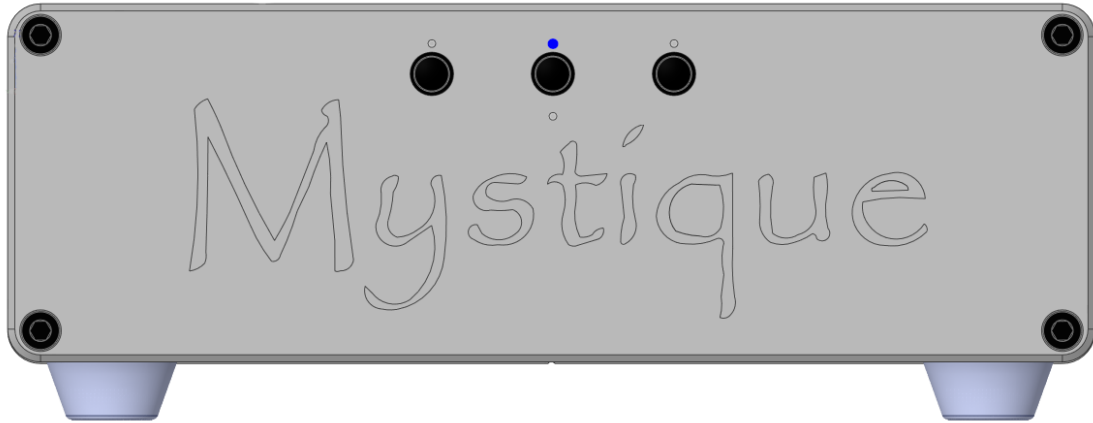


Mystique Z



User Manual for all Mystique Z
Digital-to-Analog Converters

Mojo Audi©
A bit closer to live music

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Introduction

At Mojo Audio we are all about the music. Because our customers are looking for the most transparent window into their favorite recordings, the aesthetics, function, and features of our DACs tend to be rather simple. And the recommendations we offer our customers are often quite different from other companies in the high-end audio industry.

There are quite a few misconceptions regarding digital audio that are surprisingly accepted as truths in the audiophile community. To help clear up many of these misconceptions we offer several blogs which explain technology in layman's terms:

[7 Myths of Digital Audio Dispelled](#) [The 24-Bit Delusion](#) [DSD vs PCM: Myth vs Truth](#)

At Mojo Audio we base our DAC designs on scientific facts rather than marketing concepts. Mojo Audio does not believe the laws of physics have changed in the past 100 years nor that Dr. Nyquist or Sony and Philips did not know what they were talking about.

Modern electronic components are engineered to be smaller, cheaper, more energy efficient, and more versatile, often at the expense of sonic performance. Because of this, Mojo Audio uses the best of 100-year-old, 40-year-old, and modern technologies, to achieve the most natural sound possible from digital recordings.

To bring you every subtlety and nuance on your favorite recording, we use LC choke input power supplies: the largest, heaviest, most expensive, and least efficient of all power supply typologies. LC choke input power supplies yield the best time and tune and the most articulate attack/bloom/decay because they store both current and voltage. The capacitive input power supplies used by most DAC manufacturers only store voltage which means the more energy a note requires the more off time and tune it will become.

Modern Delta-Sigma DAC chips are smaller, cheaper to manufacture, more versatile, and more energy efficient. This is part of what makes them so popular. But Delta-Sigma DAC chips interpolate rather than decode the music. They take in the bit stream faster than the music is playing, analyze it for inconsistencies, and "correct" it using statistical error correction algorithms. They then export a flawless interpolated wave form. Sadly it is not the same wave form that is on the recording.

R-2R is the only DAC typology to decode what is actually on the recording. We build our DACs around the last generation of vintage R-2R ladder DAC chips. These chips are the most linear, lowest noise, most dynamic, and most resolving or any R-2R DAC chips.

We are music lovers first and foremost. We optimize every part and every circuit to achieve musical fidelity. Form follows function. Less is more.

At Mojo Audio we bring you [a bit closer to live music](#)

Unpacking

CAUTION: Our DACs ship with NO FEET on the Bottom.

When unpacking always place the DAC on a soft surface to avoid scratching.

Since many of our customers use high-performance aftermarket anti-resonance footers. And since using more than one anti-resonance footer usually degrades rather than improves sonic performance. We do not ship our DACs with the footers attached.

Installing Anti-Resonant Footers

The Mystique Z comes standard with four Sorbothane anti-resonant footers located in a small bag attached to the plastic covering around the DAC.

The high-performance peel-and-stick Sorbothane anti-resonance footers we provide will sound better than many aftermarket anti-resonance footers.

You can compare the footers we provide to your reference anti-resonance footers without adhering our them to the chassis by placing them adhesive backing side down between your DAC and your audio rack without removing the peel off backing.

Optimal Footer Placement on the Bottom of the Mystique Z



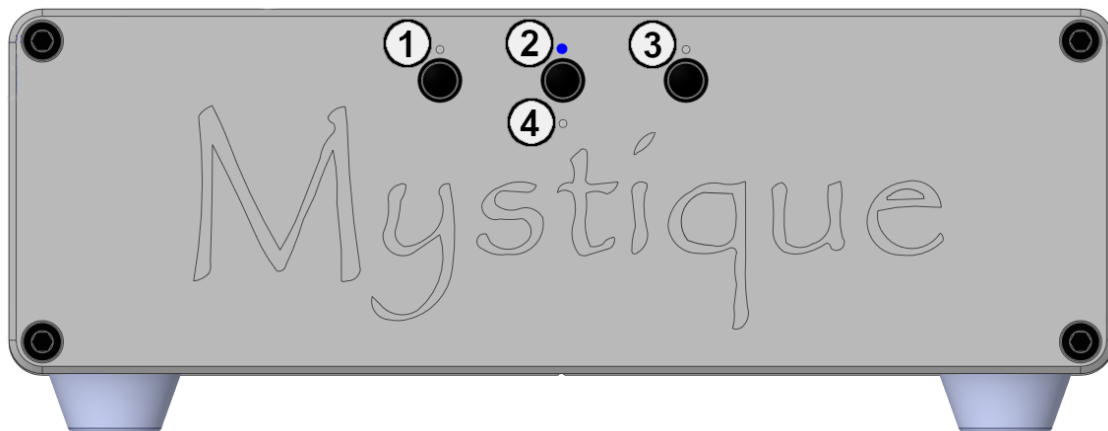
Whatever footers you use, please refer to the above graphic. Unless you are using insanely stiff or insanely heavy cables we recommend three vs four footers. Most of the weight in our DACs come from the transformers located behind the face plate. Place two footers close to the left and right edges of the chassis directly behind the face plate. Place the third footer centered directly in front of the rear plate. Note that there is a center notch on the bottom edge of the rear plate to aide in center alignment.

Digital Input Selection

The Mystique Z has three digital inputs: USB type B, S/PDIF coaxial, and TOSLINK optical. All three inputs can accept any type of Pulse-Code Modulation (PCM) digital music format up to 24-bit 192Khz. This includes: WAV, FLAC, ALAC, AIFF, AAC, MP3, MP4, and WMA.

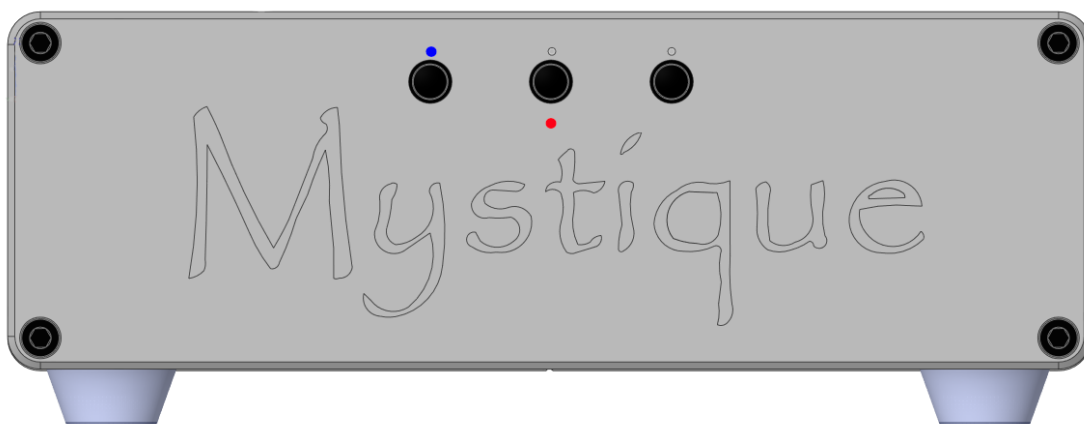
To completely isolate the digital and analog power supplies our digital input board has it's own secondary on the power transformer, it's own zero-recovery Schottky diode bridge, and uses five Belleson SPX ultralow-noise ultrahigh-dynamic discrete regulators. One regulator is used for USB input, one for USB output, and three for coaxial/optical inputs.

There are three push buttons on the front panel which activate each of the three digital inputs. There is a blue LED above each button to indicate which digital input is active. There is one red LED below the center button to indicate a coaxial or optical input error.



1. TOSLINK optical digital input.
2. USB digital input (shown as active with blue LED).
3. S/PDIF coaxial digital input.
4. Red LED indicating a coaxial or optical input error

Red LED showing optical input error



USB Input

The JL Sounds USB input module we use is of the highest performance:

1. Asynchronous
2. XMOS receiver chip
3. Ultralow-noise femto clocking.
4. Galvanically isolated input and output data
5. Isolated power for input, output, and clocking.

Always power on the Mystique Z before booting up your music server or streamer.

Unlike many DACs, the Mystique Z uses no dirty USB buss power. For this reason the Mystique Z must be powered on before booting up your music server or streamer. Without power the XMOS USB receiver chip in the Mystique Z can not be recognized.

Because of the 100% isolation and uncompromising performance of the power supplies and the ultralow-noise femto clocking used in our Mystique Z, the USB input module performs better than most USB reclockers and regenerators. According to our customers, most of those “magic” USB boxes will degrade rather than improve sonic performance.

Drivers for the USB are included in Apple OS X and Linux: no need to download.

If your server or streamer is Windows-based the driver must be downloaded:

<http://jlsounds.com/drivers.html>

Our USB input module shows up in your player software as “Mystique.” In player software that does audio and video select the option for “Mystique Front Speakers.”

USB Lift

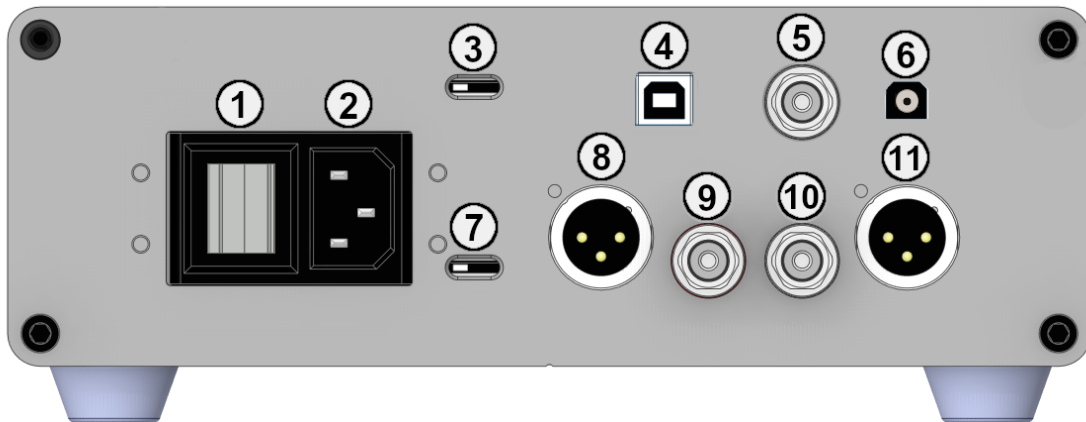
One of the unique features of the Mystique Z is a USB lift switch. By lifting the USB 100% of the power is removed from the USB input module. This eliminates any parasitic power supply drain and removes 100% of clocking noise from inside of the chassis.

When facing the rear of the chassis, slide the switch to the right to lift USB.

Some companies recommend coaxial, optical, or balanced inputs over USB. This is nonsense. Properly implemented USB can sound better than almost any other type of digital input. Because sonic performance in the Mystique Z depends on the quality of the specific digital source you are using we recommend that you compare each digital input with your digital sources to determine which one actually sounds better.

Rear Panel

Rear panel of the Mystique Z



1. AC mains power on/off rocker switch.
2. AC IEC inlet for power cable.
3. USB lift micro slide switch (right is USB lifted).
4. USB type B digital input.
5. RCA S/PDIF coaxial digital input.
6. TOSLINK optical digital input.
7. DC ground lift micro slide switch (left is DC ground lifted).
8. Right XLR balanced analog output.
9. Right RCA single-ended analog output.
10. Left RCA single-ended analog output.
11. Left XLR balanced analog output.

Ground Lift

There is a micro slide switch that lifts and disconnects the DC ground from the AC, chassis, and Earth grounds. Our DACs are shipped with the DC ground lifted.

When facing the rear of the DAC you can lift the DC ground by sliding the switch to the left. To connect DC to AC, chassis, and Earth grounds, slide the switch to the right.

We recommend lifting the DC ground unless there is some type of audible grounding related noise. From what our customers have reported, connecting the DC ground to the AC ground will eliminate any active ground-loop noise coming from our DACs.

Analog Outputs

The Mystique Z has two types of analog outputs:

1. Single-ended RCA with 2.4V peak-to-peak output.
2. Balanced XLR with 4.8V peak-to-peak output.

Most people find single-ended amplification to have better time, timbre, and musical flow. Most people find balanced amplification to have more gestalt and intensity at the expense of musical flow. Most people find the same is true with our DACs.

Many of our customers who have balanced inputs on their amplifiers prefer the single-ended outputs from our Mystique Z feeding the single-ended inputs on their amps.

We recommend comparing the balanced and single-ended outputs on our DACs in your system before deciding which to use. We do not recommend assuming which will sound better based on theory, past preferences, or advice given by other people.

Fuses and Protection Circuits

Instead of fuses the Mystique Z has self-resetting solid-state Thermistors protecting the AC input. A Thermistor will perform better both sonically and in terms of protection than even the best audiophile fuse. When the Thermistors are conducting AC to the power transformer a blue LED will light on the face plate of the Mystique Z.

If the core of the power transformer gets above a certain temperature, well below the temperature that could damage the power transformer, the Thermistors will open disconnecting all AC power. When the temperature of the power transformer's core drops back down again, the Thermistor will automatically reset, and continuity will be regained, allowing AC power to again flow through the power transformer.

If the Thermistor trips, the blue LED on the face plate will go out. Simply turn off the AC power switch on the rear of the DAC and wait 20-30 minutes for the power transformer's core to cool down. The Thermistor should automatically reset. If the Thermistor does not automatically reset contact Mojo Audio.

Breaking In

For optimal performance and longevity, we recommend leaving our DACs on 24/7.

IMPORTANT: always turn off every component in your system before swapping cables.

Burn-in only occurs when the following conditions are met:

1. The DAC is plugged into AC power and turned on.
2. A digital source is connected to one of the digital inputs.
3. The connected digital input is selected on the front panel.
4. A compatible bit stream is playing through the connected input.
5. An analog output is loaded to an amplifier or to a passive load.

Unless all five conditions met no current will flow and burn-in will not occur.

Though most of our customers have reported hearing the majority of audible improvements during the first 150 hours of burn-in, many of our customers have reported hearing subtle audible improvements for over 1,000 hours of burn-in.

You can silently burn-in your Mystique Z by connecting one of the outputs to one of your amplifier's inputs with the volume attenuator set all the way down. Of course if you have a tube or class A amp you likely won't want to keep your amp powered on 24/7. An alternative to burning up your expensive tubes or wasting electricity with a class A amp would be connecting a passive load to one of the DACs outputs. This allows you to burn-in your DAC silently without being connected to an amplifier that's powered on.

Instructions to make passive loads are in our [Breaking in Cables and Components](#) blog.

Even after the DAC is fully burned in, if it is left powered down for as little as overnight, it could take several hours powered up before it will resume optimal performance. And when cables are swapped or the DAC is moved the exact points where connectors contact with their mating connector will change. This means when cables are removed and replaced additional burn-in time will likely be required.

Warranties and Policies

All products manufactured by Mojo Audio come with a 45-day no-risk audition.

All products manufactured by Mojo Audio come with a 90-day full-value upgrade option.

All new and demo products come with a transferrable 5-year warranty.

All used products come with a minimum of a transferrable 2-year warranty.

All products manufactured by Mojo Audio are eligible for trade in.

For more information consult the [Terms of Sale](#) page on our website.

Quality of Recordings

Garbage in – garbage out.

There is a huge difference in the quality of recordings. Distortion, compression, background noise, brightness, boominess, hardness, and harshness can exist in the original master or can be created during the digital mastering process.

Our non-oversampling, no error correction, direct-coupled, R-2R typology reveals what is on your recordings, good, bad, or otherwise. If the quality of the recording is not good, there is no way the Mystique Z can yield good quality sound.

Sadly, in order to hear more of the music on your best recordings, you will also hear more of the flaws in your worst recordings. Many of our customers have reported that their best recordings sound transcendent while their worst recordings sound unlistenable when played through one of our DACs.

You have more than one option of digital remasters for most popular recordings.

Though all audiophile recording companies pride themselves in the quality of their so-called original master recordings, not all audiophile recordings are created equal. Many of these so-called higher quality and/or higher resolution versions of popular recordings cost more and sound worse.

This is because during the digital remastering process often changes are made to the original master. Remasters, audiophile masters, and gold disks are often edited with pumped up bass or highs to make them sound more exciting. Though this may sound impressive at first, it often sounds quite fatiguing over time.

The good news is that different recording companies and different recording engineers are often known for providing either the most natural or the most fatiguing versions of popular recordings. You don't always have to purchase and listen to a remaster to know the sound quality: you may be able to just read what recording company or recording engineer did the remastering to get a good idea what sound quality you will be getting.

Despite all the hype about HD recordings, quite often the original Red Book CD mastering may be your most natural sounding option.

Because the Mystique Z will reveal more differences in the quality of recordings, you may find your opinion changing as to the sound quality of some of your favorite recordings.