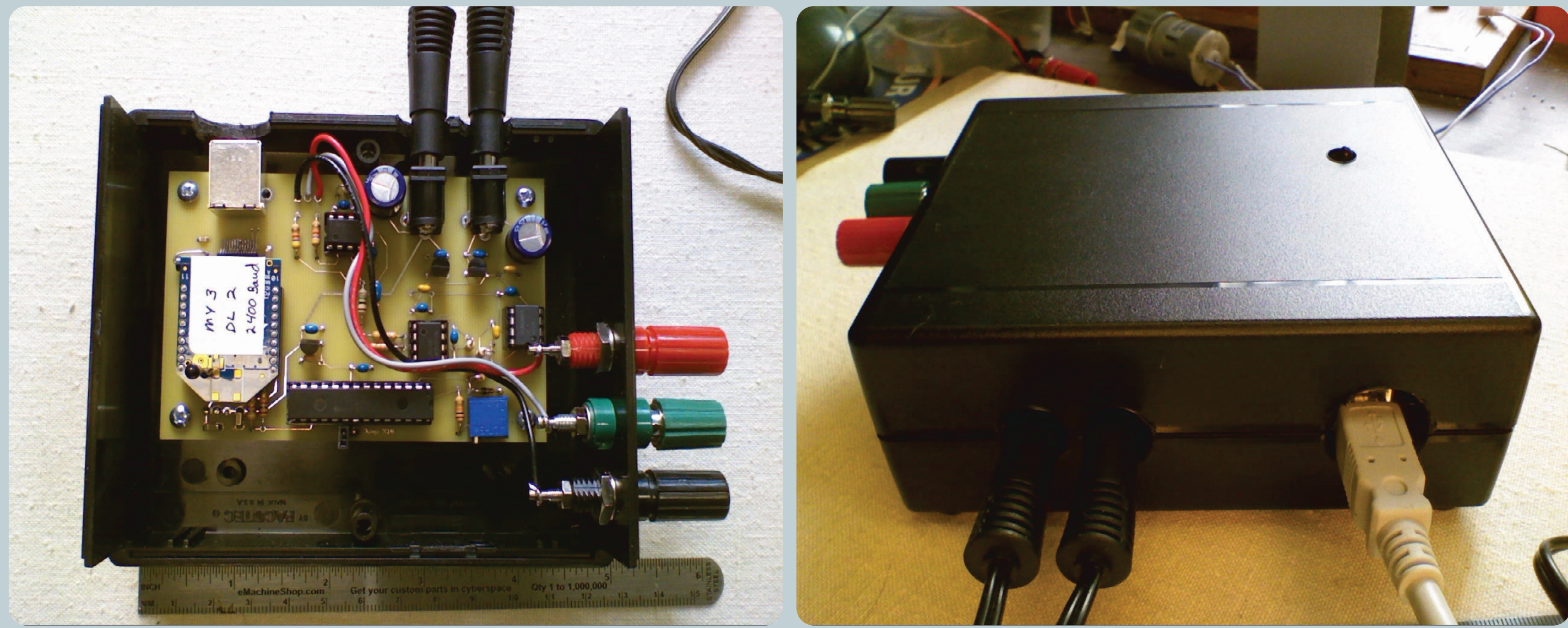


# Redesigning the AS-1 Signal Processor

## Original "Black Box"



### Issues:

- Production challenges
- Low data rate
- 16 bit resolution
- Requires two wall power supplies
- Not user modifiable/hackable

## New Signal Processor



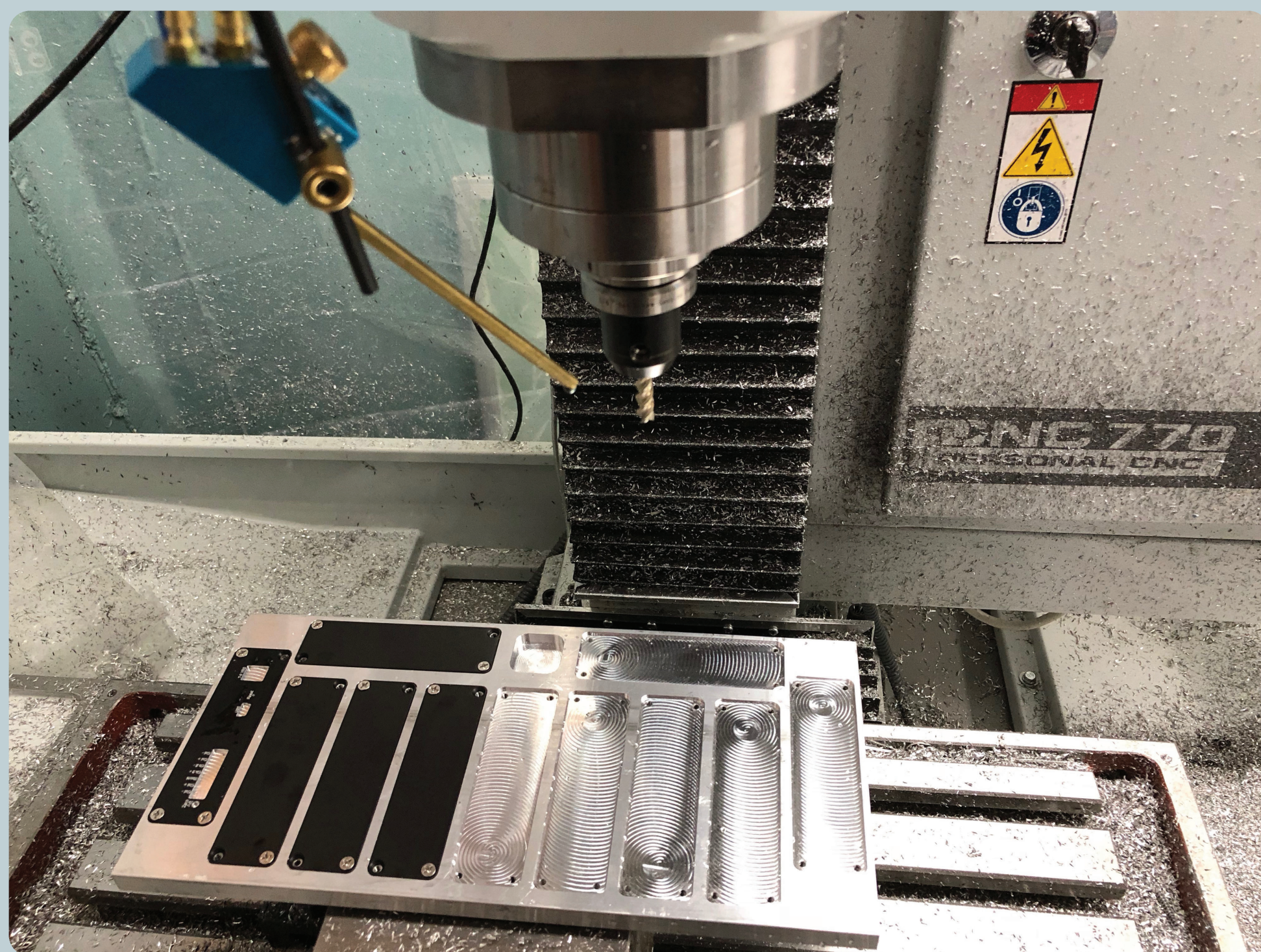
### Features:

- Serial configuration menu
- USB powered
- 24 bit ADC
- Arduino compatible
- Aluminium enclosure with laser engraving
- Optional environmental sensors
- FIR filter
- XBee Radio Capability

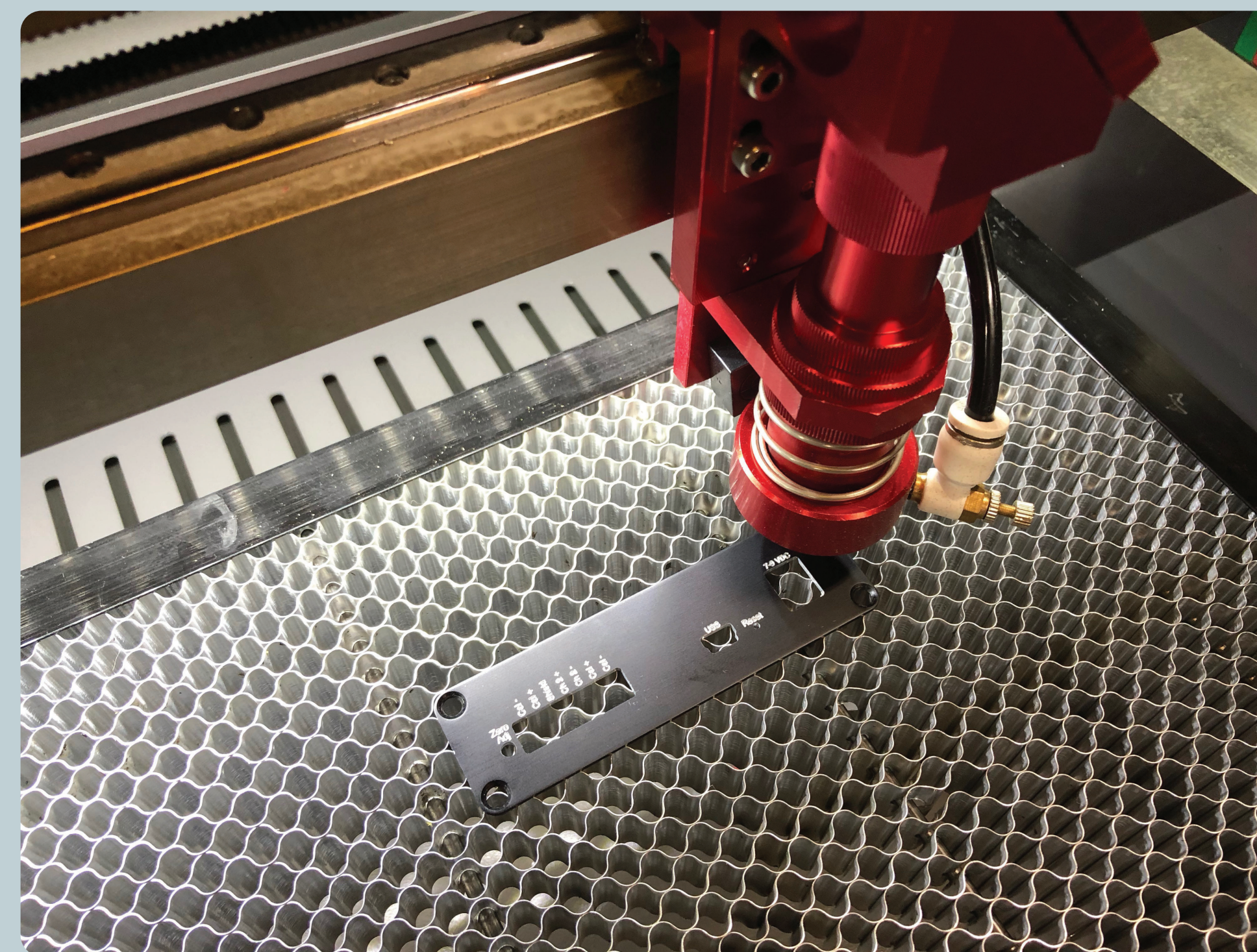
### Challenges:

- Noisy power from computer USB
- Duplicating response of original system

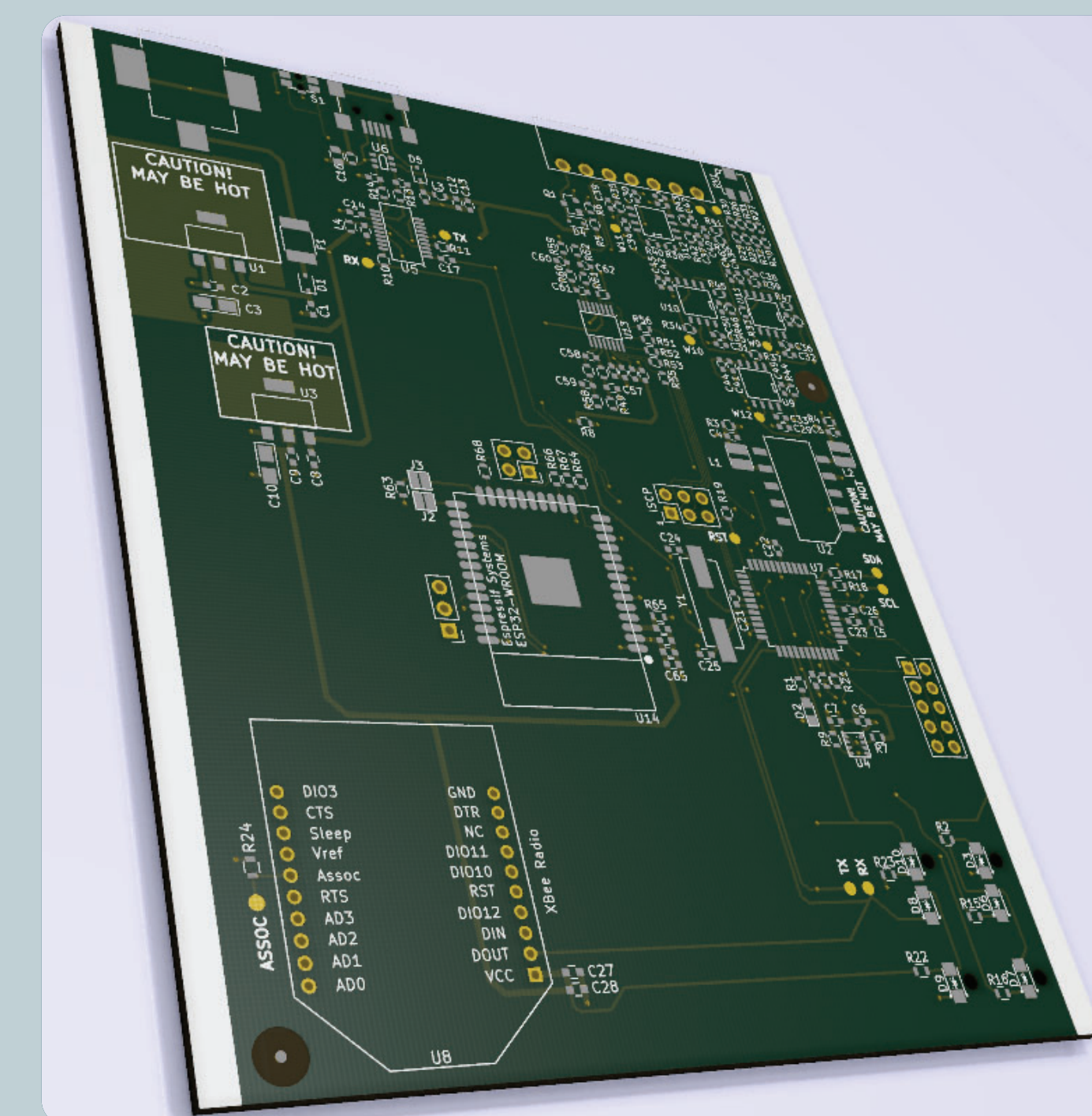
## Production



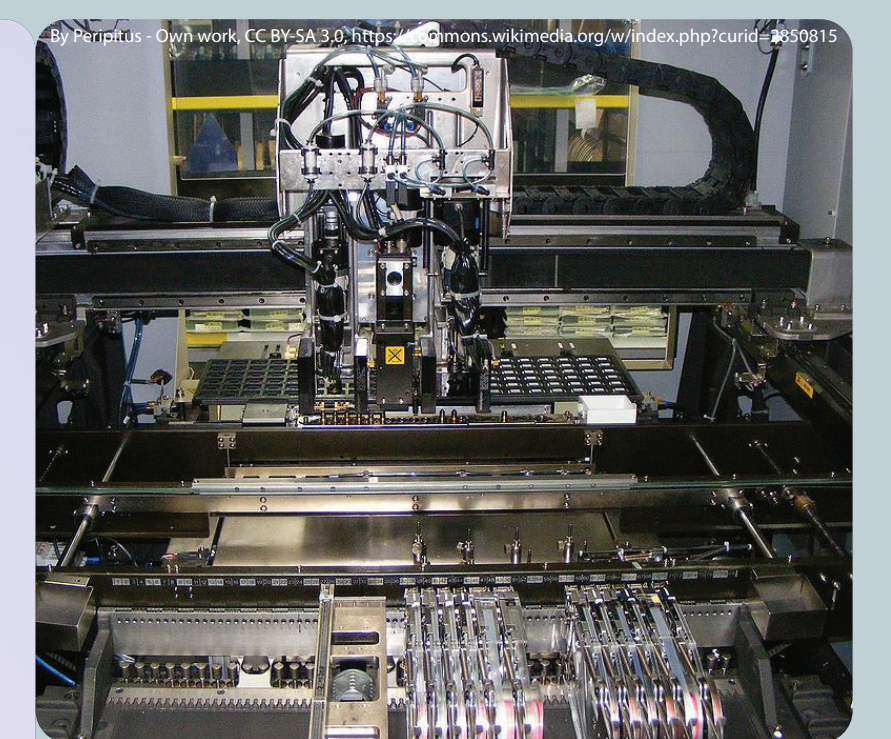
Milling



Laser

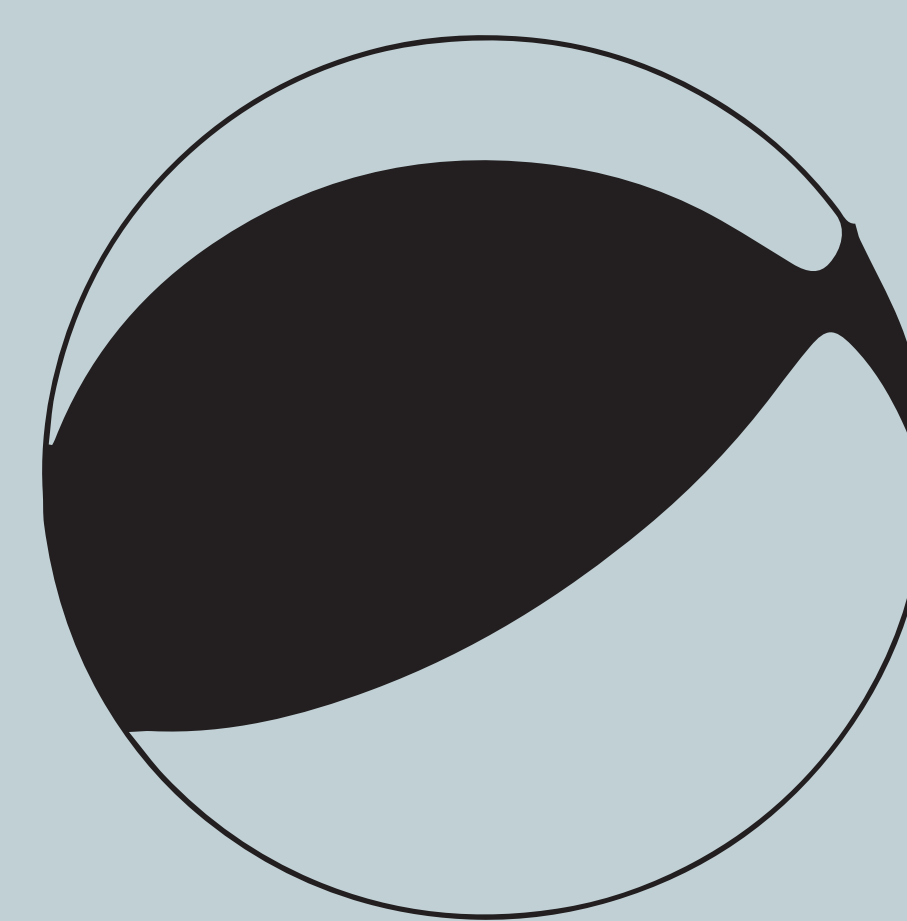
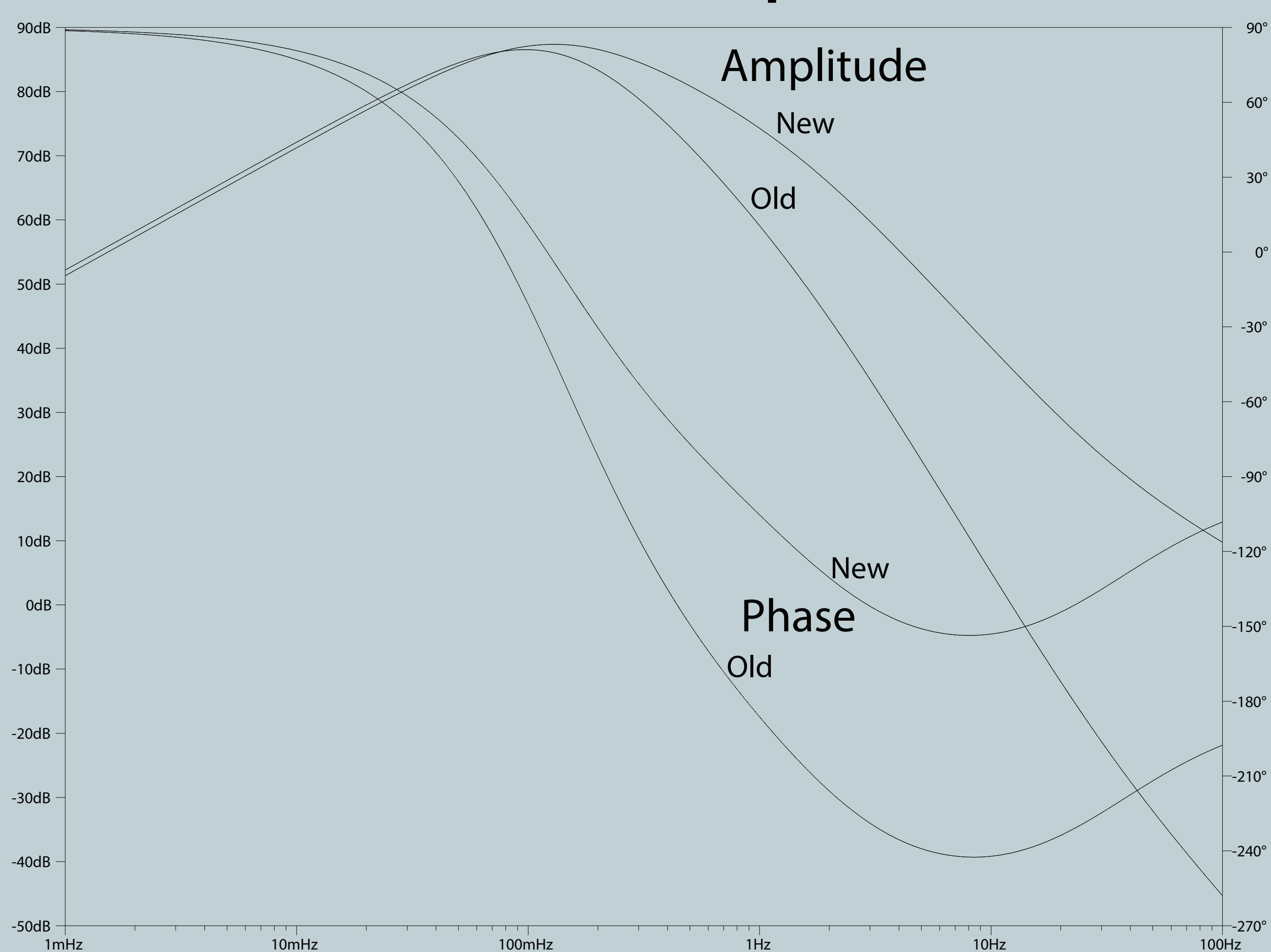


Electronics



- 4 layer FR4 PCB
- Automatic Pick and Place
- SMD Reflow Process

## Modeled Response



M 6.2 - 66km SSE of  
Tanaga Volcano, Alaska  
2018-08-23 03:35:12 (UTC)  
51.340°N 177.760°W  
20.0 km depth

## Event Comparison

