

# My HIBU

During the winter of 2020, in the midst of the COVID-19 pandemic, I grew tired of reading, playing games, and other forms of entertainment. I decided to revive one of my old hobbies: electronics and microcontrollers. With plenty of time on my hands, I refreshed my C++ knowledge and started tinkering with blinking LEDs, clicking relays, and displaying various values on an LCD screen. This was enjoyable until my attention was drawn to another old hobby of mine: vacuum tubes. I further immersed myself in the subject by studying books by authors such as Dieleman, Van der Veen, and Moers, and embarked on an intensive self-study journey.

The first result was a charmingly sputtering "one-tuber" built with a PCL86 tube, which contains both a triode and an output pentode in one glass envelope and can deliver about 1.5W. Unfortunately, the anode quickly became red-hot, and the tube soon failed. It turned out that I had miscalculated the tube; the voltages and currents were far too high. I had heard something about BIAS, but I lacked the necessary knowledge to answer all my questions independently. Seeking help, I discovered Hichtum.



There, I found a community of passionate technicians, hobbyists, and other enthusiasts, led by the inspiring Menno. No question was too much, and I received valuable guidance. Although I was familiar with using an oscilloscope, working in the frequency domain was completely new to me. ARTA was introduced as a powerful tool, allowing me to finally get serious about my projects, supported by the extensive theory behind the HIBU project. The result was my first serious vacuum tube amplifier. An old chassis from a previous project proved perfectly reusable.

Although the (aluminum) top plate did not fit into Cor's milling machine, I took on the design myself. Using various templates, drilling, milling, and a patient approach, I eventually achieved a beautiful final result. During the build, I encountered a few problems, but they were quickly identified and resolved. I learned that haste is indeed an enemy: during measurements, I accidentally slipped with the probe, causing a short circuit that destroyed the 250V power supply. And most disappointingly, I could only display my creation without being able to let it be heard.



Ultimately, my efforts were rewarded with exactly what I wanted: my own, self-built quality amplifier. This device will provide me with long-lasting listening pleasure. Moreover, I learned to measure with ARTA, gained a deep understanding of the workings, and acquired valuable insights. I look forward to possibly designing my own amplifier in the future, or tackling other projects. One example is the BIAS monitor I am currently developing. This monitor, driven by a microcontroller, displays the bias currents of the four triodes and makes adjustments easier. While replicating designs is enjoyable, co-designing offers the opportunity to gain deep insights, acquire knowledge, and exchange experiences, something that is abundantly available at Tube Society.

