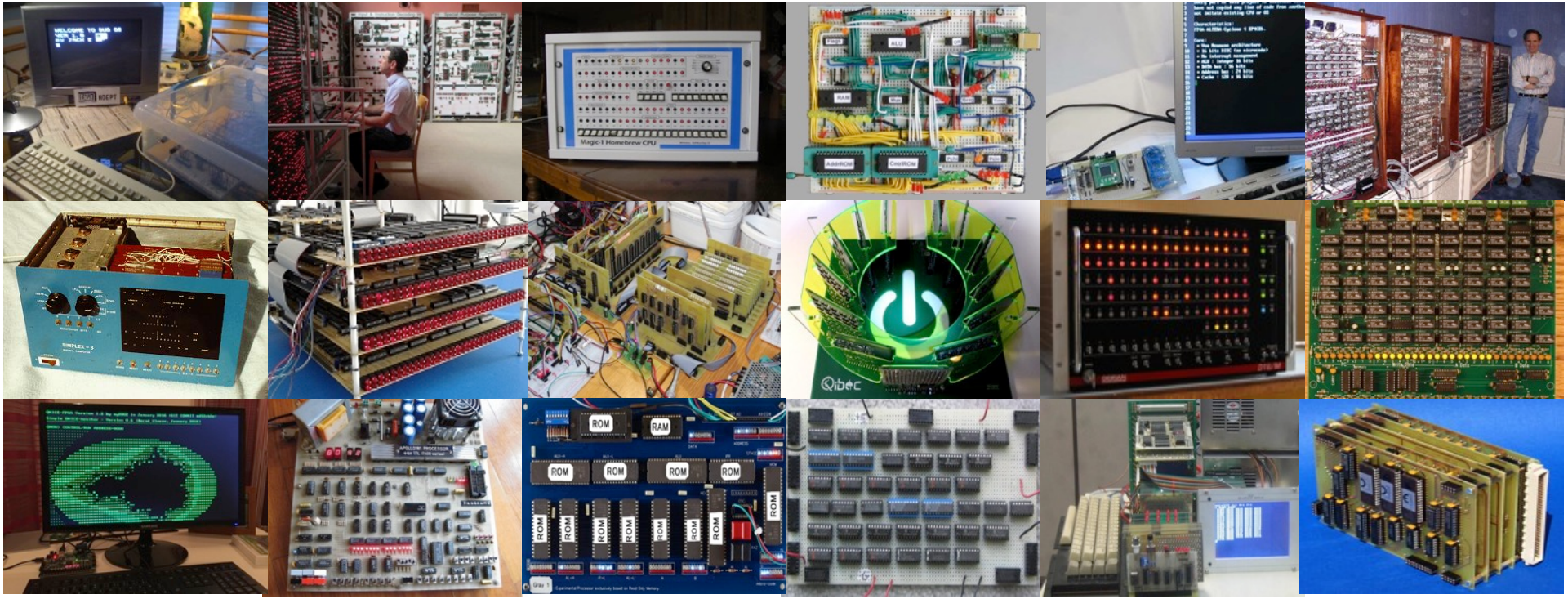
Gigatron TTL microcomputer
“Brand new vintage”

HaD Unconference Cambridge 2019

Marcel van Kervinck

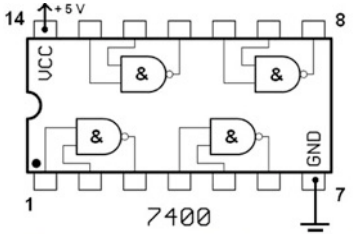
Original plan: build our own CPU that can play Tic-Tac-Toe



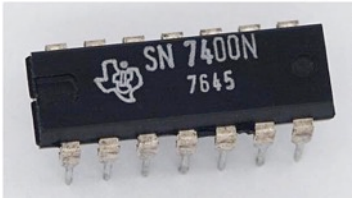
https://www.homebrewcpuring.org

Our interest: *minimalism*

Rule 1 Only *simple* logic chips



Rule 2 *Single board*, 30-40 chip count

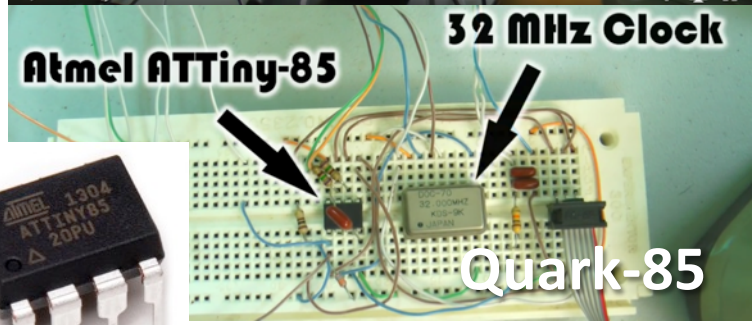


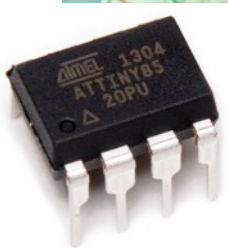
Rule 3 *Capable* of video games with sound

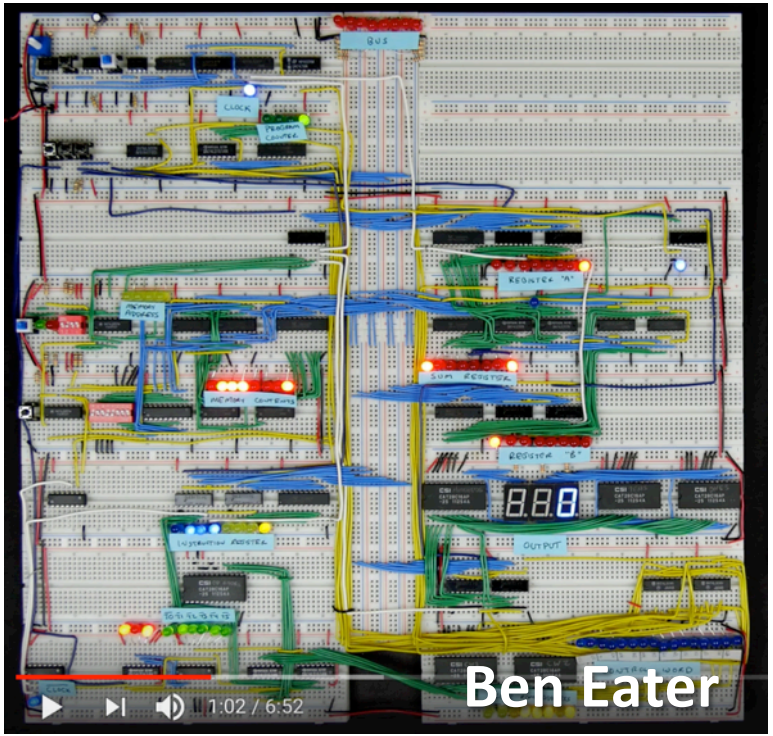
“If software can do it,

you don’t need the hardware”

Look around for inspiration







May 2017: First pixels from breadboard prototype

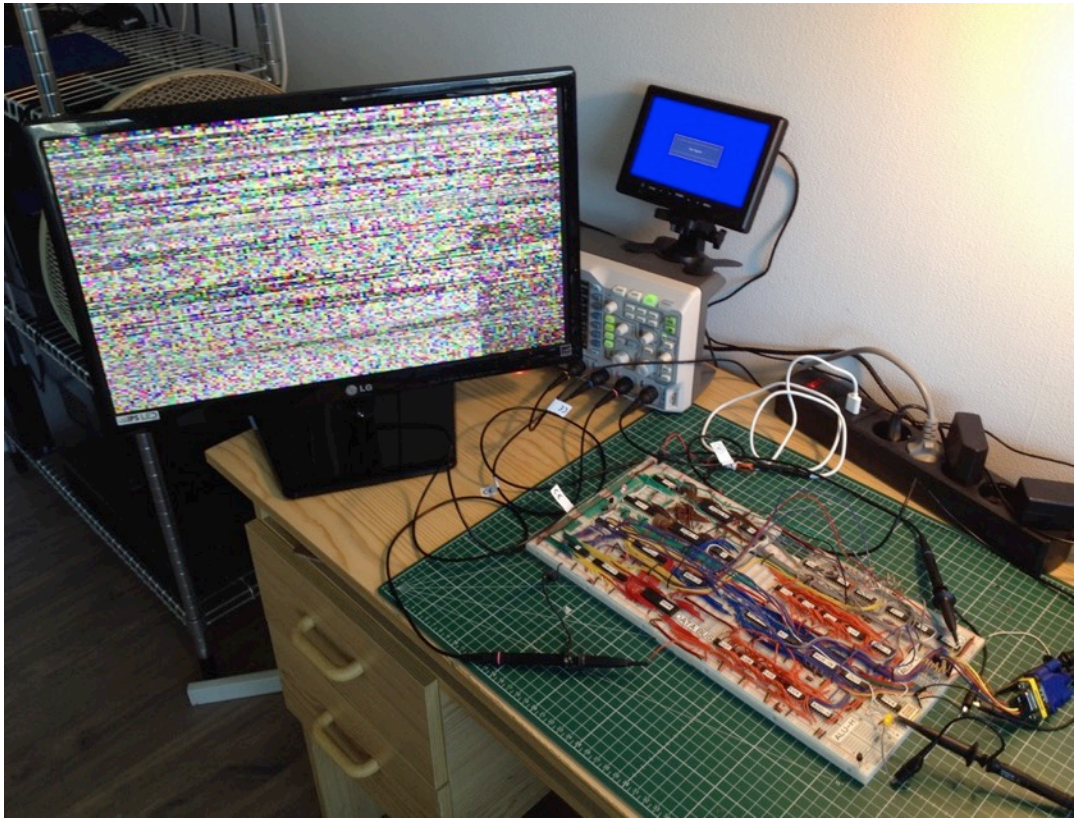
34 logic chips
(74LS series)

One 32KB RAM

2 x 32KB EEPROM
(28C256)

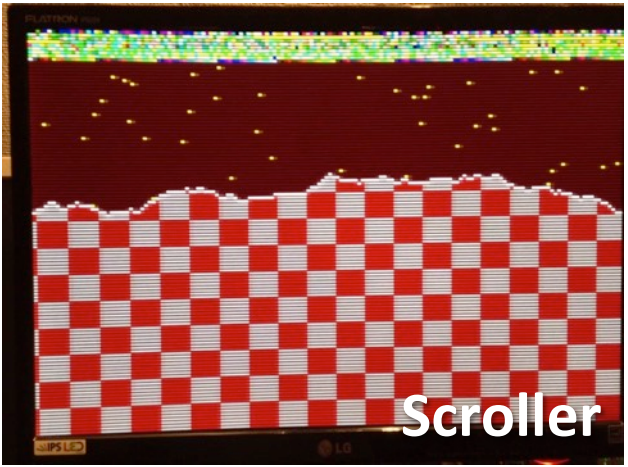
30 diodes

~400 wires



No microprocessor
No sound chip
No video chip
No UART
No CIA

Some programs we wrote

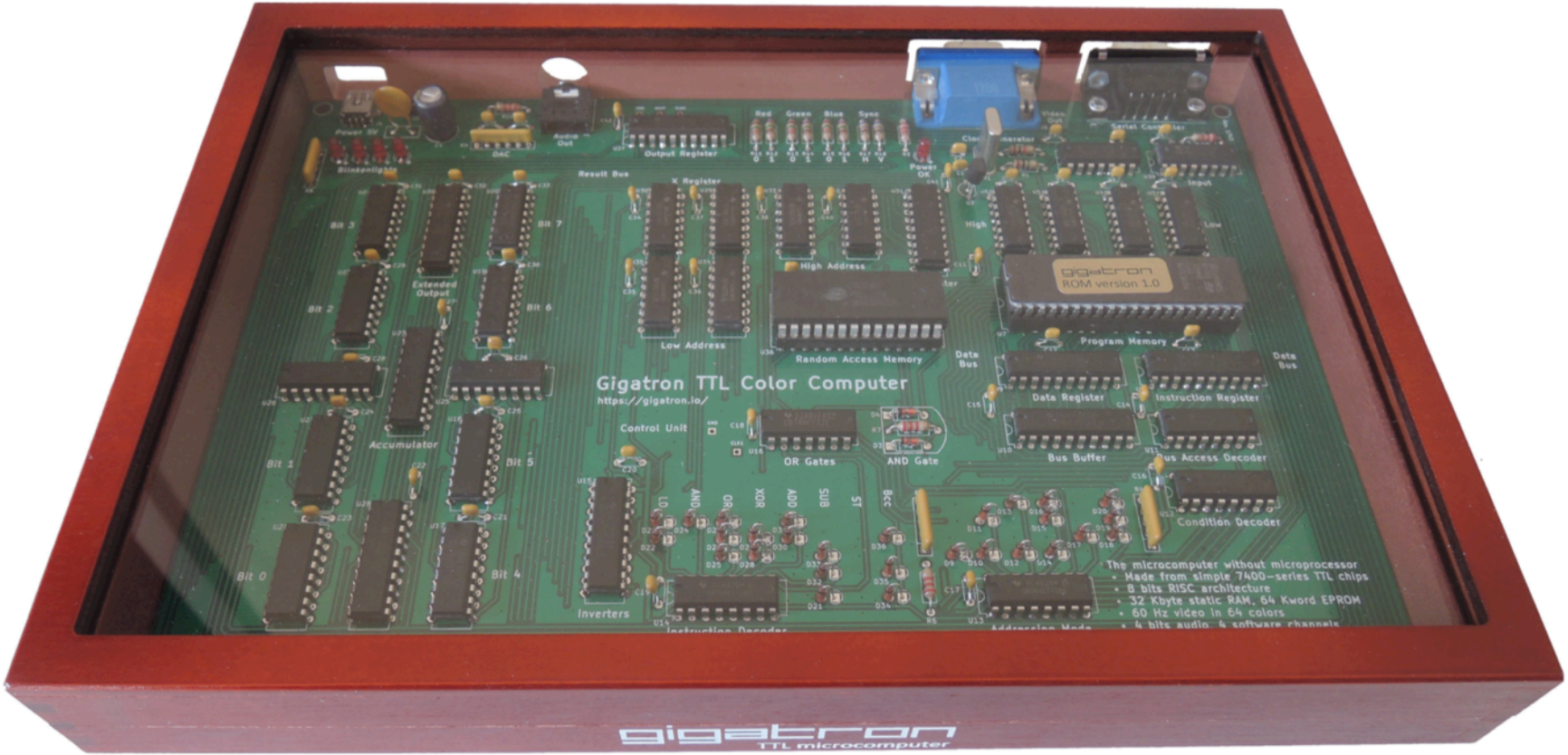


Wise people stop here

“There is no product obscure enough that people are not interested in it.”

Oscar “Obsolescence Guaranteed” Vermeulen

Printed circuit board + nice enclosure = Gigatron

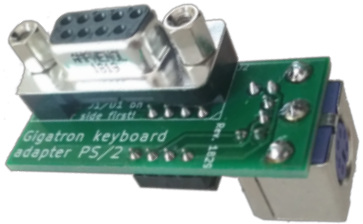


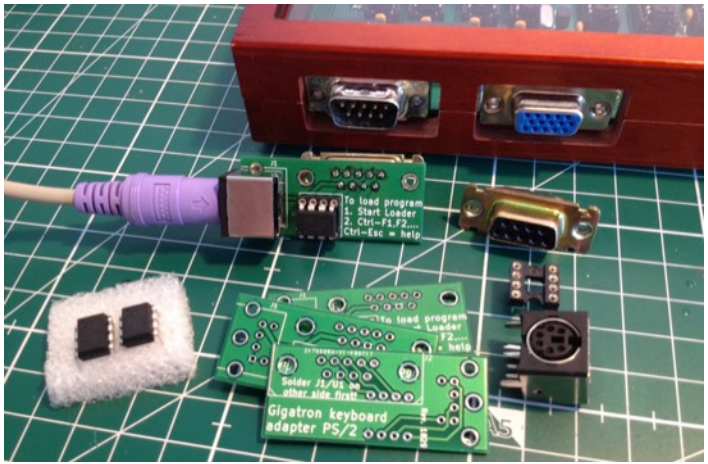
March 2018: tedious logistics for first kits

Summer 2018 some vital updates

Pluggy McPlugface

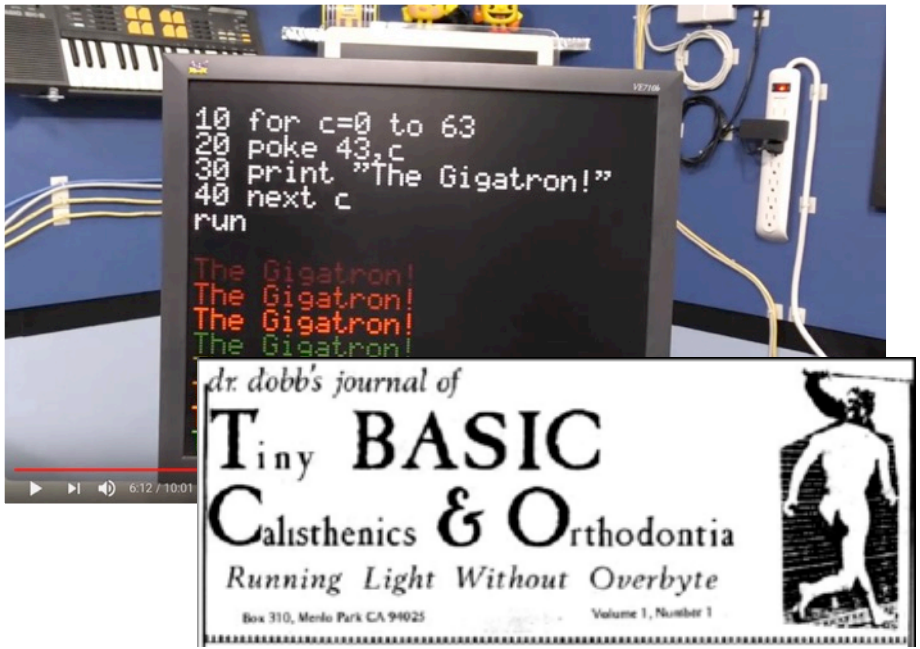
PS/2 keyboard adapter





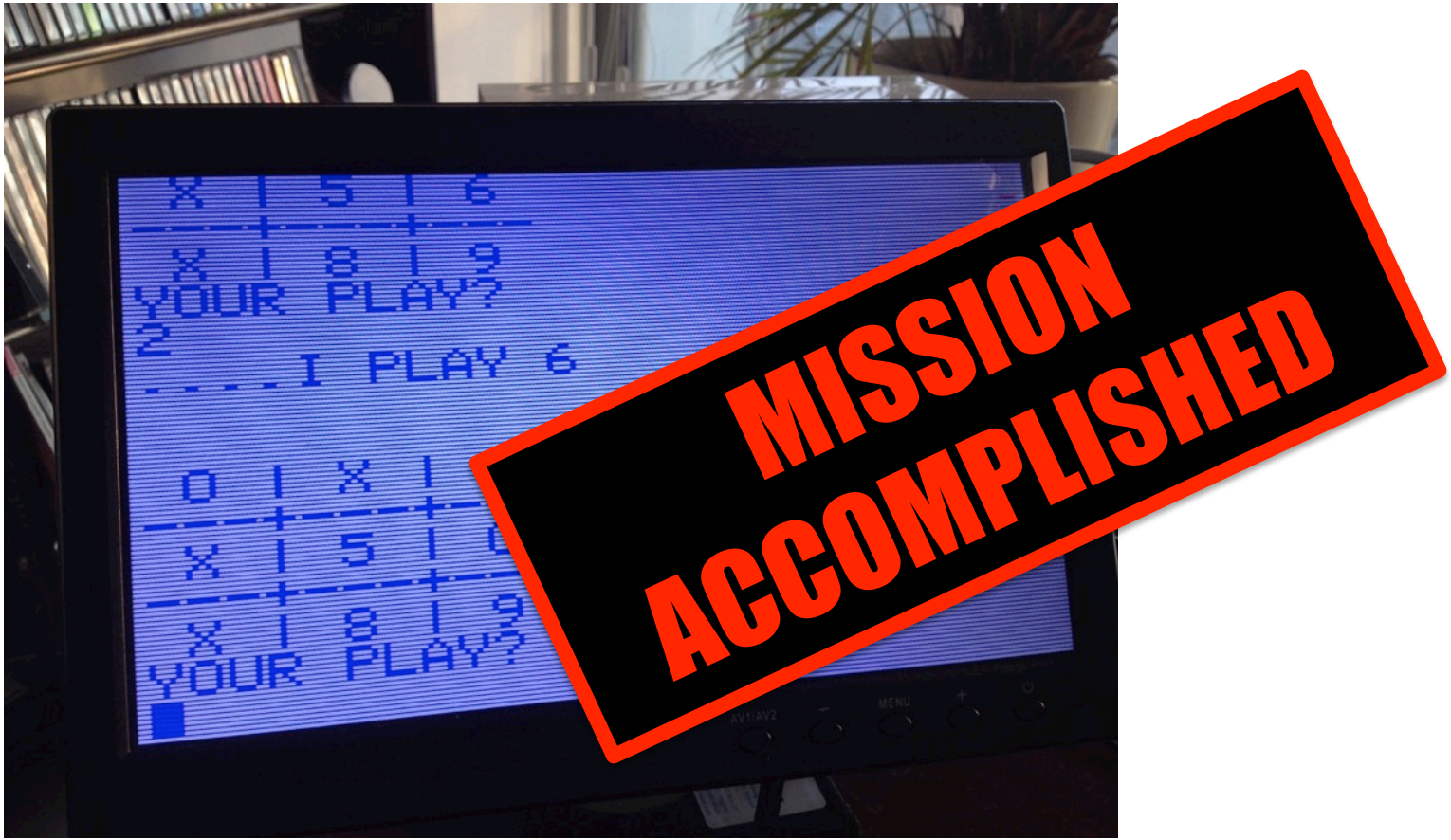
Tiny BASIC ported

Dr. Dobb's Vol. 1 Num. 1 (January 1976)

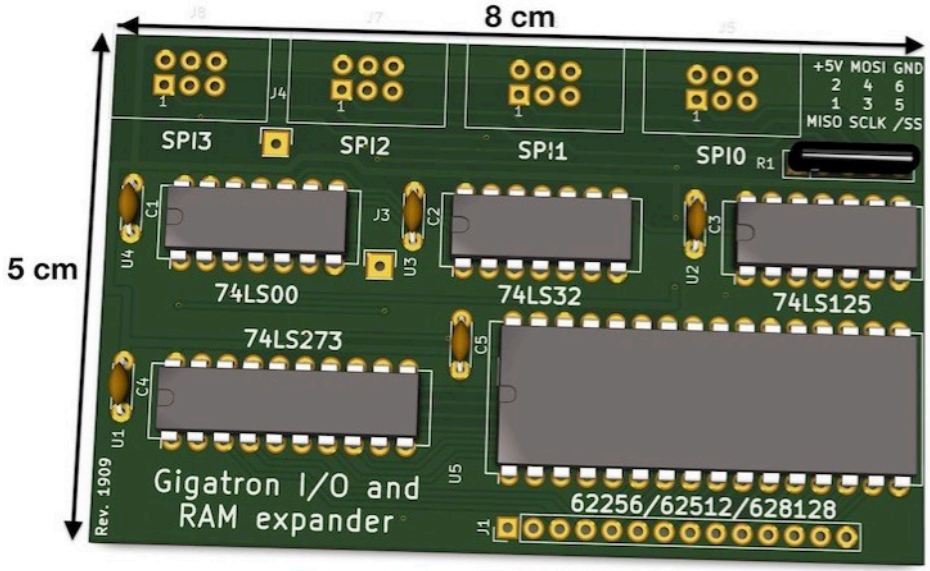


This Guy seems to like it

Tom Pittman’s 1977 Tic-Tac-Toe BASIC program works



Next? Retro Challenge RC2019/03 just started…



Add four SPI ports with just 3 or 4 TTL chips and some software wizardry

→ Huge amount of GPIO for controlling many types of devices

→ Support up to 128K RAM

→ MicroSD cards speak SPI too… FAT32 support in software?