



## Press Release

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Above: iFi iSilencer+ (USB-C to USB-C) and iDefender+ (USB-A to USB-A)

## Set USB audio free with blissful, noise-free sound

When used for audio, USB interfaces are inherently 'noisy'. iFi's iSilencer+ and iDefender+ remove electrical noise that distorts the audio signal to unleash the connected equipment's sonic potential

*Southport, England* – In recent years, more and more music lovers have taken to using computers as their primary audio source. These are often connected to audio gear via USB – the universal interface that enables digital data to pass from one piece of hardware to another.

There are pros and cons to this. USB interfaces can pass hi-res audio data at maximum resolution and, via asynchronous transfer, allow bit-perfect conveyance of the original source data – which is ideal, on paper. In practice, USB is a complex, multi-purpose computer interface – not one that was created specifically for audio – designed to carry both power and data. It is susceptible to electrical noise, not least from the computer's power supply, which can adversely affect sound quality.

iFi makes several devices that enhance USB audio quality. Two of the most popular are the iSilencer and iDefender – thumb-size 'sticks' that plug into a computer's USB socket, acting as a link in the chain between the computer and DAC, whether it's a standalone converter or housed in an amplifier. These devices are designed to

tackle different issues afflicting USB audio and the current versions, iSilencer3.0 and iDefender3.0, are being replaced by new, improved models – the iSilencer+ and iDefender+.

## **iSilencer+**

The transfer mode used for 'USB Audio Class' devices is more demanding of USB hardware/software than the bulk/burst mode used for peripherals such as printers and hard drives. Error checking is present but there is no re-transmission in the event of CRC (Cyclic Redundancy Check) errors. Electrical noise on USB signals causes CRC errors and thus data loss, as does poor signal integrity. This can result in audio signal distortion, artefacts (such as clicks and pops) and latency – all things that can affect the performance of computer-based audio systems. The iSilencer+ solves this issue by removing electrical noise (including EMI/RFI) at source, thereby enabling bit-perfect transfer of audio data to the DAC.



Uniquely, it does this by combining passive filtering with iFi's ANC II (Active Noise Cancellation II) circuit. Developed from military radar technology, ANC II works in a similar way to active noise-cancelling headphones – it generates a signal identical to that of the incoming electrical noise but in the opposite phase, actively cancelling it out. This is highly effective at removing low- and mid-frequency noise, while passive insulating filters deal with higher frequency interference. This combination is measurably more effective at eradicating noise corrupting the USB signal than devices relying solely on passive filtering.

Whilst removing noise, the iSilencer+ reduces the occurrence of jitter – a form of digital distortion that leads to data 'packet errors' and results in cold, harsh sound. It also re-balances the signal via iFi's REbalance technology, ensuring that the digital signal received by the DAC is identical to the original source, no matter which audio format is being played.



The new iSilencer+ sports several enhancements compared to the outgoing iSilencer3.0. The circuitry has been upgraded with the addition of low-ESR (Equivalent Series Resistance) Tantalum capacitors for input and output filtering, further elevating its noise-busting abilities with a 10-fold increase in filtering capacitance. It is also available in more flavours of USB; while the iSilencer3.0 is only

available with USB Type A connectors, the iSilencer+ comes in three versions to include the newer USB-C connector:

- USB-A to USB-A
- USB-C to USB-A
- USB-C to USB-C

All versions support the 'SuperSpeed' USB 3.0 standard, as well as USB 2.0 for backwards compatibility, and incorporate high-quality gold-plated connectors for optimal signal transfer.

As well as plugging an iSilencer+ into the active USB output between computer and DAC, more iSilencer+ 'sticks' can be plugged into spare USB ports to further reduce radiated EMI. Each time the number of units (and therefore the number ANC II circuits) is doubled, noise reduction capability also doubles. And the iSilencer+ can be used between external hard drives and music servers, too.

The precise effect of the iSilencer+ on sound quality varies from system to system; typically, one can expect to hear more clarity, greater dynamic extension and sharper leading edges, making the music sound more vivid and open.

## **iDefender+**

The iDefender+ is a more specialised USB audio device, specifically designed to tackle ground (or earth) loops that can cause real issues with some computer-based systems, typically resulting in an irritating buzz or hum from the speakers.



When plugged into the source device's USB socket, the iDefender+ detects whether there is a ground loop problem, caused by the presence of multiple earths that add noise. It breaks the ground loop by 'intelligently' disconnecting the computer's earth; as well as eradicating audible ground-loop hum it lowers the system noise floor, improving resolution and dynamic contrast.

When used with a DAC that relies on USB power from a computer, rather than power from the mains or a built-in battery, the iDefender+ offers an additional benefit. If an external power supply is plugged into the USB-C socket on its side, it blocks power from the computer and instead feeds the DAC with power from the external supply; if a high-quality, low-noise power adapter such as iFi's iPower is used, the performance of the USB DAC will be significantly improved.



Like the iSilencer+, the iDefender+ upgrades the performance of the outgoing iDefender3.0 with the addition of low-ESR Tantalum capacitors for input and output filtering. It, too, is available in three versions to suit the connected equipment – USB-A to USB-A, USB-C to USB-A, and USB-C to USB-C. Again, the USB3.0 and USB2.0 standards are supported and the connectors are gold plated.

The iFi iSilencer+ and iDefender+ are available from Amazon and other selected retailers from Friday, priced at £49, (€55 \$49).



Images & documents:

<https://media.ifi-audio.com/portfolio/idefenderplus/>

<https://media.ifi-audio.com/portfolio/isilencerplus/>

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