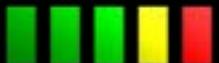




redline monitor Manual

112dB 

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INTRODUCING...

Redline Monitor is a listening, mixing, and mastering tool. It replaces the extreme stereo separation that is characteristic for headphones by the detailed stereo image of near-field monitor speakers without any detrimental effect on the audio.¹

Redline Monitor performs a sophisticated combination of filtering, frequency-dependent delaying, mid/side processing, and room simulation to create an acoustic soundstage that allows you to properly localize sound sources. It also adjusts the relative levels of panned sources as they appear on speakers, and moves the soundstage from somewhere inside your head (with headphones) towards a clearly defined location in front of you.

- True stereo soundstage with adjustable speaker position
- Transparent sound with perfectly flat frequency response
- Separately adjustable phantom center level for optimal speaker matching
- Distance control to simulate placement of near-field monitors in room
- Auxiliary left/right solo and phase invert controls for critical listening
- Output switchable to mono for mono-compatibility checking

HEADPHONES – THE PERFECT MONITORS?

Judging only by specifications, one would conclude that a pair of quality headphones is ideal for monitoring. Headphones have excellent frequency response, no sound dispersion, and don't suffer from frequency anomalies in acoustically questionable rooms. They require incomparably less effort to carry around than studio monitors, and allow you to work where and when you want – while travelling, in the middle of the night, or both! Not to mention that they are relatively affordable and extremely portable.

Sounds too good to be true? Unfortunately, it is.

Headphones achieve many of their virtues by the fact that (unlike with monitor speakers) the sound source is located almost on top of your ears. This creates a host of problems, which any regular headphones user will be familiar with. The stereo image is lost due to extreme separation of the left and right channels and has no discernible phantom center. Sound sources are impossible to locate and, because of the unnatural stereo image, ear fatigue sets in even after short listening sessions. The bottom line is that the listening experience lacks any similarity

¹ The frequency response is flat within ± 0.1 dB for the entire 10Hz–22kHz range with the Distance control disabled. Enabling the Distance control intentionally boosts or cuts certain frequencies to recreate the filtering effect of your pinnae on real-world sound sources. You may find that, while no longer flat, this frequency response may actually bring the perceived frequency response of your near-field monitors and headphones closer together. With some signals subtle phase cancellations may occur between the left and right channel, but only to the extent that the phenomenon occurs on monitor speakers.

to natural hearing, which makes it impossible to judge a mix with any level of accuracy.

That is, until now.

Redline Monitor brings the soundstage of near-field monitor speakers to your headphones. Now you can accurately judge levels, stereo placement, and overall balance on your favorite set of headphones—anywhere, anytime, and without ear fatigue even after prolonged listening. No more night long headphone sessions that turn out lifeless and with too little reverb and separation on speakers.

Redline Monitor makes mixes sound identical on speakers and headphones, at least within the tolerance of the different frequency responses of headphones and monitor speakers. (That's the best anyone can hope to achieve – no two pairs of monitor speakers sound identical either, and they definitely sound different from the speakers in headphones.) Redline Monitor uses sophisticated acoustic and psycho-acoustic processing to trick the ear into perceiving both stereo and depth information even though the sound sources – the headphones – are in reality located someplace else entirely. This gives you a portable uniform listening environment even in home studios and untreated rooms that is rivalled only by a set of good monitor speakers. Whether in the studio or on the road, whether on a full-blown studio rig or your notebook, the stereo image, tonal balance, and sound are identical where ever you go.

And better still, Redline Monitor gives you direct access to the best from both worlds. Headphones provide detail in a way that no speakers can, allowing you to zoom in on even the tiniest details. Clicks, room ambience, and soft details that are nearly impossible to distinguish on speakers are easily revealed on headphones. Simple engage the Bypass function to switch between traditional and speaker-simulating headphones.

WHAT IT CANNOT DO

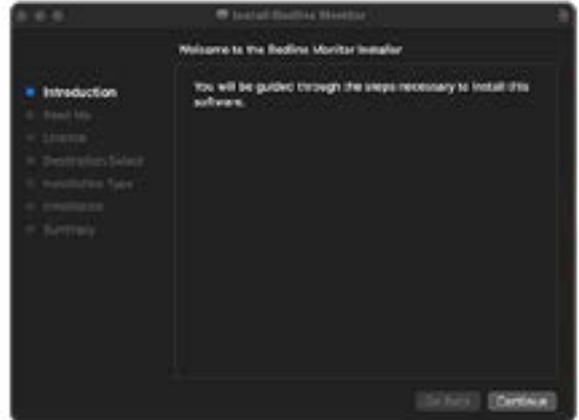
Redline Monitor is a great and useful tool, but it is not a replacement for a decent set of near-field monitor speakers! If possible you should always perform at least a final check on monitors.

INSTALLATION

Redline Monitor comes in the form of a single installer for all available plugin formats: AAX, VST3, and Audio Units.

MAC OS X

1. If you have not already done so, please download and run the latest Redline Monitor installer from www.112dB.com/download/redline/monitor. Double click the Redline Monitor Installer.pkg file to start the installer.
2. You might want to have a quick look at the readme, as it may contain important last-minute information that was not available at the time of writing.
3. You will be asked to agree to the terms of the license agreement.
4. The installer installs all plugin formats (VST3, AAX, and Audio Units) by default.
5. You will be prompted for your Mac password to complete the installation.
6. If the installer detects you haven't activated your license yet, the 112dB License Manager will be started.



WINDOWS

1. If you have not already done so, please download and run the latest Redline Monitor installer from www.112dB.com/download/redline/monitor. Double click the installer.exe file to run the setup program. Windows might give you the following warning: 'Do you want to allow this app from an unknown publisher to make changes to your device?' You can safely ignore this, and click 'yes'.
2. You will be asked to agree to the terms of the license agreement.



3. Step 3 'Choose Components' will give you an overview of the plugin formats that are going to be installed. If you wish, you may override this and deselect components that you won't need.
4. After Redline Monitor installs, Setup is complete and you may click the Finish button. By default 'Start the 112dB License Manager' will be selected. Keep it selected if you haven't activated your license yet, and want to activate it now. If you already have a license installed, you can deselect it.

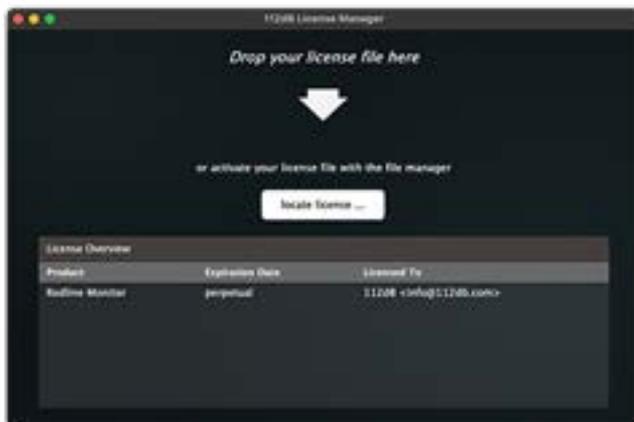
AUTHORIZATION

With your purchase or demo download you should have received an email containing a license file (in the form of an XML-document). Save this file to your computer.

The 112dB License Manager will be started automatically after the installation is finished. Drag and drop your license file on the License Manager window. Or alternatively click on 'locate license...', navigate to the folder where you saved the license file, select it, and click 'Open'. You can decide to skip this step, and activate your license later from within the plugin.

FROM DEMO TO PERMANENT LICENSE

To replace a demo license with a permanent license, first save the permanent XML license from your purchase confirmation email to your computer. Open the 112dB License Manager (see 'Where can I find the License Manager?' below). Drag and drop your license file on the license manager window to activate Redline Monitor. Or alternatively, click on 'locate license...', navigate to the folder where you saved the license file, select it, and click 'Open'. In your License Overview you will now see 'perpetual' instead of a specific expiry date for Redline Monitor under 'Expiration Date' .



WHERE CAN I FIND THE LICENSE MANAGER?

Windows: \Program Files\112dB

Mac: /Applications/112dB

TROUBLESHOOTING

Some email clients do not like plain text attachments. For this reason the license is attached in both text (.xml) and zipped (.zip) formats. If you receive an error message saying that the 112dB Redline Monitor.xml license is invalid, the most likely cause is that it got corrupted during email transfer. In this case please save the 112dB Redline Monitor License.zip attachment to your computer instead, unzip the file (this will produce a 112dB Redline Monitor License.xml file) and try authorizing again.

SUPPORT

If you encounter any problems during the installation or authorization process, please contact us by email at support@112dB.com.

INSTALLING ON MULTIPLE COMPUTERS

You can use the Redline Monitor license file to authorize the plugin multiple times. The license file you received is not tied to a specific computer, only to a specific person. Thus you can use the same license file for authorizing a copy of our plugins on any system, now and at any point in the future, as long as it is yours. This way you can install and use the plugin on your studio setup, your home computer, and your travel notebook at the same time.

UNINSTALLING

The uninstaller for Redline Monitor can be found here:

Mac: /Applications/112dB/Redline Monitor

Windows: \Program Files\112dB\Redline Monitor

In addition the uninstaller will be listed on Windows under Control Panel » Add/Remove Programs.

The Redline Monitor user interface has been designed to be as intuitive and easy to operate as possible. There are functions that might not be immediately obvious, however:

RESIZE

To change the size of the GUI, you can drag at the corner of the plugin window, but you can also right (cmd)-click anywhere on the plugin interface and select your size of choice in the pop-up window that will appear.



TOOLTIPS

Hovering over any item of the interface brings up a floating tooltip window with a brief description of that control's function. If you want to disable this function, right (cmd)-click anywhere on the plugin interface and deselect 'Show tooltips' in the pop-up window that will appear.

NUMERICAL VALUE ENTRY

Turning a knob or hovering over it will change the name below the knob into it's value. Clicking on this number will open a small edit window that allows you to change this value by typing in a new one. To dispose of the edit window either hit <Enter> or click anywhere outside it.

RESET TO DEFAULT VALUE

<Ctrl>-clicking knobs and sliders will reset them to their default value.

FINETUNE

Cmd-click-drag makes very small moves with the knob possible.

MIDI AUTOMATION

All knobs can be controlled by an external MIDI keyboard or MIDI controller. To assign a MIDI control simply right- (cmd-)click on the knob you want to connect and a window will pop up: 'Start MIDI learn'.

Click on this window, and move the control on your external MIDI keyboard or controller that you want to assign to this knob. If everything goes as expected, you will now see the knob moving when you move the control on your MIDI keyboard. Right-click (ctrl-click) on the control again and click 'Stop MIDI learn'. Do you want to detach the knob again? Right (ctrl)-click on the knob, and choose: 'Detach from midi automation'

CONTROLS AND SETUP

SOUNDSTAGE WIDTH

The Soundstage control determines the width of the acoustic soundstage, or put another way: the spacing of the virtual speakers. At the minimum setting of 30 degrees the speakers are placed close together and the resulting stereo image very narrow. Adjusting the control upwards moves the speakers apart. In general, speakers achieve optimal performance when the listener and the two speakers form an equilateral triangle. The default setting of 60 degrees approximates this placement and should provide a good starting point.

PHANTOM CENTER

You will notice that with Redline Monitor a proper phantom center emerges from the stereo image. Sounds panned in or near the stereo center appear to originate from a position directly in front and no longer from an indeterminate location inside your head.

Compared to speakers this so-called phantom center may be slightly dominant relative to the sounds panned more towards the sides. This discrepancy can be adjusted for through the Phantom Center control, which attenuates the phantom center in relation to the sides (and automatically compensates for the resulting volume loss). The default setting of -1.5dB should be appropriate for most setups.

DISTANCE

External real-world sounds are reflected by your pinnae before they can reach the ear, which causes complex cuts and/or boosts of certain frequencies. Due to the particular shape of your pinnae the exact frequencies and amounts of cut/boost depend on where the sound is coming from. Sounds from straight in front of you are filtered differently from those more to the sides, the back, or from a higher or lower position. These subtle changes in the frequency spectrum help your brain determine the position that the sound originates from.

The Distance control simulates this effect by applying a complex series of subtle cuts and boosts that trick the brain into perceiving directional clues. (The control was modeled after precise measurements obtained from recording a 'dummy' head model with in-ear microphones in an anechoic chamber.) The result is an enhanced directional perception of the simulated soundstage and a feeling of proper distance from the virtual speakers.

You will find that engaging the Distance control makes the soundstage feel more 'real' and tangible. By the nature of the process this slightly alters the overall frequency balance, but your ears will soon get accustomed and compensate for this – in fact, you may find that the altered frequency response brings the resulting sound of your headphones and near-field monitors closer together!

If you absolutely require zero frequency change, set this control to its minimum setting.

Doing so will dim the knob and disable the effect, resulting in a frequency response that is flat within $\pm 0.1\text{dB}$ for the entire 10Hz–22kHz range. (Detailed frequency response graphs are shown at the end of this manual.)

S O L O

Click on L (or R) to listen to only the left (or right) speaker solo'ed in place. For prolonged solo listening you may prefer to engage Mono at the same time.

M O N O

When this is enabled the incoming left and right signals will be mixed to mono. This serves a variety of purposes: mono compatibility checking, more comfortable L/R solo listening, and to check the pure stereo component of the signal – see the Phase control below.

D I M

Even though Redline Monitor does not change the perceived loudness of the signal, its processing may affect (and sometimes increase) the measured signal amplitude. This can cause digital overloads if you are listening to pre-mastered material that peaks close to 0dB. Activating this control attenuates the entire signal, which should suffice to keep the signal below 0dB at all times.

P H A S E

Select L (or R) to phase invert the left (or right) channel. Useful for phase checking of signals, and for listening to only the side components (as in Mid/Side) when combined with Mono.

RECOMMENDED SETUP PROCEDURE

To get the most out of Redline Monitor we recommend to start with the default settings. Play some music with a wide and detailed stereo image – preferably music you are intimately familiar with – through both your near-field monitor speakers and headphones. Listen carefully to differences in the apparent width of the soundstages generated by the headphones and the speakers. Keep performing frequent A/B comparisons by taking off your headphones (and putting them back on) while adjusting the Soundstage control a little at a time until sound sources are panned identically and you can imagine the headphone sound to originate from your speakers.

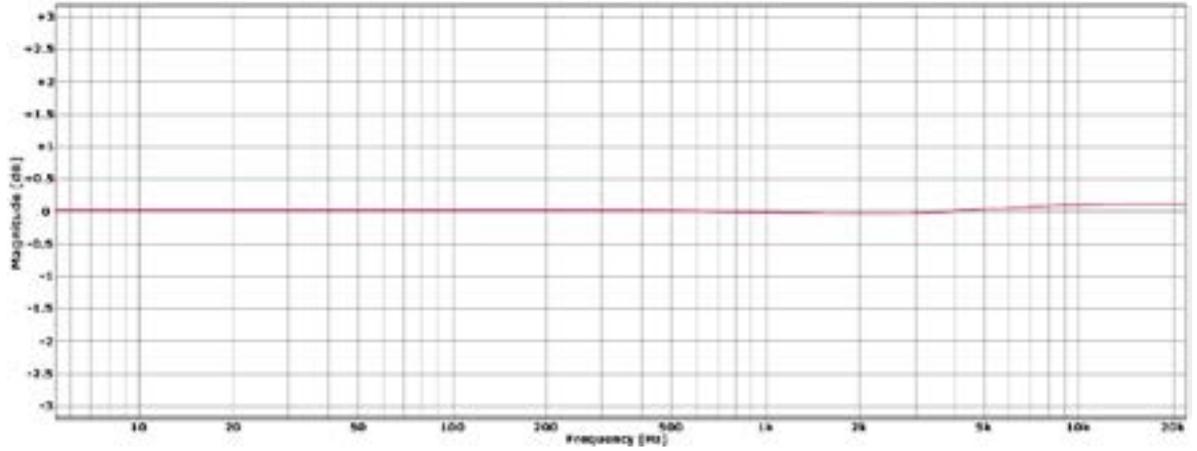
Once you feel you have arrived at the best Soundstage setting, proceed to the Phantom Level control. Pay close attention to the apparent shape of the soundstage provided by Redline Monitor and the speakers. In particular concentrate on the relative level (or apparent distance) of sounds panned near the center of the stereo image and sounds panned more towards the sides. If the center appears louder or closer than the left or right extremes, the control should be adjusted away from 0dB. If the center appears softer or more distant adjust the control towards 0dB instead. Closing your eyes while visualizing the perceived soundstage can be helpful here.

Note that it may take several hours of critical listening to perfectly match Redline Monitor with your speaker setup. Careful A/B comparisons should reveal whether adjustments are necessary. When the ideal setup has been achieved music played through Redline Monitor and your headphones should sound as if it originates from your speakers – or at least very close to it.

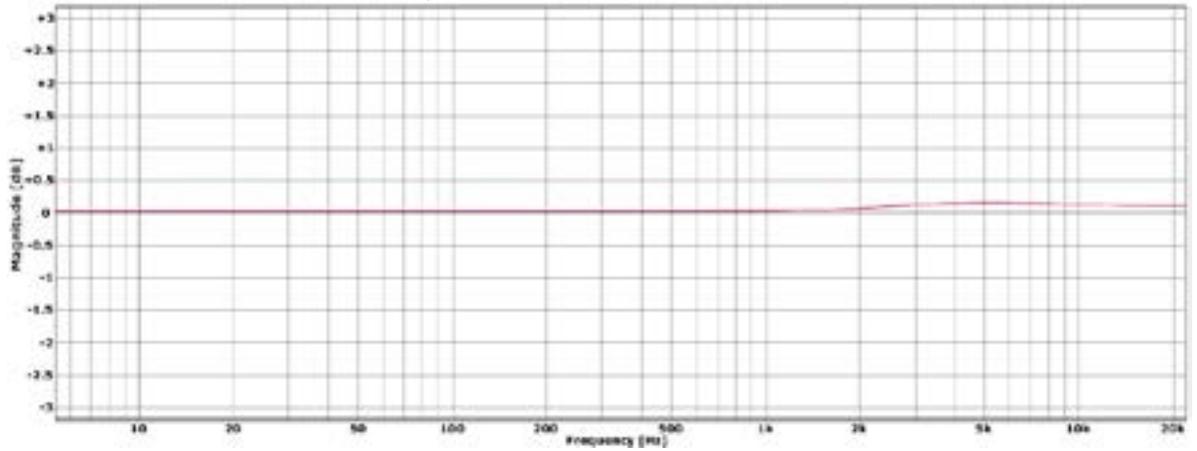
TECHNICAL SPECIFICATIONS

With the Distance control at its minimum setting, the overall frequency response is flat within $\pm 0.1\text{dB}$ for the entire 10Hz–22kHz range with an overall total harmonic distortion of $< -150\text{dB}$. Detailed measurement graphs are shown on the following pages. Redline Monitor supports all common samplerates up to 192kHz.

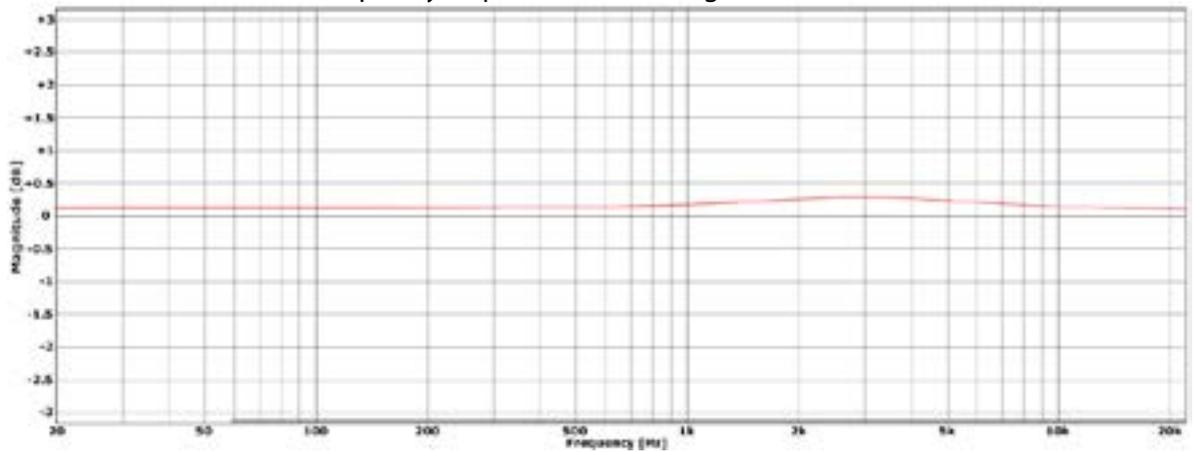
Frequency response Soundstage 30° Distance off



Frequency response Soundstage 60° Distance off



Frequency response Soundstage 90° Distance off



SYSTEM REQUIREMENTS

OPERATING SYSTEM

- Windows 7 or up (64-bit)
- Mac OS X 10.11 or up

HOSTS

Redline Monitor is compatible with any host that understands the AAX, VST3, and/or Audio Units protocol.

UPDATES AND SUPPORT

Updates for Redline Monitor will be made available at

<https://www.112db.com/download/redline/monitor/>

For product support, questions, comments, feature suggestions, and anything you feel is worth sharing, please contact our support staff by email at

support@112dB.com

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