Computer Audio Design USB Control grounding device

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Computer Audio Design is a company with feet in two camps. A big part of CAD's product line is its original Computer Audio Transport and 1543 Mk II DAC. However, of late, CAD has become better known for its Ground Control grounding devices. As the name suggests, the USB Control extends that grounding to USB. We're used to in-line filters (such as the AudioQuest JitterBug FMJ and CAD's own USB filter). These are designed to help reduce noise from the USB source to receiver in the musical signal path. But the USB Control is different. It isn't designed to be used in an in-line context at all.

Instead, the USB Control (which looks like a USB dongle) is used on any spare USB ports, including software update ports. The USB Control reduces higher frequency noise on the +5Vdc line that is present in all USB ports over a large frequency spectrum. It also reduces noise on the Signal Ground, in a similar way to CAD's Ground Control products. »

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In-line filters can reduce noise from that +5Vdc line, but are inherently limited by the presence of data lines on the same cable. Worse, the +5Vdc generated by the USB controllers on your digital device are engaged in acts of self-pollution! They must have a +5Vdc feed if they are to power USB memory sticks, but that isn't good to keep noise low in a digital audio system's most sensitive areas.

It's not just digital

The big change to audio in recent years is just how much upgradable firmware there is in each device. We naturally think of digital audio when we think of USB connections, but there are lots of amplifiers that have no digital audio components, but still use a USB port for potential upgrades to control software and other options. The USB Control helps here too.

This quickly becomes a cumulative thing; buy one USB Control and you will end up with several of them. Start with using one in a spare USB port on a digital audio device. Then put one on an upgrade port. Then yet more on amplifiers, tuners, phono stages... the works. I received two USB Control devices and I could use more.

I used the two USB Control devices in a number of ways. First, using one, then two, on my Innuos Statement Next Gen server. These went on the USB port used to connect to an external HDD, and the second for backup. Then I used one on the Innuos and one on my Primare I35 Prisma's USB A input. Then I removed a USB Control from the Innuos altogether, leaving just one in the Primare. Then, I unplugged the Innuos from the network and the Primare. Finally, I used one, then two, on my Mac Book Pro.

In each case, the USB Control was removed from the audio signal chain (it's in the wireless module in the Primare, designed for powering an external hard drive full of music). The Primare also allowed me to see what happens when a USB Control is used with USB-based audio and pure Ethernet.

There was a lot of swapping going on and this precluded fast A-B style switching for testing. I'm also of the opinion that the USB Control's effect on a system improved over time, although the initial change was enough to hear on the device's insertion.

Let's get the easiest test out of the way first. The USB Control proved equally effective on the Primare I35 Prisma's performance whether it was being fed from USB or via Ethernet. It didn't matter which one you were playing or if one or both sources were

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» connected, the USB Control plugged into the Primare worked consistently, whichever way you connected it. In fact, taking next-gen digital out of the equation altogether and connecting an Audiolab 8300CDQ to the Primare's DAC – via TOSlink optical – also benefited from the USB Control being plugged into the back of the amp.

What it did in the Primare was make it seem more directly connected with the music. Sounds had more purpose and musical intent, and there was a sense of snap and drive to the musical performance. It made 'Go!' by Public Service Broadcasting [*The Race For Space*, Test Card Recordings] even more evocative than usual through this system. It's a tribute to the Apollo 11 landings and always pulls deep emotions from anyone who is either a science nerd or was watching the skies in 1969. Here, it brings out a lot of the emotion in the track, in part because the recording of the Mission Control team from that era is so clear and detailed. I don't think I could bring myself to play 'Fire in the Cockpit' again though. Too harrowing.

Scratching the surface

This only scratches the surface. As we move to multiple USB Control devices we get a lot more directness and realism. This increased when using a USB Control in each device more than stacking them in the Innuos, but I suspect some of that is down to the high degree of shielding in the Statement Next Gen. However, that being said, the Innuos wasn't immune to the charms of Computer Audio Design, and deploying one, then two USB controllers did improve the sonic output of the top Innuos server. It's that the greater improvement was had when one of those two Controllers was used in the Primare. Every time. To the point where I would make it the first port to be filled in a similar system.

Once again, the USB Control devices improve the system's ability to convey musical themes and improve the overall communication between musician and listener. Yes, it cleans up the sound quality, making the sound rise out of a quieter background, improving intelligibility and creating more soundstage space and size, and seemingly faster attack and release of notes.

The more I listened with the CAD USB Control devices in place, the more I realised just how much noise USB controller chips must be putting into everything audio they get near, and the USB Control device, er, controls the controllers. These don't just tame noise, they direct the system to perform its tasks better. It's like your system went to night school and studied time management and musical arrangement, because it learns how to organise a piece of music.

Yes, they help bring out detail that might be hiding below the noise floor, and yes they help make the soundstage seem larger and more open. They even make the sound more dynamic and expressive. But more significantly, they tie the sound together like it was meant to sound.

I think the best way to describe what the USB Control does so well is to play *The Atomic Mr Basie* [Roulette]. Probably Count Basie's last great record, and that powerful opener – 'The Kind From Red Bank' shows his orchestra in fine Big Band form. But above all, it's that rhythm section that really shines; Eddie Jones on bass, Freddie Green on guitar and Sonny Payne on drums. They play so tight that you can barely hear Freddie Green's guitar part (but take it away and the band falls apart). With a pair of USB Controls in place, that rhythm section became even more 'in the pocket', more upbeat and coordinated and just tighter and faster. That's some feat.

Finally, there's the sound from a computer. To many, the Mac+DAC ship has long sailed and they choose better sounding server-side alternatives. But the USB Controls on that computer go some way to even the score. Yes, dedicated separates sound better, and the really good models are considerably better, but once again the USB Control cleans up the Mac's act. A lot.

I'm trying not to go overboard here, but I find the Computer Audio Design USB Control devices so good at their job that it's hard not to be swayed by them. It sounds crazy but the biggest downside to them is they are small; we in the audio world are so attuned to the 'large, heavy thing sounds better' hypnotic suggestion that we might overlook what look like USB dongles as just another accessory. Where, if they were made in a rack mount (and cost five times as much), audio enthusiasts would be singing their praises.

The CAD USB Controls deserve the same acclaim handed out to the company's Ground Control boxes. These pocket rockets are true game-changers. They make your system sound more like music. Buy some! +

Prices and Contact details

CAD USB Control £675/$750

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