




# 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, 1.01Mips (= 2.3 x  )**
- 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 like TETRIS, 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

