



CPU System **1.6 Redux Beast Mode**

- Von-Neumann architecture, 8-bit data bus, 16-bit address bus
- 64 instructions including conditional branching, subroutines, stack and word operations
- UART interface for terminal display, keyboard input, data I/O & upload via 'cut & paste'
- 32KB RAM, 512KB FLASH with file system (format, load, save, dir, delete commands)
- Expansion port (I/O card, VGA card)
- **Maximum clock speed 8.3MHz, processing power 1.0Mips (= 2.3 x Commodore 64)**
- 2 data registers A and B
- Simple adder
- 3 flags (negative, carry and zero)
- **24** control signals
- **40 TTL chips** (74HCxx logic, 62256 SRAM, 39SF0x0 FLASH)
- Online reference manual
- Games, cross-assembler (Win10 or Python), cycle-exact emulator (Win10)
- **Native tool-chain: Operating system, text editor, assembler, Python-like interpreter**



1.6 Redux

TI = UART Transmitter Register In
 TO = UART Receiver Register Out
 TC = UART Receiver Register Clear
 MIL = Memory Address Register In (LSB)
 MIH = Memory Address Register In (MSB)
 ME = Memory Address Register Increment
 KI = Bank Register In
 RI = RAM In
 RO = RAM Out
 CIL = Program Counter In (LSB)
 CIH = Program Counter In (MSB)
 COL = Program Counter Out (LSB)
 COH = Program Counter Out (MSB)
 CE = Program Counter Increment
 AI = A Register In
 AO = A Register Out
 BI = B Register In
 BO = B Register Out
 EO = Adder Sum Out
 ES = Adder Invert Operand B
 EC = Adder Carry In
 FI = Flags Register In
 II = Instruction Register In
 IC = Step Counter Clear

Control Signals
 Components
 Functional Blocks
 Data Lines
 Data Bus

