It started with this:

This is the CFC4 from Lake Butler, circa 1987 or so. Four expression pedals mounted on a common base, wall wart power, MIDI output. There was a little removable plate on the bottom that revealed the cutest little editing interface! For each pedal, you could select MIDI channel, CC number, curve… I can't quite remember all the parameters. I might still have the manual somewhere. I wish I hadn't tried to reverse engineer it, because I kinda destroyed it in the process. I still have the empty husk and the boards all piled in a box somewhere. Seems like it deserved a more respectful end…

Sorry, back to the story. One day in 2012, it finally died after 25 years of faithful service! We looked on ebay, none for sale, now what? Decided to make one. Here's the very first prototype, made from an old SpudCo beltpack board, MIDI connectors on a perf board, ribbon cable to something (?), June 2012:
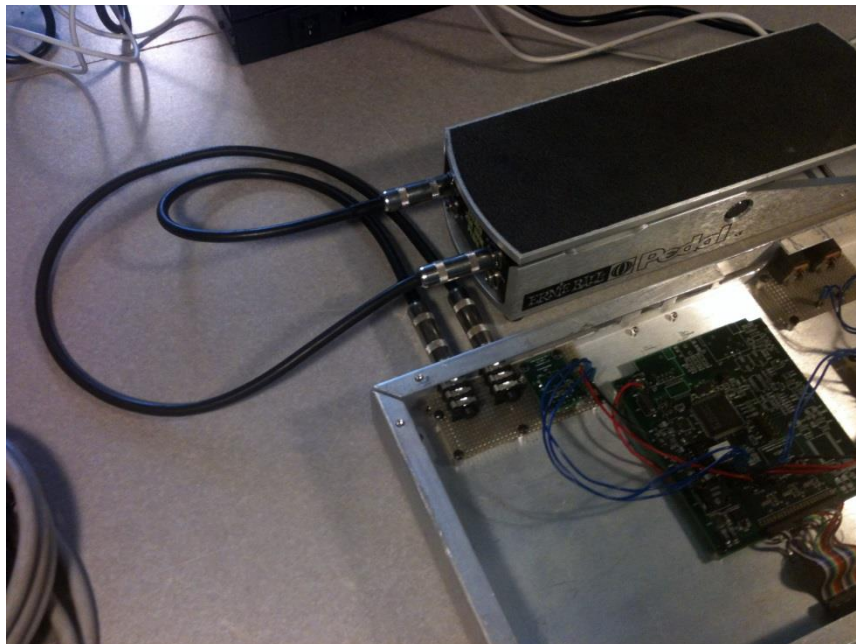
Proof of concept went OK, seemed promising, -- now what's the best form factor? Experimented with mods to existing pedals, August 2012 (pay no attention to the screen door springs):

But it seemed unworkable to expect users to mod their own pedals – potentiometer would have to be swapped out with linear pot, or lookup table to linearize – but then how do we come up with a curve that works for every one off the assembly line? Anyway, seemed like a lot of expense for just one pedal. So, OK, four pedal inputs in one unit. New board set, March 2013:

Now what to put the boards in? First try at an enclosure, April 2013:

Wow. Not exactly ready for prime time. Notice the editing panel on the top. Top button cycles four LEDs so you know which pedal you're editing, next button cycles which parameter group (look in the manual to know which group). 3rd button cycles the individual parameter (look in the manual). 4th button cycles which digit you're about to edit, and 5th button increments that digit's value. Number displayed in hex, you do know hexadecimal, right? No, I think I did actually convert to decimal. Must have, or 3rd digit wouldn't have been necessary.

Next comes the John Deere version; we found these off-the-shelf extrusions in anodized colors, not sure why I picked green. You have to stab through the plexiglass holes with a pencil to push the buttons. And dig the 5mph bumpers? I guess this could also be called the LL Bean version. May 2013:

Finally decided to get rid of the editor panel. Too expensive and too nerdy! Yikes, talk about user-hostile. Moved editing to external software. So here's the new, low-profile version, September 2013:
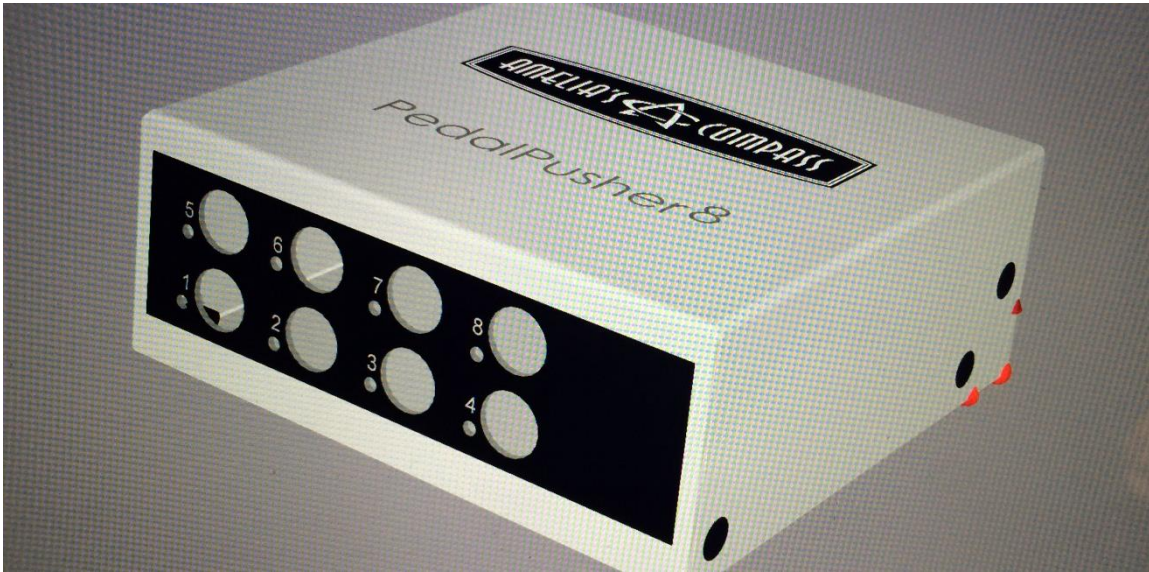

A little better, maybe? Labels printed on Brother P-Touch label maker.

Here's Blue #2, April 2014. It's finally starting to look like a real product. We have a logo!

At this point, we doubled the input count and changed the input circuitry to be able to switch-hit between pedals and buttons without special cabling. Here's an initial study for the enclosure, August 2015:

Needed a new board set with a 2nd-story board for the four extra inputs, December 2015:
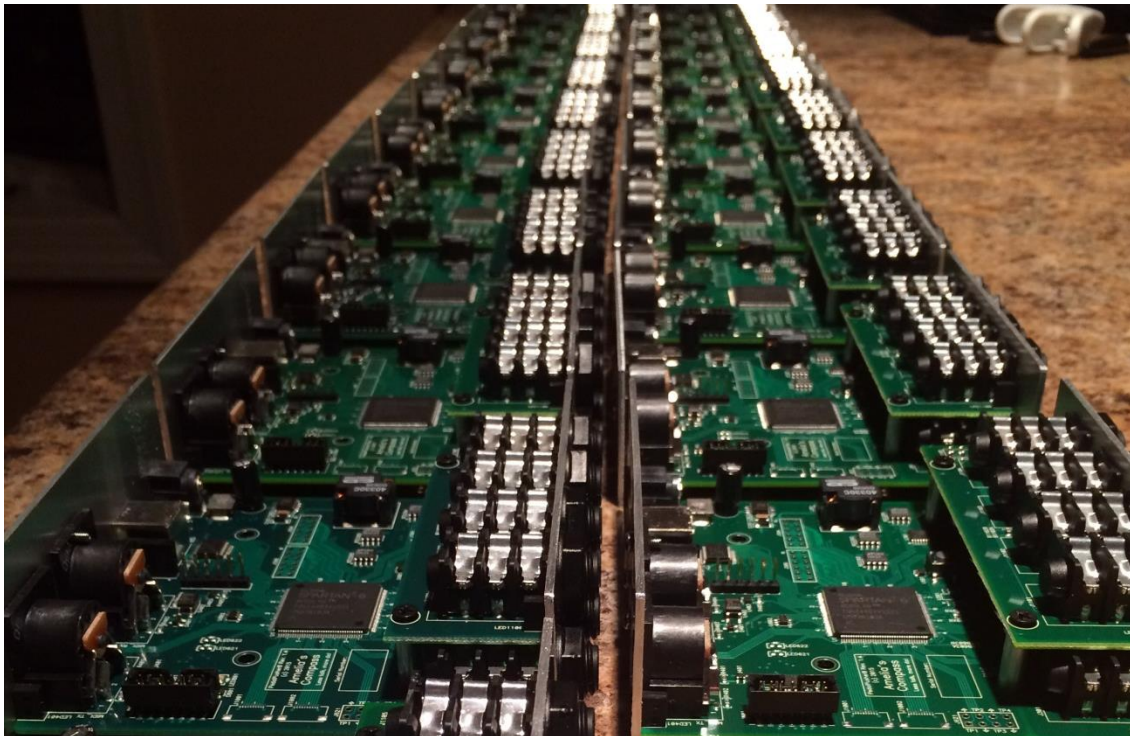
Changed the name from PedalPusher to ControllerHub 8, which is much more self-explanatory (plus we have other plans for the old name).

Complete redesign of the enclosure, February 2016:

We sold a good number of these.

The last ControllerHub 8 was sold in 2023. Two things conspired to make it go obsolete, both involving the Xilinx Spartan 6 FPGA chip. First, Xilinx moved customers to a new development platform, which did not support the older Spartan 6 product line. Fine, I'll use the old development system for these chips. Oh no you don't, Mr. Xilinx Customer! We're not supporting the old development system, which can't run on the new Windows OS! Fine, I'll use my old laptop that can still run Windows 7. No, it finally died! Fine, I'll use a Windows 7 virtual machine hosted on Windows 10. Never mind -- the Covid supply-chain issues mean that you can't buy Xilinx FPGAs anymore!

So, I threw in the towel. I still use mine, and Liz still uses hers.

Stay tuned for the next rev! The chip shortage is easing up and I have the updated version well in the works. Lots of new features, more inputs & outputs.

Thanks for reading.

Steve

July, 2023