



FiDef JENtwo

User Manual

MAAT Labs

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Installation & Setup

When preparing for installation of your MAAT FiDef JENtwo, we recommend that you quit all applications prior to proceeding. Also, after downloading the installer and prior to installation, let any anti-malware measures you may have running scan the installer. Then, temporarily disable all anti-malware measures once scanning is complete.

To install, simply double click on the downloaded Installer for your particular operating system. The installation process will guide you through the install procedure. If you have an older OS version, restarting your host may be required. Don't forget to reenable anti-malware measures or simply restart your host.

Licensing

MAAT software is licensed through our dongle-free, cloud-based license control framework. Cloud-based implies a connection to the public Internet, which you will need for at least one computer under your control. That net-connected computer does not have to be the host machine on which you want to run MAAT software. It can be any computer to which you have access; see Offline Activation below.

Basically, you can activate a license on any machine and that activation "sticks" or stays active for 30 days. You can have two simultaneous activations on two different machines. If you want to move the license from one machine to another, you must "retire" or deactivate one of your two activations.

Online Activation

There are two ways to activate a license; either by opening the product directly, or by using License Central which is our global licensing utility installed with every MAAT product. If the product is a plug-in, you can open an instance to start the activation process. If the product is stand-alone or "native," then you can simply launch the product. With License Central, you can manage all your licenses within one unified interface.

In-Product Activation

To license your MAAT purchase directly within the product, instantiate an example in your preferred plug-in host. When licensing, we recommend you open a new session in your DAW just for this purpose.



Figure 1: The initial Activation dialog

Instantiate the plug-in or, if an app, launch the product. Wait for the user interface to open, then click on the Preferences' gear icon. Click on the Activate License button. Once the Activation dialog appears, paste or type in your Product Key supplied at the time of purchase. Then click on Activate Online and follow the prompts. Once your product is licensed on a particular host, clicking on the Deactivate Online button will deactivate your license on that machine. Repeat elsewhere to reactivate.

⚡ NOTE: THE ONLINE PROCESS REQUIRES LIVE INTERNET TO THE HOST MACHINE. YOU MUST HAVE AN ACTIVE INTERNET CONNECTION FOR ACTIVATION.

License Central Activation

To activate any of your MAAT products or several at once, use License Central...see below.

Offline Activation

If, for security reasons you have:

- an offline host computer not connected to the Internet
- or you plan on working without a reliable Internet connection

...it is best to go with an offline license.

This will license your MAAT product without the need to periodically contact our licensing server. If you anticipate working without the internet for more than several months at a time or, for security purposes, your studio machine is "air gapped" and has no Internet, take a moment to surrender your online license, and replace it with an offline version.

⚡ NOTE: AN OFFLINE LICENSE DOES NEED TO BE EXPLICITLY RENEWED ONCE A YEAR.

To prepare for offline activation, you will need:

1. Your Product Key!
2. Some method to move your License Confirmation file to the offline host machine.

You will need your Product Key that was supplied to you via e-mail when you purchased your MAAT product. That second requirement can be accomplished in any number of ways, but a USB flash drive is often readily available and most convenient.

The offline activation process starts with generating a License Request, with a ".maatr" file extension, which is submitted on-line to our server or via e-mail to MAAT Support <support@maatinc.zohodesk.com>. A License Confirmation file, with a ".maatc" extension, will be returned to you, which will activate your product.

To proceed, click on the Activate/Deactivate Offline button, and follow the prompts. In a year's time, 365 days from the date the maatr file was created, a full offline license must be renewed using the same maatr/maatc interchange method.

License Central

License Central, located in MAAT's Shared directory, is a free utility that validates, repairs and logs your MAAT licenses. It also displays what MAAT products you have installed and assists in downloading both updates and demos. License Central is installed alongside all MAAT products.

License Central lists all of our products, and shows you:

- If a product is installed and what licenses you have [CLOUD, SUBSCRIPTION, TRIAL, OFFLINE]
- What versions are installed, and which version installers are available for download

It also provides:

- A one-click download of an update or a demo
- A button to activate or deactivate any of your licenses

- A copyable list of all your Product Keys
- One-click generation of the MAAT diagnostic report

In Use

When you launch License Central, it scans your host computer and then attempts to match up each product found with a Product Key on our license server. That scanning happens in real time, and the process is shown as a progress bar. When quitting, this process happens in reverse.

Once all the licenses are validated, a list on the left displays all MAAT products, including License Central. Products that are not installed are grayed out, and installed products are displayed in high contrast. To the right of each product entry is a check mark, which indicates that the product is licensed.

Selecting a product entry displays information about the installed version and if an update is available for download.

Controls

There are two persistent buttons along the top. At upper left is Check for Updates, which refreshes the list of installed products, and pings our server again for currently available versions to download. It also recreates your Product Key list.

At upper right, the Activate/Deactivate button brings up the familiar blue and orange MAAT license window, allowing you to deactivate or return your license to the Cloud. If you have requested a 365 day Offline license, use the Create License Request function in the MAAT license window, and have received your “.maatc” confirmation file, you can take your license offline. Finally, you can also paste in a Product Key to activate a new license.

Note: 365 day Offline licenses require a license confirmation file as supplied by MAAT’s support department.

If any product is out of date, a third Download Update button will appear when that product is selected. This button is an express method for updating your MAAT products.

At bottom left of the License Central window is an Auto-Refresh check box, which is selected by default. Deselecting that will prevent License Central from frequently scanning your host for changes including new installs. It starts a scan every 3 seconds, waiting for completion of that scan, then begins a new 3 second countdown before starting the next scan. If you find that License Central is interrupting you workflow while scanning, then disable Auto-Refresh.

Preferences

In License Central, the Preferences’ gear icon brings up the Preferences window with four tabs.

Paths

For those who set up alternate directories for the management of their plug-ins in a DAW, two alternate plug-in paths can be defined. These directories will be also included when License Central searches.

Keys

This tab lists all of your Product Keys that are known to our license server. Please take a moment to copy all of your Product Keys, paste them into a text or word processor file, and print out a hard copy. Your Product Keys are your proof of purchase and, without them, your purchase will not work and we cannot provide product support.

Troubleshooting

The Troubleshooting tab has one button, which generates a Diagnostics Report. This report, automatically written to the Desktop, gathers useful, non-personal information about your machine’s state that our support team can use to diagnose any problems.

Info

As with all our products, the Info tab lists credits, copyright information, and the version number you are running.

Introduction

It’s been a long journey to bring this incarnation of FidelityQuest’s original FiDef™ to life. Together, we have recreated this modern, 64 bit version for even better fidelity, plus compatibility with all modern DAWs. We also use our driverless, MAAT cloud services to license your purchase anywhere, even if you’re “off the grid.” We at FidelityQuest and MAAT have crafted a tool to help make your product more compelling and versatile.

Features

FiDef JENTwo takes the goal of maximum engagement to a whole new level. With multiple presets, we’ve taken the complexity out of setting the well over two dozen parameters hiding “under the hood.” Five presets, suited to a wide variety of genres and material, are optimized with a high resolution implementation of the original FiDef process.

- Sample rates up to 384 kHz, perfectly suitable for high resolution DXD, DSD, game audio, sound-for-picture production and post
- New, lower perceived amplitude preset especially for wide dynamic range content
- All internal calculations are in 64 bit double floating-point accuracy for extremely low distortion

Applications

- Recording studios: tracking, mixing and mastering
- HRA production and post
- High sample rate game audio production and post
- Broadcast production and post
- Sound reinforcement: intelligibility improvement, enhanced audience engagement and participation
- Sound design and EFX
- Spoken word restoration and forensic audio retrieval
- Subjective transmission loss correction

The Interface

FiDef JENtwo's user interface (UI) is about as simple as it gets. For a pro user in a dimly lit room who's face is directed toward a display all day, the UI is designed for speed and minimum visual fatigue.

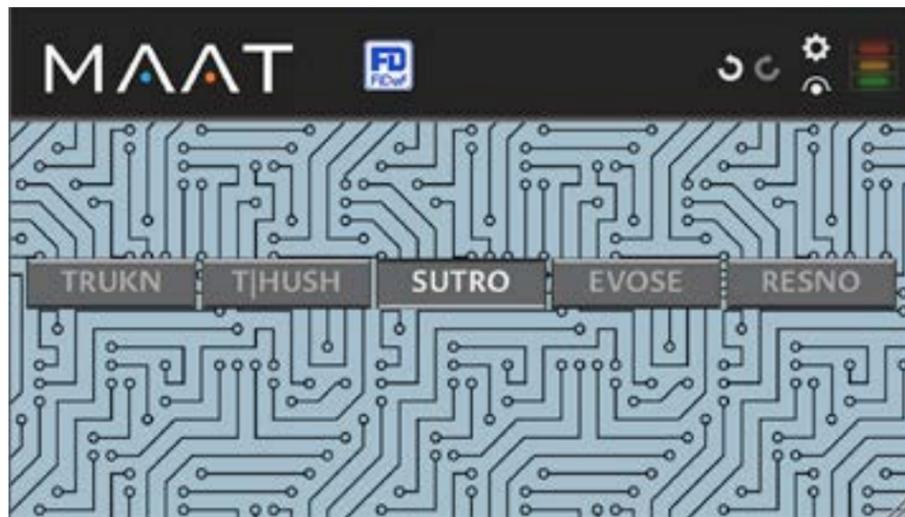


Figura 3: Interfaz de usuario de FiDef JENtwo

Overview

The Process

FiDef® by FideQuest (www.fidef.com) is a very low amplitude, psychoacoustic stimulus designed specifically for audio engineers. FiDef can be thought of as “dither for your brain.” It makes a receptive brain relax and pay closer attention to an incoming audio stimulus. In brain physiology laboratory tests using functional neuroimaging techniques, FiDef has proven to excite brain activity related to perception and attention, and to enhance the subjective processes of listening and engagement.

Because FiDef is a psychoacoustic process, it may not have an impact if the listener resists its charms. We're talking full-on Jedi mind tricks, folks. If you are like most of us audio engineers, you are very much a “left-brain” person and discount what you cannot understand or explain. You are used to dissecting what you hear, you simply can't help it. Unfortunately, your higher level brain function will suppress and override your unconscious brain, and FiDef acts subconsciously. Result? If you try too hard to hear it, you probably won't! Though this is in direct opposition to coping with the “impostor syndrome” you've worked so hard to overcome, there will be no noticeable effect if you “listen hard.” That is; analytically.

However, your clients, your spouse and most likely your second engineer will notice “something different” about FiDef'd content. That something is usually a subtle and positive improvement in engagement and enjoyment. Most folks don't listen analytically, they listen casually and, in the case of music or dialog, for entertainment and enjoyment. That's a right-brain thing, and that's why some of us call our clients “creatives.” Their mindset is not, “Hmmm, I hear too much top end above 10.5k.” — It's more like, “That synth pad is sooo shiny and purple” or “That vocal is dreamy, it sounds like they're singing right to me.”

The Effect

Cast aside your expectation bias and simply try FiDef. See if you hear an improvement...you may, or may not. Better yet, give your customer two almost identical versions of a song, the only difference being FiDef or no FiDef, and let them decide.

Introduction

Once upon a time, an audio engineer wondered why recorded music never sounded as engaging as listening live and in person. So, with the help of a physicist colleague, they spent several years digging around in the nitty gritty of digital audio. What they found was something novel and unexpected; an apparent channel in the human auditory system that responds to a specially formulated signal. This signal cannot be heard consciously, it can only be felt. Once they had a working prototype, they enlisted a music and brain science expert to test their creation. Sure enough, test subjects were consciously unaware of the presence of FiDef, but their brains showed a significant increase in stimulation and attentiveness. Thus, FiDef was born.

What's So Special

There is literally only one FiDef. Unlike “exciters,” equalizers, Schrod-erizers, M/S processors, multiband dynamics and “unmask” processors and other old skool effects, Fidef is new...and quite different. It's a true psychoacoustic processor, creating a low amplitude correlated noise customized for:

- the content being fed to it
- the human brain and its cognitive apparatus

FiDef works on the listener, below their level of consciousness. It elicits an attentive response, enabling the user to shift focus to the audio they are hearing.

Remember, FiDef is not like any other DSP or analog outboard gear. It works on your subconscious and, for you as an engineer or producer, requires a new way of critical listening...a more passive approach that lets your lower level brain activity inform your higher level, conscious experience.

FiDef is the only concentrated carrier of deep emotional engagement available to you in your work. It requires a slightly new mindset on your part to best utilize its qualities. As you use FiDef over time, you'll naturally arrive at a personal approach that suits your particular "head space" and way of working.

While the awareness of the FiDef effect can be more or less dependent on the listener's individual internal state and disposition, brain research has shown that FiDef measurably increases awareness and appreciation of audio content even when the listener is not aware of their own reaction! So, the long held approach to objective assessment, A/B'ing between original and processed versions, is a less useful tool with FiDef than with quotidian EQ, dynamics or other old skool processing mentioned above.

In Use

Despite its complex underlying technology, FiDef is either on or off. There are no adjustments, only presets. A lot is happening "under the hood," but there are no other user controls.

✦ NOTE: THE KEYBOARD MAPPING IN PLUG-IN HOSTS VARIES WIDELY. YOUR PARTICULAR DAW AND CONFIGURATION MAY NOT SUPPORT THE SHORTCUTS BUILT INTO FiDEF JENtwo.

Guidance

Some usage guidelines are in order...From us artery-hardened audio craftspeople, we suggest you try turning off your monkey brain. We know, it's very difficult to do and not something most of us are practiced at; quite the opposite actually. When first listening with FiDef enabled, try simply turning around 180° from your normal listening position and take in the content without trying to use your eyes or mentally dissect it. Close your eyes so you're not looking at your DAW, desk or displays... just chill. FiDef does require about 30 seconds to penetrate your wetware and fully activate your brain, so typical quick A/B'ing simply will not work. Extend your uninterrupted listening for full effect.

NOTE: In keeping with FideliQuest's original design, we have had to lock out FiDef processing at DXD and higher rates in the initial release.

We are working with FideliQuest to add FiDef support up to 384k, so version 2.0 will be fully aligned with our standards. Over time, we will be adding more FiDef capabilities as well. So, stay tuned!

FiDef works best on stems or entire mixes. Creativity is good, so go ahead and try it wherever it seems appropriate. The FiDef process can be applied to individual tracks or instruments prior to mixing in order to modify or highlight that material. It can also be applied to an entire mix during mixing or mastering. Individually FiDef'd elements can be mixed, then the entire mix can also be FiDef'd with another setting. In the final analysis, FiDef is low amplitude specially correlated noise, as you'll discover when you perform a null test. (I know, you are compelled to do it!) It can be applied multiple time and/or at multiple stages, and it will simply increase the noise floor. So, do be thoughtful before applying it.

FiDef usually "survives" modern, high bit rate lossy encoding, so go ahead and create high quality lossy children from a FiDef'd parent. That said, please do your own tests to get a sense of its abilities. Also, post-processing may diminish its impact, though EQ should not degrade the effect. Again, it's manifest in the final product as noise, so, most DSP will not degrade FiDef too much. While on the subject of noise, redithering will not interfere with the FiDef signal. While dither is applied only to the LSBs or Least Significant Bits, the FiDef signal is much louder, in the range of -40 to -60dBFS.

FiDef JENtwo adds that eldritch, intangible quality that many people conflate with thermionic electronics. Wrap your head around that! Whether you call them valves, glow-FETs or hollow state, tubes seem to impart a special quality to audio that passes through them. Others bestow a similar "magic" on analog tape, with its correlated modulation noise. We are not talking about distortion, bandpass restrictions or slew rate limiting, we mean something intrinsic and apart from analog design choices. In fact, that's how FiDef was discovered; as a vestigial signal common to all analog recordings. The exceptional sound quality created by MAAT's engineering rigor, when combined with the indescribable deliciousness of FiDef, raises the whole to an even higher level of beauty and performance. One of our FiDef fans, a multi-grammy Award-winning mastering engineer, told us that, "... (FiDef) is like audio crack. I need more of this!"

NOTE: FiDef is not a panacea. It does not and will not work on all program material. If you hear unpleasant sounds with FiDef engaged, try disabling it as a check.

The Profiles

The FiDef settings consist of five Profiles or presets. Profiles can be selected from the main radio button group. Once a Profile is selected, you can change the Profile by direct selection or with your keyboard's left/right arrow keys.

1. TRUKN

Keep on truckin' with subtle sweetness and energy...This is the standard Profile, designed to make any mix have the juicy nuance your client is hoping for. If you're going to use FiDef, you can't go wrong with this setting.

2. TRUKN HUSH

This is a low amplitude variation on the standard Profile, designed for when the FiDef signal noticeably intrudes on or becomes audibly separate from the material. Try it for wide dynamic range content or for material that features isolated instruments or voice.

3. SUTRO

Spread it on...This Profile is designed to draw your attention to frequencies above 8 kHz. The result is a widening of the overall sound stage and an accentuation of transient detail. Nice on some classical material to provide a touch of air.

4. RESNO

In the air tonight...This Profile draws your attention to the upper mid frequencies. This can lend a throaty qualities to vocals, add harmonic overtones to other instruments, and thicken things up overall. Nice on rock.

5. EVOSE

Warm forwardness...This Profile builds on the fundamentals of RESNO and then turns it up to 11. EVOSE can be effective on mixes that have an aggressive "smile EQ" aspect. It can lend a touch of articulation and clarity.

In combination with particular content and production styles, go where your creative juices point. A last bit of advice: be open minded. Just because you may not hear it, that's not true of others, especially your clients. Have fun with your content, FiDef can help. Isn't that what audio is supposed to be about?

User Preferences

Clicking on the gear icon in the upper right corner opens the User Preferences...

License/Info Tab

This tab contains a link to open this, the user manual; a link to activate or deactivate ("park") your license along with a list of the contributors and their roles. Note that the current version number and installed CPU Architecture, 32 or 64 bit, is shown at bottom.

FiDef

This tab contains FiDef JENTwo's Profile renaming mechanism. The Profiles purposefully have abstract labels, as their effects can be difficult to describe in words. We invite you to rename the Profiles to suit your taste...

At the top of the tab is a wide white menu button. Click on the button to select a Profile from the list to rename. Below the button is a text field. Enter a short new label for the selected Profile, then hit the Return key. The selected Profiles name will change in the accompanying button menu, but a new instance will be needed to see your change reflected in the main UI's Profile buttons' labels.

To the right of the text field is a button labeled "Reset to Default". As the label suggests, clicking that button resets the name of the selected Profile back to the factory default.



Figure 4: Renamed Profile examples

Specifications

Latency

The latency is a fixed 1354 samples. As the sample rate increases, the latency in the time domain is reduced since more samples pass through the plug-in per second.

Sample Rate	Latency (seconds)
44100	0.031
48000	0.028
88200	0.015
96000	0.014
176400	0.008
192000	0.007
352800	0.004
384000	0.004

Table 1: Latency versus sample rate

System Requirements

- Mac: macOS 10.8 and newer, 64 bit only
- Win: Windows 7 and newer, 32 & 64 bit
- Pro Tools 10.3.10 and newer
- 4GB RAM minimum

Supported Platforms

- AAX, AU, VST2/3 Mac, VST2/3 Win

Supported Sample Rates

- 44.1 to 384 kHz

Supported Hosts

Ableton Live, Cubase, Logic, Nuendo, Pro Tools, Pyramix, SADiE, Sequoia, Studio One & Wavelab

Updates

Please always use the latest version of the software! You can find your current version on the Info Tab of the back panel. You can download the latest version simply by visiting:

<https://www.maat.digital/support/#installers>

For optimal security and stability, you should always stay up to date with Operating System revisions, and we keep up with compatibility

changes to our products. We also continue to optimize for reduced CPU load, and this very user manual gets its own improvements.

To stay up to date with the news and product releases, please subscribe to our monthly newsletter. You'll find a opt-in form on our [Contact](#) page, or sign up for a copy of our free and very handy 2BusControl and GÖN plug-ins which will also subscribe you. Don't worry, we know you are busy so we only send out an average of 12 mailings a year.

Support

For product support, please visit:

<https://www.maat.digital/support>

Share The Love

Would you like to help us in our quest for better sound quality? Help support MAAT by sharing the love...Like us on Facebook!

<https://www.facebook.com/maatdigital/>

Instagram

<https://www.instagram.com/maat.digital/>

and Twitter too:

https://www.twitter.com/maat_digital

Please tell your friends and colleagues about us. We really appreciate it, and thank you for supporting better quality audio.

Support

For product support, please visit:

<https://www.maat.digital/support>

Credits

FiDef Concept & Realization

Jayson S. Tomlin

FiDef Foundational DSP & Algorithms

Dr. Jeff Wilson

Initiator, Product Management & UX

Oliver Masciarotte

Plug-In Programming

Nils “Svenny” Karl Magnus Petersson

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About This Manual

Afterword

This manual was written in Adobe InDesign CC 19, and is set in Robert Slimbach’s Minion Pro and Myriad Pro. The cover page is set in Aldo Novarese’s modernist geometric Eurostyle.

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