

DANIEL HERTZ

MASTER CLASS

Daniel Hertz Master Class is a highly innovative music player for Mac that offers superior sound quality and unique features designed for people who want the most natural sound. For the first time in history, listeners can have the sound and feeling of the best analog master tapes from digital sources including CD and compressed music downloads.

The Player

The sound quality of music players varies. iTunes, Quicktime, and Windows Media Player all sound different. Master Class is designed to provide the most natural sound and faithful reproduction of recorded music. Master Class will open any music library, folder, or track in AIFF, WAV, AAC or MP3 at any standard resolution. To listen to music, just open a file and play. You can make playlists and save them.

A+

Master Class includes a technology called A+. With A+, the listening experience is much more like analog. Since the introduction of digital audio, many people have noted that, despite its convenience, the actual listening experience is not as enjoyable as analog formats like the LP and analog tape. A+ can be turned on and off by clicking a box in the GUI (graphic user interface). The change is very subtle and many people will not hear it immediately, but the listening experience is not the same. A+ offers the best of analog and the best of digital, for the first time, on Mac. Many listeners will use Master Class with only A+ switched on.

EQ (Equalization)

Master Class enables the listener to make tonal balance corrections from the most subtle to the most dramatic. In 1985, audio designer Mark Levinson created the legendary Cello Audio Palette, the world's first sonically transparent tone control system. The Cello Audio Palette is today the most expensive and rare audio

component, prized for its ability to fine tune the sound with no distortion or noise. Master Class offers the same capability in the digital domain, with some refinements and new and valuable features such as A+ and the ability to save presets and print files that capture the content with A+ and the EQ dialed in by the user.

Why EQ is important?

Content

Every recording is optimized for sound in the mastering process. Since the tonal balance of playback systems used by mastering engineers vary in tonal balance, so do the recordings. It is established that mastering systems vary up to +/- 12dB in frequency response; therefore the recordings do as well. In practice, adjustments ranging from tenths of a dB up to 6dB are sufficient to optimize most good recordings, but many need more. Master Class provides up to +/- 12 dB adjustment at 6 frequencies, in 0.1dB steps.

Equipment

The human ear is extremely sensitive to small changes in frequency response. A few tenths of a dB change can be easily heard by many people. Many of the sonic differences provided by "high end audio" cables and other products are actually small changes in frequency response. Spending large amounts of money on such products is not the most efficient and intelligent way to improve the sound of a system. Master Class enables the listener to quickly optimize the sound in the most precise way, with the flexibility needed to achieve the best results.

Examples of ways in which frequency response can be altered in audio systems
Most people do not understand the ways in which impedance, resistance, inductance, and capacitance affect frequency response. Every audio electronic component (active or passive) has an output impedance. Every audio amplifier has an input impedance and output impedance. Every speaker has an input impedance that varies with frequency. When one component is connected to another, the frequency response at the input and output might not be the same, due to

interactions which are in many cases unavoidable. For example, vacuum tube amplifiers tend to have an output impedance high enough to create significant interactions with the load impedance of the speaker. People may think they prefer one amplifier to another, but in many cases, what they are preferring is the frequency response of one amp/speaker combination to another. The interconnect and speaker cables add another variable that creates sonic differences, many of which are frequency response related. Master Class provides the listener with the ability to optimize the frequency response of a given audio chain in 0.1 dB steps with no distortion or coloration. The user can store an overall system setting (or a number of them) to optimize the sound according to personal taste. Instead of changing equipment, just dial in the correction.

Room acoustics

Most living rooms are good environments for listening to music. A small overall system frequency response correction might improve the sound, but serious problems in room acoustics cannot be addressed with EQ. This is because reflections and resonances affect the time domain, not just amplitude. Master Class is not intended to correct major room acoustics issues.

FILE/SAVE AS

Once a recording has been fine tuned, it can be saved by using the "FILE/SAVE AS" command. Label the file and save it in your music library or a folder, and play it instead of the original file. An easy way is to add "MC" to the end of the file, so it reads, for example, Over the Rainbow MC.AIFF or Over the Rainbow MC.WAV. Then you can easily identify the MC files you have made from the originals.

Presets

You can save presets with the SAVE PRESET command. For example, if you find that a certain preset is great for all classical recordings by RCA, you can make a preset labeled possibly RCA MC. Or a preset for vintage rock and roll might be labeled VINTAGE RR MC. You can save a preset for listening on headphones, and call it HP

MC. If you find a certain correction makes the best sound for your car, you can make files called CAR MC.

Learning to use Master Class

Play the demo file called Honeysuckle Rose by Jane Monheit. Do the following:

1. Move the 2kHz control up and down. Hear her voice become more aggressive as you increase, and become softer as you decrease. You will probably choose a setting around -1 to -3.
2. Increase the 40Hz level so that the bass is more solid. Around +2 to +4dB
3. Increase the 20kHz level so that the cymbals are more audible. +2 to +6dB
4. Decrease the 5kHz level so the voice is less aggressive. -1 to -3dB.

The actual settings will vary depending on the performance of your system and your personal taste.

How do I use Master Class? How do I know what is accurate?

From listening, you know what amplifier and speakers you like best. When you buy audio equipment, you choose what sounds most natural and pleasing to you. Apply the same judgment with Master Class. Slowly adjust each control and choose the settings that sound most natural and pleasing to you, one by one. Check or uncheck the EQ box to turn your settings on and off. You can check or uncheck A+. Most people will leave A+ on all the time. Check or uncheck the BYPASS control to turn off both A+ and all EQ. It's easy. Have fun! Master Class enables you to bring the music to life.

Why Mac only?

Many people are likely to ask this question. Mark Levinson says, "From my experience, Windows is not stable enough and has too many issues. Daniel Hertz is a small company and cannot provide a tech support line to help Windows users make things work. With Mac, it is plug and play. It just works."

What about CD players?

CD players are inherently limited in many ways. The best recordings are mastered on Macs. The bitstream is fine, we just need to convert it to analog in the best way and allow the user to optimize the sound. Mark Levinson says, "With Master Class, you can download music files from iTunes and have sound quality that is equal to or superior to the most expensive high end audio CD and SACD players. "

Summary

Master Class is a highly engineered product with deep roots. Audio legend Mark Levinson is a professional musician, recording and mastering engineer, and audio equipment designer with 40 years experience in making music and reproducing it. In 1984, in collaboration with Dick Burwen and the Cello engineering team led by Tom Colangelo, Mark produced the Cello Audio Palette which introduced no-compromise EQ to the residential and professional audio worlds. Like the Cello Audio Palette, Master Class is a mastering-level product that goes beyond the limits of the conventional audio mindset. Master Class is a powerful tool that is easy to use. It is not a sound effect or gimmick. Rather, it is a no-compromise audio software that enables the listener to overcome limitations in quality of recorded content and equipment to have a superior listening experience with recorded music from all eras and genres in every digital format.

History of EQ

Of all the parameters that influence our perception of audio quality, frequency response is the most important. Every speaker, amplifier and electronic device is designed with circuits that optimize the frequency response. Every recording of music is optimized in the recording and mastering process for optimum tonal balance with EQ.

The first audio amplifiers produced in the 1940's and 1950's had tone controls. They were seen as necessary for obtaining the best sound from a wide variety of recordings.

Later, Mark Levinson introduced the idea of preamplifiers and amplifiers without tone controls to get the most pure and natural sound. An audio industry perception developed that considers tone controls (EQ) a source of distortion. True, typical tone controls often added unwanted coloration. But the reality is that without good tone controls, the listener is deprived of ways to get the best sound from the playback system and most refined listening experience.

In 1984, Mark Levinson collaborated with audio pioneer Dick Burwen to create the legendary Cello Audio Palette, the first and only analog equalizer with no distortion, noise, or unwanted sonic coloration. It was produced for 15 years straight with almost no changes. The Cello Audio Palette is now the most expensive and rare audio component on the used market, often fetching \$10,000 to \$20,000 or more.

Now, in 2014, Mark Levinson has designed audio software called Master Class. Master Class offers the same frequency response correction as the Cello Audio Palette plus powerful additional features. The differences are:

- 1. Instead of rotary controls with fixed steps, Master Class has 0.1dB resolution.*
- 2. The Audio Palette has a signal to noise ratio of 110dB. Master Class adds essentially zero noise.*
- 3. The Audio Palette must be adjusted manually for each recording every time it is played. Master Class can retain unlimited numbers of presets and will also print new files with all corrections captured, in AIFF and WAV formats.*
- 4. Master Class is available at a price most people can afford.*
- 5. Master Class is installed on an Apple computer, so the user has an integrated solution for downloading, storing, and playing recordings in all formats from MP3 to 24 bits with a click of the mouse.*
- 6. Master Class takes up no additional space, consumes no electricity, is not subject to aging and never needs repairs.*
- 7. The Cello Audio Palette operates in the analog domain. Master Class operates in the digital domain. For reproduction of all digital recordings, Master Class is*

inserted into the digital signal throughpath, the most transparent and elegant way to modify the signal.

8. *The sonic signature of PCM digital audio is undesirable but until now listeners have had no way to eliminate it. Master Class, with A+, offers a real solution that cannot be achieved with a device working in the analog domain.*

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