# Cassette Deck 1

Cupwise Nebula Programs


**General Information**

This deck improved on the original 122, which was considered a standard in the broadcasting and recording industries. These decks were the rule at the major television networks in the USA, like ABC, CBS, and NBC. They were known for their rugged build, consistent performance, and quality sound.

To capture the essence of this deck, a wide variety of tapes (14 altogether) and sampling methods were used, to provide a variety of effects- 22 in all, and 5 bonus 'stereo combo' programs made by combining some of those. Tapes ranged from notoriously poor performing cheaper ones to well regarded high-end ones. Types I, II, III, and IV were used. Most were NOS, but a few had previously been recorded on. The 122 mkIII has variable speed control up to 12% up or down, and this was usually set to the highest speed for the best quality, but in some cases it was set to normal speed (1 7/8 ips) or slowest for a little more variety. At slower speeds the high freq roll-off is usually more pronounced. The deck has Dolby B and C noise reduction. In some cases one or the other was used, and in other cases none was.

This set is designed to recreate the sound of recording to, and playing back from a tape with this deck at normal operating levels. From my experience it seems that the deck's electronics will clip the signal before it gets hot enough to really saturate most tapes, so you can't really get lots of 'tape saturation' out of this deck anyway.

What you should expect:

- subtle to not-so-subtle high frequency roll-off
- a chunky weight in the dynamic behavior (great for subtle lo-fi flavor on drums)
- some subtle tape saturation/distortion
- a general smoothness to the overall sound

All tape programs are in the 'TPE' category, then the 96khz set will be found in 'TA9', and the 44.1khz set in 'TA4' (TA for Tascam). There's also a 'pass-through' program of the deck's amps without tape, and a duplicate of it can be found in the 'PRE' then 'CW4' and/or 'CW9' sub-categories (for 44.1 and 96khz).

The stereo programs were made by combining different effects from the set to create stereo pairs. You'll hear one tape on the left and an entirely different tape on the right. However, they were chosen to have similar frequency responses. They should add a slight stereo effect to your sound.

These are dynamic effects, so the result changes depending on the level of the audio signal going in. The 'trim' gives you quick control over this. It adjusts the input level, and automatically compensates with the output level, so all you hear is the change in the effect at the different levels. Be careful not to overload the programs though, and remember, the harmonics will always be subtle no matter how hard you drive the programs.

## Installation

Just copy the .n2p files to your Nebula 'Programs' folder, and the .n2v files to the 'Vectors' folder. To install skins, consult skin install manual

## Graphs

The following graphs can be useful for helping to find the right program if you have a specific need regarding the frequency response.

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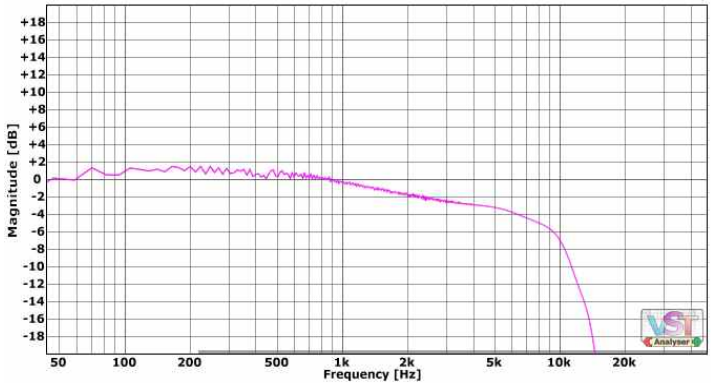
# Tp1 – Memorex dBS (NOS) type I normal

## 1A

Recorded/played back at fastest speed, meaning that the vari-speed/pitch adjustment knob was fully clockwise. Dolby B was used here.

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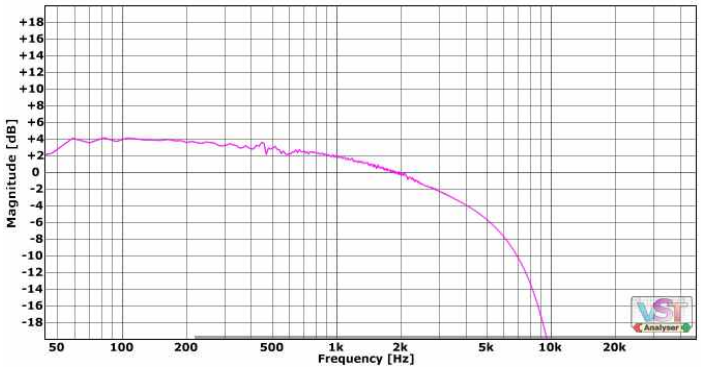
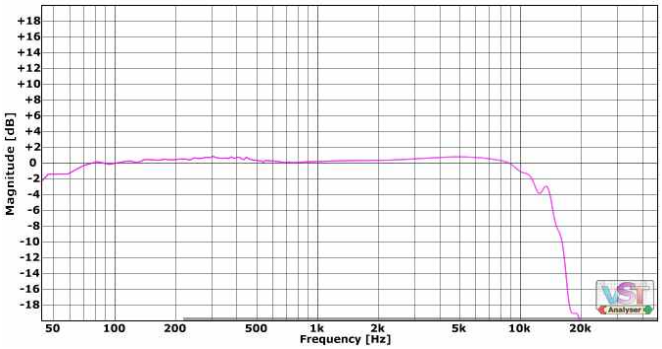
## 1B

Slowest tape speed setting, dolby C. Try this one for a muffled effect.



# 1C

Fastest speed, no dolby NR was used. I have no idea why the response came out so much flatter than with the A and B samples.

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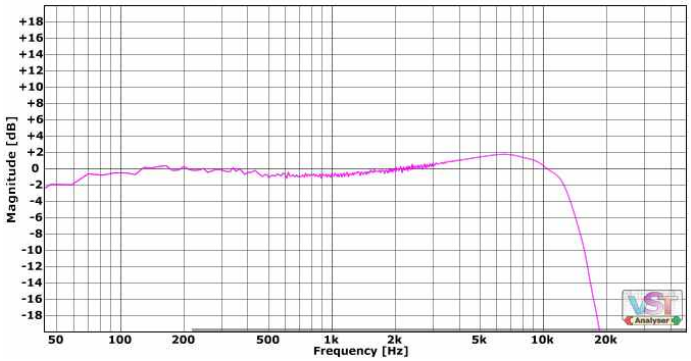
# Tp2 – TDK D60 (NOS) type I normal

Dolby B, fastest speed. 'Adjust' mode was left on during sampling. This mode is entered when fine tuning the bias settings for each tape, and it seems to engage some kind of emphasis EQ to help with the adjustment process. It is supposed to be turned off before recording, but leaving it on gives a sharp high end boost. This tape was giving a poor high-freq response (like the dBS), so leaving the 'adjust' on counter-acted that a bit, and produced a unique response.

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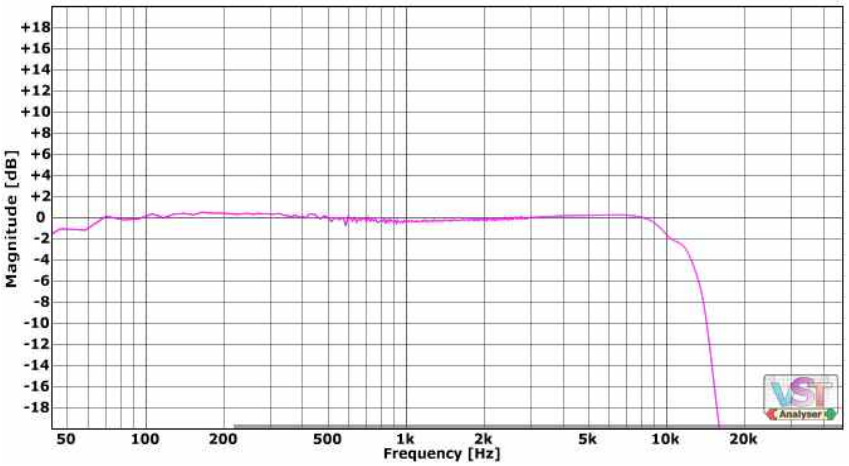
# Tp3 – Maxell UR (used) type I normal

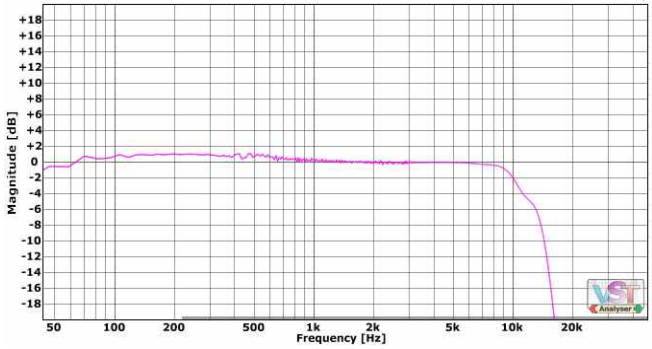
This was an old tape I had used and reused a lot. Dolby B, fastest tape speed.



# Tp4 – TDK D90 (NOS) type I normal

## 4A

The D tapes are/were considered to be among the best type I tapes. Here, fastest speed and dolby B were used.

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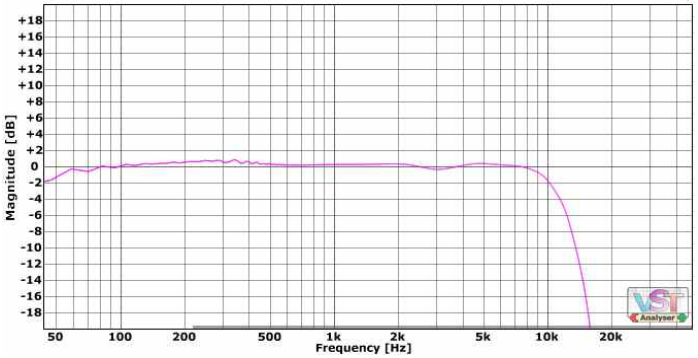
## 4B

Here no dolby NR was used, tape ran at slowest speed, and the 'adjust' mode was left on.

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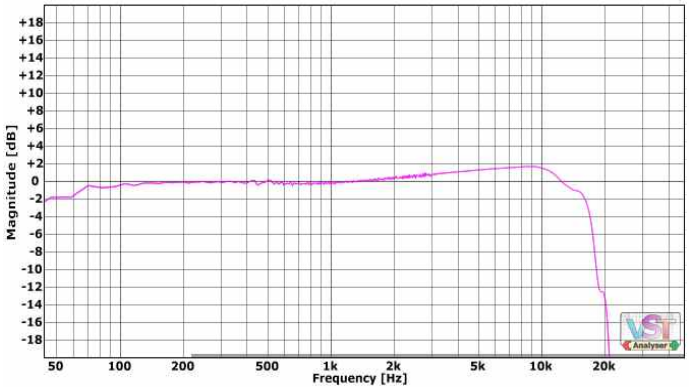
# Tp5 – Maxell XL II (NOS) type II CrO2

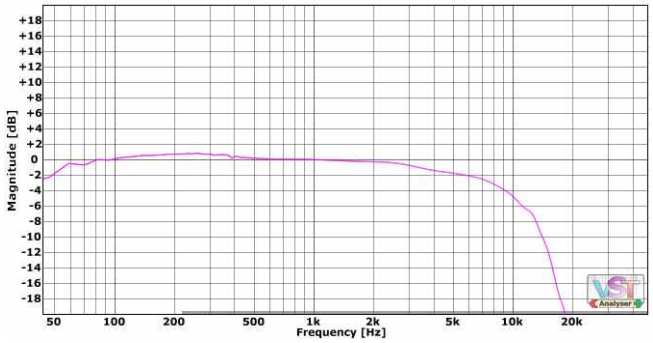
## 5A

This was one of the best common tapes. It's a type II, but can compete with more expensive type IV tapes. Here, the fastest speed and dolby B were used. Again the 'adjust' mode was left on, making this one of the brightest effects in the set.



## 5B

Slowest speed, no dolby.

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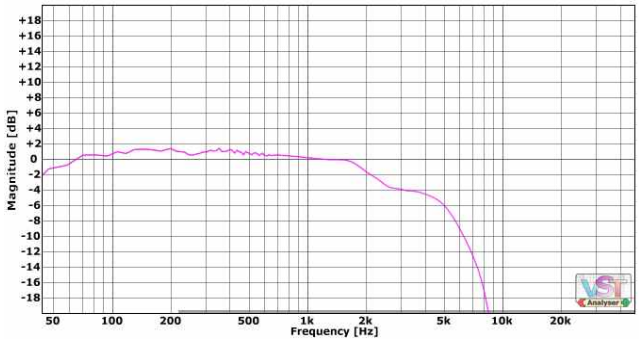
# Tp6 – TDK SM (NOS) type II CrO2

This was supposed to be one of the best tapes (and was expensive) but all I could get was a really lo-fi result out of it. Maybe mine was bad somehow. Dolby C, fastest speed.

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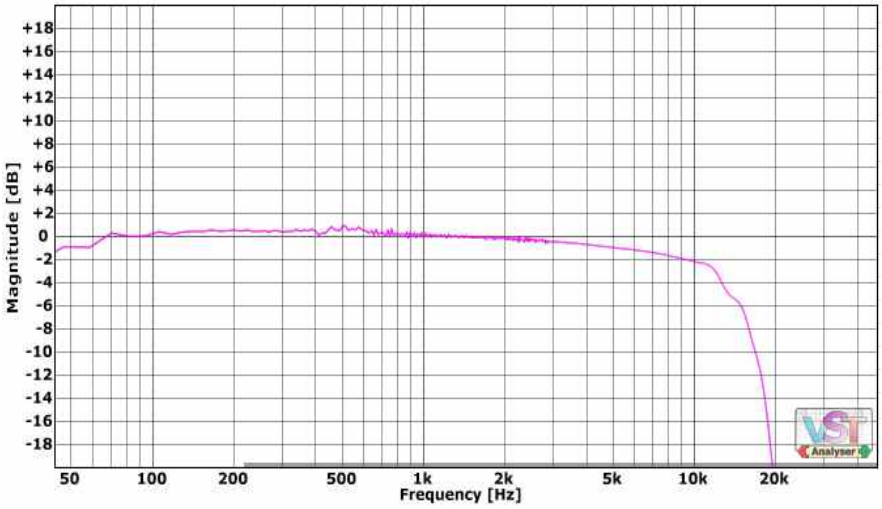
# Tp7 – Fuji DR II (NOS) type II CrO2

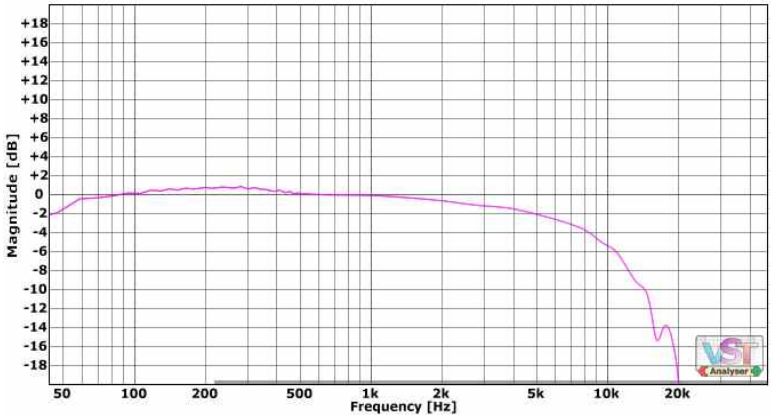
## 7A

This is another well regarded type II. Dolby B was used. Fastest speed.



# 7B

No dolby his time. Normal speed.

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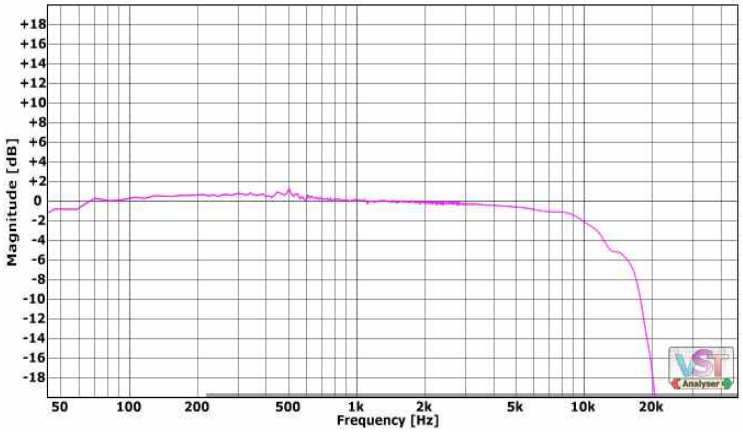
# Tp8 – TDK Cdpower (used) type II CrO2

I just found this one, and it had been used. Dolby B. Fastest speed.

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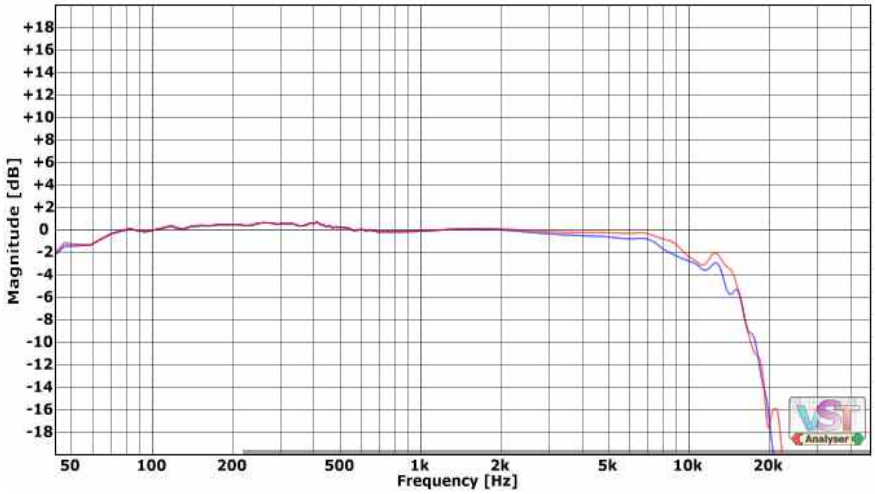
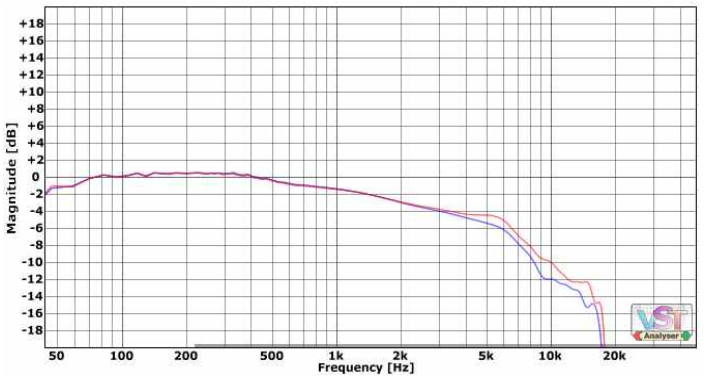
# Tp9 – Denon HD8 (used) type II CrO2

A really good tape. No dolby NR, fastest speed. Sampled in stereo.



# Tp10 – Scotch Master III (used) type III FeCr

This is the only type III tape used in this set. Type III tapes were basically a failed experiment, and they aren't very good for the accurate recording of music. For our purpose (as an effect), they can be great! They always seem to give a unique high frequency roll-off. Sampled in stereo. Fastest recording speed, dolby C, and the deck's MPX filter was used also, making this the only one to use it.

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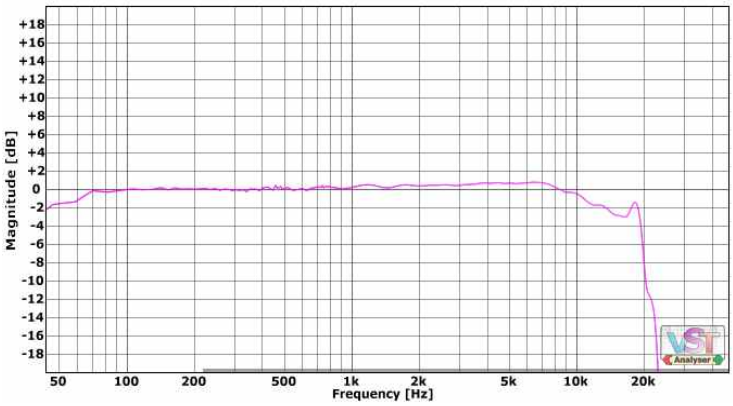
# Tp11 – Maxell MX-S (NOS) type IV metal

## 11A

Amazing tapes. They have some kind of anti-resonance coating on the shell, and I have no idea if it actually helps or does anything, but it looks neat. Check out the nice high end. No dolby, fastest speed.

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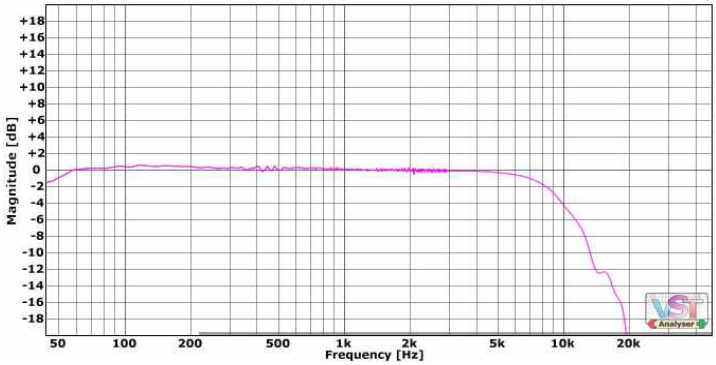
## 11B

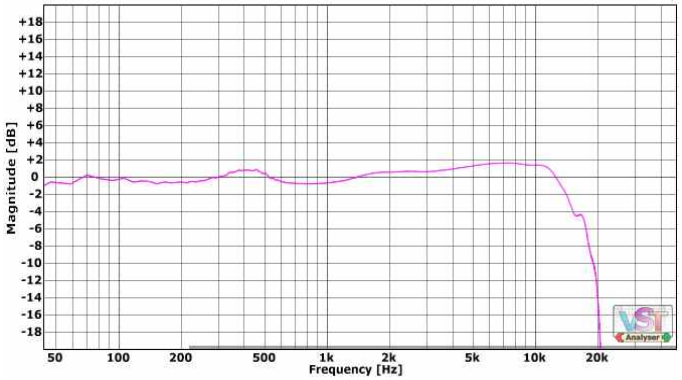
Normal speed, dolby C.



# Tp12 – TDK MA (NOS) type IV metal

## 12A

Another respected metal tape. This is the only program in the set where the unbalanced (RCA) ins and outs were used. Dolby C, and the fastest speed setting was used also.

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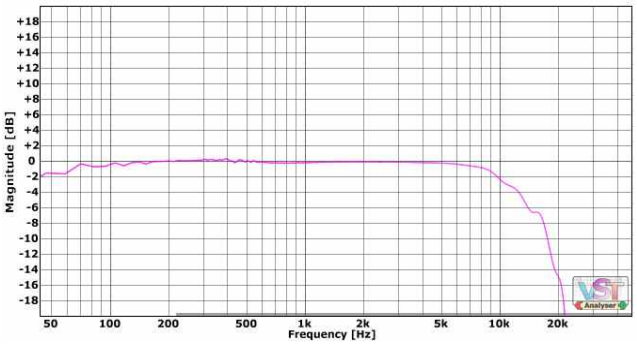
## 12B

No dolby. Fastest speed.

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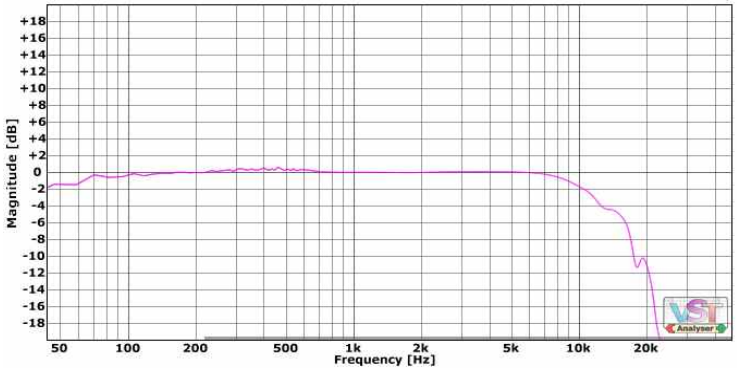
# Tp13 – Memorex Ciré IV (NOS) type IV metal

## 13A

What's cool about this tape is that Memorex isn't exactly known for putting out the best tapes, but this one is quite good. It's hardly mentioned online, and was probably not a very common tape. So I bought this just to see how it would do, and it was a nice surprise! From the back of the J-card:

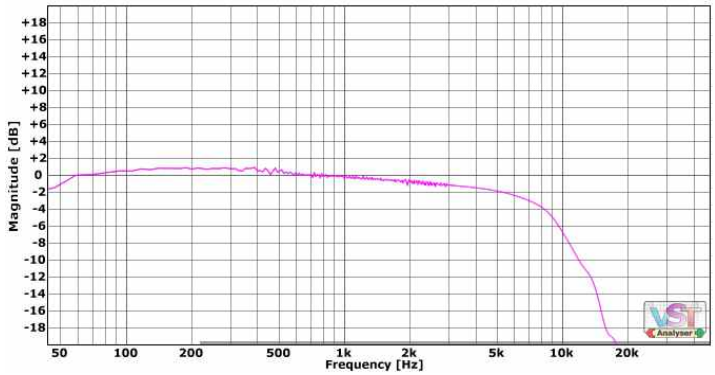
CIRÉ : ("SEER-RAY") the mix of attitude, fashion, and personal expression in music.

No dolby, fastest speed.



# 13B

Normal speed, dolby B.

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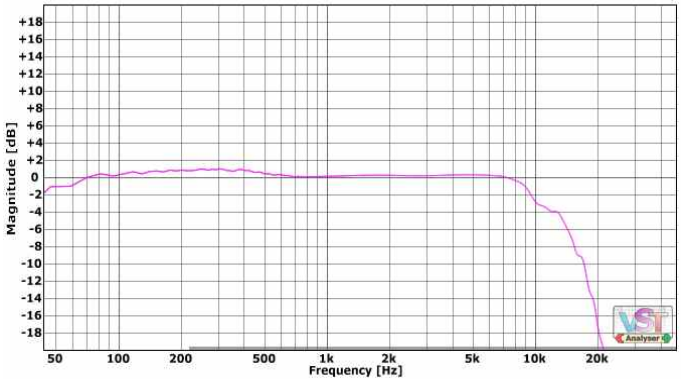
# Tp14 – Axia K Metal (used) type IV metal

A previously used tape. Stereo. No dolby NR, fastest speed.

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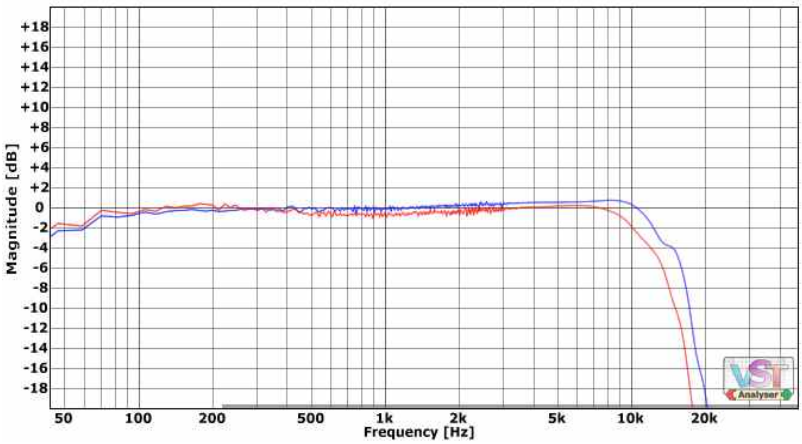
# Below are the stereo combo bonus programs:

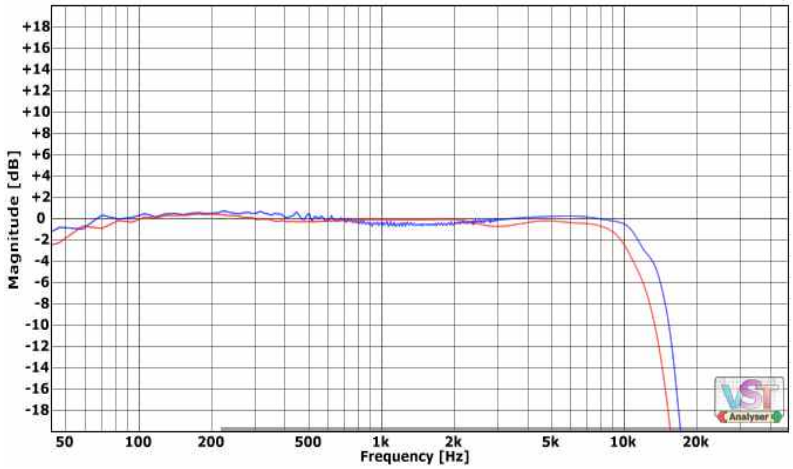
# St1

Tp5A was used for the left channel, and Tp2 for the right.



# St2

Tp3 for left, Tp4B for right.

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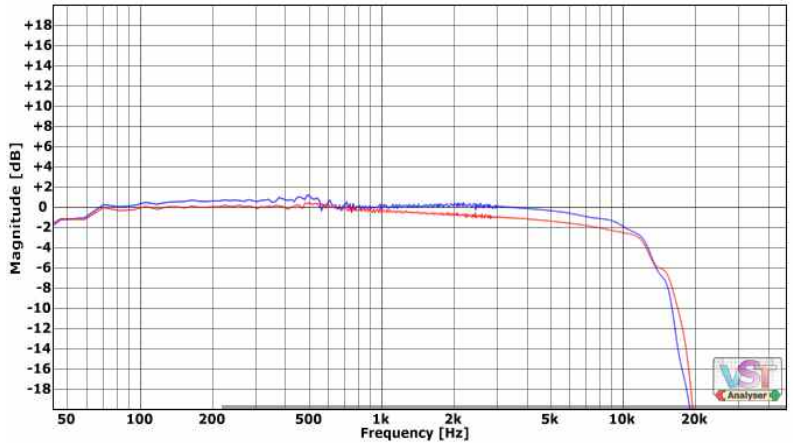
# St3

Tp8 left, Tp7A right.

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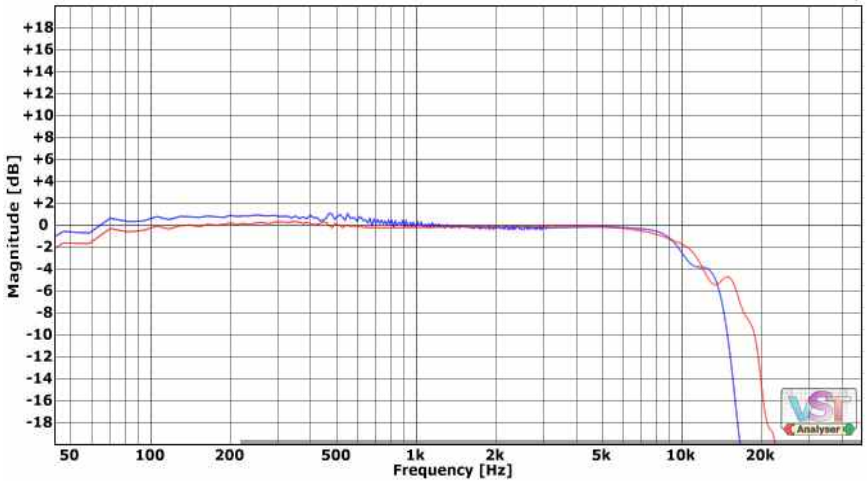
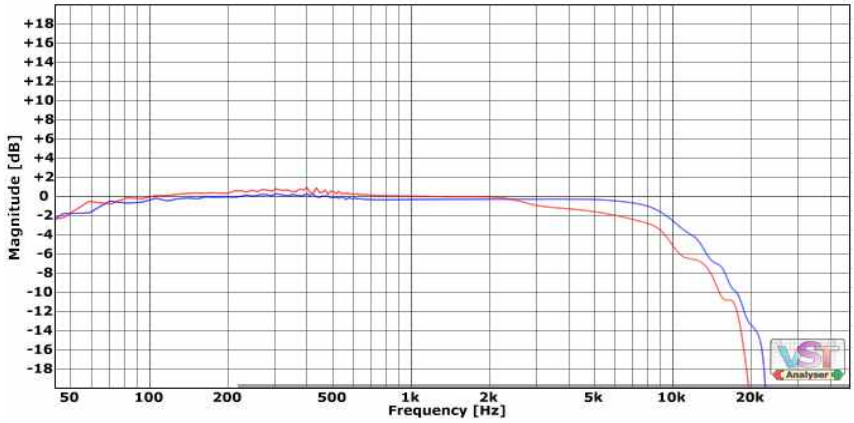
# St4

Tp4A left, Tp12B right.



# St5

Tp13A left, Tp5b right.




## General Usage Tips/Ideas:

- Program 11A (the metal Maxell tape) gives the most extended high end with the least amount of roll-off beyond 10khz. After that the Denon HD8 tape (program 9) is probably the closest to flat beyond 10khz. Try these two if you ever want a very subtle tape effect with little filtering of highs. 5A Maxell II actually boosts the treble a bit, before dropping off around 15khz, so try that one if you want a subtle treble boost. At the opposite extreme, try 1B and 10 if you want to filter highs out, in that unique 'bad cassette' way.
- Remember to use trim to fine tune the effect! You will get different tones and dynamic behaviors depending on how hot you drive the programs.
- Make sure your input never overloads the programs by going above 0dBfs. Nebula has an indicator that lights up if that happens. It won't necessarily always make a terrible result, but sometimes it will, so it's good to keep in mind.
- Using the 'dist' control to boost distortion usually doesn't seem too useful, to me. Again, you can't expect lots of tape distortion from these programs. The harmonics can give a nice subtle sheen though, as with other Nebula programs. However, I did see cases where **lowering** the dist control to lower the harmonics, might be desirable just to get a cleaner sound.
- Don't forget to try messing around with the release control so you can control the dynamic behavior a bit, especially if your input level is peaking anywhere between -15 and 0dbFs and your signal is dynamic (like drums).



## Thanks:

Christian Budde- maker of VST Analyser, which was used to produce every graph in this manual. He also has some other pretty useful tools and VSTs. Check 'em out!
http://www.savioursofsoul.de/Christian/