

Silent Power - Noisebusters

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Source: iFi audio

Fantastic Four: Defender⁺/iSilencer⁺/DC iPurifier2/iPurifier3

What they do and how they solve noise issues

This short article attempts to highlight the differences between the various iFi Silent Power accessories, starting with the iDefender and iSilencer, and comparing them with the DC iPurifier and USB iPurifier3. Straight to it then...!

1. The iDefender+ is a ground loop breaker. It 'intelligently' inserts a resistance in series with the ground between computer and DAC, and has facility for plugging in an external power supply for the dac (if the DAC is not self-powered). This is good news for DACs without an external DC power supply inlet; but for iFi DACs like the Neo iDSD or Zen Dac V1/V2 you may not necessarily need the separate power facility on the iDefender+, if they are powered via their separate DC power supply inputs. That does the same thing as the iDefender+'s DC input. The iDefender+ kicks in by breaking the ground when both the computer and dac are earthed at the mains and you're getting hum from an earth/ground loop. It helps to eliminate the hum or buzz by breaking the earth loop. It is 'intelligent' in that it won't do anything for hum if the computer OR



the dac are earthed, or if neither are earthed. If neither are earthed, a Groundhog cable to ADD earthing to the system to the mains would most likely work to reduce hum.

2. The iSilencer+ contains Active Noise Cancellation (ANC) on the power supply. It works to reduce electrical noise from a typical computer power supply USB bus, which is generally derived from an incompletely-filtered switchmode (SMPS) power supply. Those usually carry all manner of additional digital noises as well. The iFi DACs (Neo iDSD and Zen Dac V1/V2) have the facility to be powered by a separate DC power supply, so an iSilencer+ wouldn't be needed in this case. That's because the USB power supply is switched out at the DAC by plugging in the external (clean) power supply. If the Neo iDSD or Zen Dac are powered by the computer (ie. no external DC power supply used) the iSilencer does help to keep power supply noise to a minimum. The xDSD, Diablo and hip dac are battery-powered and only use the USB's 5V power line to detect when a computer is connected. So in this case, the iSilencer+ isn't needed as the USB power isn't being used to power the unit. The iSilencer+ is appropriate for when you are powering the Neo or Zen Dac (and others) from the computer's USB output, ie. with no external power supply connected.

iSilencer+ vs DC iPurifier2 vs iDefender+ vs USB iPurifier3?

The iSilencer+ is great for when you power the DAC from the computer via the USB cable. Having a USB-A or USB-C connector, it's located right at the computer's USB socket. The USB iPurifier3 can be at an advantage over the iSilencer though, as it's located at the end of a USB cable, right at the inlet of a DAC. The noise suppression works better as it relies on the resistance of the cable to be more effective. In addition, the USB iPurifier3 reduces jitter as it re-clocks the signal so may end up sounding better than the iSilencer+ by itself.

If using an external power supply to power the DAC, a DC iPurifier2 can be inserted in the DC power line. It's location at the end of the power cable allows it's ANC circuit to work where its noise reduction is most effective.

The iDefender+, with its external power supply inlet, means you can plug in a low noise power supply for use with a DAC that has no facility for one. The power supply (such as an iPower X) that you plug in here can also benefit from having a DC iPurifier2 in line with it.

For the ultimate though, you can use all of these units together, as the effect of more than one ANC circuit is additive. For example, the iDefender+ can be plugged into the computer USB socket with the iSilencer+ then plugged into it. A DC iPurifier2 can be inserted in line with an external power supply output and plugged into the iDefender+ side power inlet. Use the USB cable as normal to the DAC. Finally, the USB iPurifier3 is used at the USB inlet of the dac. This arrangement is similar to using two DC iPurifier2s for the external DC power supply inlet on the dac!

As always, the impact will vary from one setup to another but we hope you enjoy trying these different combinations out!



iFi is the sister-brand of Abbingdon Music Research (AMR) and is headquartered in Southport, UK. The two brands respectively design and manufacture portable, desktop and lifestyle audio products and high-end hi-fi components. Combined in-house hardware and software development teams and a 'music first' approach enable iFi and AMR to create advanced audio products that deliver new levels of design, functionality and performance at their respective price points. Since iFi's formation in 2012, its products have earned many awards around the world, helping it to become one of the fastest-growing brands in its field.

