AUDIFIED

MIXCHECKER ULTRA: REFERENCE+

User Manual

Version 1.1.0

Webpage:	audified.com
Support:	audified.zendesk.com

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Introduction

We are pleased that you have chosen MixChecker **ULTRA +**, where we have integrated all our years of experience from the original MixChecker and its Pro version and taken them to the next level. Now, you have a complete set of tools for the final check of your mix, including a helpful analytical section in a single plugin.

MixChecker ULTRA + saves you time. Insert it into the master track of your project as the last segment of your listening chain and instantly transform your studio monitors into the most famous reference monitors or several common consumer devices.

Rest assured, with the ULTRA version, your mix is guaranteed to sound exceptional across a wide range of the most commonly used listening devices.

Software Installation

Get the most recent version of the plug-in from your user account on our website:

Webpage: audified.com/account/downloads

- **Windows**: Download and run the installer and follow the on-screen instructions. During the process, you can select the destination path and the installed plug-in format.
- **Mac**: Mount the downloaded disk image and run the installer. You can select the installed plug-in format by clicking the Customize button. Plug-ins are installed in the standard locations.

Software Uninstallation

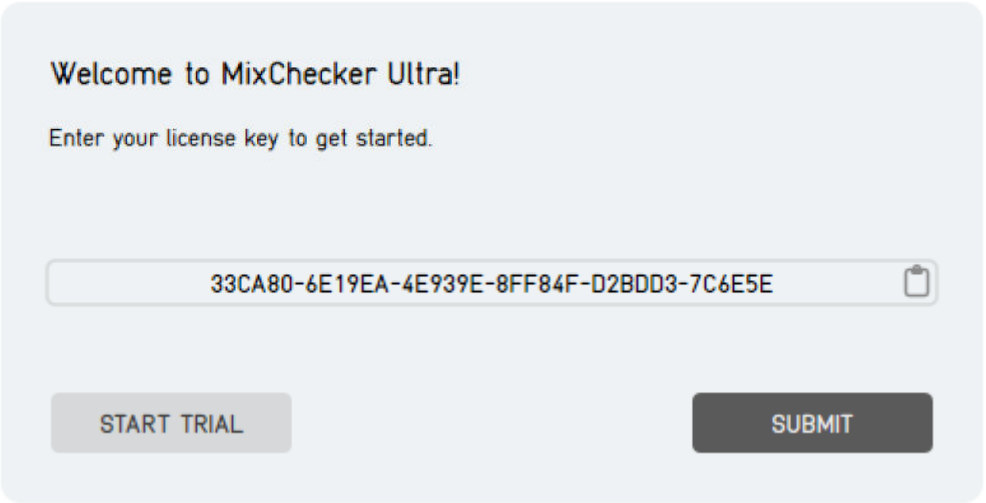
- **Windows**: Navigate to the MixChecker Ultra + program folder in the Start menu and run the uninstaller.
- **Mac**: Open the provided disk image and run the uninstaller.

Product activation

If you are a first-time buyer, you will automatically create an account at checkout. You can also sign in to your account anytime on our site, audified.com, via the Account icon in the right corner to access your Account dashboard.

Upon completing the purchase, you will receive an automatic email containing your serial numbers and the download link for your purchased products.

When you first launch the plugin, you will be asked to enter the serial number, or you can use the product for a limited time as a trial.



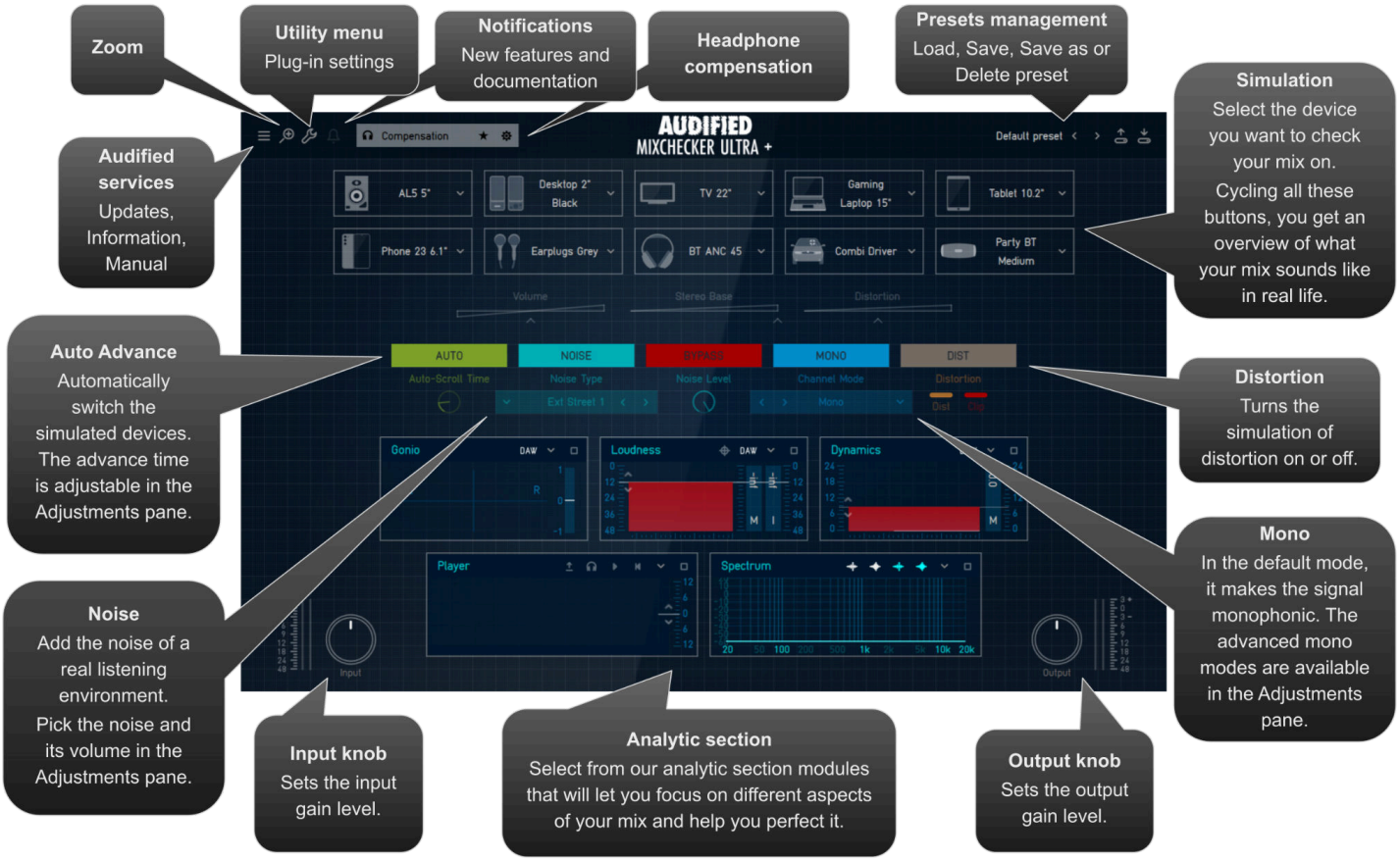
Opening the plug-in

AUDIFIED MixChecker Ultra + works as a plug-in in all major digital audio workstations (recording applications).

To open the plug-in, locate the plug-in selection (usually a hierarchic menu). MixChecker is listed in the Tools group or in the AUDIFIED group when the manufacturer sorting is available.

Working with MixChecker

Control overview



Standard workflow

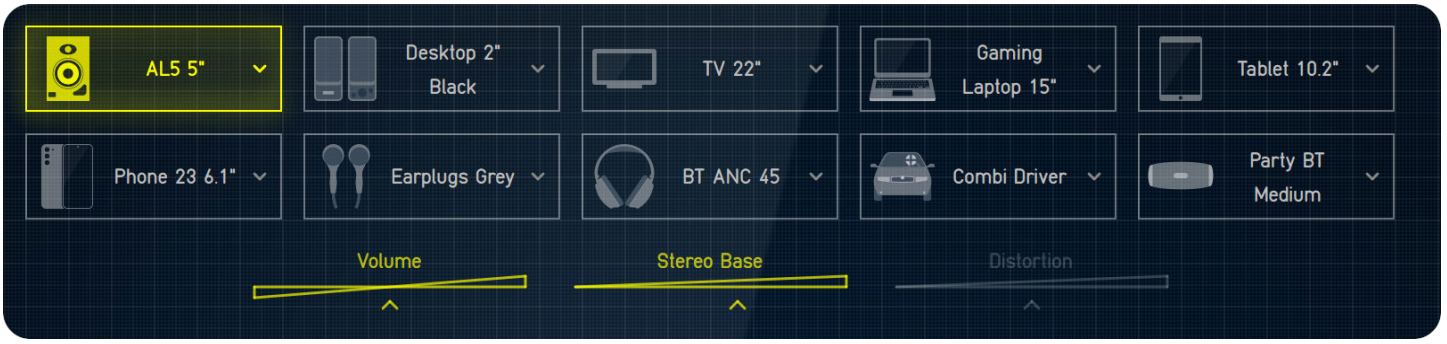
- MixChecker Ultra works as a plug-in on all main digital audio workstations (recording applications).
- To open the plug-in, locate the plug-in (usually a hierarchic menu). MixChecker Ultra + is listed in the “Tools” group or in the “AUDIFIED” group when the manufacturer sorting is offered in the DAW.
- Usually, the checking takes place at the end of the mixing and mastering process. Click the selected simulated devices and listen to the results.

Once the checking is finished, we suggest **fully bypassing** the plug-in (not only deselecting the simulations).

MixChecker screens

Simulation devices

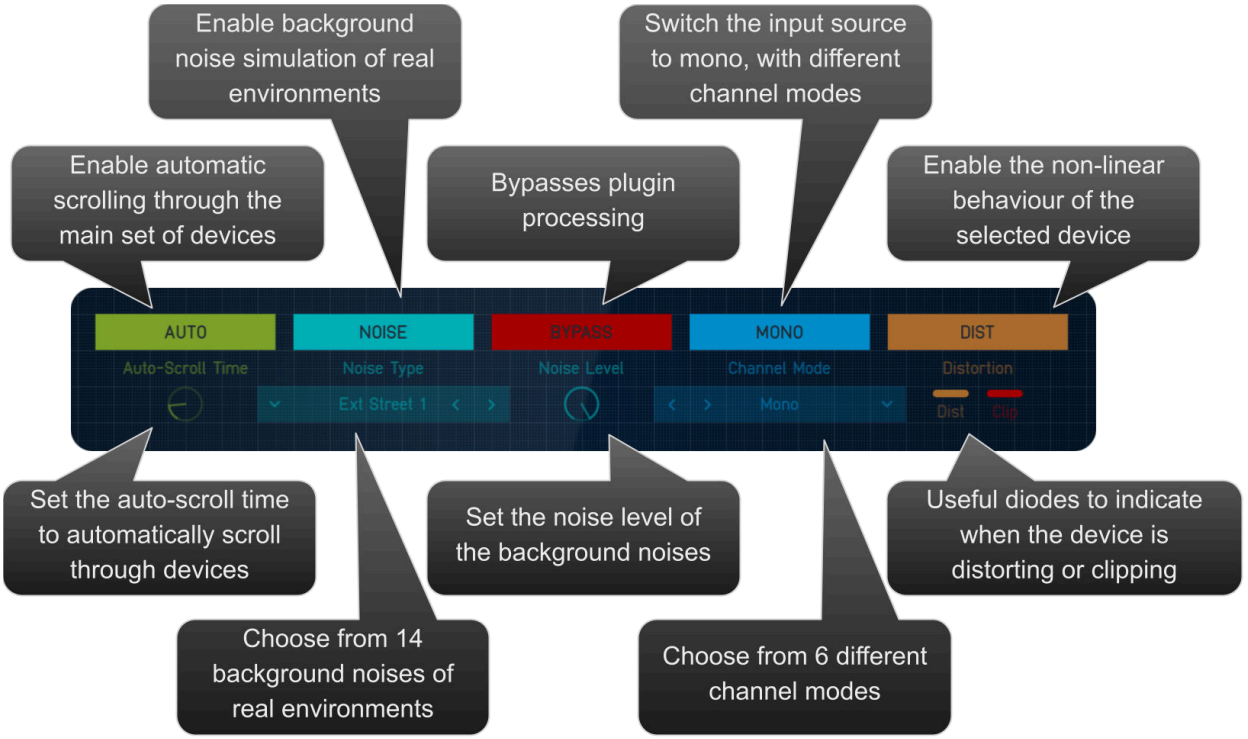
Choose from almost 100 simulations of studio monitors, headphones, consumer electronics, cars, and other devices. Each device features a telling pictogram and description. You can select devices by opening the pop-up menu or scrolling with the mouse wheel.



Set the volume, stereo width and the amount of distortion of the selected device.

Control panel

Buttons in the control panel offer various features, such as different channel modes, distortion, or background noise. These settings are independent of the simulated device selection.



Noise

When activated, some background noise is added to the output, simulating the real environment. The amount of noise is adjustable by the Level knob.

When the noise is added to the headphones simulations, the noise is processed as if it went through the headphone shell from the outside.

Playing the noise depends on the DAW transport state, it may differ in various DAWs.

Auto Advance

When activated, all device buttons are automatically cycled through from the first to the last with a bypassed state included. Each of the buttons is active for the time set by the auto-advance time knob below in the Edit pane.

Mono

The MONO button has several more modes than just the standard monophonic function. You may also listen to the left channel signal from both speakers, the right channel signal from both speakers, swap the left and right channels or swap each channel´s phase.

Once the MONO button is off, the signal is unaffected. Once the MONO button is on, the signal is processed according to the selection from the menu in the Edit Pane.

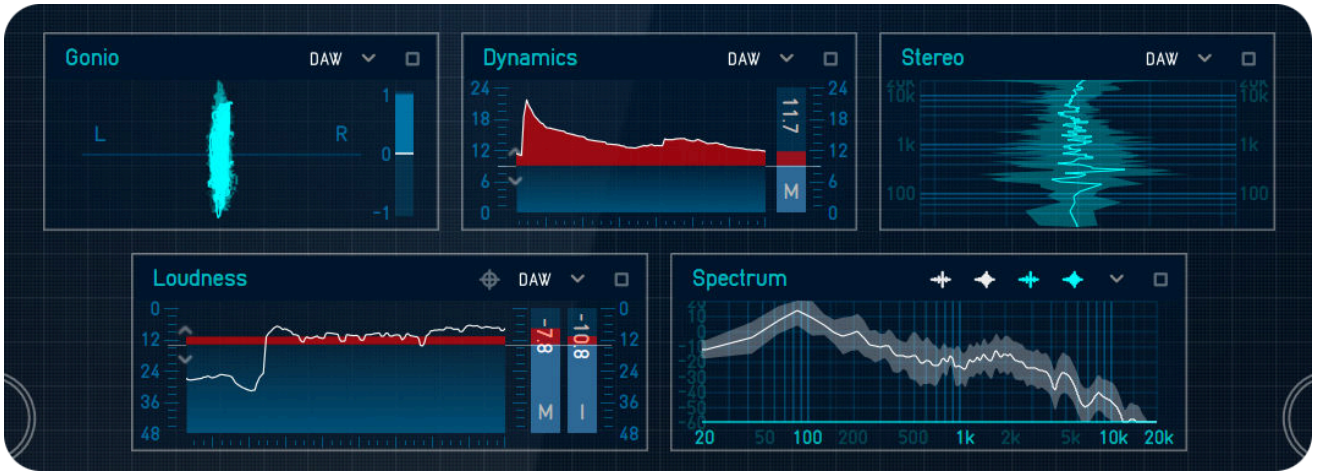
Distortion

We've analyzed the behavior of the devices in a wide volume range and we focused on the specific distortion produced by each device when it is normally loaded. This nonlinear behavior was transformed to a model unique for each of the devices, using less or more harmonics depending on the current device harmonic distortion characteristics. Each model was tuned to be as close as possible to the original device, including A/B listening tests, etc.

- If the signal reaches the level when the distortion is audible, the yellow indicator shines.
- The red indicator shines if the signal exceeds the level that the simulated device could process. In this case, a hard limiting is applied to the signal.

Some of the devices have disabled Distortion controls - typically the studio monitors, producing negligible harmonic distortion.

Analytic section

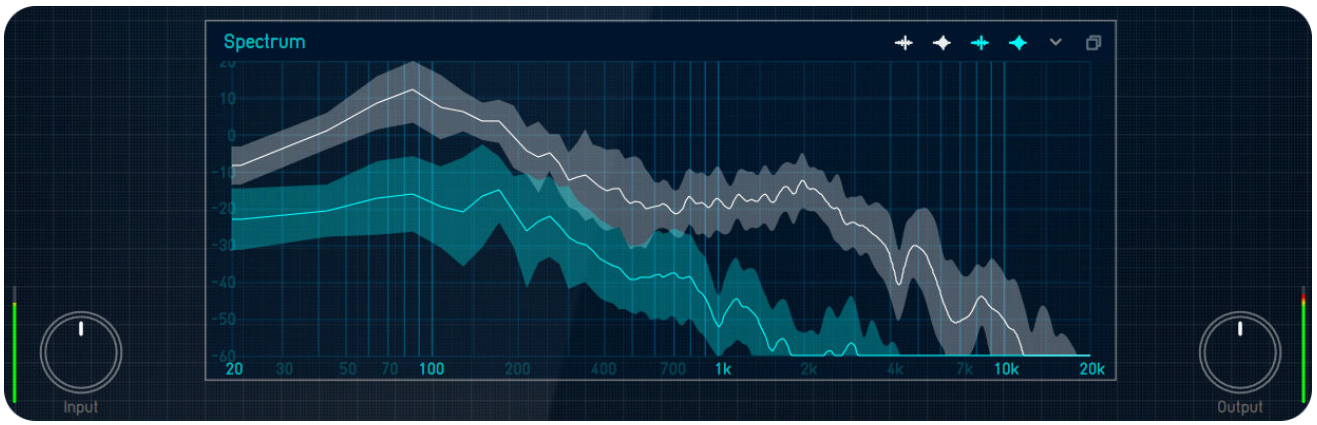


Select modules from the analytic section that will let you focus on different aspects of your mix and help you perfect it.

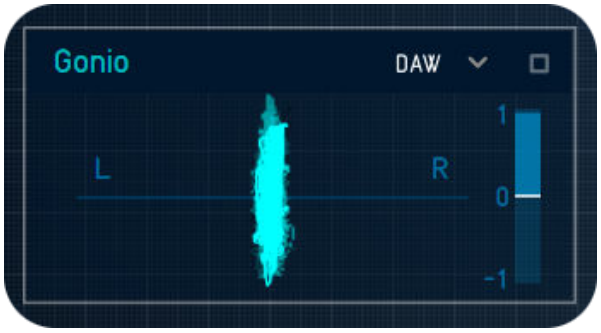
Press the Select Module button to choose from 6 different modules or leave the spot empty.

Select your favorites and create the ideal working environment for your needs.

To view the module in more detail, use the Maximize/Restore button to enlarge it to full size.

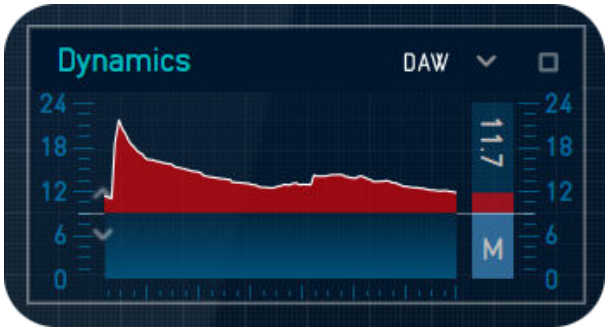


Gonio



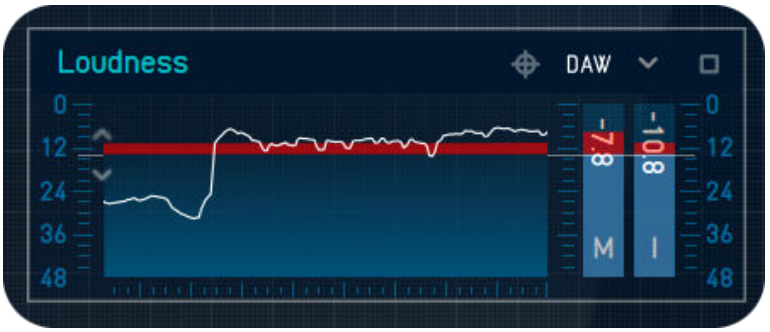
The Gonio module shows you the amount of stereo phase differences in your track. With a correlation meter, you can see errors in your track, such as an inverted signal.

Dynamics



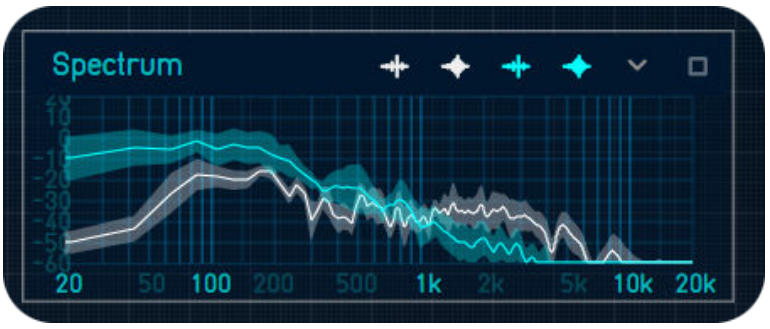
This module shows you the Dynamic Range of the track - displaying the PSR (peak to short-term loudness ratio) - the difference between the short-term loudness and the maximum true peak value measured in windows of three seconds. You can set the Threshold to see if you are meeting the desired value.

Loudness



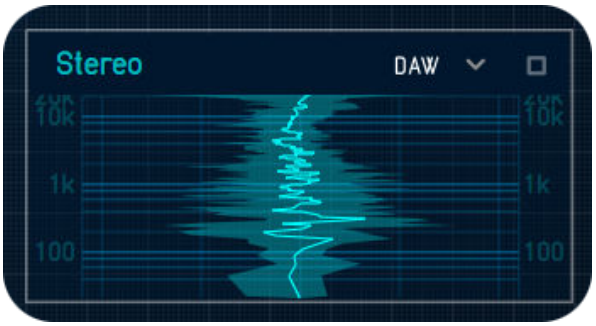
This module shows you the Loudness of your track on a meter and plotted in time. You can set the Loudness target for both meters to see if your mix exceeds those levels.

Spectrum



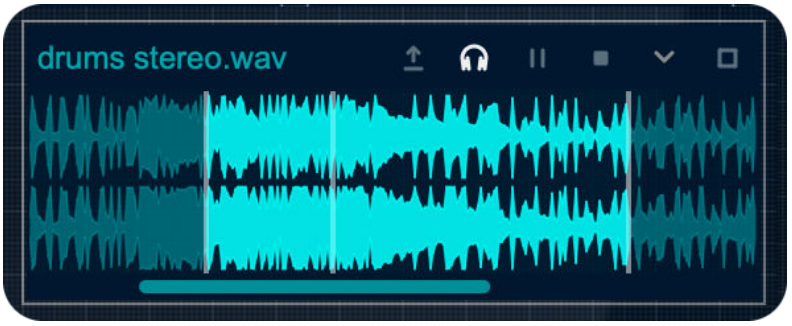
This module displays a spectral analysis of the source and reference tracks. Easily compare the spectral differences between different signal sources.

Stereo



This module shows you the dispersion of the source signal in the stereo tied to the frequency and how occupied frequencies are in relation to the stereo image.

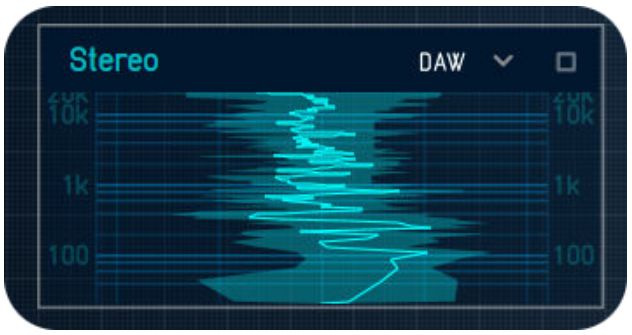
Player

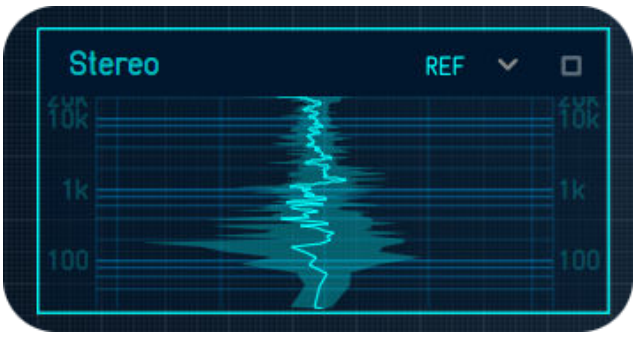


This module allows you to load your reference track and compare it with your track with a click of a button. Supports MP3, FLAC and WAV formats.

Track/reference button

Modules that enable this feature have a dedicated track/reference button that switches the measurement context between the track from the DAW or the reference track you selected in the Player module. You can see the module is analyzing the reference track when its border is highlighted in blue.

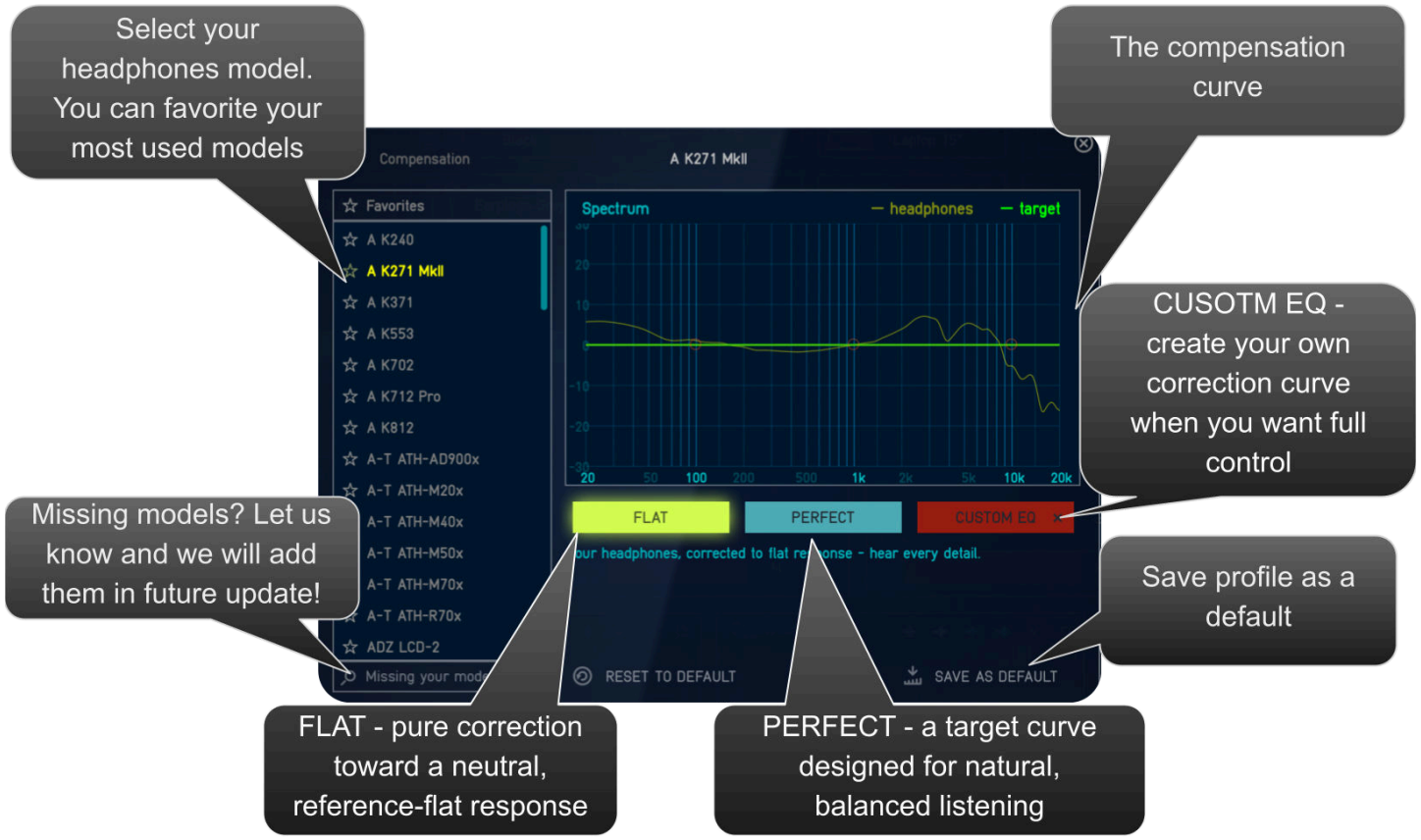




Headphone Compensation

Headphones are now the most common monitoring tool - not only for home, but also for professionals working in unsuitable or untreated rooms or while travelling. Yet every pair of headphones has its specific frequency response and tonal coloring that can significantly influence how you perceive your sound - and therefore the entire mix.

That's why we added a new layer to MixChecker ULTRA + - **Headphone Compensation.** This new overlay corrects the natural frequency of your specific headphone model and ensures that you hear a natural, predictable, and reference-grade playback *before* you even start switching between simulated devices.



Reference

Modeled devices

Studio monitor	AL5 5"
	Focus 6"
	Genilux 4"
	KaLP 6"
	MAud B5
	Micro Loud 3"
	MT Loud 3.5"
	Passive Cube 4.5"
	PreEros 5"
	PreEros 7"
	Shapeless 6.5"
	White Cone Modern 7"
	White Cone Modern 8"
	White Cone Vintage 7"
	Yellow Cone Modern 5"
	Yellow Cone Modern 7"
	Yellow Cone V4 4"
	Yellow Cone V8 8"
	Yellow Ribbon 5"
	Yellow Ribbon 7"
	Yellow Ribbon Pro 4.5"
PC speakers	Desktop 2" Black
	Desktop 3" Red
	Desktop 3" Wooden
	Dektop Pebble
	Desktop Z47

	LCD Screen 24"
TV	TV 24"
	TV 37"
	TV 22"
	TV 32"
Laptops	Gaming Laptop 15"
	Studio Laptop 13.6"
	Studio Laptop Pro 14"
	Work Laptop 12"
Tablet	Tablet 10.2"
	Tablet Lite 10.4"
	Tablet Pro 12.9"
Phones	Phone 23 6.1"
	Phone Note 6.4"
	Phone Pro 15 6.1"
	Phone 2020 SE 4.7"
In-Ear Headphones	Earplugs Grey
	Earplugs Iso Black
	In-ear Monitors
	Classic Pods
	Link Pods
	Wired Pods
On-Ear Headphones	BT ANC 45
	BT ANC 1000
	BT Mayor
	DJ HF15
	DJ Pro 30
	DJ Red
	Studio 77
	Studio 240

	Studio 701
	Studio 912
	Studio 7506
	Studio AM50
	Studio D880
	Studio D900
	Studio HD26
	Studio HD56
	Studio HD68
	Studio KN84
	Wired Custom
	Wired PortPro
Car	Combi Driver
	Combi Co-driver
	Sedan Driver
	Sedan Co-driver
	Sedan Passenger
	Minivan Driver
	Minivan Co-driver
	Minivan Kid
Bluetooth speakers	Party BT Medium
	Party BT Mini
	Party BT MiniLink
	Party BT Round
	Party BT Small
	Small Radio Black
	Smart Home Speaker
Live Sound / PA	PA Club Center
	PA Club Engineer
	PA Club Near

	PA Disco Pool
	PA Disco Stage
	PA Cheap Full-Range
	PA Cheap Satellite
HiFi	HiFi Micro Black
	HiFi Micro Silver
	HiFi Mini Silver
	HiFi Floor-Stander

Types of noise

Exterior City Street 1
Exterior City Street 2
Exterior Park 1
Exterior Park 2
Exterior Playground
Exterior Railway Station 1
Exterior Railway Station 2
Exterior Subway
Interior Bar
Interior Bus 1
Interior Bus 2
Interior Car 1
Interior Car 2
Interior Shopping Center

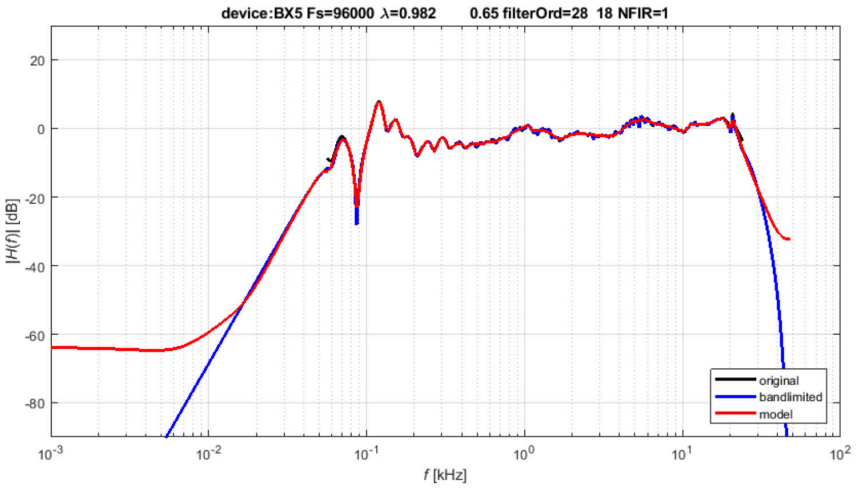
Theoretical background and measurement details

Parallel Warped Filters

The linear part of the model uses transfer function modeling by fixed-pole parallel filters based on the dual-band warped filter design.

Thanks to the filter design on a warped frequency scale, the frequency resolution of the model takes into account the frequency resolution of the auditory system. The dual-band design brings even more precise modeling at low frequencies without reducing precision at high frequencies.

The parallel structure of 2nd-order minimum-phase filters brings extremely low latency, minimal phase distortion, and high stability.

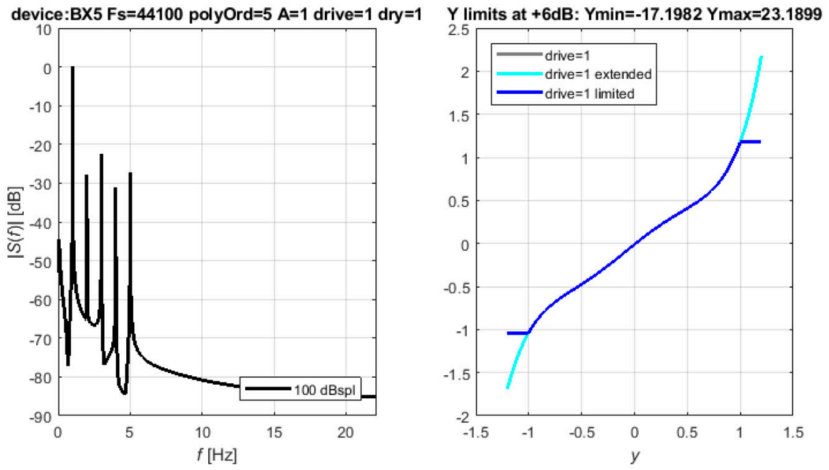


Desktop 5” Black: magnitude response (measured and model)

Extended Wiener Model

The non-linear part of the model uses a proprietary model based on the Wiener model.

The non-linear model extends the standard Wiener model and introduces dynamic nonlinearity and frequency-dependent nonlinearities while keeping the computing demands low.



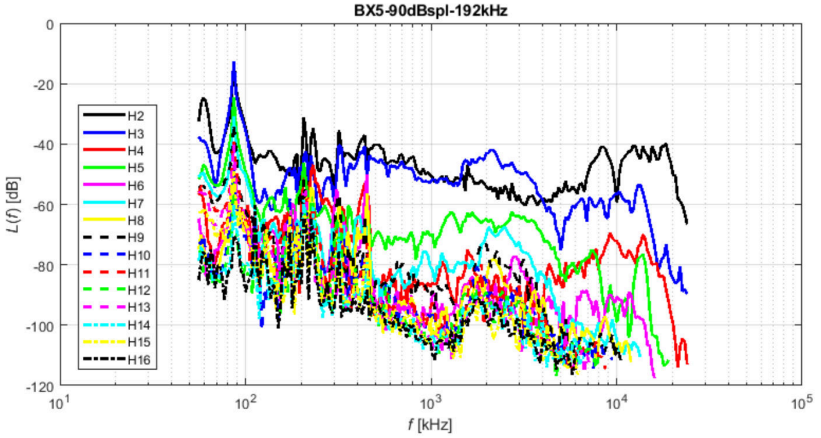
Desktop 5" Black: non-linear model - spectrum of excitation harmonic signal, nonlinear transfer function

Constant Loudness

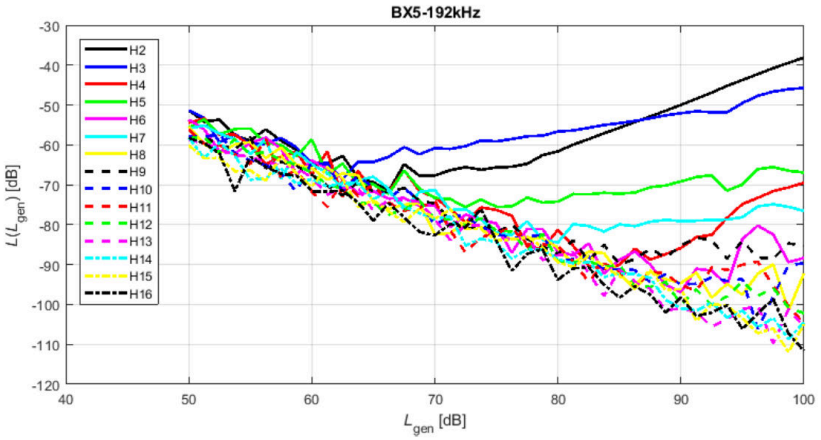
For the seamless switching among devices, the overall gain of all devices is normalized to the same objective loudness using an algorithm derived from the Loudness Unit (LU) meter (ITU-R BS.1770-3).

Measurement

All characteristics of the devices used for identification of model parameters were measured using APx525 Audio Analyzer with an acoustic option in the anechoic chamber. Headphones were measured using B&K Type 4128-C.



Desktop 5" Black: Measured dependence of higher harmonics ratio on input signal frequency



Desktop 5" Black: Measured dependence of higher harmonics ratio on input signal level

Technical info

Specification

- AAX, AU, VST3,
- macOS, Windows plug-ins.

Requirements

- macOS 10.14 and newer (64bit format delivered),
- Windows 7 and newer (64bit format delivered),
- 300 MB of disk space required.

Conclusion

We are confident that you can now work with MixChecker Ultra +. However, if anything seems unclear or you need assistance, feel free to contact us.

Support: audified.zendesk.com

Thanks for using AUDIFIED products.