

Alice 2

1999

8-bit custom microcomputer

Modular design

Custom bus:

- Ribbon cables

- DB-25 connectors

Boards:

- Z80 CPU, 8259 interrupt controller

- Clock (single-step, variable, 1 MHz)

- Debug board (bus lines to LEDs)

- Memory (16 KB EEPROM, 48 KB RAM)

- I/O board (PIC, keyboard, serial, 2-line LCD)

- Video (200x170 monochrome NTSC)

lkesteloot.github.io/alice/alice2

Alice 3

2015

8-bit custom microcomputer

Monolithic design

Z80 CPU

ARM Cortex M4 for I/O:

- SD card

- Keyboard

- RAM (intercepts Z80 memory bus)

Parallax Propeller:

- VGA video (color text)

- YM2149F audio emulation (3 voices + noise)

- Generates Z80 clock

Runs CP/M 2.2

lkesteloot.github.io/alice/alice3

Alice 4

2017

Hand-held graphics tablet

Runs mid-1980s Silicon Graphics demos

Altera Cyclone V SoC:

Linux and demos run on embedded ARM

GPU in FPGA

Performance:

1.9m triangles per second

47m pixels per second

Comparable to SGI Octane (1997)

lkesteloot.github.io/alice/alice4