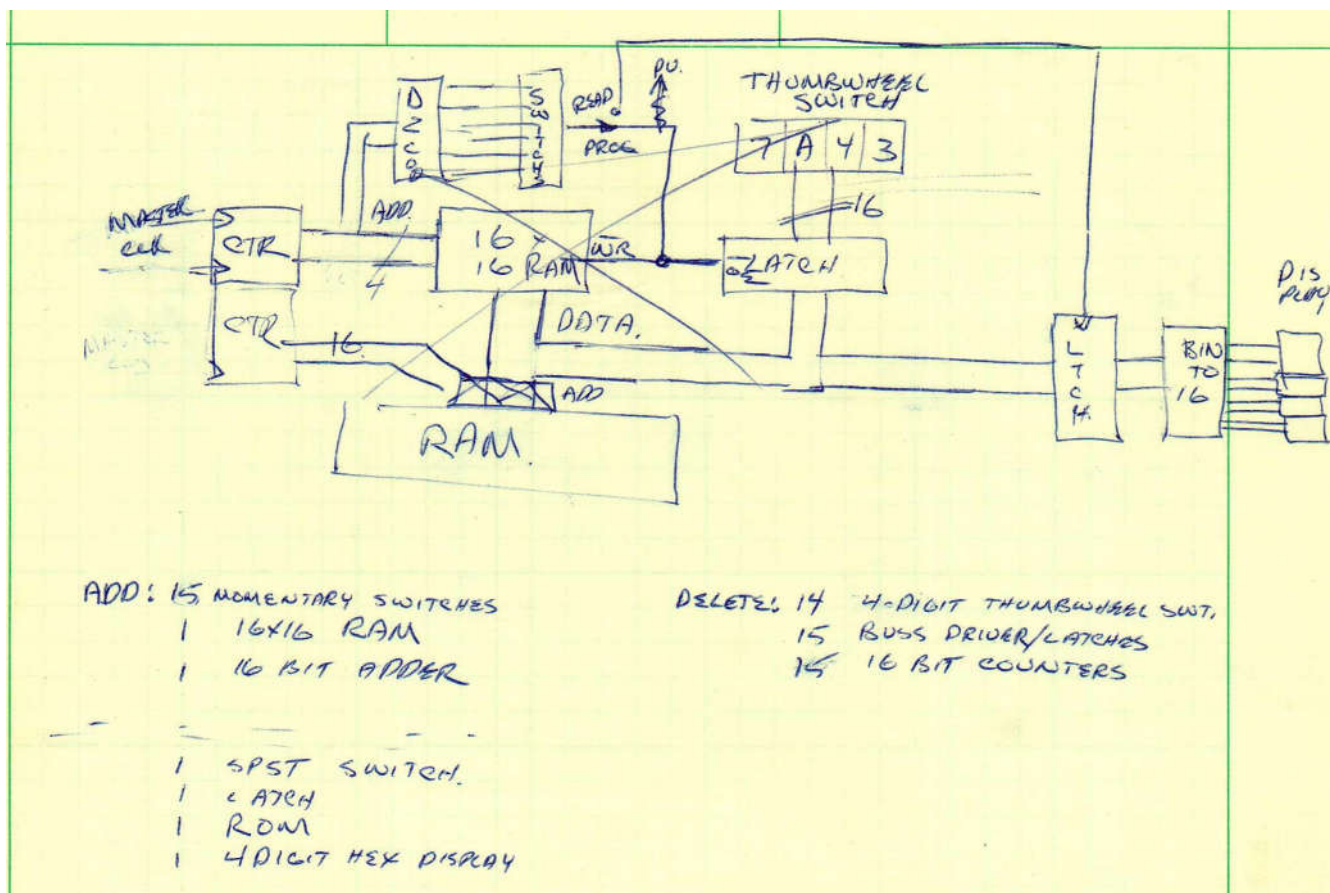


—RAKO STUDIOS—

## Digital reverb

Some paper scratchings on how to make a digital reverb.



Back in the 1980s I played with charge-coupled [bucket-brigade ICs](#) to make an audio reverb. The circuit was well-understood and published. After building it, I was disappointing in how bad it sounded compared to a spring reverb as used in guitar amps.

Music studios used a plate reverb. This was a large steel plate, many feet long and wide. They excited one point on an edge and the sound waves would bounce around and reflect as they traveled around the plate. This 1980s design tried to get at least 16 "reflections" in the digital domain.

The first of four pages below started out with discrete hardware, along the lines of that bucket-brigade reverb. I crossed that out when I realized I could use a microprocessor with a memory array serving as the two-dimensional "plate" to simulate a studio reverb.

Subsequent version got more simple and straightforward, the benefit that software can bring to a design. The last page, unfortunately stained by some paper that was not acid-free, shows a pretty clean design. These days you can do all this with a cheap chip with a handful of memory.

