

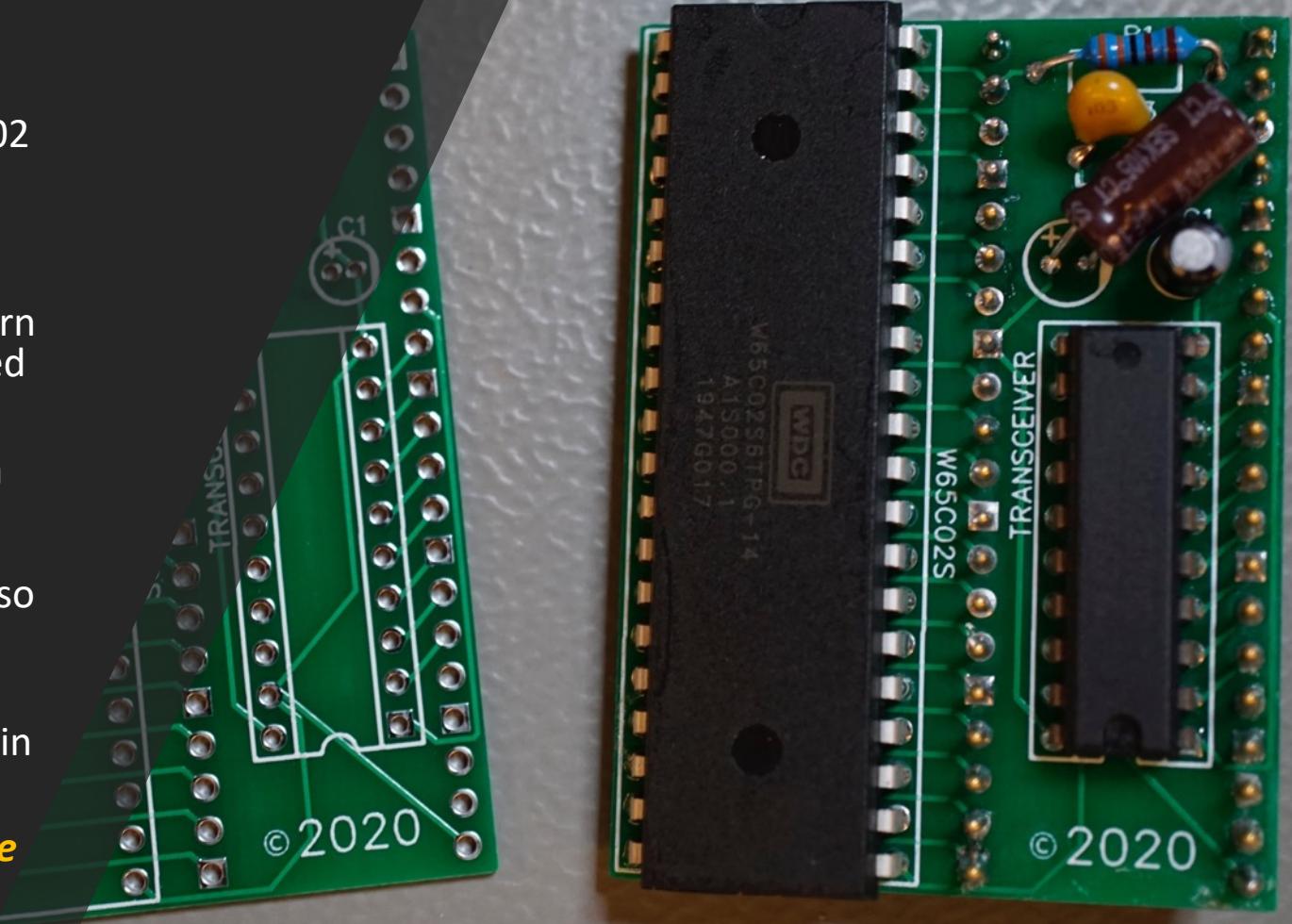
6502 CPU Replacement Adapter

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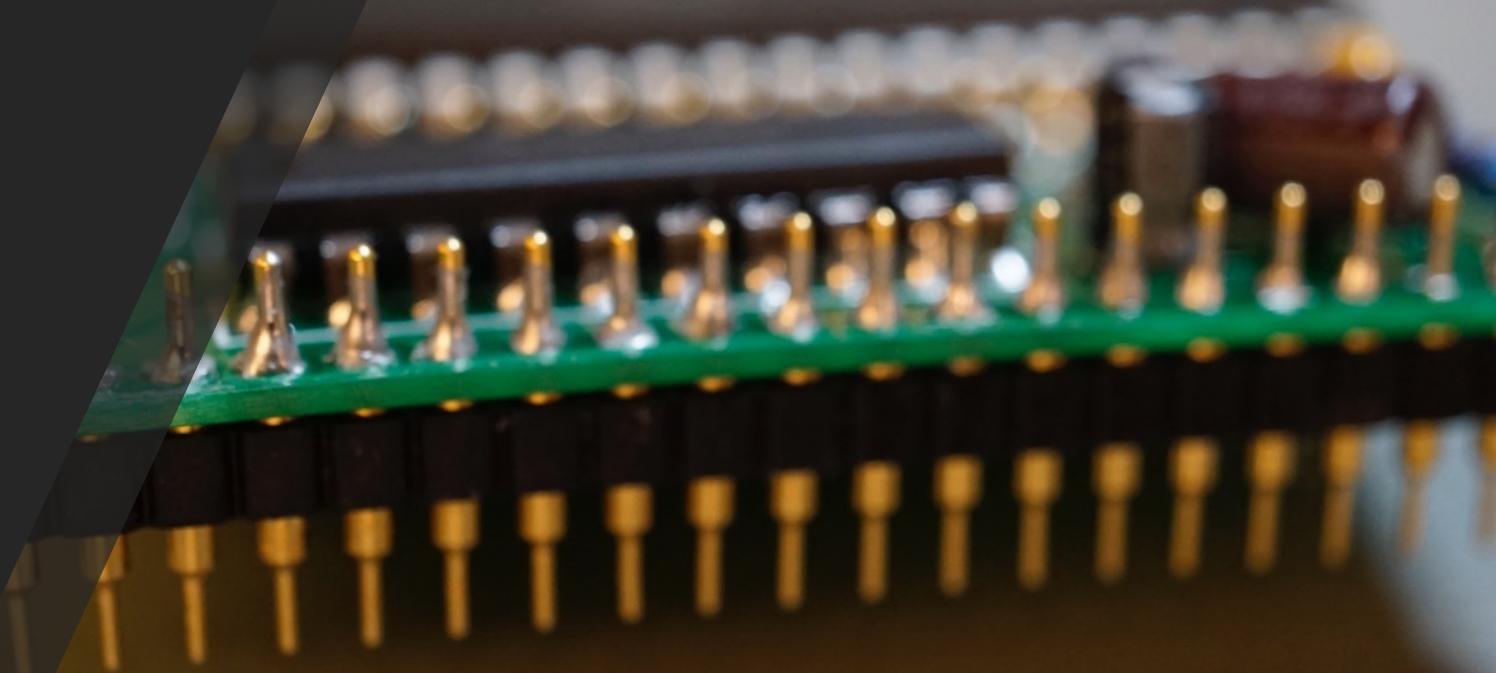
Introduction

- This is a small daughter-board adapter meant to be inserted into the existing 6502 socket in vintage 8-bit computers such as the Commodore VIC-20 and Acorn BBC Micro
- It replaces the old 6502 CPU with a modern CMOS, low-power, currently-manufactured W65C02S CPU and some auxiliary logic
- The adapter is provided in two versions: a long, side-leaning version and a short version. The two versions are electrically identical, but have differing aspect ratios so to fit into the available space of different motherboards/cases
- The adapter has been successfully tested in both versions of the VIC-20 motherboard
- ***But it has failed tests in an Apple //e, due to either timing discrepancies w.r.t. the R65C02, or to unrecognized TTL levels in the clock and/or control lines (which, unlike the data bus, are not boosted by the onboard bus transceiver)***



Components

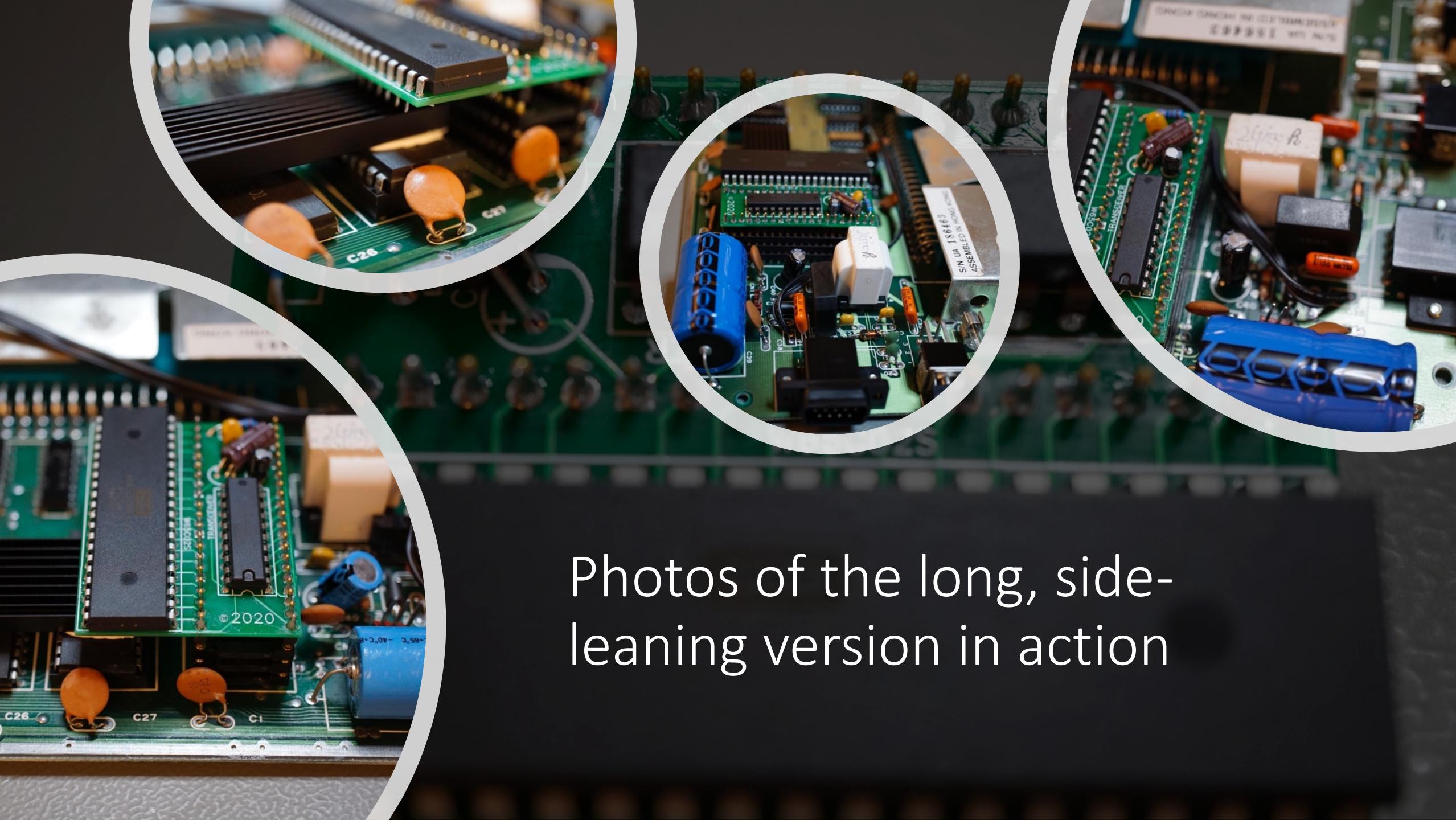
- 1x 3K3 ohm resistor, preferably metal-film
- 3x bypass capacitors. You can use the values you prefer. I recommend 1x 10nF (tantalum), 1x 100nF (mini-electrolytic) and 1x 1uF (electrolytic)
- 1x W65C02S6TPG-14 CPU, 40-pin DIP/DIN through-hole package
- 1x SN74HCT245N bus transceivers, 20-pin DIP/DIN through-hole package (this *must* be the HCT version of the 74245)
- 2x 20-pin, single-row precision pin-headers (see photo for a reference)
- 1x 40-pin DIP/DIN precision IC-socket for the CPU (required in the short version of the adapter, but optional in the long, side-leaning version)



Project history

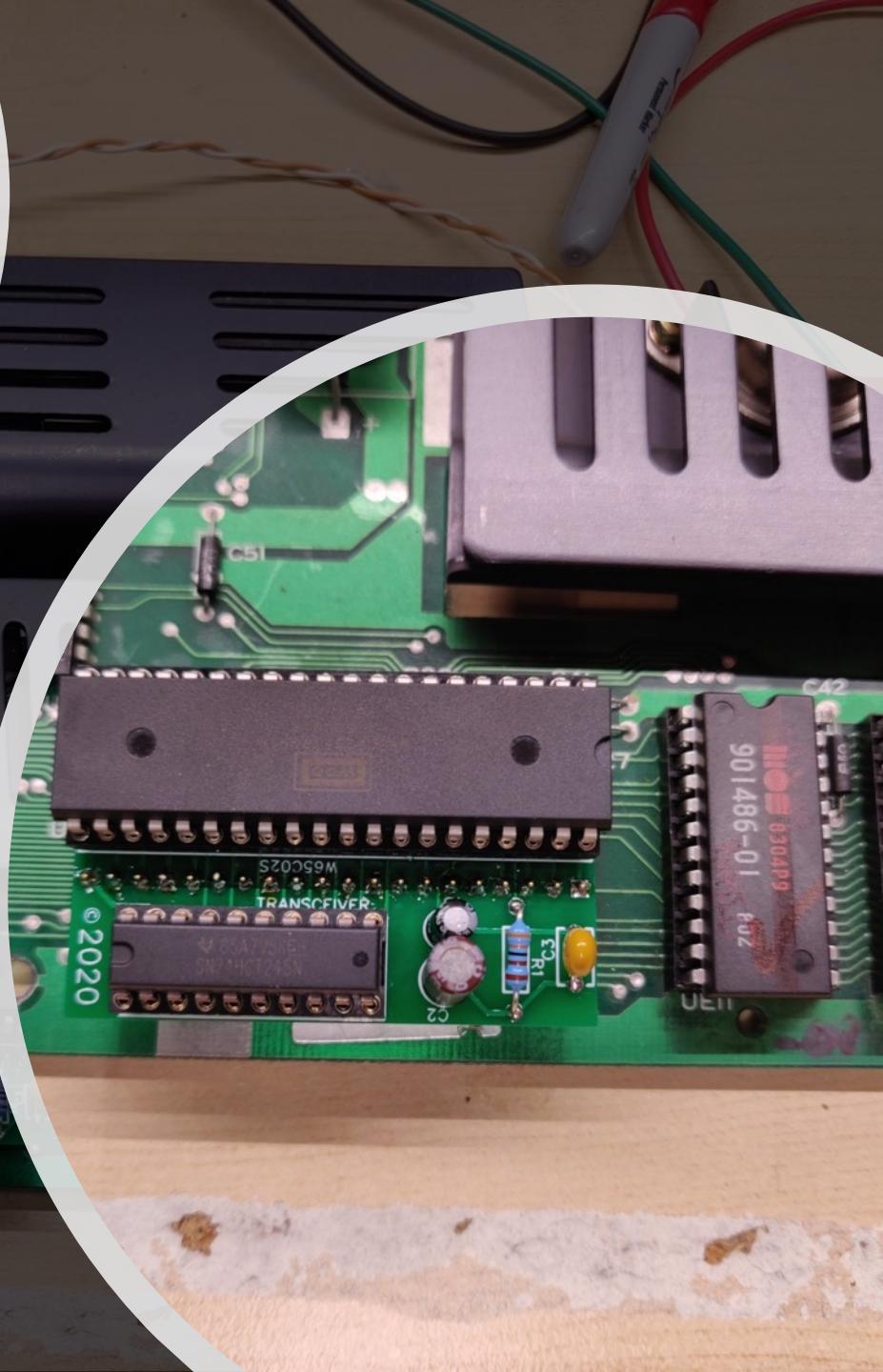
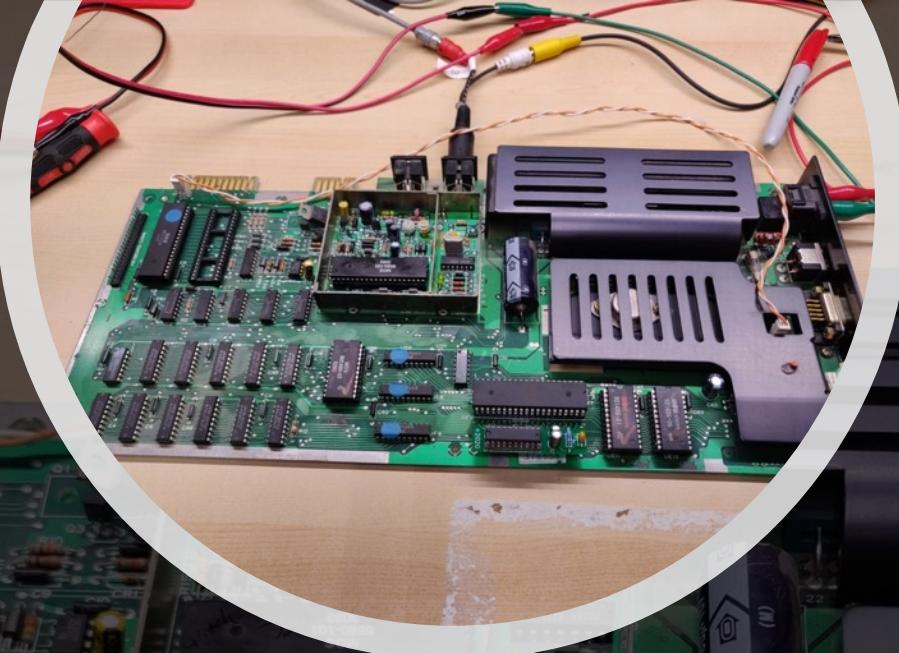
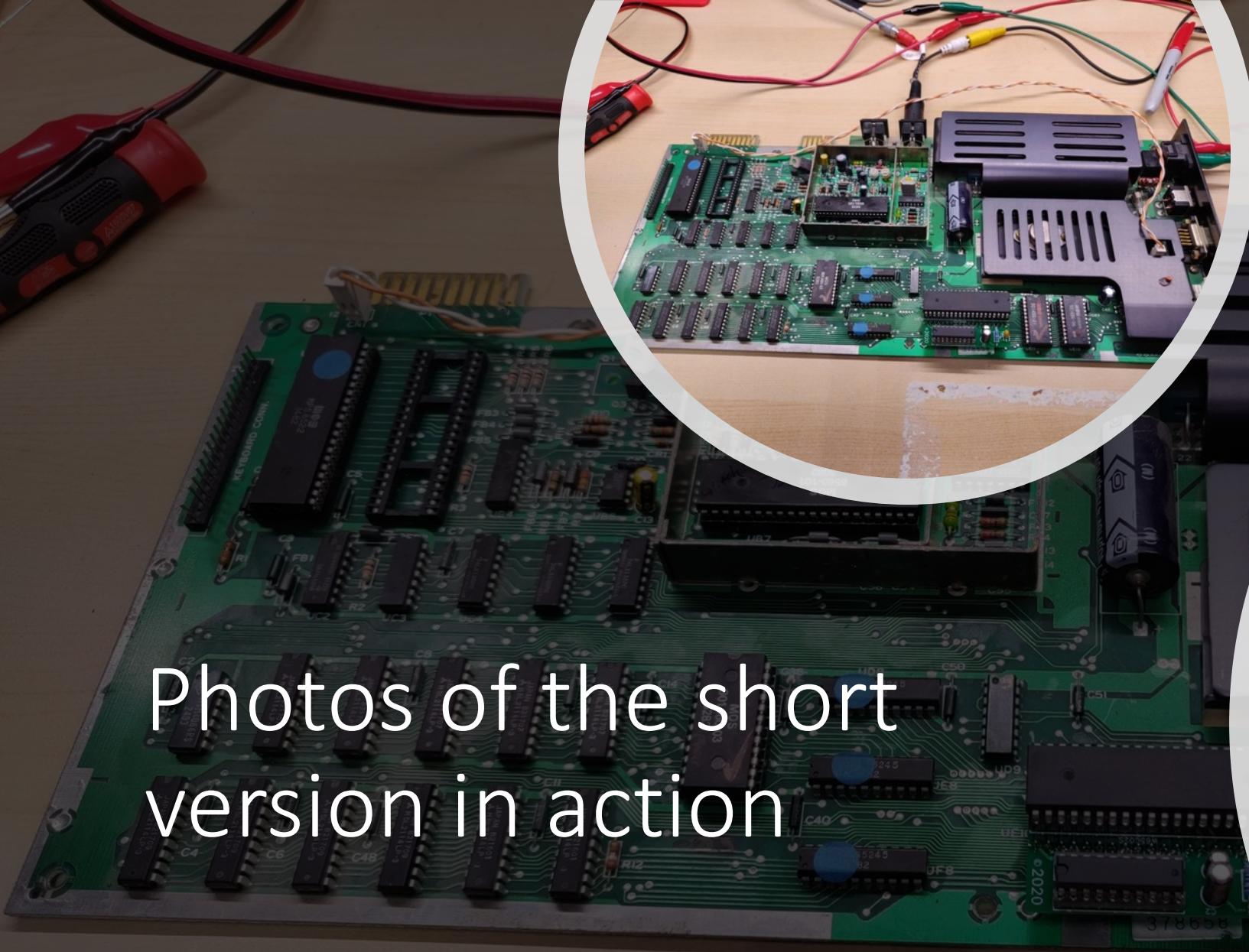
- The development of this board has been documented in a ~1/2-hour video available online:
 - <https://youtu.be/XwWGI3z IFQ>





Photos of the long, side-leaning version in action

Photos of the short
version in action



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