

# Affordable\$\$Audio

*Issue Fifteen: March 2007*

## Monarchy AC Regenerator

By John Hoffman

### Specifications

M150 Dual Isolation AC Supply

Monarchy Audio AC-Regenerator

Power Handling: 100 Watt

Output Frequency: 50Hz, 60Hz, 120Hz, 400Hz.

Output Voltage: (a)110 to 120 Volt Adjustable in 1-Volt steps

(b)200 to 240 Volt Adjustable in 2-volt steps

17"Wx12"Dx4"H

Net Weight: 24 lbs

Shipping weight: 30 lbs.

Price: \$750



Several months ago, the UPS driver dropped off several boxes from Monarchy Audio. The first piece to go into my system was the M24 digital to analog converter, which was reviewed in the January issue. There were a few other products in that delivery that have proven to be quite interesting. One package contained the Monarchy AC Regenerator. Mr. Poon sent this piece to be used in conjunction with a pair of Dignity Audio mono-blocks that his company imports. The Dignity pieces have been in and out of my system a few times, and Affordable Audio readers can expect to see a write up on them in the next couple of months. However, my curiosity got the best of me in regards to the Monarchy AC Regenerator. I decided to install it in my current system because I wanted to see what improvements have been made in the arena of reasonably priced power conditioners.

I live in a rural part of the Pacific Northwest, and out here the power grid provides high quality electricity. In the past I have used power conditioners from several companies, and have had mixed results. I would not deny that each power conditioner had an audible effect within my system. After a thorough evaluation process I removed each power conditioner due to the fact that there was a degradation of the overall sound that could be directly linked to the unit being auditioned. Some conditioners hid the fine detail within a song, while the worst one actually created an audible haze within the music. I drew the conclusion that my geographic area has pristine electricity coming from the power grid; therefore a power line conditioner was not necessary. Yet I took Mr Poon up on his offer to hear the Monarchy AC Regenerator, although I was quite skeptical that there would be improvements within my system. Well, as you may have noticed, this months article is about the Monarchy Regenerator, and it does make a significant improvement to the music in my home.

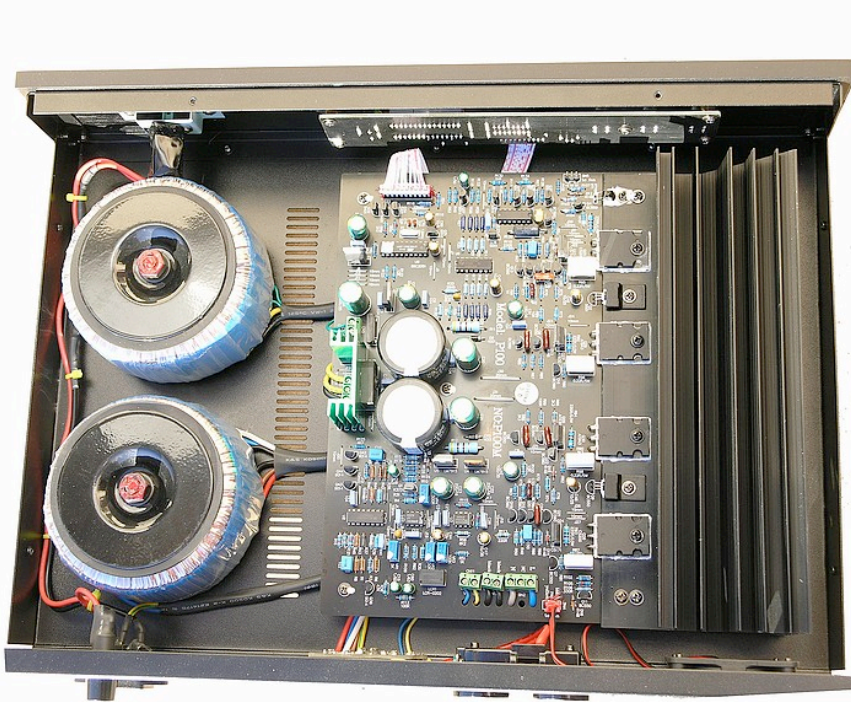
The AC Regenerator is housed in a conservatively styled metal chassis. The faceplate is a brushed aluminum with a black finish. Controls to manipulate the output voltage and frequency are located on the front panel. A blue LED display on the faceplate shows all the operating points that the unit is set at. There are provisions to plug in two electrical devices. 100 watts of reconstituted power is available; therefore it is important to know the electrical requirements of the components being used with

the AC Regenerator. Weighing in at a hefty 24 pounds, the Monarchy unit is not a lightweight component. If you remove the top, it becomes readily apparent that the twin toroidal transformers are responsible for the majority of the weight of this piece. There is neatly laid out circuit board that is populated by a large collection of high quality parts. On the back panel of the chassis there is an internal fan that is used to dissipate the heat generated in the unit. From a visual inspection it is apparent that the AC Regenerator has the Monarchy pedigree of providing excellent build quality for its price point.

I needed a quick tutorial from Monarchy Audio in order to explain how the AC Regenerator works. Mr. Poon has the ability to explain electrical design issues in a logical manner that makes them quite easy to understand. To begin with, the AC Regenerator abandons the incoming alternating current waveform. It does not matter how clean or dirty the incoming electrical current is, the AC Regenerator converts the waveform back to a direct current format. The incoming signal first passes through a toroidal transformer, which has three purposes. The transformer isolates and protects the internal circuitry from the current coming out of the wall socket. Another function is voltage reduction on the incoming AC current. The AC Regenerator requires less than the 117 volts that most power systems supply to a home. Finally, a transformer is an energy storage device, and in this application it provides the rest of the unit with a stable power source. The processed AC signal is then fed into a DC

Bridge Rectifier Module.

This module converts the incoming AC signal back to pure DC. The DC signal is then handed off to a 150-watt amplifier. The amplifier section converts the signal back to an AC format. A sophisticated clocking circuit is implemented in this stage to create the desired voltage and frequency parameters for the unit. The user is able to select between 50hz, 60hz, 120hz, and 400hz settings. Higher frequency settings reduce the ripple contained in the AC wave pattern, and provide a faster rate of charge to the power supply of the component plugged into the AC



Regenerator. Finally, the reconstituted electrical signal is passed through another toroidal transformer before it leaves the AC Regenerator. The transformer is responsible for ensuring a smooth supply of power to components that are connected to the AC Regenerator. This transformer also isolates the internal circuits from the components that are downstream from the AC Regenerator. This is a basic overview of how Monarchy is generating a pure AC waveform. It is based on proven electrical engineering concepts, and there are no black magic, voodoo, or mystical events occurring inside this box.

There is one other interesting application of the AC Regenerator that should be mentioned. It is possible to reconfigure the output voltage of this unit to run components that have been designed for the European or various Asian countries. Basically what you have with the Monarchy piece is a high qual-

ity voltage converter. For instance, if you obtain a CD player that was intended to be used in the European domestic market, it can be plugged into the AC Regenerator without having to convert it's internal power supply. Since power supply conversions are quite expensive, the Monarchy unit can be an incredible value to the right user. The process of configuring the AC Regenerator for 220-240V output is fairly simple. However, I would recommend contacting Monarchy before you begin the process. You must take care to return the unit to its standard configuration before plugging in components that are intended for the US market.

Since the AC Regenerator is limited to 100 watts of current I chose to use a small system for these listening sessions. A pair of Atelier Audio First Horn speakers set the foundation for the system. Due to the high sensitivity of these speakers, I was able to use a single Monarchy SM 70 PRO amplifier. The Electra Print PVA is a passive pre amplifier, so therefore it did not use up any resources from the Monarchy power conditioner. Finally, a Tube Research Labs modified Sony SCD-595 CD player took care of spinning the compact discs for this system. I used the Extreme interconnects and speaker cable from Audio Magic. Even though total price tag of this system is pretty modest, it is capable of high quality musical reproduction. However, the AC Regenerator elevates this system to a level of refinement that is quite magnificent.

In my music library I have a disc from Kasey Anderson, who is a gifted singer/songwriter from the Pacific Northwest. This disc was not commercially released, but could only be obtained by attending one of Kasey's concerts. "Look Across My Shoulder"

[*Kasey Anderson*; Kasey Anderson PDX New Music KA1] is recorded in a minimalist fashion, and is capable of exposing all sorts of limitations of an audio system. Within the first thirty seconds of this song, it became obvious that the AC Regenerator enhanced the performance of my system. A whole layer of grunge was removed from the music. This audio grunge was never noticeable during my previous listening sessions, but really just masked the true abilities of these components. For instance, the acoustical guitar playing on this piece is very closely miked, and has some stunning nuances to its structure. Without the Monarchy piece in place, all the subtle audio cues get lost in the presentation. When the system is run through the AC Regenerator I notice all the sympathetic resonances of the guitar body, bridge, or adjacent strings. Kasey's voice also shows an improvement in the texture and detail when the Monarchy piece is in the system. It is obvious to me that the AC Regenerator is capable of providing significant gains in an audio systems ability to present low detail in a recording.

The increase of dynamic contrast found within music is another positive attribute that I can attribute to the use of the Monarchy unit. Diane Schuur has one of the most powerful voices in jazz today. When you team her up with the Count Basie Orchestra, you are guaranteed to have an awesome session of hot jazz. "You Can Have It" [*Diane Schuur & The Count Basie Orchestra*; GRP Records GRD-9550] is my favorite track on this disc. Diane shows off the incredible vocal power and range, while the orchestra plays an infectious swing number. In previous listening sessions I have heard what I thought were the effects of an amplifier being on the edge of clipping during the loudest passages of this song. I attributed these events to the relatively low power rating of a single SM 70 PRO amplifier. It is



logical to think that a 30 WPC amplifier could experience problems with the demands placed upon it by a big band playing at full tilt. When I installed the AC Regenerator and listened to this piece again, any signs of clipping or compression just completely disappeared. The song played by the orchestra was smooth and detailed, and there appeared to be plenty of power on tap to meet the demands of the music. Diane's voice took on a more realistic presentation. With the AC Regenerator in place, Scuur's voice was distinctly separated from the music generated by the Basie Orchestra instead of being engulfed by all those horns. The incredible range of Diane's voice also highlighted the improved dynamic performance of my system when the AC Regenerator is installed. Her voice never sounded constrained or ragged during my listening sessions. My listening experiences show that a good power conditioner is capable of enhancing the perceived power characteristics of an amplifier, even those who reside in the lower power categories.

I have always believed that power conditioners will have an audible effect on the sound of an audio system. However, these changes are not always an improvement, and in many cases a mediocre power conditioner will degrade the overall musical performance of a system. It is important to critically evaluate any power conditioner, and keep it only if there is a discernable upgrade during your listening sessions. If the perspective power conditioner does not improve your collection of components, then do not succumb to audio "group think" and shell out the cash for it. Peer pressure can be a terrible thing, instead trust what your own ears tell you. My listening experiences show that the Monarchy AC Regenerator is capable of elevating the performance of every component that I have tried it with. Even modestly priced units show significant improvements in their abilities. Simply put, the AC Regenerator provides pure AC energy, which really is the foundation of an audio system. I should also emphasize that it increases the charging rate of the capacitors in a component, therefore increasing the abilities of the power supply stage. The combination of these attributes resulted in improved dynamics, detail, and transparency within the context of my listening experiences. If you are looking to take your system to the next level of sonic performance, then consider the quality of AC you are providing your stereo with. You may be pleasantly surprised at what improvements can be coaxed out of your current equipment.

Equipment Used For Review:

Aeltier Audio First Horn speakers  
Electra Print PVA pre-amplifier  
Monarchy Audio SM 70 PRO amplifier  
Tube Research Labs modified Sony SCD-595  
Audio Magic Extreme interconnects  
Audio Magic Extreme speaker wire  
Audio Magic Extreme power cords

