

# TAIPEI STUDIO TAPE RECORDER

- CUSTOM SERIES -

## **THANK YOU!**

Thank you for purchasing our **TAIPEI STUDIO TAPE RECORDER** plugin. Designed and tested in the UK, this plugin combines modern advances in highly technical software production to bring you the ultimate ITB professional music production enhancing tool.

This plugin is an official third-party product for Acqua N4. This plugin uses a patented technology courtesy of Acustica Audio SRL Nebula ©, so please read the manual for installation, settings and usage.

## LONDON ACOUSTICS

We are a group of very passionate producers and musicians who met in London with a passion for recording gear and years of experience working in the pro-audio industry. Our mission is to offer cool new sound palettes for Nebula users and, of course, for ourselves!

There will be different series:

- **CLASSIC SERIES**, rare and/or hidden gems from the past.
- **CUSTOM SERIES**, sampling of our custom-made hardware prototypes/mods;

So stay tuned!



## FOREWORD

To transpose a tape machine to the digital domain, preserving the maximum expression available from its analogue sound, is extremely difficult, if not impossible. It's about catching a mutually interconnected chain of all possible variations of the analogue components. Keeping them all 100% faithful to the original can be described in literature as "catching the white whale". So, first of all, we decided to bypass both the wow and flutter and the tape noise sections of the machine.

These aspects, while catchy for some nostalgic producers (usually ones that never had a real tape machine to struggle with), are often not the most desirable features of tape sound. And anyway, on the wow and flutter side, there are already plenty of specialised algo effects (even some free ones) to place in series after Taipei.

Instead, what we have strongly focused on, is the recreation of that awesome original 'tapey' sound in order to get rid of the digital "coolness". We mean those unique magnetic (non-linear) dynamics, enriched with that fluid-but-never-harsh variable saturation, with some light distortion that usually comes through from the repro head. Everything mutually dependant on the frequencies and dynamics of the source. We started sampling a single machine, but due to having a little more time on our hands than usual, we decided to go 'beyond', creating instead the sound we had always dreamed of; the sound that was missing from our arsenal. Of course, we highly respected the nature of the original machine, but we found that the possibility to sculpt and personalise each single characteristic of the tape sound might be a novel and welcome feature.

We also added a noise reduction stage into the mix.

**TAIPEI STUDIO TAPE RECORDER** is a plugin made to deliver strong analogue character, in the form of a 16 track 2" tape machine for the tracks and a stereo track 1/4" tape machine for the master buss.

Back in the day, having a tape machine was the only professional way to record music. It was 'state-of-the art' then and it was not intended to sound like anything but the cleanest and truest gear available on the market. Then, only a few decades after, with the advent of the digital domain, with all those recall and A/B comparison possibilities, as well as the relative affordability, the idea of 'tapey' sound has taken on totally the opposite meaning: "tape" equals now "strong effect", often even deliberately degrading the signal.

Hence the need to create a personal vision for the matter. The long process of sampling, listening, testing and studying, helped the London Acoustics team to isolate all their preferred sections of each different tape machine and compose them back into a single plugin.

There are already some convincing algo products that mimic the kind of magnetic distortion produced naturally by tape machines, but honestly they are a little less convincing than true tape sound. There are also some very good alternatives focused on the impeccable and faithful "golden unit" sound, but although excellent in the sound they don't deliver any genuine tape distortion; the above-mentioned 'tapey' strong character.

With TAIPEI STUDIO TAPE RECORDER we hope to fill the gap, or at least to start our winding journey to the possibly most true and adjustable tape-in-the-box effect for the masses.

We hope you like our vision for this pretty unique plugin.

## FEATURES:

- 30, 15, 71/2 IPS speeds.
- Tape saturation and distortion: 2 different brands by the choice of 2 kinds of tape formulas.
- Low and High response fine-tuning controls.
- BIAS calibration control.
- Unique saturation-character and recording-quality calibration controls.
- IN/OUT peak VU meter leds and +6/-30dB level VU meters.

Available in VST, AU, AAX - 64 bit formats.





## INSTALLATION PROCEDURE

**1. To install and manage our products you need the Aquarius app:** <u>https://acustica-audio.com/pages/aquarius</u>

It's portable, light, and doesn't mess with your system.

Here a brief tutorial about Aquarius: <u>https://acusticaudio.freshdesk.com/support/solutions/articles/35000154363-get-ting-started-with-aquarius-application</u>

Just install it and login with your Acustica Audio credentials.

2. Before installing any third party library you need to install the engine N4 (commercial version) or N4 Player (that is free and fully functional). Not both, just one of them.

You'll find N4 or Player in Aquarius, here the brief tutorial: <u>https://acusticaudio.freshdesk.com/support/solutions/arti-cles/35000109347-how-to-install-n4-and-libraries-through-aquarius</u>

It's mandatory as a framework.

To make a quick comparison with a famous system, N4 is something like the Native Instruments Kontakt software of effects (and N4 Player is like the free Kontak Player) and our plugins are like the commercial sample libraries, with custom UI and coding. Just to figure out how the concept works.

**3. Once you installed N4**, after closing and reopening Aquarius, **you can install our plugins** in your preferred format, from the drop-down menu near product image, in your "PURCHASED" tab:



Where "N4 x64" is the library format that you will be able to load exclusively into the N4 plugin. If you choose instead "N4 VST2 x64", and so on, Aquarius will also install the standalone DLL to let you use the plugin without the need of launching N4 each time.

It may seem difficult, but once Aquarius and N4 are installed, all the future libraries installation will be quite straightforward. Why we chose to use N4 as a framework? Because it will be easier to update all our plugins in one step just updating the N4 engine. Very convenient if you own several London Acoustics products.

If you encounter problems following the previous steps, just contact us with an enquiry.

If you are having issues with Aquarius app and the authorisations system, please, open a ticket with your Acustica Audio personal-account in www.acustica-audio.com -> Login -> "Support" tab -> "Submit a new ticket" on the upper-right side of the page.

## **MORE INSTALLATION INFO**

- After purchase, you will need to install the Acustica Audio AQUARIUS application found via this link: <a href="http://www.acustica-audio.com/pages/aquarius">http://www.acustica-audio.com/pages/aquarius</a>
- This plugin should be loaded using N4, installed via the Acustica Audio AQUARIUS application.
- It is mandatory to first install either N4 Player (fully functional and completely free) or N4 (commercial version).
   Once your chosen version of N4 is installed, it is possible to proceed with the installation of 3rd party products such as TAIPEI STUDIO TAPE RECORDER.
- NOTE: Please do not install both N4 Player and N4 use only one of them to guarantee proper functionality of London Acoustics plugins.
- Also make sure that you use an up-to-date version of N4 Player or N4.
- The legacy N4 FREE and the current N4 Player cannot coexist.

## INSTALLATION F.A.Q.

Q: Why is N4 Player or N4 required to run an ACQUA
 3rd party plugin?

A: Because of the technology back-end, and because in this way it will be easier to buy, install, register the plugin, and update its engine in a matter of seconds, directly from the technology provider. This is the best way to protect and guarantee your investment.

#### Aquarius for macOS or Windows & Aquarius Web.

Easily manage your studio.



Aquarius is a free assistant application for macOS & Windows operating systems that offers a quick and easy way to download, install, update and authorize your products. For more information about trial products and the installation process please refer to this page.

NEW! Aquarius Web is now available and makes it easier and faster than ever to manage your authorization slots and machines, directly from your browser. Please note that the desktop application is still needed to download the products.

Aquarius for macOS
 Aquarius for Windows
 Aquarius Web

\*NOTES:

- For more details about Aquarius read the user manual

Having a reliable fast internet connection is mandatory.

- Acustica Audio cannot be held responsible for any loss or damage, errors or omissions arising directly or indirectly from using this experimental version of Aquarius. All product names and trademarks are the property of their respective owners and are hereby acknowledged.
- Acustica Audio reserves the right to change the features and specifications of this application without notice or obligation

An older version of Aquarius for macOS and Windows is still available should you encounter any problems using the current version



Positions from 7 to 3 o'clock are the recommended range: NOTE: with tracks recorded with gain exceeding -18dBFS, loud spikes may occur if TRIM is set over the zero level. Please set your monitors & headphones to a low volume while tweaking.

Gain staging al -18dBFS all your tracks in the mix, before starting to insert our plugins is recommended. Also checking with a VU meter the incoming signal sum into the mix buss, and in case trim it to -18dBFS, is highly recommended.

- Mainly Grey light: under-calibrated level . with, already working but quite clean THD Mainly Green light: optimal level, with .
- the "factory" sweetest THD Mainly **Red light:** over-calibrat with subtle preamp distortion. d light: over-calibrated level, .

If the PRE SATURATION knob at full cannot reach intermittent peaks of green, insert a gain plugin before Taipei in order to reach a

better margin It's ok to overdo it a little, having short-intermittent red-peaks, according to personal taste, just try to avoid the full end-scale constant red light in order

to keep a reasonable signal-integrity

frequency-response. (from a vintage "dark" sound to a "hi-fi" clearer sound)

> 0

00000

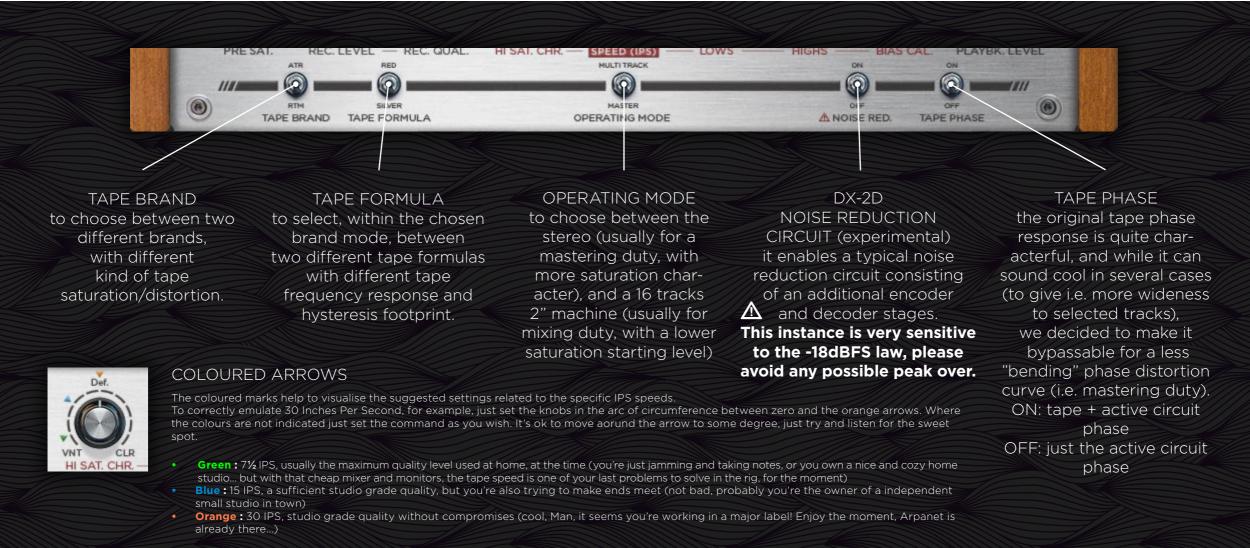
71/2 IPS: Lowest quality (suitable as lo-fi saturation effect)

the machine

If +6dB are not enough, just place a gain staging plugin after TAIPEI.

## TAIPEI LITE

it consists of a slightly different version for those who have a less recent computer. But it can also be a nice way to experiment because it sounds different even still 'tapey'. Don't underrate it because of its "lite"name.



## **TIPS:**

- We still suggest that you calibrate your digital levels to the classic Acustica Audio recommended reference OVU = -18dbFS to avoid unwanted distortion, especially for low frequencies, although TAIPEI can work very well, normally, until the +6dBVU!
- In the olden days we were all used to recording our tracks as "hot" as possible to maximize the signal-to-noise ratio. Now, in the digital domain, where we have easy access to very high-end settings like 24/32bit 48/96kHz, there is no point to push the track gain up to OVU (-18dBFS), because the source STN ratio is significantly worse than even our crappiest DAW system. Therefore, recording hot won't prove your tracks. On the contrary, it will make it harder to mix them with the right amount of headroom. A sensible headroom margin is essential when tracking, to avoid the risk of clipping. A similar margin is also suggested when mixing, to avoid overloading the mix bus and stressing the plug-ins out of their programmed "sweet spot" zone (even with floating-point calculations).
- Due the quite-strong resources-usage nature of this plugin, we suggest extensively treat your tracks with the "bounce to a new track" and the "freeze" of your DAW.

## USAGE WORKFLOW EXAMPLE



TIP: when the saturation is raised over the zero, listen carefully to the result, possibly with headphones, in order to avoid possible crackles, especially in the fast transient and/or deep bass parts.

1. Set the pre-saturation TRIM to GREEN light, referring to the IN LED VU meter.



#### **OPERATING MODE:**

characterful THD.

-10

HIGHS

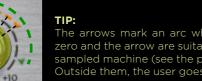
MULTITRACK: good for each single track into a mix, with a light THD. MASTER: better suitable for a master buss, with a more

2. Chose the preferred OPERATING MODE



#### 3. Set the desired speed IPS.

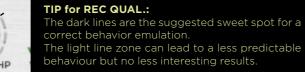




sampled machine (see the picture on the left). Outside them, the user goes beyond the real thing.

4. As a good starting point, adjust the LOWS and HIGHS according to the chosen speed (matching the colours).





5. As a good starting point, set the HI SATURATION CHARACTER according to the chosen tape speed. Adjust then the RECORDING QUALITY according with your tape bass-distortion expectation: "expensive" sub harmonics clockwise, "cheap" crank-harmonics counterclockwise.



TIP: Usually the "zero" setting is well calibrated for a clean tape signal, in an already well-done gain-staged project, but for creative duties the user can push it harder in order to obtain some nice tape distortion. Just avoid, in relation between this control and REC QUAL., to make the sound unnaturally too compressed for a tape.

6. Tune the REC LEVEL knob until you will reach the preferred level of tape-saturation (better to tune this parameter listening to the loudest part of your track).



WIKI: The term Bias refers to an ultrasonic tone that is applied to improve the quality of recordings to tape. This tone is inaudible and helps to push low signals out of the nonlinear response of tape into the linear zone of tape's transfer function. Basically it helps to overcome problems resulting from the magnetic tape's natural hysteresis effect.

7. If needed just try to modify the BIAS CALIBRATION knob back and forth, to find your sound.



#### TAPE FORMULA:

**RED:** medium tape saturation and slight distortion, low tape-compression release. SILVER: high tape saturation and hotter distortion, high tape-compression release.

8. Try to switch the TAPE BRAND and the relative TAPE FORMULA control on/off and choose.



#### This NOISE REDUCTION stage is very sensitive to the input level, so if you are intending to use it, please, set the incoming signal strictly following the OVU= -18dBFS (peak) rule.

The arrows mark an arc where any position in between 9. Try to insert the DX-2D NOISE REDUCTION circuit, sometimes it can be a nice addition, sometimes less useful. Just try and listen for the sweet spot.



10. If you're looking for the true phase response of the tape, switch on the TAPE PHASE control and check the result. This parameter is very effective to the sound.

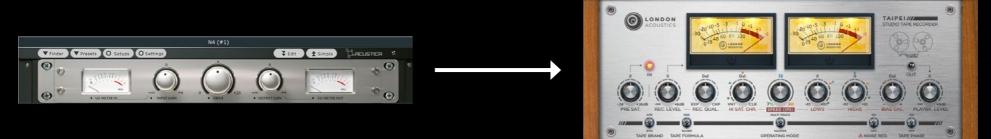


11. Compensate the output volume with the PLAYBACK LEVEL knob according to the OUT LED, that should never become persistently red.

CHECK ALSO IN OUR YOUTUBE CHANNEL FOR MORE VIDEO TUTORIALS AND TIPS: https://www.youtube.com/channel/UC7Un2EtWerbyNDjW\_9MVfSA

## SOME WORDS ABOUT THE INTEGRATION OF LONDON ACOUSTICS TAIPEI AND OTHER TAPE "REELS" :

Having TAIPEI doesn't overlap with other tape emulation plugins or libraries. Here some suggestions on how to use them together:



Place the tape "reel" as first the instance in series with TAIPEL



In TAIPEI select the RTM tape brand (the more linear one).



In TAIPEI, turn the PRE SAT. all down (full counterclockwise) in order to minimise the RTM tape fingerprint.

Then set TAIPEI STUDIO TAPE RECORDER as you prefer.

However, try to be consistent with the chosen tape "reel" emulation and your settings in TAIPEI,

so if the emulation in tape is a 7.5IPS model don't expect a pristine 30IPS sound out from TAIPEI.

In this application just pay attention that you will now have a sum of 2 "tape" stages (tape "reel" and TAIPEI) to manage, so don't be too "hot" with

both of them simultaneously. For this exact reason the PRE SAT. at -24dB is recommended.

In this way you will have a kind of universal tape emulation, with all the "reels" you own and all the personalisation and character of TAIPEI.

## **ABOUT TAPE NOISE and WOW & FLUTTER**

There are many paid or free tape emulations that feature WOW and FLUTTER, so just place them in series (setting the rest of that plugin controls at minimum, or better switched off when possible) with TAIPEI in order to emulate this effect.

Also, if you really need some tape noise, just create another track and insert a pink noise generator with a very low volume and possibly with a sidechain to the main track. Or, of course, use a real-tape sampled noise-loop.



## GENERAL F.A.Q. ABOUT TAIPEI:

## THE PLUGINS SEEM TO BE HEAVIER ON CPU THAN YOUR PRODUCTS AVERAGE.

TAIPEI captures several tape behaviours and allows the user to tweak all those sound aspects. Due this fact, the resulting sound quality is extremely close to the real machine, but this also usually means that this attention to details has its costs in terms of resource usage.
We strongly suggest then the practice of creating a separate pre-mixing project, where, carefully listening in solo, track to track, the user will be able to freeze/bounce any preferred tape, preamp and even some preparatory equalisers.
This operation will help to spare a lot of CPU/RAM resources and also will allow to print the aforementioned treatments in the highest available quality, choosing the 96kHz sample rate for this stage, independently from the main mixing-project frequency-value. Zabukowski's NebulaMan, for this precise task, is highly recommended: <a href="https://zabukowski.com/software/?page\_id=26">https://zabukowski.com/software/?page\_id=26</a>

# WHY THE COLOURED ARROWS AND NOT USUAL PRESETS?

Currently the N4 Acqua libraries are not fully implemented to properly store a preset independently from the working sample rate. For this reason, as a simple solution we marked the suggested settings with a visual method,

that is basically the same used for the real hardware recall.

It was also interesting to note that this way the user is invited to think actively and to experiment.

Very often, infact, the presence of presets in this kind of effects can cause "addiction" and make the usually boring, mechanical choices.

# IT SEEMS THERE ARE TOO MANY PARAMETERS TO SET EACH TIME!

At first glance TAIPEI appears to have a quite long learning curve, but it's not.

In a few minutes of tweaking and testing on your own tracks everything will become quite clear and not so difficult to remember. At any time you can come back and refer to this manual for the workflow explanation (ref. pag.8).

Anyway we placed the coloured arrow-markers that allow the user to set the plugin straight at its standard condition, ready to be used. For the average of tracks it should be already in a good-sounding setting, and only if you have in mind a certain kind of different sound, or you feel the need to experiment, you are free to tweak every parameter.

In the end, having a real R2R tape machine (placing reels, loading tape, tuning the bias, demagnetizing every time, etc.) is not easier and faster than loading and tweaking TAIPEI ;)

Also when you will find your personal sound you are always allowed to save the preset in your DAW for future easy and fast recall.

## **USEFUL LINKS:**

LONDON ACOUSTICS OFFICIAL WEBSITE - <u>www.londonacoustics.com</u> | DIRECT CONTACTS - <u>info@londonacoustics.com</u>

LONDON ACOUSTICS ON FACEBOOK - <u>www.facebook.com/londonacoustics</u>

• LONDON ACOUSTICS ON YOUTUBE - <u>https://www.youtube.com/channel/UC7Un2EtWerbyNDjW\_9MVfSA/featured</u>

HOW TO INSTALL N4 and PLUGINS - <a href="https://acusticaudio.freshdesk.com/support/solutions/articles/35000109347-how-to-install-n4-and-li-braries-through-aquarius">https://acusticaudio.freshdesk.com/support/solutions/articles/35000109347-how-to-install-n4-and-li-braries-through-aquarius</a>

• TECHNICAL SUPPORT/HELP-DESK/CUSTOMER CARE - <u>www.acustica-audio.com/store/support</u>

	WINDOWS			
			OSX	
	Minimum	Recommended	Minimum	Recommended
OS	Windows 10	Windows 10	OSX 10.13	OSX 10.15
CPU	Quad Core	Latest multi- core CPU	Quad Core	Latest multi- core CPU
RAM	4 GB	16 to 128 GB	4 GB	16 to 128 GB
HDD/SDD	100 Gb	1 Tb	100 Gb	1 Tb
Screen Resolution	1024x768	1920x1080	1024x768	1920x1080
Audio Host	VST2/AAX 64 bits	VST2/AAX 64 bits	VST2/AAX/AU 64 bits	VST2/AAX/AU 64 bits
N4 version	The latest	The latest	The latest	The latest

#### SYSTEM REQUIREMENTS

- Please, it's highly recommended to **TRY BEFORE BUY!**
- Acustica Audio Aquarius application is mandatory.
- An **Internet connection** is mandatory in order to install and authorize the software. TCP/ UDP ports: 8080 and 443 must be open. Use a reliable and fast connection for download.
- SSD storage devices and 32Gb of RAM are recommended for a fast control response.
- The free trial period is 30 days from the installation.
- Case sensitive systems are not supported.
- The CPU speed is more important than the CPU cores number.
- Each format requires **three times the space of the product size** in order to download and decompress the libraries.
- **Trial settings are not automatically transferred** to the commercial version. In order to transfer your settings, please, take note and transfer them manually.
- For Apple Silicon ARM and AMD processors, please, check the compatibility with the trial before buy.
- Genuine Apple devices or valid volume ID on Windows OS are mandatory.
- Modern computers are powerful enough to run many plugins at once. However, AA technology requires on average more resources than algorithm based software. Please, consider optimizing your system to work with high CPU loads and low audio latency.

**ABOUT DYNAMIC SAMPLERATE CHANGES:** N4 (libraries or AFP loaded into N4) and/or N4 libraries converted to a standard plug-in via Aquarius Setups are using UAE which <u>does not support online sample rate changes</u>.

If you are changing the DAW project sample rate online, please save, close and reopen it in order to let N4 to load the correct sample rate library.

# APPENDIX 1: KNOWN BUGS and INCOMPATIBILITIES in the TAIPEI update A007 [A007 - 1 OCtober 2021]

All N4 3rd party Acqua plugins in Pro Tool with the standalone AAX version: in order to avoid possible unwanted "linked knobs" behaviour in the plugin's UI, due an incompatibility with the N4 engine and PT in its "setups" format, please, refrain to use the standalone "N4[plugin name].AAX", but use instead the "N4.AAX" plugin, and load our Acquas as libraries into N4. This temporary workaround takes some more seconds and actions, but is effective. There is no specific schedule on a bug fix from Acustica Audio in conjunction with Avid, at the moment.

Also there are some reports of "break delay compensation" once TAIPEI is bypassed in PT. This behaviour is still under investigation.

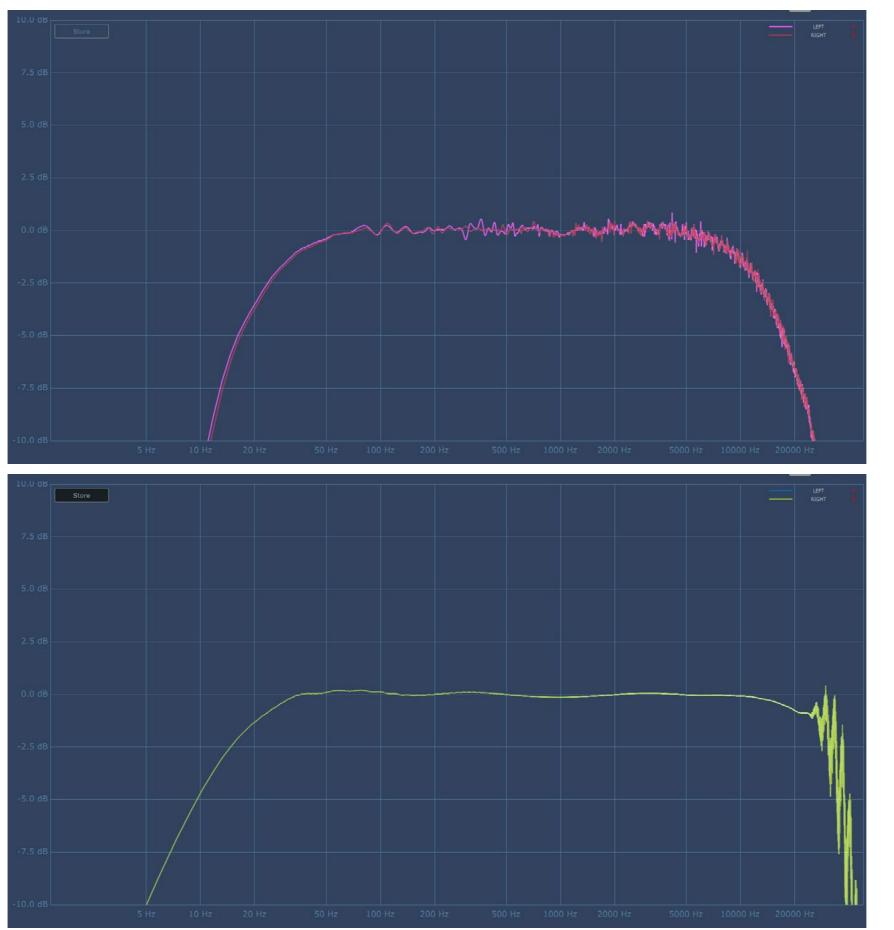
- Apple ARM M1 and Rosetta 2 mode: according to Acustica Audio, at the moment (October 2021) the N4 engine is still not officially compatible with the M1 CPU and the Rosetta 2 mode IOS. Anyway, recommendation is always using an application with a specific build for Silicon computers. Please test your system with our trial before buying.
- According to Acustica Audio there will be the next N4 engine update in 2022 with M1 compatibility.
- All N4 3rd party Acqua plugins in Reaper with N4 full: according to Acustica Audio, "N4 full" available at the moment [R031 14 Oct 2020] doesn't implement the dynamic sample-rate change. So, due the way of the plugins initialisation structure in Reaper, all the N4 Acqua plugins, once opened, suffer from a frequency displacement. In order to avoid this, please:
  - load the N4 Acqua plugin
  - press "toggle selected FX offline" (right click on the plugin instance, and select)
  - then, in the similar way, press "bring effect online" button
  - a way to avoid doing this every time is to park an offline version of our plugin in a dummy track, and duplicate the instance in your tracks every time is needed.

Note that N4 Player [OO20 - 12 August 2021] is more recent and already implements the online sample-rate change, so it doesn't suffer from this problem, so if you are using N4 Player you don't have to do this workaround. According to Acustica Audio the "N4 full" engine will be updated to the full implementation in 2022.

• **TAIPEI in Logic Pro:** there are some reports of random buttons behaviours in Logic Pro, if you experience this too, please, open a ticket form you Acustica Audio personal account. The phenomenon is still under investigation. Please test your system with our trial before buying.

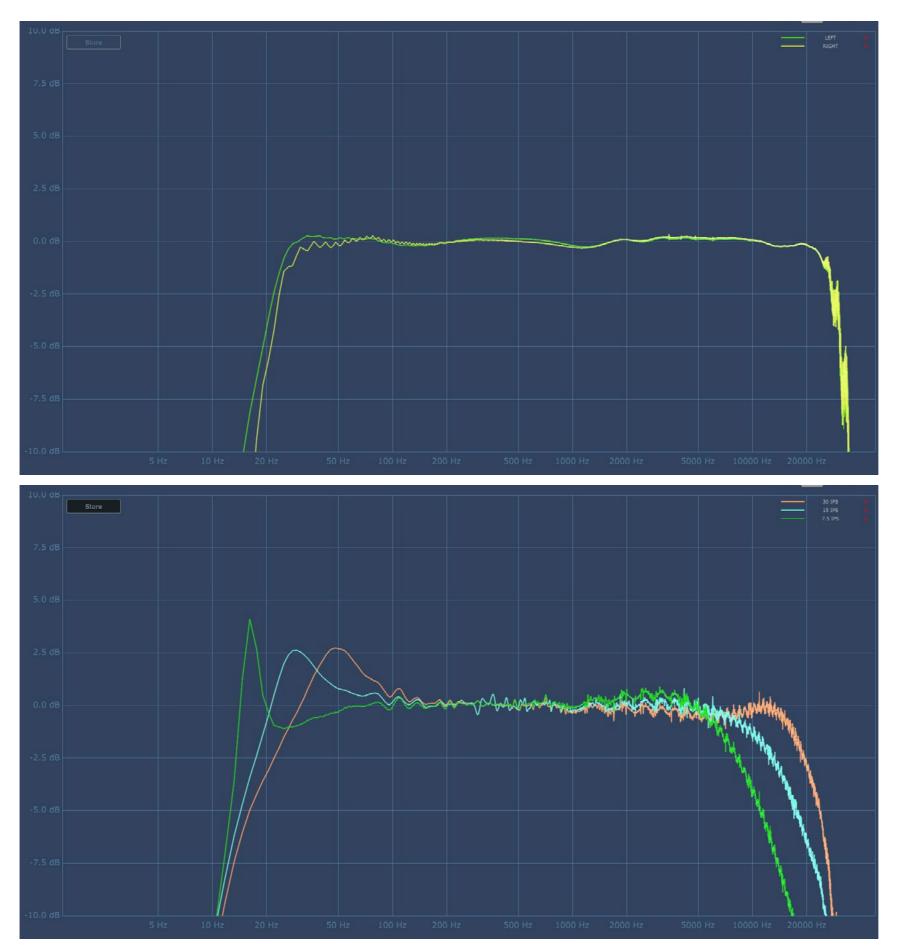
**NB.** at the time you're reading this page some points can be already fixed, then please, keep you always informed in our website, our gearspace official threads, in the Acustica Audio website and/or subscribing in our newsletter. Thanks.







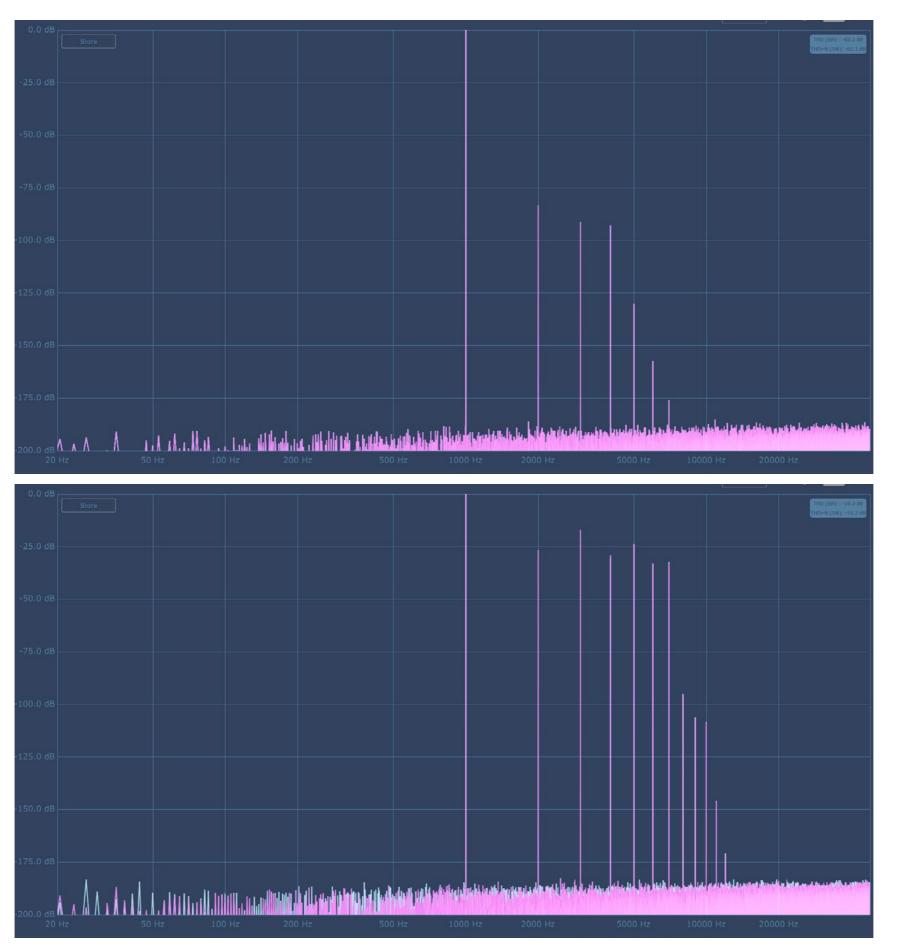
TAIPEI TAPE magnitude RTM



# TAIPEI TAPE magnitude ENCODER/DECODER ENGAGED + RTM

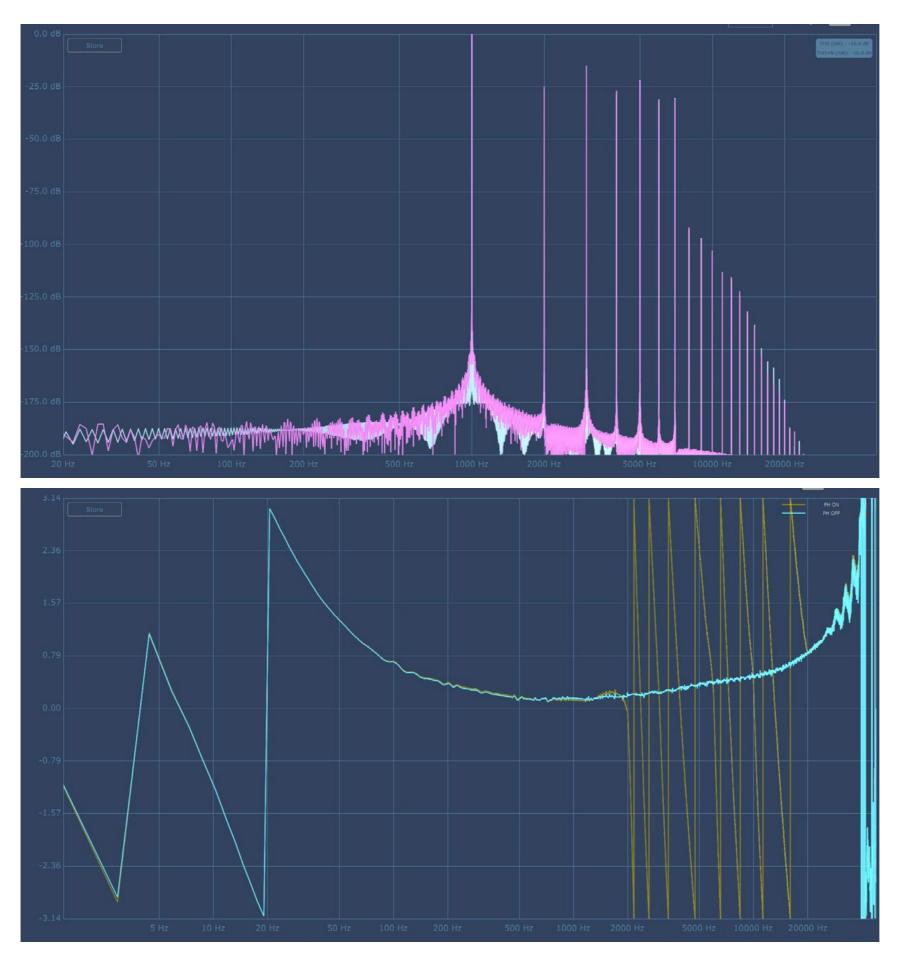
TAIPEI TAPE IPS MAGNITUDES ORANGE: 30 IPS BLUE: 15 IPS GREEN: 7.5 IPS

REMEMBER: the user can adapt the curves in any preferred position!



# TAIPEI TAPE THD MULTITRACK

TAIPEI TAPE THD MASTER



## TAIPEI TAPE THD MASTER + ENC/DEC

TAIPEI TAPE PHASE DISTORTION OCHER: PH ON BLUE: PH OFF

