으로 앰프라는 기계임을 잊게 만들만큼 매력적인 포름과 분위기를 갖는다. 이를다른 디자인이 결합된 ‘INPOL 회로’의 기술적인 메트릭과 독특한 외형에 임맞는 사운드와 달리 이는 산데 브랜드의 신비성과 신현성을 놀라울 정도로 갖추고 있다.

첫 제품의 성공에 이어 페도스 사에 서는 분리형 앰프를 기획했고, 그 첫 제품이 우리 나라에 상륙했다. 아시아 시장에서 최초로 수입되었다고 하는데 그 머_lit지와 위치는 역시 이탈리아산 분위기와 강렬한 개성을 바탕으로 마감되어 있다.

이런바 리뷰되는 것은 인컨트롤 (INCONTROL) 프리앰프로 전원부 분리의 두 볼륨으로 나누어진 라인 아웃 입력 전용이다. 자료가 도착하지 않아 자세한 내용은 확인되지 않았지만 먼저 수입된 인플러어 (INPOWER) 모노 볼 류와 같이 앰프와 함께 되는 것을 염두에 두 과 같다. 유럽의 고급 포드 주 박스 같은 내부 케이스에 담겨져 배달된 이 앰프는 사용자가 직접 나사를 풀어 내장을 끝내게 되어 있다. 두경을 열 자 드나는 이국적인 자라는 내장물 물라도 “이와 이탈리아계” 하는 감탄이 들을 만큼 개성적인 모습이다. 드 끈게 곡선 처리한 15mm 두께의 알루미늄 몸통, 휘어진 결합 유리, 열반은 봃은 색의 메이커의 아름다운 소재를 조화하 게 결합하여 아주 포스트 모던한 분위기를 줄기고 있다. 케다가 더욱 감탄할 것은 리모트 컨트롤로 플래쉬 라이트 같은 거북한 형태의 좌표로 만들 어진다는 점이다.

아니! 리모트 컨트롤로 너무나 만들어진 나는 나의 반응도 상상의 힘을 뽐낸 것 같은 신선한 충격이었고. 조작부는 오로지 대개의 금색 배 톤으로 이루어진 표시가 없다. 지금까지 나는 오디오용 리모트 컨트롤이라는 가장 단순한 레이아웃일 것이다. 이 리모트는 전자부위나 보편적으로 조작 방법을 더욱하게 되는데 기존 라디오 컨트롤 드럼의 기능성 강조와는 반대벽에 있 는 듯한 분위기로 조작의 느낌까지를 즐기게 해주는 만드는다. 목재의 결합이 얇으므로 착각되는 감촉까지 앰프의 분위기와 연결시키고 있다. 여러모로 사용자의 감각 손목을 위한 세심한 배려와 시각적 폭감은 매우 좋은 안정을 준다.

전원부 본체는 같은 크기로 되어 있는데 전원부의 전면에 페도스의 CIP 문제가 대부분되어 있고, 말의 디스플레이 이 패널 면에는 붉은 색 입체디네일 라인으로 앰프의 모델명이 오호른다.

이름다운 디자인 감각에 내부 회로도 간결한 구성

내부는 트로이당 트랜스와 한 장의 PCB 기판에 배치된 전원회로로 구성된 단순한 모습이다. 미국제 하이엔 드 기기 같은 물량공세는 아닐지만 내부 레이아웃 역시 외부 디자인과 자연스럽게 어울리는 미적 요소를 갖는다. 기판의 색감과 어울리게 배치된 부품 레이아웃이 주는 조화는 예전의 러드 앰프가 주는 느낌과 일관성을 하고 있는 만큼의 성의와 정성이 들려있고, 눈에 보이지 않는 부분까지 놓치지 않는 제작자의 의도는 후각 에어커로서의 조심스러움과 음악적 음반의 저항 사이를 결합하게 균형 맞추는 인
상이다.
본체는 전원부와 같은 크기이고 전면에는 높고 덜어진 석면으로 구성되어 그 끝 부분은 보호와 고급 호환도가 좋다. 전면으로 글래스 패널에 작은 금색 버튼 2개만 매치된 심플한 디자인이다. 노브의 조작감은 인스턴트한 느낌이 들지 않는 복잡한 조작감을 주지만 기존 몰품이나 아테네아가터와는 다른 감촉을 갖는 것이 특징. 본체에 대한 자료가 전혀 준비되지 않아 전면을 파악이는 것은 불가능하지만 베노토의 주제인 자연의 분위기가 현대의 기술적 특징으로 읽어져 있는 것이 같다. 인물 챔플라노, 헤이브리드 구성에 있어서 이중 소자
의 절정에서 발생하는 음극을 감체시키기 위한 회로로 알려져 있는데 기존 하이브리드 방식에 대한 개선 회로 정 도로 파악하는 것이 정확할 것이다. 결국 헤이브리드 설계의 지향점이라 할 짏감과 솔리드 스테이트 소자의 장점의 결합이 생각보다 쉽지 않다는 점 에 착안, 양 소자간의 장점을 아낄어 내려는 설계의도를 주목하면 좋을 듯
싶다.

내부에 보면 가장 먼저 눈에 띄는 것이 대형 디지털 아테네아이터이다. 밸
져의 펠은 4단 텀으로 처음 보는 부품이다. 기존 아테네아이터는 전자

다른 구성으로 총 3중의 기판으로 종
점되어 있다. 의 2단은 밸러플렉스
IC와 레지스터 어레이가 충분히 배열
되어 있고, 밸 아레의 기판은 상당

센서가 달린 로터리 엔코더로 노브의 회
전에 따른 각 산호 IC로 제어, 릴레이
를 구동시키는 방식이다. 노브
으로 돌리면 한 단계씩 가변되고

릴레이에 의해 단단히 돌아간다. 예전

제프 플랜드의 프리암프에도 채택된

것으로 기능하는 주로 캡팩식

아테네아이터는 장착감이나 동작 키

브가 전혀 다르다. 리모트 컨트롤로 조

작하면 노브는 움직이지 않고 내부 회

로에서 바로 등작된다. 입력부는 라인

입력 전용으로 멀린스 1 개를 포함

총 5 개용의 입력단을 갖는다.

내부 배선은 구로로 설계된 수선을

사용했다고 하는데 각 배선은 절시

경연하게 배열되어 각을 잡아 연관하
는 등 매우 신경을 쓰는 혼적이 역학하
다. 사망 점령은 중류 군을 드레곤
제 12AU7이 채널 1 사용하
는 삼각형 구성을 플루 트로프 투명한 하이브리드 구성
임은 두괄할 나머지 없다. 이로는 플
벤트스 구성이며, 벨런스 이웃 단자를 갖추고 있다.
취미성의 요소가 많은
개성적인 프리앰프

몇 시간의 예열을 거쳐 조심스럽게
음용을 내려다. CD 플레이어는 테뷰
TCD-1과 함께 앤드는 최근 일수루
미국의 Arty 상 V3, 스펙커는 디스
오디오의 EVO 이다. 전환적인 가격
구성으로 볼 때 금형이 무자금 조합이
긴 하지만 경과게 익숙하게 각 기기의
특성을 여드럽게 하자는 다툼에선 나
름대로의 재판을 갖고 있다고 해야
한다.
첫번째 곡은 '트레시 채프먼'
의 '짐스트 키'이다. 소형 스피커
인 EVO를 극한의 상태로 몰아 몰아
있다는 느낌이 우선 강하게 전달된
다. 패턴 앤드의 세동으로 인해 스피커의 불량적인 에너지가 있는 긴
장의 순간이다. 트레시 채프먼의 거
습준점한 맥소리가 정확히 중앙에 정
위하고 드럼의 브러쉬 워크와 세이커
의 급속미음이의 전기화적인 신발함으로 반복
거리들어 부각된다. 드럼의 저음은 중
분의 비터까지 맡아 있는 목표로 중량
감으로 봉사되는 에너지가 충분히 전
달된다. 흔히 특유의 목소리 절환이 손
에 닿아 못들 뿐만이 부각하는 것이
다. 무대의 깊이는 하지만 그것은 정확
의 차가움이 아니다. 이 프리앰프는 감
미롭고 전방향, 투명도 느끼고 갑
세드는 분위기를 담고 있다. 두 번째
곡은 '탬런 메밀'의 1954년 뉴욕
에서 녹음된 'Don't Explain' 을 들
는다. 탬런 메밀의 허스크하고 흐릿적
인 판능미가 유연하고 축축하게 공기
중으로 방사되는 느낌으로 반주 악기
의 위치가 충분한 거리감이 있는 공간
감을 만들어준다. 클리포드 브라운의
트럼펫은 급속한이 좋다 공격적인 것
이 되었으면 하는 아쉬움이다. 내
가 바라던 경쾌한 표정은 충분하다
못해 느끼지는 느낌 동후함으로 던
치고 있어서 스쳐 지나가지 않고 고여
있는 느낌 표현이 분위기가 된다. 베이
스의 힘을 빼는 탕신이 미국제 하이
앤드 기기와 같은 일락함에서 약간 벗
겨나 있는 듯한 유연한 표현이다. 이
등부터 트럼펫의 느낌이 분명하게 느껴
지는 유연함으로 변하는 것이다.
채로운 강렬한 악기의 음리는 더욱
이름답게 만들어준다. 좋은 녹음의
고금하고 풍부한 음색을 순상시키지
않고 악기적인 속성을 강조하는 부드
립과 아름다운 음이 되는 것이다.
인간드를 프리앰프는 자신의 존재감
을 적극적으로 반영하는 공격적 성향
의 원형은 다르다. 안정된 전체
적 벨런스를 중요시하는 튜닝의 묘미
가 잘 반영된 인상이다.
이렇듯이의 다자인이 연계되는 특유
의 감각적인 소노리티가 밤은 있다는
의미가 편리해 우리 식의 표현을 하지
면 취미성의 요소가 많은 개성적인 프
리앰프가 아닌가하다.
WIN ATC's £10,000 SCM70 MONITOR SPEAKERS: THE FINAL QUESTION!

RECORD of the month

MARIA CRISTINA KIEHR
PIANTO DELLA MADONNA

INTERVIEW: DAVID LLOYD-JONES
BERNSTEIN: WHAT IS JAZZ?
IMPETUS: VINYL CACHE
FINALE: BURT BACHARACH

MEGATRON
British valve amp proves the single-ended argument

On test
B&W Nautilus 803 Tannoy R2 speakers
Pathos hybrid amp McCormack phono stage
More speaker cables Pro-Ject tonearm
Plus Chicago show report Linn's CD12 revisited

Traxdata
CD drive
Burning your own CDs
True innovation from Italy: Pathos has come up with a unique valveMOSFET hybrid

by KEN KESSLER

During the worst — no, make that 'during the most obsessive' period of my love affair with Italy* — a pompous British wag railed at me that the country's entire industry suffered from a lack of imagination and a fetish for retro. He argued that, gorgious styling aside, the Italians contributed nothing whatsoever to our passion and that I was guilty of glorifying a 'packaging job'. Suffice to say, he was a manufacturer of boring two-way loudspeakers.

Although I cited Unison Research's stable and affordable single-ended triode amps, GRAAP's success in making OTL amplifiers which work in the real world, Sonus Faber's patented crossover in the Extrema and its prescient sub/sat system of over a decade ago, Audio Analogue's under-priced electronics and more, he was unmoved. Now that the dispute is long-forgotten by my detractor, I find proof-positive that the Italians do innovate.

Why it took this long for me to get around to reviewing a Pathos product is down to distribution. But now that Pathos is handled here by Italy's virtual British-based embassy — UKD — I need wait in torment no longer. Did I say torment? Sure did! the Pathos goodie are among the sexiest, sleekest, most beautifully-assembled gems I've seen this decade; admiring them at shows for years but having to decline the offer of a review has been torture indeed.

On the surface, the Pathos Twin Towers could be described as a tube/solid-state hybrid, and our friend above could argue, 'So what's new in that?'. But Pathos developed a topology to make it behave quite unlike most of the hybrids I've heard. With rare exceptions like the Radford TT100 (solid-state front-end but tube output), most hybrids use tube drivers to add a frisson of valve-like warmth. It's worked so well that companies like Luxman have been tempted to use it in near-mass-market applications. And while some have come close to that ideal of 'tube sound with solid-state convenience/size/cost/cool running', most have sounded like what they are: mongrels. (I don't mean that in a pejorative sense — any dog-lover will tell you that mutts are far more intelligent, friendly and loyal than prissy pure-breeds. What I mean is that a keen listener can identify the DNA strands.)

Pathos' INPOL circuitry is the latest in a history of audio crosstalk, but this one has earned a world-wide patent, and it seems designed to confront purist prejudices [see box]. MOSFETs or not, its demeanor is that of a tube amplifier, however minuscule its glass complement of two small tubes. As Italians understand the worth of visual impact, Pathos wisely positioned them at the front of the chassis in their own cages, serving as crafty sirens to distract analytically-retentive valve purists. Behind the valves are four massive capacitors flanked by enormous black box capacitors, followed by the mains and output transformers, all superbly finished and resting on top of a chromed top plate. The Twin Towers' edges are solid rosewood.

At the back, a row of beautifully appointed, gold-plated screw jacks accept four-line sources plus tape-out (a phono stage is in the planning), alongside an earthing tag, hefty multi-way binding posts, two user-changeable fuses and an IEC mains input. Beneath? Massive comes at each corner. All straightforward, but ask your dealer to unload the thing. Packed in a reassuring solid wooden crate, the Twin Towers is not something to be installed on one's own. Its overall dimensions are a manageable 482x300x450mm (wbd), but they hide a backbreaking 32kg weight.

A curved front plate contains but two rotary controls; recessed below are an on/off toggle switch and a red power-on LED indicator. At the right are the input selector and the rotary volume control, sited on either side of a small display. Here's where the palms grow moist and where even rivals are driven to utter an involuntary 'Gosh; the Twin Towers comes with the slickest volume-only remote I've ever seen, a wand made from rosewood and gold-plated metal, bearing only up and down buttons in the form of tiny gold dots. The window in-between provides a numerical read-out of the level setting in bright red.

It's here that I must bring up the price tag because the model I'm describing is the top of three versions of the Twin Towers. But, as the price difference between the non-remote, 24-step entry model, the same-plus-remote and this, the remote control with 64-step-resistor volume control, is only £125, or 10% of the £3250 total, the lesser models are not being imported. The volume control is made in-house by Pathos, using 1% metal layer precision resistors, driven by a bank of vacuum reed relays with thorium contacts. Internal wiring is silver. The
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AMPLIFIERS

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Teszt
Szub basszusok
Surround
hangsugárzók
DVD-játszók

Bemutatjuk
Sennheiser
fejhallgatók
Kőncziól Alí Plusz
Bose Lifestyle 20

Kiállítás
Budapest
High End Show

Know How
Sony Super Audio CD
Hangfelvételekről

High-end Exkluzív

Video
LG Flatron
Samsung
Tantus Flat
JVC kivetítők

30 éves a Samsung Electronics

A jövő zenéje
Super Audio CD Magyarországon
**Magic Sound a Gellért Szállóban**

Immár hagyományosan, ez év őszén is megrendezte a Magic Sound háromnapos kiállítását a budapesti Gellért Szálló egyik hangulatos termében. A zenehallgatás céljából ideális méretekkel rendelkező teremben vízszintleg kis számú készüléket láthatott a nagyéremű, ám a felsorakoztatott, túlnyomórészt a tengerentúlról érkezett berendezés, és persze az általuk prezentált muzsika igazán nem hagyott kívánnivalót maga után – nem véletlen, hogy a Magic Sound az egyik legjelentősebb audiofil lemezforgalmazó. A kiállítás egyik üjdonsága volt a C.E.C szijihajtású CD-játszója, amelynek specifikációjából elég csak egyetlen adatot említí, a jel/zaj viszonya 106 dB. Ha már CD és Magic Sound, akkor természetesen Wadia, már kapható a legújabb Wadia, a 830i. A cég által forgalmazott high end gyártók – Wadia, Jeff Rowland, Manley, Sonic Frontiers, Wanderstein, Audiostream – készülékei mellett a kiállítás másik fő attrakciója a Magic Sound által kínált hatalmas számú, audiophil CD és LP kiadvány, amelyek meghallgathatóak és természetesen megvásárolhatók is voltak.

**Pathos Twin Towers Itáliából**

A Pathos valósággal berobbant a hifi világába: röviddel a debütálása után, a Twin Towers szíllárd pozíciót ért el a high-end világában. A szaklapok a Pathos első termékét cimoldalon köszöntötték, lelkes kommentárokkal és tekintélyes díjakkal jutalmazták.

A Twin Tower erőtől keresztül a hallgató valódi külsőbséget tapasztalhat muzikális, attetszőség tekin-

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PATHOS TWIN TOWERS RC

定評あるモデルがリモコン対応になった

いかにもイタリア製らしい美しいデザ
インと、独創的なINPOL回路によって
高い評価を得たツインタワーズのマー
クIIバージョン。リモコンが加わって
いっそう使いやすさを増している。フ
ォトカブラで回転方向を指示できる
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決定するアダプテーサ式ユニットを
採用。60ステップのきめ細かな音量
調節が可能になっている。またフロン
トパネルに音量位置を示すインジケ
ーターも装備された。
This month's column is devoted to the Pathos Acoustics Twin Towers integrated amplifier.

Good grief, what a name!
To Italians, "pathos" apparently suggests emotion. According to one dictionary on hand, the original Greek means "suffering"—something audiophiles are fond of.

*My Collins English Dictionary* defines it as "the quality or power, especially in literature or speech, of arousing feelings of pity, sorrow, etc."

I don't know about the sorrow and the pity, but the Pathos Twin Towers integrated amplifier may be just the thing to end your hi-fi misery.

**Three guys from Vicenza**
Pathos Acoustics was founded in 1994 by three guys from Vicenza—Gianni Borinato, Paolo Andriolo, and Gaetano Zanini. The Pathos Twin Towers ($4950 in its basic version, reviewed here) was their first product. Other products in the line include the Classic One integrated amp ($1950), and a battery-powered phono stage called In the Groove ($1150).

The importer, Richard Kohlruss, of Hi-Fi Forum, is on a roll these days, with Triangle loudspeakers from France, Audio Analogue electronics from Italy, and Final electrostatic loudspeakers from the Netherlands.

"You may like it after a while," Richard said when he delivered the Pathos.
"You mean not at first?"
"It seems to take some getting used to." He doesn't mean the amp has to break in. He means you do. (Actually, Richard cooked the amplifier for me in advance.)

Emotionally, the Pathos is the complete opposite of the Audio Analogue Puccini that I wrote about in December, which tries (successfully) to ingratiating with a sweet tube sound, even though it isn't tubed. The Pathos is more Northern Italian than Southern. But if it sounds somewhat cool, I've warmed up to it—in a big way.

**Palladio's home turf**
Vicenza is the city where the renowned renaissance architect Andrea Palladio started out as a stonemason. (He was born in nearby Padua.) I've never visited Vicenza, but Palladio designed many buildings in and around town—palaces, villas, churches, and the city's town hall, known as the Basilica. If you tour Venice, as Marina and I recently did, you might want to visit the churches of San Giorgio Maggiore and Il Redentore—two of Palladio's masterpieces.

Palladio aimed to capture the splendor and simplicity of antiquity. His designs have a cool, classic logic that exerted a strong influence on architects ranging from Inigo Jones to Thomas Jefferson.

There's more than a little of Palladio in the Pathos Twin Towers. As you can see from the photo, this is a work of art—a sculpture. Both Gianni Borinato, the chief engineer, and Paolo Andriolo, who created the looks, are to be congratulated. Palladio would be proud.

Like the great renaissance architect, Gianni and Paolo aim for simplicity—a purity of sound and visual design. And just as Palladio tried to rethink the rules of architecture instead of copying what he saw around him, so Gianni and Paolo have rewritten the rules of amplifier design.

The Pathos Twin Towers is an original.

"Don't listen with your eyes!"
That was John Atkinson's reaction when I started to enthuse over the Pathos Twin Towers.

Ha! An Englishman talking! Bone, Giovanni—what's wrong with listening with your eyes? What do you think—that hi-fi equipment should be so ugly you want to listen with the lights out? So masculine, military, and intimidating that your wife won't have the slightest desire to turn it on?

Actually, I think JA would be impressed if he saw and heard this amp. And weighed it. We're not talking about flashy design with flimsy build quality here. There's substance along with style. Just lift the damned thing. But be careful—you might drop it. Eighty-eight lbs. This heavyweight champ ships in a wooden crate.

**Amps by the pound**
I don't know about you, but I wouldn't mind paying a premium for the exquisite look of this Italian integrated. Or for
the equally exquisite look of the Graaf GM-20 OTL tube amp from Modena, Italy (review coming up). But it doesn’t appear that you’re paying a premium. Consider: At $4950 for the standard edition, the Pathos amplifier weighs in at a very reasonable $56.25/lb.

Go to the Conrad-Johnson B-60 ($14,995) is considerably more expensive at $74.75/lb. The Creek 4330R ($595) looks like a bargain, but tops the scales at $85.50/lb (still a bargain, though). And the Conrad-Johnson CAV-50 ($2495) comes in at $63.38/lb.

All that weight comes from several things.

First, the massive twin heatsinks—the Twin Towers—which are necessary to dissipate the considerable heat from the Twin’s pure class-A operation. The Pathos Twin Towers are rated at 35Wpc into 8 ohms, by the way. The amp from the wall at all times, and, like all class-A amps, will run even hotter at idle than it will playing music at any volume.

Look at what appear to be three large transformers in the back—that’s a good part of the weight. Actually, two of those “transformers” are inductors/ coils. That’s part of the unique circuit story, which I’ll get to presently.

Palladian cages

Paolo Andriolo must have soaked up all that Palladian architecture from childhood. The twin tube rotundas—cages, if you will—out in front are, well... Palladian. Inside reside two 12AX7 input tubes. On the sides, slightly in back, the twin heatsinks soar from the chassis like cathedral towers.

Mamma mia!

Marina watched as Richard and I uncrammed the amp. “Oooh,” she cried. “Odetn panano! [I like it very much]!” Richard could have sold it to her on the spot. Russians love things Italian; especially Russians from Marina’s native city of St. Petersburg. Peter the Great hired Italian architects—churlly Rastelli and Rossi—to design the core of the city. The Palladian influence is very much in view along the banks of the Neva River.

Taking their cue from our pal, Palladio, the three guys from Vicenza have done everything possible to eliminate clutter and to simplify. This goes for the circuitry, too—starting with the fact that this is a “passive integrated.” There is no line stage. And—what a blessed relief after struggling to use my new tube player—there are only two knobs: volume (controlling a stepped attenuator on the standard version) and selector, without any markings.

The RCA inputs on the back are labeled. There are four line-level inputs, plus a tape output. The on/off switch is recessed under the left front corner of the chassis—easy to get at once you know where it is, hard to find if you don’t.

The sound of the Pathos Twin Towers is as bracing as a Vivaldi concerto played in a Venetian church.

There is no balance control. No headphone jack. No preamp-out jacks. And only one set of speaker binding posts—no biwiring, at least. More to do with analog, but the sound is open and airy with a well-recorded CD as well. You can hear the sound of the hall. You can hear the musicians breathe.

Some single-ended tube amps impart more richness to the sound. More sweetness, too. But the Pathos Twin Towers is probably more neutral than most of the SET breed—and, over time, neutrality wears very well.

Masked strings are handled particularly well—even masses but individually, too, with no glomming up. Give the Pathos a good recording from a decent source—yeah, preferably analog—and there’s a sense, just like you get in a concert hall, of individual instruments playing together.

There is no artificial sweetening effect; you’ll need single-ended triode for that. Yet the string sound can be ravishing—when it ought to be. And there is nary the slightest hint of stridency or grain.

The INPOL circuit

I said INPOL. No Interpol. This has nothing to do with European police.

According to the poop sheet, translated from the Italian, Pathos Acoustics was founded to develop and propagate a new amplification circuit called INPOL (Ineguitore a Pompa Lineare = Linear Pump Tracker)..."The INPOL circuit is patented.

Gianni Borinato, the chief engineer, says he chose tubes for the input stage not to be fashionable or nostalgic, but because tubes still rule when it comes to amplifying high maximum voltage swings with very low distortion. According to Sr. Borinato, while each tube is capable of very great voltage swings, only a small range of that swing actual-
ly comes into play, and this keeps the distortion very low. Like the entire amp, this is a zero-feedback stage.

Current, of course, is another matter. That's where tubes—we're talking output tubes now—typically poop out.

You do have to remember, though, that the power rating of the Pathos is 35Wpc into 8 ohms. Avoid very insensitive speakers and crazy low-impedance loads, listen at reasonable volume levels, and you may find that the Twin Towers can shake you out of your seat—or at least out of your complacency.

I hadn't realized that the B&W CDM1 SE or the Triangle Zephyr II could go so low. I easily got an extra half-octave of surprise bass extension from both speakers—compared, say, with the Audio Analogue Puccini SE or the various single-ended tube amps I had on hand.

Single-ended
A new amplifier circuit design. Big deal. I hear your skepticism. After 15 years of writing about hi-fi, I, too, have become yaded—as my Swedish friend Lars likes to say—about new miracle circuits.

But something special is going on with the INPOL circuit. And when I looked into what's actually going on, I thought: No wonder!

For starters, the INPOL circuit is single-ended, not push-pull. Only the input stage is tubed—those two 12AX7s. The output stage is solid-state. There are three—that's right, three—MOSFET transistors per channel, running class-A, single-ended. (For push-pull, you'd need transistor pairs.)

St. Borinato uses only NPN (negative-positive-negative) transistors. According to Giannii, NPN transistors sound better than PNP transistors. And when you pair NPN transistors with PNP transistors (as is usually done in push-pull solid-state amps), you must reconcile the difference with negative feedback. Says Giannii:

"Despite the fact that properly created feedback can provide considerable advantages, it nevertheless remains an artifice which cannot but have implications on the sonic result in terms of loss of naturalness and sharpness."

I hadn't realized that the B&W CDM1 SE or the Triangle Zephyr II could go so low.

With the Twin Towers, I easily got an extra half-octave of surprise bass extension from both speakers.

So how does St. Borinato get 35Wpc from three MOSFET transistors per side while running them in single-ended class-A?

He gooses the juice with inductors. Remember those three "transformers" at the back of the amp, two of which are not? The middle one actually is a transformer—the power-supply transformer. The other two blocks, to the sides, each conceal one massive coil.

The tubed input stage of each channel feeds into a transistor, which in turn controls a large inductor. Each inductor acts as a current generator—goosing the juice in concert with the three paralleled output transistors per side.

According to Giannii, the inductors double the voltage swing, and this doubles the efficiency of the output transistors, making them "50% efficient instead of 25% efficient, as with most pure class-A amps."

The output impedance, by the way, is very low at a stated 0.07 ohm. Typically, an SET tube amp has a much higher output impedance (1.0 ohm or greater). This will affect the frequency response with certain loudspeakers—boosting the midrange, perhaps, and rolling off the highs. You should have no such problem with the Pathos Twin Towers.

For all its innovation, the circuit is very simple. "The less the signal is manipulated, the more the sound keeps all its values of naturality and its original harmonic components," says St. Borinato, by way of translation from the Italian. And parts quality is very high. For instance, all signal wiring is pure silver with copper shielding.

Any downside to the INPOL circuit? You can go on only so far, power-wise, with this approach before practicality and economics kick in. With class-A, if you want much more power than 35Wpc, you're talking about a great deal more heat—and heatsinking—to go along with it. At 88 lbs, the Pathos Twin Towers is already about as heavy as you'd want a stereo integrated amp to be.

For various reasons, the circuit doesn't work so well at higher output levels. You're asking for too much voltage swing from the input tubes, the inductors can goose the juice only so much, and so on. So 35Wpc is about it.1

You'll note that the Pathos Twin Towers is not power-rated into its 4 ohms. I wouldn't let that scare me—I had no difficulty driving such nominal 4 ohm speakers as the Audio Physic Step SE and the Triangle Zephyr II. Still, I'd avoid insensitive speakers, particularly those whose impedance drops much below 4 ohms.

A real sesame open-up
Lars visited last night and had a listen. He was impressed by the Pathos Twin Towers. He seemed to enjoy himself. "Transparency like that is a real sesame open-up," he opined.

A "saeame open-up?"
"I said something wrong?"
"It's open sesame," I believe.
"Not in Swedish."

For me, the Pathos amp represents an exciting alternative to single-ended triodes—a real sesame open-up! Did I say alternative? Perhaps the SET-tube amps should be considered alternatives to the Pathos Twin Towers.

Why do SET amps, as a rule, sound so transparent, so live, so immediate? For several reasons. SET amps operate in pure class-A. There is no "notch distortion" switching into class-A/B. There is no splitting of the waveform—that's what single-ended means. And with most SET designs, there is no overall negative feedback—or you can dial it out. These are the very same reasons the Pathos Twin Towers sounds the way it does.

And consider the advantages vs SET. There are no expensive (up to $800 per matched pair) output tubes to replace. You're much less limited with regard to

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1 The Pathos Inflower mono power amplifier, rated at 80W into 8 ohms, achieves in higher power rating by doubling up on INPOL circuits and using them in a balanced push-pull configuration.
speakers than you are with 7–10Wpc, yet you have many of the SET advantages: Transparency, Harmonic purity. Spatial resolution. The freedom from listening fatigue.

Have you heard the Sing We Christmas CD (Teldec 94563-2) by the vocal ensemble Chantelle? The sense of space on this recording is superb—as is the overall resolution. With the Pathos Twin Towers, every syllable was clearly and cleanly reproduced—almost as if live—and much in the manner of a great single-ended triode tube amp. This is not the rich, romantic SET sound, though. Even running single-ended with no negative feedback, solid-state output devices are not going to sound like a 300B or 2A3 output tube. The Pathos Twin Towers may be more neutral, though.

Marina and I just returned from a concert by the New York Wind Ensemble. The group's wonderful bassoonist, Frank Morelli, is featured on a number of recordings by the Orpheus Chamber Orchestra. I decided to compare Mr. Morelli live with Mr. Morelli on disc, via the Pathos Twin Towers. I can tell you that the sound is very close to what I just heard live. In fact, maybe this is as close as it can get.

Your options
Now, about your options...

The standard edition of the Pathos Twin Towers has a stepped attenuator with 23 steps in 2dB increments. Each of its 23 positions has only two resistances (1% metal layer) in the audio signal path.

The Pathos Acoustics Twin Towers amplifier is an original, a sonic and visual masterpiece.

A remote-control version is available for the same $4950, but no one is pretending that its sound quality is quite up to that of the stepped attenuator. For that, you need the optical Reference Remote edition ($5700).

An outboard phono stage used to be an option but no longer is, since most people who wanted phono opted for Pathos' In the Groove outboard phono stage ($1195). I didn't have a chance to groove on it myself, but I did do some analog listening through Tim de Paravicini's EAR 834P phono stage.

Rewriting the rules
Palladio rewrote the rules of architectural design. Gianni and Paolo rewrote the rules of amplifier design. They started with a clean sheet of paper. The Pathos Twin Towers appears to represent a completely fresh approach—something all too rare in hi-fi products.

It succeeds brilliantly—more so than any of the other single-ended solid-state amplifiers I've heard. Like any great piece of hi-fi gear, it succeeds on its own terms. It is very convincing. I can't point to any weaknesses—except, perhaps, the relative lack of liquidity when compared with certain single-ended triode amps. But, like I say, the Pathos may be more neutral.

If you're an SET fan, you still may prefer the romance and the richness of a 300B or a 2A3—or of a great push-pull tube amp like the Conrad-Johnson CAV-50, for that matter. But the Pathos Twin Towers is something you should hear...and see. It's an original, a sonic and visual masterpiece.

Marina and I are purchasing the Reference Remote version for use in our living room.

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Pathos est un mot grec qui possède de nombreuses significations. Dans le domaine qui nous préoccupe nous avons retenu les définitions suivantes : 
« passion », « partie de la rhétorique qui traitait des moyens propres à émouvoir l'auditeur ». Si nous ne devions en retenir qu'une, ce serait sans aucun doute celle de « passion ». Car voilà un amplificateur intégré vraiment pas comme les autres et qui n'aurait certainement pas pu voir le jour sans justement la passion de ses concepteurs.

Pathos est une petite société italienne, sise à Vicence et fondée en 1994 par trois amis de reproduction sonore. L'objectif de cette équipe était de concevoir un amplificateur intégré qui soit le plus musical possible, quitte à devoir pour cela expérimenter des circuits peu orthodoxes.

Selon ses géniteurs, vu la sévère concurrence qui règne sur le marché de l'audio haut de gamme, un nouveau venu n'aurait pas la moindre chance de se faire connaître s'il n'apportait son lot d'innovations. Toujours selon eux, ces innovations ne se conçoivent que dans le cas où elles apportent quelque chose sur le plan de la musicalité. Voilà un engagement pour le moins courageux à une époque où le mot progrès est hélas beaucoup plus souvent synonyme de marketing que d'amélioration musicale.

Voici donc l'intégré Twin Towers, premier produit de la marque, doté d'une structure pour le moins originale... Déjà sur le strict plan esthétique, cet amplificateur ne risquera certainement pas de se fondre dans la foule. Comme nombre de ses confrères et néanmoins concurrents, la société Pathos a doté son amplificateur d'un design recherché et fait usage de bois précieux. Disons-le franchement, le dessin de ce Twin Towers est une réussite, mêlant élégance et originalité sans être trop chargé. Il est vrai que sur ce point les produits italiens font souvent référence.

Une fois n'est pas coutume, nous commencerons notre descriptif par la télécommande. C'est décidé, cet article sera écrit sous le signe de l'enthusiasme car, là encore, il y a de quoi être admiratif devant la beauté de la chose. Point de plastique, d'acier ou même d'aluminium. Nous avons ici affaire à du bois massif, rien de moins ! Précisons que plusieurs essences sont disponibles et que ce boisier est bien entendu assorti aux jous latérales, elles-mêmes massives.

Cette télécommande tout en longueur est créée dans une pièce de bois de rose, du moins pour l'exemplaire qui nous a été fourni. Elle n'est ornée que de deux minuscules touches plaquées ou destinées à la commande du volume. Le fond est constitué d'une épaisse plaque d'acier dorée à l'or fin. Très élégante, cette télécommande...

Le châssis de l'amplificateur est en revanche plus classique puisqu'il est constitué de métal. Pas de l'acier mais de l'aluminium. Si nous faisons cette petite précision c'est parce que bien que ce métal soit nettement plus léger que l'acier, l'amplificateur n'en accuse pas moins 44 kg sur la balance. Les raisons d'une telle «santé» ? Trois superbes transformateurs fixes sur la partie supérieure du châssis et qui affichent des dimensions que ne renierait pas un puissant ampli à lampes. Ils sont accompagnés de quatre enormes condensateurs électrolytiques. Mais là où l'originalité technique commence, c'est qu'en guise de tubes on ne trouve que deux doubles triodes 12 AX7 Golden Dragon. Il s'agit des étages d'en-tête. Les étages de puissance sont constitués de deux énormes dissipateurs thermiques qui expliquent le nom de « Twin Towers ». Ces dissipateurs sont équipés de transistors de puissance, classant du même coup cet intégré dans la catégorie des hybrides. Déjà vu, dites-vous ? Il est vrai que bien que peu répandue, la technologie hybride n'est pas totalement absente du marché. Cependant le schéma adopté dans le cas présent est une authentique nouveauté qui a fait l'objet d'un dépôt de brevet. Mais un peu de patience...

Les commandes du Twin Towers sont simplissimes. Un sélecteur rotatif à quatre positions pour les entrées (le niveau ligne exclusivement) et une commande de volume sans butée qui indique que nous n'avons pas affaire à un potentiomètre motorisé. Ces deux commandes entourent un afficheur numérique à télécommande de type « sept segments » qui indique précisément le volume de sortie par pas de 1 dB.

Précisons que la version de base, avec télécommande, fait tout de même appel à un sélecteur à 24 points par voie qui commute les résistances de haute précision. C'est d'ailleurs le même type de résistances que l'on retrouve dans notre version mais avec un mode de commutation différent...

Rhaussée d'une épaisse plaque d'aluminium, la face arrière dispose d'une connectique de qualité, plaquée or. Les borniers de sortie sont de type banane et les prises d'entrée sont au format RCA, avec une paire supplémentaire pour la surcharge...

Ouvrez, le Twin Towers témoigne d'une très bonne qualité de fabrication. Nous avons affaire à de l'artisanat de haut niveau, ce qui n'exclut pas des circuits imprimés de qualité industrielle. Cet intégré en possède quatre. Les deux pre-
miers sont placés en sandwich, juste derrière la face avant. Ils gèrent les fonctions de volume, de télécommande ainsi que l'afficheur. Placé au « rez-de-chaussée », celui-ci comporte de nombreux circuits logiques et autres microcontrôleurs. L'axe du bouton de volume est relié à un codage optique qui transforme toute rotation, ainsi que toute impulsion émise par la télécommande, en un signal numérique. Ce signal pilote à la fois l'afficheur et le circuit imprimé superieur. Ce dernier est composé de treize relais miniatures et de trente-huit résistances de précision. L'ensemble constitue un réseau logarithmique à deux pistes parfaitement appariées, et très précis. Le sélecteur de sources est quant à lui beaucoup moins high-tech puisqu'il s'agit d'un modèle mécanique. Il est néanmoins de haute qualité et se retrouve fixé au plus près des prises d'entrée sur une épaisse cornière en aluminium qui traverse tout l'amplificateur. Notons que les concepteurs n'ont pas fait d'économies sur le câblage puisque tous les fils véhiculant des signaux audio sont en monobrin d'argent massif, excusez du peu. Cette cornière sert également de dissipateur à un énorme pont de diodes carré, exclusivement réservé aux étages de puissance. À ses côtés, un petit circuit imprimé est exclusivement destiné aux alimentations des étages d'entrée. Il comporte plusieurs points de diodes et de multiples condensateurs de filtrage dont deux de 200 µF/400 V destinés au filtrage de la haute tension. Les concepteurs ne se sont pas contentés d'amplifications stabilisées qui ne pourraient qu'offrir un rapport signal sur bruit moyen, sachant que l'amplificateur fonctionne sans la moindre trace de contre-réaction. Pour prévenir tout risque de dysfonctionnement, les tensions de chauffage filaments et haute tension sont régulées par des circuits composés de diodes zener et de transistors. Ce circuit imprimé comporte également un dispositif essentiellement composé d'un relais et d'un amplificateur opérationnel. Rien à voir avec le traitement du signal, assurez-vous. Il s'agit en fait d'un circuit de temporisation destiné à supprimer les tristement célèbres « clocks » qui peuvent se manifester à la mise en ou hors tension. Passons maintenant au circuit principal qui comporte essentiellement les étages à tubes. Les entrées sont filtrées en continu par des condensateurs MKT de 6,8 µF chacun. L'amplification en tension utilise une 12AX7 par canal configurée très simplement, en classe A. Les composants annexes sont réduits au minimum avec quelques condensateurs et résistances de précision. Et ensuite, dites-vous, un étagé déphaseur à transistors ? Que neni ! Le Twin Towers ne comporte pas le moindre circuit déphaseur pour la simple et bonne raison qu'il ne fonctionne pas en mode push-pull. Oui, vous avez bien compris, cet intégré hybride fonctionne en classe A single-ended. Depuis le temps que nous attendions ce type d'électronique sans compromis ! Ce mode de fonctionnement est appelé « voix royale » à juste titre. Schématiquement, un amplificateur de type push-pull (classe AB ou classe A d'ailleurs, ce dernier mode de fonctionnement ne faisant que limiter les effets néfastes du push-pull) sépare le signal en...