

Minimal UART CPU (FLASH Edition) – Overview

- Comparable to Altair 8800 or Apple 1
- Clear(est?) and simple(st? – you judge!) design for fun and education
- 8-bit data bus, 16-bit address bus, Von-Neumann architecture
- 64 instructions (conditional branching, subroutines, stack and word operations)
- 1,8432MHz clock speed with 0.25Mips (Altair 8800: 0.29Mips, Apple 1: 0.43Mips)
- **32KB RAM and 4KB FLASH ROM** (OS: memory monitor, tools, **file system**)
- **28KB SSD (file system: LOAD, SAVE, DELETE, SHOW) for games and demos**
- UART interface (115.2kbps) for terminal display, keyboard input and data I/O
- only 16 control signals
- 2 data registers A and B
- ALU (arithmetic and logic unit) = simple adder
- 3 flags (negative, carry and zero)
- 74HCxx TTL logic on **115mm x 175mm** PCB (all ICs also available in SMD package)
- Cross-assembler (Windows 10) for easy programming / upload via terminal 'cut & past'

Minimal UART CPU – FLASH Edition

Main Control Signals

Derived Control Signals

Components

Functional Blocks

Data Lines

Data Bus

