Minimal UART Computer – Performance 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 ops)
- 1,8432MHz clock with 0.25Mips
  (Altair 8800: 0.29Mips, Apple 1: 0.43Mips)
- 24kB RAM / 8kB ROM (OS, memory monitor, disassembler, tools, games)
- UART interface (115.2kbps)
  for terminal display, keyboard input and file I/O

- 16 control signals
- 2 registers A and B
- ALU (arithmetic and logic unit) = simple adder
- 3 flags (negative, carry and zero)
- 74HCxx TTL logic on 120mm x 190mm PCB

- Cross-assembler (Windows 10) for easy programming and
  upload via terminal 'cut & past'

Minimal UART CPU

Main Control Signals
Generated Control Signals
Components
Functional Blocks
Data Lines
Data Bus