

# Monarchy New Model 24 DAC and Tube Line Amp

by Marc Yun

**Monarchy New Model 24 (NM24). 24-bit/96kHz tube/solid state DAC with tube line stage. Coaxial and toslink optical digital inputs; solid-state and 6DJ8 tube DAC outputs; 6DJ8 tube line amp with 1 external input. 17" x 12" x 4", 21 lbs. \$1590. [www.monarchyaudio.com](http://www.monarchyaudio.com).**



I'll cut to the chase: the Monarchy NM24 is the finest-sounding digital component I've ever had in my system, and one of the finest I've ever heard anywhere, in any system at any price. Add a tube line stage that's well worth the entire cost of the unit, and you have what has to be one of the more insane audio bargains of all time.

## Description.

The NM24 is the latest version of the Model 24 DAC/line stage reviewed by MGD back in May '06 (the "N" stands for "New"). The basic formula is unchanged: a single chassis containing both a tube DAC and line stage. New to this version are a solid state output option on the DAC, an updated DAC chip and some circuit refinements. Unlike some of Monarchy's products which are built in-house in California, the NM24 is based on a unit sourced from China. Lest you think it's simply re-badged and marked up, rest assured that Monarchy chief C.C. Poon has devoted his considerable expertise to massaging the circuitry and having the units built to his specifications. Evidence of C.C.'s hand can be seen under the hood in component choices and quality of execution... mere details it may seem, but as I know firsthand from my own tinkering, the devil is often in the details.

The back panel has separate outputs for the tube and solid-state DAC output stages, along with a single input for the line stage. The line stage can be switched between the tube DAC and external input; you'll need a pair of interconnects if you want to listen to the solid state DAC. In that case, Monarchy recommends using a 1:1 matching transformer (e.g. from Lundahl or Jensen) to provide ultrasonic filtering. I didn't have such a transformer on hand, so my comments on the solid state output are provisional.

## Under the Hood.

A Burr-Brown DF1704 filter feeds a PCM1704 24-bit DAC, which replaces the previous version's 20-bit PCM63K. While the aged PCM63K still has its partisans (the datasheet copyright dates back to 1990), the new chip allows the filter to operate in full 24-bit mode, which C.C. Poon feels results in greater inner detail. And it's still a true ladder DAC, unlike the ubiquitous PCM19xx series from Burr-Brown or chips from Cirrus and Wolfson which employ some variety of sigma-delta (1-bit) technology. The digital filter is an old-school 8x oversampler; there's none of the asynchronous sample rate conversion (a.k.a. upsampling) that's become so fashionable. The DAC is followed by two independent analog stages: a passive I/V converter (just a resistor) buffered by a 6DJ8 push-pull circuit, and an Analog Devices AD811 opamp I/V converter. The tube circuit is filtered by a 2<sup>nd</sup>-order LC network formed by a choke and the inherent input capacitance of the tube, whereas the opamp I/V converter is run completely unfiltered. The AD811 is a high-speed, high-current video opamp that's ostensibly suitable for this application, but you'll want to complement it with Monarchy's recommended transformer to avoid degrading downstream components with RF noise.

The line stage also employs push-pull 6DJ8's configured for around 16dB of gain, with an Alps "Blue Velvet" pot providing attenuation. All tube circuits run in Class A with zero global feedback. Two very beefy toroidal power transformers feed ten separate supplies with solid state regulation. Capacitors include Sanyo OSCON and Elna audio-grade electrolytics for bypassing and WIMA MKP metalized polypropylenes for signal coupling. Resistors are a hodgepodge of metal and carbon films, none particularly exotic. Overall parts quality and implementation are solid and purposeful rather than extravagant; same goes for the basic but sturdy metal chassis. The steel top is a bit resonant, so I recommend some form of damping. (MGD left his off altogether to facilitate tube swaps, but I don't recommend it for safety reasons.)

### Setup.

The line stage came with Penta Labs 6DJ8's, one of which became microphonic, so later listening was performed mostly with a pair of National 6DJ8's. The DAC was tested primarily with the supplied RAM Labs 6DJ8's, but MGD had great results in the older model with a variety of tubes including 6922's and ECC88's. As the tube circuits are essentially unchanged, his comments on tube rolling should still apply. (You can find his original review in the "Reviews" section of the BFS website.) Transport was an Onkyo DX-7555 CD player connected with a basic Belkin/Canare coax video cable. Yes, I should have tried something fancier, but the sound was so good off the bat that I never felt the urge. Transport quality is certainly material, as the NM24 doesn't have any fancy reclocking or buffering circuits - for that, Monarchy makes a reclocker/up-sampler called the DIP (review forthcoming). Power cord was the venerable Audience PowerChord.

The tube DAC is muted for a couple minutes during warm-up, but the line stage is not, so care must be taken when switching the unit on and off (I learned this the hard way). Other than the bad tube, I experienced only a couple snafus: the line stage input switch was intermittent in one channel initially, but this resolved itself with use; and the AC line fuse blew, but C.C. tells me a more reliable fuse value has since been substituted. The DAC was auditioned through both my MSB Gold MVC preamp and the built-in line stage, which proved an excellent match for my tube-friendly ME Sound 550II amplifier. The DAC is the focus of this review, so unless otherwise noted, all comments are assumed to be regarding the NM24's tube DAC output.

### Listening.

Two words to describe music emanating from the NM24's tubular DAC: *vibrant* and *alive*. It might be a reviewer's cliché, but the Monarchy can have a truly transformative effect on your music library, so vivid and present is the soundscape it paints. Take Dietrich Fischer-Diskau's 1966 recording of Schubert's *Winterreise* song cycle. I've listened to it dozens of times on a wide variety of systems, and the Deutsche Grammophon recording quality is serviceable if flawed. Through the Monarchy, it's transcendent - Fischer-Diskau's artistry has never sounded so resplendent, every subtle nuance and emotional upheaval pouring forth seemingly unencumbered. In *Die Wetterfahne*, the contrast from the hushed *nicht so laut* ("not so loudly") to the tortured *Was fragen sie nach meinen Schmerzen?* ("What do they care for my sorrows?") is positively bracing. The limitations of the recording are still there, but the Monarchy conveys the emotional impact in a way that renders them largely immaterial. Mahler's Symphony No. 5 (Philharmonia Orchestra/Zander/Telarc) further showcases its aptitude for bringing out the contrasting colors in a performance. Sweeping *crescendo* gestures in the Scherzo movement are conveyed with urgency and drama, while the tranquil *ländler* waltz glows with warmth and tenderness. I confess there is something special about the way fine tube gear can convey dynamic contrasts with such clarity and spontaneity, and the Monarchy excels in this regard. And yet, it accomplishes this without the sonic baggage I often hear from such gear - things like undue warmth, bass bloat, nasal midrange, false intimacy or artificially sweetened treble. Direct comparisons with my current reference, the Onkyo DX-7555 CD player, revealed them to be surprisingly convergent in their take on tone, timbre and perspective. While the Onkyo is undeniably mid-fi in stature and cost, it handily bested a number of high-end contenders many times the price in my system, and excels even more after some light modifications. (MGD also reviewed it quite favorably, in case you needed a sanity check.) But those comparisons also revealed the Monarchy to be more complete and realistic sounding by a large margin. Listening to the radiant Second Symphony from the Berlin Philharmonic's recent Brahms Symphony cycle with Simon Rattle (EMI), my wife described the Monarchy as "brighter" sounding, but in the woodwind instrumentalist's sense of being more brilliant and articulate (she's an oboist). She felt the Onkyo resembled "other recordings" or "home stereo sound," while the Monarchy was more suggestive

of a live performance. The opening of the Fourth Symphony was also startlingly more vivid even in casual, quiet listening, with the swells of the falling opening figure, the flowing string melodies, and the interjections of the brass all communicating more persuasively and palpably. Last year I had the privilege of hearing the symphony performed live by the very same ensemble in Carnegie Hall, and while the big rig will never compete with that experience, the Monarchy brought it closer than I'd ever imagined. Here's what I think makes it so great. First, it has tremendous resolution of every form of detail imaginable – low-level, ambient, inner, harmonic, dynamic, you name it. Listening to my wife's favorite recording of Mozart Wind Serenades (Berlin Philharmonic Wind Ensemble/EMI), we were able to pick up little cues normally not heard outside of the concert hall - the breath before an entrance, the tapping of the instrument pads and keys, the tonal nuances of the reed the oboist chose for that session, the precise reverberant signature of the stage.

Second, it's effortlessly dynamic yet superbly controlled. In the frolicking finale of Dvorak's American String Quartet, jubilant countermelodies explode onto the scene with great gusto and spontaneity, yet the instrumentalists always sound anchored to their proper place on the stage. Even during the grandest of climaxes in a Mahler symphony, the Monarchy has a way of keeping it all together and in context.

Third, it's vanishingly quiet. I don't care what the S/N ratio numbers say – it's capable of projecting sounds against a backdrop as black and quiet as a winter night in the Vermont countryside. In combination, these attributes help lift much of the electronic haze, the synthetic quality one normally associates with digital media. Some products are able to nail one, maybe two of these qualities, but it's extremely rare that one conquers them all with such proficiency (hi-res players like SACD included). And as for the usual things audiophiles look for like imaging, soundstaging, pace and timing, etc., the Monarchy covers all those bases as well as most anyone should need. Imaging has the liquid, holographic quality one expects from the best tube gear, with tactile placement of instruments on a wide, deep and perfectly-spaced soundstage. Rhythms are conveyed with toe-tapping satisfaction, the bass being on the warm side but never so loosey goosey as to slow down a tune.

Negatives are in some cases more a matter of taste than deficiency. As realistic as it sounds, the Monarchy doesn't strike me as perfectly neutral. I found the DAC to be better in this respect than the line

stage, but compared to some of the cleaner solid-state gear I've ever heard - MSB, Ayre, and Pass Labs come to mind – the Monarchy doesn't possess quite the same degree of even-keeled transparency and vise-like control from top to bottom. Tonally, there's some emphasis on the presence (upper) region of the midrange that makes everything a bit more up-front and intimate. The higher THD of tubes maybe coming into play, and it can result in a forwardness that won't complement all systems, recordings and/or tastes. My wife also remarked on a slightly nasal coloration that threw off the timbre of oboes ever so slightly, and at times, the mid to upper bass could sound a little murkier than the Onkyo. If you prefer an ultra cool and clean view of a performance, or if you favor certain kinds of leaner, hard-hitting music, the Monarchy might not be your cup of tea. I would also be remiss if I didn't mention a comment of a musician friend who was otherwise impressed with the vividness and realism of reproduction. Nevertheless, he couldn't help remarking that the Monarchy made a modern recording sound "like an old recording." My guess is he was picking up on some tube colorations akin to what he hears with older analog-era recordings. Note however that this was when playing the tube DAC through the line stage, the combination naturally having a stronger sonic signature together. Using a different preamp can ameliorate this to a degree, and the choices of tube will also be a factor.

Speaking of the line stage, it's been a while since I've had a tube preamp in my system. The last ones I remember were units from Aronov and Rogue nearly a decade ago, but neither of them could compare with the fidelity of the Monarchy. It's essentially unchanged from the version in MGD's previous review, so I won't go into too much detail. I will say it was clean and quiet enough to not bring attention to itself, while adding some welcome warmth to my lean-sounding system. Going back to the MSB preamp after a long stretch revealed the Monarchy to be just a tad fuzzy and wooly, particularly at the frequency extremes, but with a midrange wholeness and liquidity that the MSB couldn't match. Overall, I found its performance to be excellent and more than competitive with the MSB with upgraded power supply, which is a terrific (and if I remember correctly, more expensive) preamp in its own right.

As for the solid state DAC option, I won't comment too much as I wasn't able to use it with the recommended transformer; I relied only on the Monarchy's tube line stage to help smooth out HF noise

a bit. In brief testing, it sounded decidedly buttoned up compared to the heart-on-a-sleeve tube DAC. Its more distant perspective pushes you a dozen or so rows back in the hall, while capturing far less of the air and ambience around a performer, almost to the point of making a recording sound like it was captured in a different acoustic. It is also somewhat cleaner, with tauter bass and a little less brightness in the upper midrange to treble. However I can't help but notice the signature of negative feedback, or at least IC opamps which necessarily employ it: a compression of both micro and macro dynamic contrasts, and a blotting out of the low-level detail that gives music its texture and authenticity. Again, this is all provisional – many of these issues could stem from the lack of recommended external filtering. Nevertheless, I'd put it ahead of the Atoll CD player MGD reviewed a while back, and maybe slightly ahead of the Onkyo in stock form (but behind my lightly modified version).

There's one function I really like the SS output for: as a steady control for tube rolling. Audiophiles are usually forced to rely on aural memory when evaluating

changes to a system, and while the human brain is a marvelous thing we all know its propensity for error and confusion. By using the SS output as a listening control, you have a rock solid measuring stick with which to compare different tubes.

### **Conclusion.**

The NM24 is a must-audition for any 'phile looking for a DAC, regardless of price point. It's fascinating how C.C. Poon has taken "old" technology – even the digital bits have been around since the last millennium – and created something with very much cutting-edge fidelity. If you're looking for state-of-the-art sound, I'm confident the Monarchy can give many of the big-name, mega-buck DACs and players a run for their (excessive) money. If you're building a system on a budget, the combination of a stellar DAC and very good preamp make it an outstanding value proposition. And the solid-state output option, despite being more of a curiosity for me, is a nice bonus. Even if you're not a tube kind of guy (and believe me, I'm not) or have no interest in the preamp part, the Monarchy deserves your consideration. Unequivocally recommended.