VTM-M2

The Vintage Tape Machine

Manual

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Created By Michael Angel and Michael Heiler
Mx2
(Michael Times Two)
Stunning Graphics by GravityLinks

<u>Introduction</u>

Thank you for purchasing the VTM-M2!

The VTM-M2 is the result of 5+ years of research and design. It stands for "Vintage Tape Machine" and we be believe that it defines a new level of authenticity in plug-in technology. It is based upon an original concept developed by Michael Angel of CDSoundMaster called "Virtual Interactive Signal Chain Technology", and has been brilliantly executed in code by Michael Heiler. This unique cooperation has led to this special line of products developed for CDSoundMaster by "MX2" or 'Michael Times Two'.
The VTM-M2 reproduces the unique character of reel to reel tape machines for use on all aspects of recording, mixing, and mastering. It can be used on every track of a multi-track project, on a single instance of a final mix or master, on group bus duties, and any combination of the above. It has two completely independent operating modes, calibrated for Low and High calibrated tape settings. This provides a full range of use from subtle, clean response to higher gain, deeper harmonic distortion and compression, giving the user every desired response of a real tape machine without alteration to the source's frequency range. It contains advanced multiple operations yet requires very few parameters for operation. It uses minimal system resources and is ideal for multiple instances and use on every track in dense multi-track session projects.
For those who have been using CDSoundMaster Program Libraries for the Nebula Pro Plug-In for several years, the VTM-M2 represents the long-awaited "3rd Stage" for the complete building-block concept for creating absolute authenticity in reel to reel tape inside the DAW. R2R - Reel, Too REAL, and Tape Booster +, are stages one and two, found in the Nebula Pro Plug-In list of CDS original software on this website. R2R brings the user a complete collection of actual reel to reel tape machines, each with its unique frequency response, dynamic response, and harmonic distortion. Not only are multiple machines included in R2R, but each with its own tape speeds and tape stock choices. Literally every authentic nuance of these machines are represented in R2R. So, why three stages? Because Nebula Pro is the finest platform for reproducing absolute accuracy from such machines, and what it does is unrivaled. But, there are certain limitations to what the engine is created to do. Each instance of Nebula Pro acts as a certain process.

In this case, tape is reproduced with frequency, dynamic change, and harmonic content. Nebula Pro can also act as a very realistic compressor, but this takes a different form than natural tape compression, and would require a separate instance even if it did include this type of function. This is where Tape Booster + comes in. Tape Booster + is used as a second stage after R2R to build the level of perceived volume based completely on saturation or harmonic content. Dynamic harmonic distortion in exact detail to tape response is what Tape Booster + adds to each individual R2R machine. The two together make for an amazing daily mix, tracking, bus, and mastering tool using any desired machine.

And now, stage 3, the VTM-M2! Natural, authentic, complex saturating tape compression with two independent calibrations for subtle mastering work and for higher gain functions. The VTM-M2 is a completely new concept in creating code that sounds like, thinks like, acts like real analog. At literally every dynamic level it is processing uniquely, based upon the input. If it is receiving fast transients, it acts one way, if it is receiving long lyrical passages, it responds differently. If it gets a loud signal it operates uniquely to that signal. If it is given a quiet signal, it operates in a different manner. The VTM-M2 is always compressing, and it is always adding saturation. As it is driven harder, all forms of processing increase, change, and adapt. We believe it is the first product of its kind, and if used on its own, it may very well become your favorite replacement for digital brickwall limiters, mastering compressors, and tape saturation emulators. But, when used with R2R and Tape Booster +, you will experience the complete tape revolution that can only come from CDSoundMaster. Choose your unique R2R machine, load some saturation boost from TB+, and then add one instance of VTM-M2 or several! It has been carefully tested and designed never to loose its authentic analog response. We have run the VTM-M2 through its course to make certain that its sound never goes digital!
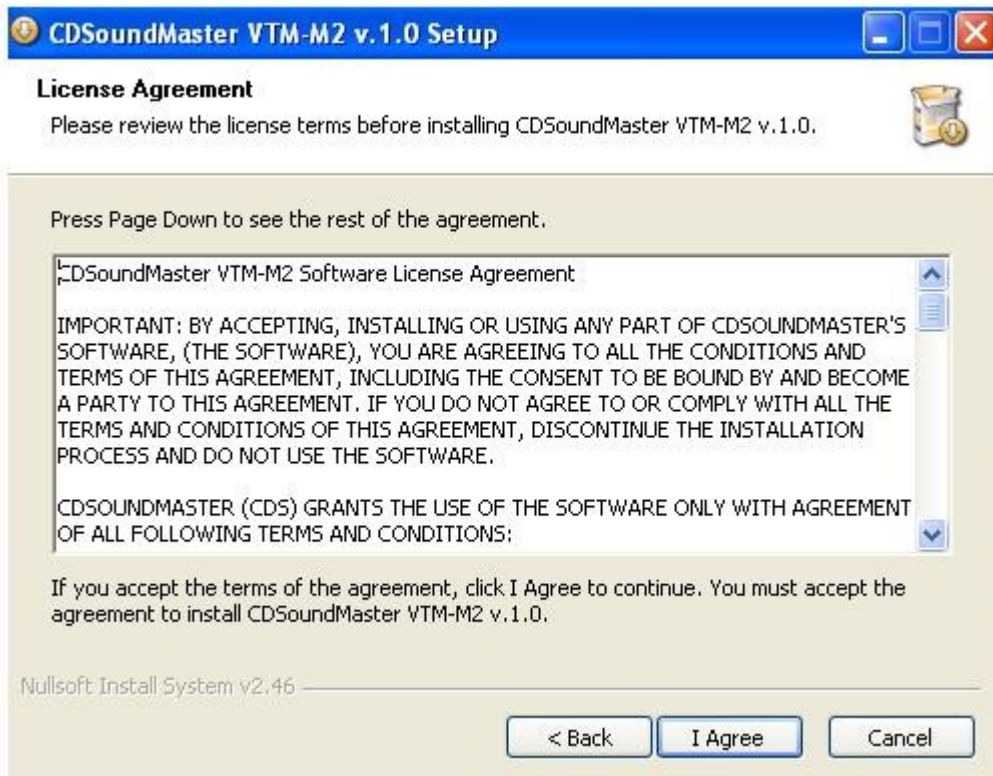
Installation

1. Unzip your download folder.

2. Make sure that your main DAW Host and audio programs are closed. It is always a good idea to create a system restore point before installing any software.

3. If you are using Win7 or later Vista, make sure that you are logged on as administrator. Right Click "run as administrator" for "Setup.exe".

4. Run the "Setup.exe".

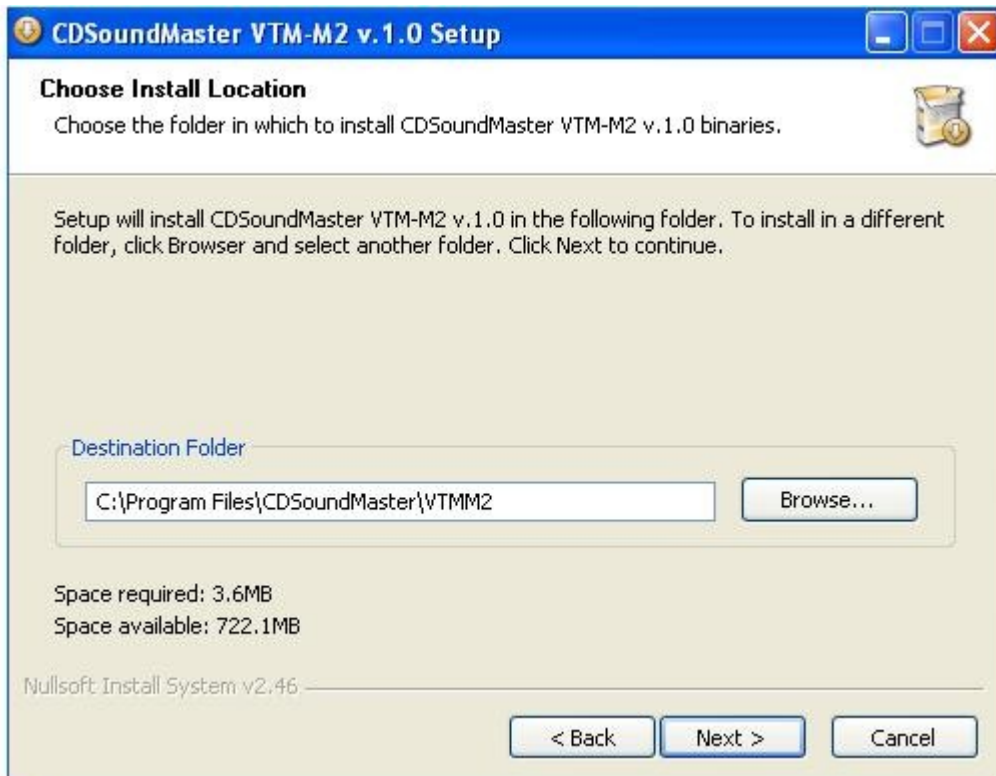5. The following screen will appear:

6. Click "Next" to continue.
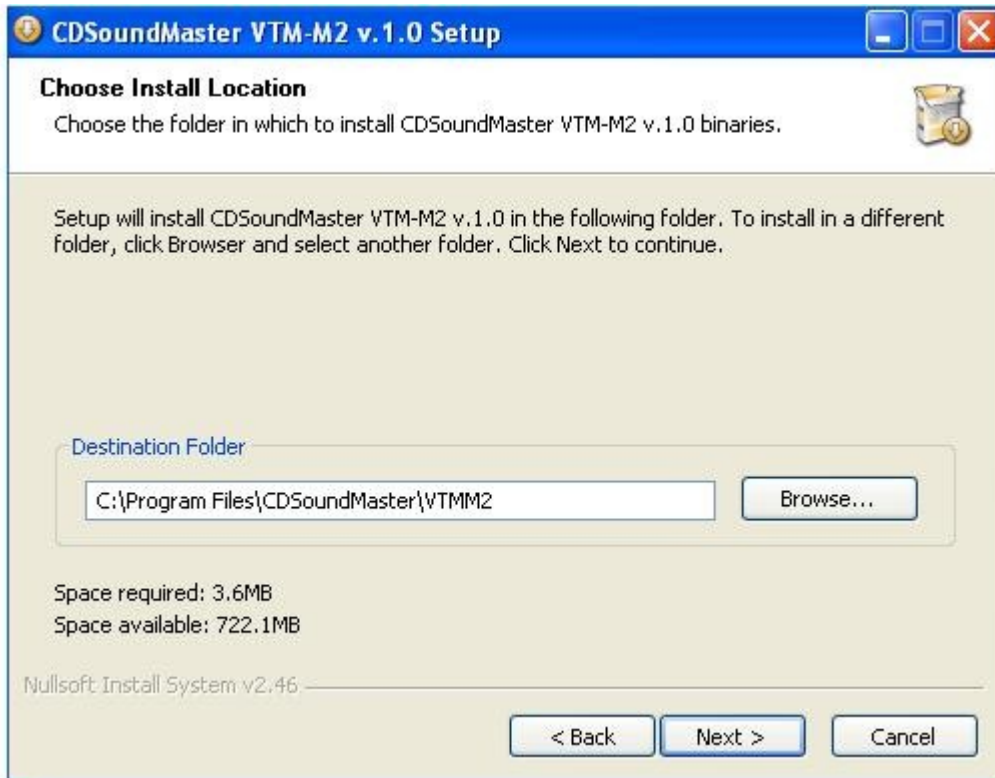
7. The license window will appear as follows:

8. If you agree to the terms of our license, click "I Agree".

9. Choose the install location for the e-licenser program, as displayed:

10. Choose the destination folder where you would like to place your VTM-M2 vstplug-in as displayed:

Important:
If you are using an x64 OS like late Vista or Win7, you may have more than one vstplugins directory. Usually, there will be a 'Program Files (x86)/vstplugins' for your 32 bit plug-ins, and 'Program Files/vstplugins' for your x64 plug-ins. If you are using an x64 OS but only use 32 bit Host programs or DAW's, then you may only have a single 'Program Files' folder. Please make sure that you know what your install directory choices are in order to choose the proper location.
The first release of the VTM-M2 is a 32 bit application, so it belongs in your 32 bit vstplugins directory. If you are installing an x64 release of the VTM-M2 it will be clearly marked on the download button and the zip folder that you have selected.

11. Click the "Install" button and you should be finished with installation very quickly, as displayed:

12. The "Run CDSoundMaster" button will have a check mark next to it as shown: It is best to leave this option when first installing.

13. Click the "Finish" button and the VTM-M2 Licenser will appear as shown:
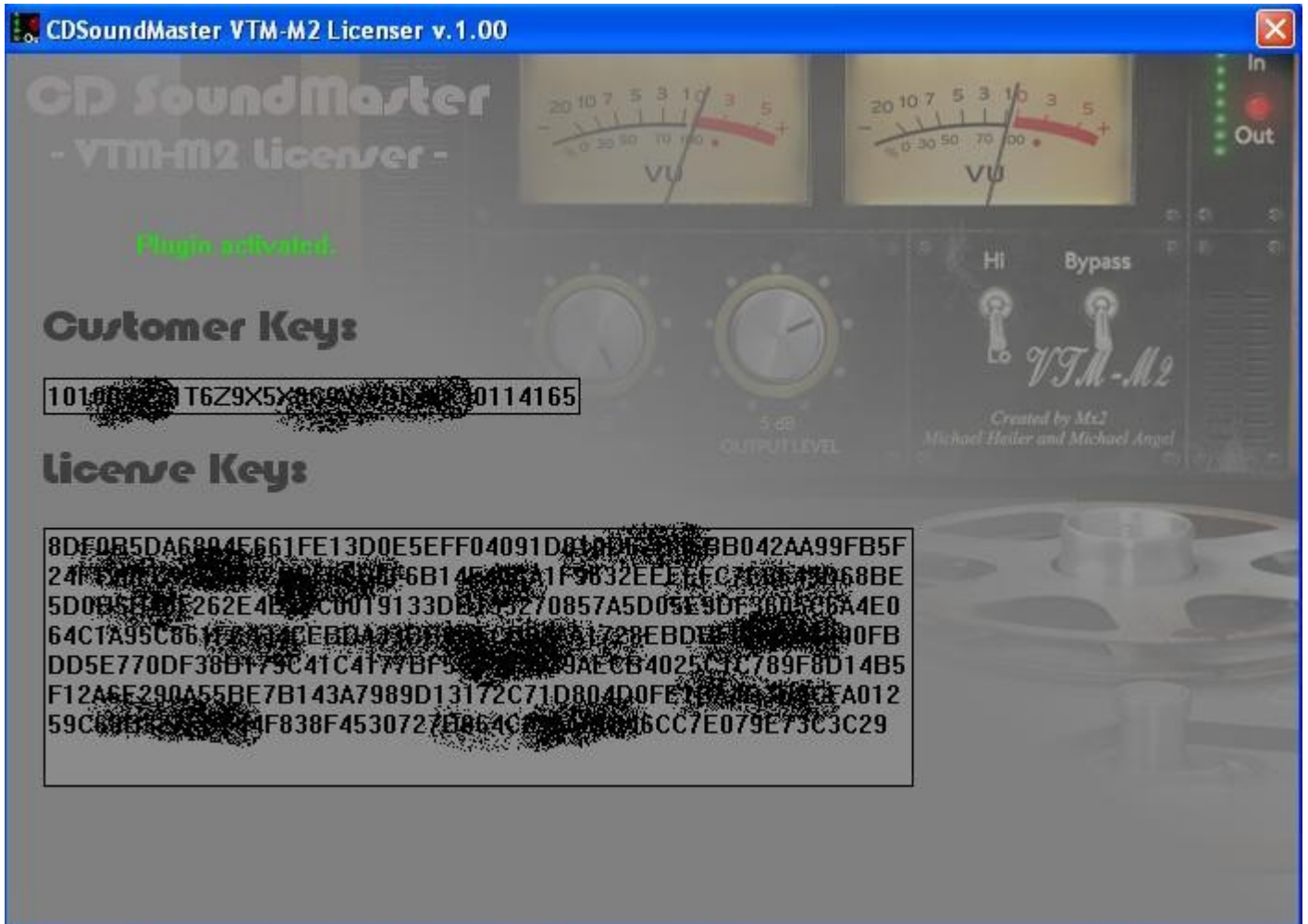
14. You can choose to run the demo the first time this appears, or go ahead and set up your license key.

15. Your personal "Customer Key" will appear in the window that says "Customer Keys".

16. Email this key to us at Michael@CDSoundMaster.com and we will send your License key. This can also be done from the plug-in directly.

17. Open your DAW. If using Win7 or late Vista, you may need to right click "run as administer" to open your DAW. You should have your VTM-M2 plug-in working and ready for action!

Controls

The Vintage Tape Machine has been designed to function with great complexity and detail with very few required actions.
The most important sonic choices are made with literally only four main controls.

1. The Input. Level
2. The Output Level
3. Lo
4. Hi
5. On/Bypass
6. In Level meter
7. Out Level meter
8. VU Meters
9. Presets

The Input Level controls the entire signal process, including all saturating drive and compression elements.

The Output Level adjusts the digital signal volume back to its desired level for proper mix level setting.

The 'Lo' function should be chosen where you wish to use the VTM-M2 for more subtle tasks such as mastering, but is also useful when used in combination with other instances of the plug-in. This will be discussed in more detail under "Suggested Use". The 'Lo' control is also very helpful if you wish to have a wider range of control over the sensitivity in changes in saturation and compression with less 'high gain/high drive' response.

The 'Hi' control should be chosen for the most common tasks, including tracking to tape, mixing individual channels to tape, placement on typical 'bus' groups, and even on final two track and in mastering. The 'Hi' control gives a more obvious effect on the input signal than the 'Lo' setting, and represents a typical multi-track tape calibration.

There is no difference in the frequency spectrum when using the two modes of operation. The purpose of the two modes is to provide a best-case scenario for your work flow. 'Lo' can be thought of as the benefit of tracking a little bit cleaner with more subtle effect, as if you were 'hitting the tape' near unity gain, but with the benefit of tape that is calibrated to be cleaner at a higher setting above the noise floor. Think of it as a perfect tape level for gentle tape effect without adding a noise floor!

The 'Hi' setting is a typical calibration used for everything from printing drums to tape to final two track mixdown. It can be reduced for subtle results or driven hard for obvious tape overdrive and compressing.

All settings can be saved with your DAW session, and can be automated using standard MIDI function changes and commands.

The In and Out level meters will let you know your average and peak signal level information, and will alert you if you are getting too loud. When the red light comes on, you have gone above 0dB. But, there is some analog-style comfort room on the input. You do not ever want to go over with the output level, but a little bit of over on the input is still a part of the authentic processing within the plug-in.

Use the Bypass switch to compare the signal before and after the plug-in or to automate turning it on and off during a mixdown.

The VU Meters are calibrated towards the actual analog response of the VTM-M2. This is a very special function. This means that you are getting a good general reading on the average signal that is being processed, but even more so it is responding to the natural feel and calibration of the 'Lo' and 'Hi' modes. The meters will read differently based upon the amount of actual compression taking place. For those who are used to working with hardware devices, this would be similar to getting a single meter reading that not only shows you an average 'real' signal, but the amount of compression, both in an averaged, single instance. The complete information on average and peak levels can be found with a combination of your DAW's track level, the red in/out lights, and the VU meters.

Presets

The VTM-M2 comes with a special set of presets. These have been very carefully chosen for the tasks they are named for. These can be an excellent starting point in order to learn the special results that come from every setting in the VTM-M2 and you may even like them enough to stick to the settings!

It is possible that when in use, that a preset may have a higher or lower output level than it is initially being fed. This is because the amount of actual signal compression that occurs is completely dependent on the kind of audio it is processing. The compression process in the VTM-M2 is not linear and does not respond the same all the time. The volume of the input, along with the speed, attack, and other variables all have an influence on the resulting amount of compression and therefore the output level. This is part of what makes the VTM-M2 so ultra-realistic, in that it compresses harder and with more complexity, the harder it is being driven. Because of this, the volume of what you input may increase steadily from one level to another, but as the level is increasingly higher, it compresses harder, and therefore increases by smaller degrees the hotter the signal.

Technology

The VTM-M2 is the result of many years of hands-on testing and research. It is the fruition of an original concept called "Virtual Interactive Signal Chain Technology". This process is based upon the actual sound of a wide range of reel to reel tape machines, many of which are found in the R2R collection. This new technology generates an extremely complex signal processing routine that responds to volume, change in volume, transient, change in transient, and specific saturation and compression based upon every dynamic change at the input. Literally every possible change in signal has been audibly compared to a wide range of machines and determined based on a signal chain that is complex in multiples, meaning that each stage of reading, analyzing, and processing is not added to the signal, but is multiplied to the signal, meaning that in several steps, hundreds of specific responses take place with very low cpu resources.

The way that tape responds to a signal changes as it increases in intensity. This is not a steady rise in saturation and compression, but an increasingly more deliberate process the harder that the machine works to maintain a clean signal. Compression 'compresses' harder and saturation drives at a high harmonic content in the last few decibels of the loudest signal. This also means that the user has control over this reaction in their decision to hit the machine with a loud or quiet volume to begin with.

The complexity of this technology is apparent also in the way that it responds in repetition. Most plug-ins that attempt to emulate real hardware may sound good under a few tough examples, but when added to many tracks of a mix, or when used in more than one instance in a chain, they will start to show a more digitized character in sound. Our ears pick up on many subtle cues about sound, and we can often instinctively tell when there are certain limitations or patterns in the way a sound is generated. the VTM-M2 has been carefully designed to intentionally satisfy the full analog response of use in numerous serial instances, one after the next, without ever going digital.

As a special note about this technology, Michael Heiler has done a tremendous job of carrying out what proved to be a huge technical challenge. His work in developing this software and interpreting natural analog processes according to the details of research data is truly worthy of notice. If you are please with the results of this plug-in, please let us know. It is our goal to move forward with this original concept and bring you other releases that make use of this amazing technology, but it completely depends on your support. We feel it is worth of inclusion in the manual that Michael Heiler is mentioned for his incredible talent, patience, and determination, and CDSoundMaster hopes to press forward with MX2 until every software design has been accomplished, so if you enjoy this plug-in please support it!

We also feel that it is important to acknowledge our friend Vincent of GravityLinks, who has been an inspirational member of the team, creating graphics that are as stunning to look at as we hope the software sounds. His work has really helped motivate and inspire the development process and we thank you for your awesome creativity!

The technology would not be complete if it weren't for our incredible beta testers, who have made this process possible. We hit a lot of frustrating moments in the timeline and shared many exciting breakthroughs, and not a second of it has gone unnoticed. Thank you so much for your awesome help and support!

And finally, the technology section of this manual would be lacking if I did not mention Giancarlo, Acustica Audio, and the Nebula Plug-In. What we develop at CDSoundMaster using our own algo-based concept is intentionally designed to be a beautiful compliment to the amazing V.V.K.T. process that Giancarlo has created for the Nebula Plug-In. Anyone that thinks that one single process could ever do all things perfectly has not heard just how unique the development process can sound. What Giancarlo has created with Nebula is the best in its class, and we make every use of this in the form of program libraries and stand alone Acqua plug-ins like the Nice EQ and N-TEN-AT4. What we have developed in our unique process covers a different range of complexity and when used together, we believe that the customer is truly getting a complete picture of reality in analog, inside the DAW. We encourage everyone that has tried the VTM-M2 to also visit Acustica Audio and check out the amazing Nebula Plug-In in action. Once you have heard Nebula, you will understand what real analog eq's truly sound like!

Suggested Use

The VTM-M2 can be used as an extension of your Production technique, and in the same manner that a real tape machine is more than just a device used to capture sound neutrally, your decisions about how to use the plug-in determine your expression as the Producer and Engineer.

We believe that the absolute best way, and in the end the most cost-effective way for the customer, to achieve absolute realism in tape processing inside the DAW, is to provide the sound in 3 stages. Each stage has been carefully designed to serve the purpose of a bigger picture, but to be equally valuable on its own. If the entire range of sound is attempted using a single coded/algorithmic concept, it is certain to and destined to show its weaknesses in one form or another. But, if the absolute best technological processes are used in this process, then they can work together flawlessly to achieve amazing, natural results.

The first stage in the concept is the R2R collection. This provides the user with complex programs of real tape machines, using real tape stock and choices of tape speeds. This supplies the frequency changes, dynamic changes, and harmonic distortion specific to the machine in its every day form.

The second stage is called Tape Booster +, and it is created to generate the perceived boost in volume that comes directly from the tape's natural saturation character. By adding this to any degree desired, on top of the R2R machine selected, the user can push the harmonic distortion of the R2R machine harder without ever harming transients.

The third stage is the VTM-M2, providing realistic saturating tape compression. It is not randomized, it is not linear, and it is not static. When used on its own, it performs at a complexity and quality that easily can replace many favored mastering limiters and compressors, but also handles saturation to a remarkable level of realism. When used after a chosen R2R machine and TB+ instance, the user now has an incredible range of control over the specific qualities they want from the specific type of tape machine selected.

Whether you should decide to use the VTM-M2 on its own or in combination with one of the two stages mentioned above, we have intentionally designed it to where it can be used on multiple tracks side by side, and once again on bus groups, and yet again on the master 2 track, and even a final time in mastering.

We highly recommend that it be used before making any drastic processing decisions before hand. The realism of the VTM-M2 is best heard on clean, natural recorded tracks. It can perform heavy squashing and saturation when desired, but for the most dimensional results, it works the best when it is used with high quality recordings that have not been overly processed to begin with. You may find that when you become comfortable with its effect on your music, that you make decisions regarding other things like eq and compression much differently, and often with less necessity.

We recommend that multiple instances be balanced against each other for the most realistic results. This means that in a traditional all-analog studio, each track would have gone from a line channel or microphone preamp to a tape track, and then back to its mixer channel, then sent to a bus group for mixing, and out to a 2 track tape machine to print, and often to a second for mastering (often times the master was processed from the second print, adding an additional repetition!). Each time that tape was used, it was printed in a manner that made a musical statement and based upon a technical need. For cleaner signals, there was more hiss in the noise floor. So, hotter signals were typical, and at each stage the choice was made how hot was too hot, to where one heard unwanted distortion, balanced by not wanting to hear hiss.

The complex interaction of tapes tracks and a taped final mix is where so much of the analog "glue" comes from. This can be achieved by balancing input and output levels between instances of the VTM-M2 during tracking, mixing, or mastering, and best with all stages of the mixing process. This is done without a literal affect on the frequency spectrum. If R2R is used, you can also affect the frequencies in this process, adding that dimension to the process. This will usually lead to the implementation of other analog sounding eq devices for intentional analog compensation of changes to frequency while mixing.

You may want to use the VTM-M2 in 'Hi' mode for tracks that you wish to sound like they hit tape at a hotter signal, and use it moderately at 'Lo' for your main mixdown channels. Depending on how much processing has occurred, this is an artistic decision. You may also find that some input source seems to drive the machine harder than others. The actual sound of overloading the tape and the circuitry itself are included in the path, and at the most extreme internal and external signal levels it may sound unpleasant- intentionally! The electronics and tape itself can both start to get a little edgy and buzz at the most extreme settings, but they never go digital and start ruining transients. This is accurate to the real response of the machines tested and researched. Therefore, it is always a good idea to test the hottest levels of a track for overload before making final rendering decisions.

If you should find yourself using similar favorite settings over and over, then by all means set up your own rendering batch processes. But, we would recommend that each step be made as a creative choice and to use specific settings for each track choice. If you are not sure whether it will be right down the line, you can save your sessions one after another and choose the levels that work best.

When using more than one instance of the VTM-M2 feeding the signal one after another serially, consider that you are saturating and compressing the signal coming in. So, the second instance is already receiving the compression of the first. This balance can make for your very own signature sound and we highly recommend listening to the unique effect this can have on things like rhythm guitars and items that respond very critically to drive characteristics.

When used for drums, the harder that drums are hit to tape, the deeper the resonant sound of the instrument is heard, the rounder and fuller individual drums may sound, but you also are increasing the more average and sustained material up closer to the fast attack transients of the drums. A little goes a long way in making a natural taped drum sound. If you don't wish to lose the hard biting attack of drums, don't push the tape too hard.

For the most natural taped effect in a mix with compression, we recommend using tape first and then compression. Although there are benefits to using eq, tape, and compression in different orders, you will find that your plug-in compressor responds to the natural roundness of the tape sound with a more realistic response than when processing the digital source first. The VTM-M2 can truly raise the bar on the results of your other plug-ins as well!

We hope that you are as excited about the sound of the VTM-M2 plug-in as we are, and it is our sincere wish that your music and recordings are blessed by using this plug-in.

Please consider CDSoundMaster software in the future.

God Bless You.
Sincerely,
Michael
CDSoundMaster