Minimal 64

Home Computer

Control Signals
Components
Functional Blocks
Data Lines
Data Bus

I/O

KO → PS/2 Keyboard

TI → UART Transmitter

TO → UART Receiver

ALU

B Register ← BI
← BO

A Register ← AI
← AO

Buffer ADD / SUB ← EO

AND ← ES

OR ← EC

Flags NCZ

Memory

MIL → MAR$_{LSB}$

ME → MAR$_{MSB}$ ← MIH

NI → BANK

Address
512KB FLASH
64KB RAM
SP
VGA X Y
RI
RO

Control Logic

II FI 3 IC

Instruction

NCZ
Flags

Step

Address
Control ROM

CIL CIH COL COH CE TI TO KO FI II IC NI
ES EO EC MIL MIH ME RI RO AI AO BI BO

Program Counter

COL → Buffer

CIL → PC$_{LSB}$

CE →

COH → Buffer

CIH → PC$_{MSB}$

TI = UART Transmitter Register In
TO = UART Receiver Register Out
KO = PS/2 Keyboard Register Out
MIL = Memory Address Register In (LSB)
MIH = Memory Address Register In (MSB)
ME = Memory Address Register Increment
NI = 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 / AND Out
EC = Adder Carry In / OR Out
FI = Flags Register In
II = Instruction Register In
IC = Step Counter Clear