

SYSTEM CONFIGURATION

AN OPERATING SYSTEM IS NOT INCLUDED AS A  
PART OF THE SYSTEM.

**MINIMUM SYSTEM CONFIGURATION**

**Z-80A SYSTEM**

- ZPU OR DPU PROCESSOR BOARD
- 64KZ MEMORY BOARD
- 64FDC FLOPPY DISK CONTROLLER BOARD

**68000 SYSTEM**

- DPU PROCESSOR BOARD
- 256KZ MEMORY BOARD
- 64FDC FLOPPY DISK CONTROLLER BOARD

SYSTEM Ø

(CSØ)

- 4 SLOT S-1ØØ BUS
- SCC
- MCB-216 (MONITOR/CONTROL BASIC)
- CBL-1 (QTY 1)

SYSTEM 1

(CS1)

- 8 SLOT S-100 BUS
- ZPU; 64KZ-11; 64FDC
- TWO 390K TANDON 5" DISK DRIVES
- CBL-1 (QTY 1)

(CS1H)

- 8 SLOT S-100 BUS
- ZPU; 64KZ-11; 64FDC; WDI-11
- ONE 390K TANDON 5" DISK DRIVE
- ONE 20 MB IMI 5" HARD DISK
- CBL-1 (QTY 1)

SYSTEM 1  
(CONTINUED)

(CS1D2)

- 8 SLOT S-100 BUS
- DPU; 256KZ; 64FDC
- TWO 390K TANDON 5" DISK DRIVES
- CBL-1 (QTY 1)

(CS1D5E)

- 8 SLOT S-100 BUS
- DPU; MCU; 512MSU; 16FDC
- TWO 390K TANDON 5" DISK DRIVES
- CBL-1 (QTY 1)

SYSTEM 1  
(CONTINUED)

(CS1HD2)

- 8 SLOT S-100 BUS
- DPU; 256KZ; 64FDC; WDI-11
- ONE 390K TANDON 5" DISK DRIVE
- ONE 20 MB IMI 5" HARD DISK
- CBL-1 (QTY 1)

(CS1HD5E)

- 8 SLOT S-100 BUS
- DPU; MCU; 512MSU; 64FDC; WDI-11
- ONE 390K TANDON 5" DISK DRIVE
- ONE 20 MB IMI 5" HARD DISK
- CBL-1 (QTY 1)

SYSTEM TWO

(Z2X)

- 21 SLOT S-100 BUS
- NO BOARDS OR STORAGE DEVICES

(CS2)

- 21 SLOT S-100 BUS
- ZPU; 64KZ-11; 64FDC
- TWO 390K TANDON 5" DISK DRIVES
- CBL-2 (QTY 1)

SYSTEM TWO

(CONTINUED)

(CS2D5E)

- 21 SLOT S-100 BUS
- DPU; MCU; 512MSU; 64FDC
- Two 390K TANDON 5" DISK DRIVES
- CBL-2 (QTY 1)

(CS2D2) SEE (CS1D2)

(CS2H) SEE (CS1H)

(CS2HD2) SEE (CS1HD2)

(CS2HD5E) SEE (CS1HD5E)



SYSTEM THREE

(CS3A)

- 21 SLOT S-100 BUS
- ZPU; 64KZ-11; 64FDC
- TWO 1.2 MB TANDON 8" DISK DRIVES
- CBL-3 (QTY 1)

(CS3H)

- 21 SLOT S-100 BUS
- ZPU; 64KZ-11; 64FDC; WDI-11
- ONE 1.2 MB TANDON 8" DISK DRIVE
- ONE 20 MB IMI 5" HARD DISK
- CBL-3 (QTY 1)

(CS3D2) SEE (CS1D2)

(CS3D5E) SEE CS1D5E)

(CS3HD2) SEE (CS1HD2)

(CS3HD5E) SEE (CS1HD53)

*Cromemco*

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SYSTEM CONFIGURATION GUIDES

## Z-80 System Configuration Guide

	CDOS 1-USER	CROMIX 1-USER	CROMIX 2-USERS	CROMIX 3-USERS
System Boards	ZPU 64FDC 64KZ-II	ZPU 64FDC 256KZ *	ZPU 64FDC 256KZ *	ZPU 64FDC 256KZ *
Serial Ports	1 port standard on 64FDC	1 port standard on 64FDC	TUART or IOP and QUADART ‡	TUART or IOP and QUADART ‡
Cables	CBL-1 (2)	CBL-1 (2) CBL-0	CBL-1 (3) CBL-0	CBL-1 (4) CBL-0
Hard Disk Storage **	HD-20 includes WDI-II	HD-20 includes WDI-II	HD-20 includes WDI-II	HD-20 includes WDI-II
9-Track Tape Storage **	TDS ‡ includes IOP and CSP	TDS ‡ includes IOP and CSP	TDS ‡ includes IOP and CSP	TDS ‡ includes IOP and CSP
Software	none	CROMIX included	CROMIX included	CROMIX included

- ‡ - IOP/QUADART's include necessary "C-Bus" cables except for 5 or more users you must order: 1 ea 519-0101.
- Each QUADART occupies two slots
- Improved CRT performance is possible by using IOP/QUADART's instead of TUARTS.
- \* - These configurations are possible using 64KZ-II's; however, more slots will be used which may preclude the use of IOP/QUADART or TDS.
- ‡ - TDS requires its own IOP
- ( ) - Quantities are one except where denoted by ( )
- \*\* - Mass storage options include all necessary cables

Note 1: Substitute CBL-2 for CS-2's or CBL-3 for CS-3's.  
 Note 2: Hard disk is recommended for multi-user configurations  
 Note 3: If printer is required, a PRI or TUART must be included.

	CROMIX 4-USERS	CROMIX 5-USERS	CROMIX 6-USERS
System Boards	ZPU 64FDC 256KZ (2) \$	ZPU 64FDC 256KZ (2) \$	ZPU 64FDC 256KZ (2) \$
Serial Ports	TUART (2) or IOP and # QUADART	TUART (2) or IOP and # QUADART	TUART (3) or IOP and # QUADART (2)
Cables	CBL-1 (5) CBL-0	CBL-1 (6) CBL-0	CBL-1 (7) CBL-0
Hard Disk Storage **	HD-20 includes WDI-II	HD-20 includes WDI-II	no bus slots available for CS-1
9-Track Tape Storage **	no bus slots available for CS-1	no bus slots available for CS-1	no bus slots available for CS-1
Software	CROMIX included	CROMIX included	CROMIX included

- # - IOP/QUADART's include necessary "C-Bus" cables except for 5 or more users you must order: 1 ea 519-0101.
- Each QUADART occupies two slots
- Improved CRT performance is possible by using IOP/QUADART's instead of TUARTS.
- \$ - When using a second 256KZ order:  
(1 ea 502-0048 74948 and 1 ea 502-0049 74949)
- ( ) - Quantities are one except where denoted by ( )
- \*\* - Mass storage options include all necessary cables

Note 1: Substitute CBL-2 for CS-2's or CBL-3 for CS-3's.  
 Note 2: Hard disk is recommended for multi-user configurations  
 Note 3: If printer is required, a PRI or TUART must be included.

## 68000 System Configuration Guide

	CROMIX-D 1-USER	CROMIX-D 2-USERS	CROMIX-D 3-USERS
System Boards	DPU 64FDC 256KZ (1+) or MCU and * 512 MSU (1+)	DPU 64FDC 256KZ (1+) or MCU and * 512 MSU (1+)	DPU 64FDC 256KZ (2+) or MCU and 512 MSU (1+)
Serial Ports	use 64FDC or add IOP and # QUADART	TUART or IOP and # QUADART	TUART or IOP and # QUADART
Cables	CBL-1 (2) CBL-0	CBL-1 (3) CBL-0	CBL-1 (4) CBL-0
Hard Disk Storage **	HD-20 includes WDI-II	HD-20 @ includes WDI-II	HD-20 @ includes WDI-II
9-Track Tape Storage **	TDS % includes IOP and CSP	TDS %@ includes IOP and CSP	TDS %@ includes IOP and CSP
Software	none	none	none

- # - IOP/QUADART's include necessary "C-Bus" cables except for 6 or more users you must order: 1 ea 519-0101.
- Each QUADART occupies two slots
- Improved CRT performance is possible by using IOP/QUADART's instead of TUARTS.
- \* - These configurations are possible using MCU/MSUs; however, more slots will be used. This may preclude the selection of other options.
- % - TDS requires its own IOP
- @ - Insufficient bus slots may be present in a CS-1 for this option depending on other options selected.
- ( ) - Quantities are one except where denoted by ( )  
Quantity shown assumes minimum of 64K bytes per user.  
More will be needed to run 68000 software.
- \*\* - Mass storage options include all necessary cables

	CROMIX-D 4-USERS	CROMIX-D 5-USERS	CROMIX-D 6-USERS
System Boards	DPU 64FDC 256KZ (2+) or MCU and 512 MSU (1+)	DPU 64FDC 256KZ (2+) or MCU and 512 MSU (1+)	DPU 64FDC 256KZ (2+) or MCU and 512 MSU (1+)
Serial Ports	TUART (2) or IOP and # QUADART	TUART (2) or IOP and # QUADART	TUART (3) or IOP and # QUADART (2)
Cables	CBL-1 (5) CBL-0	CBL-1 (6) CBL-0	CBL-1 (7) CBL-0
Hard Disk Storage **	HD-20 @ includes WDI-II	HD-20 @ includes WDI-II	no bus slots available for CS-1
9-Track Tape Storage **	no bus slots available for CS-1	no bus slots available for CS-1	no bus slots available for CS-1
Software	none	none	none

- # - IOP/QUADART's include necessary "C-Bus" cables except for 6 or more users you must order: 1 ea 519-0101.
- Each QUADART occupies two slots
- Improved CRT performance is possible by using IOP/QUADART's instead of TUARTS.
- @ - Insufficient bus slots may be present in a CS-1 for this option depending on other options selected.
- ( ) - Quantities are one except where denoted by ( )  
Quantity shown assumes minimum of 64K bytes per user.  
More will be needed to run 68000 software.
- \*\* - Mass storage options include all necessary cables

Note 1: Substitute CBL-2 for CS-2's or CBL-3 for CS-3's.  
 Note 2: A hard disk is recommended for multi-user configurations.  
 Note 3: If printer is required, a PRI or TUART must be included.

*Cromemco*

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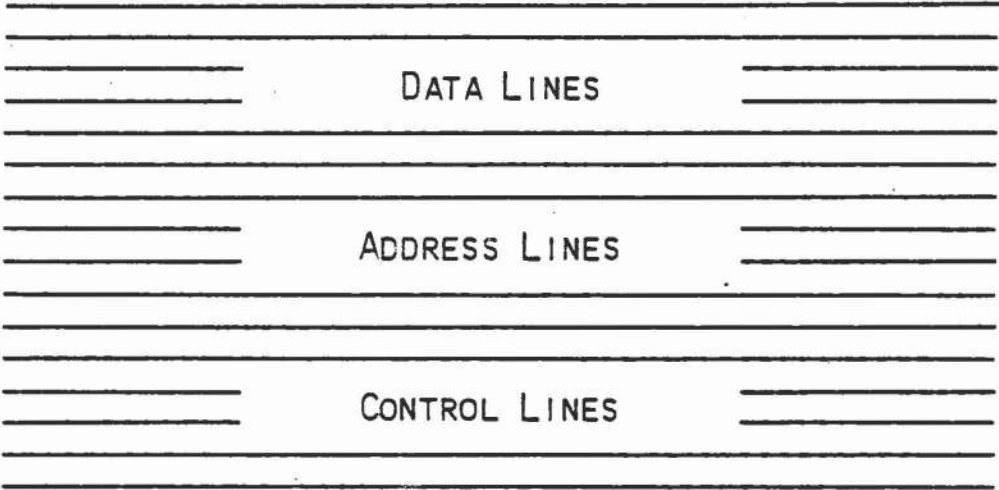
CROMEMCO'S  
PRODUCT LINE  
(PRINTED CIRCUIT BOARDS)

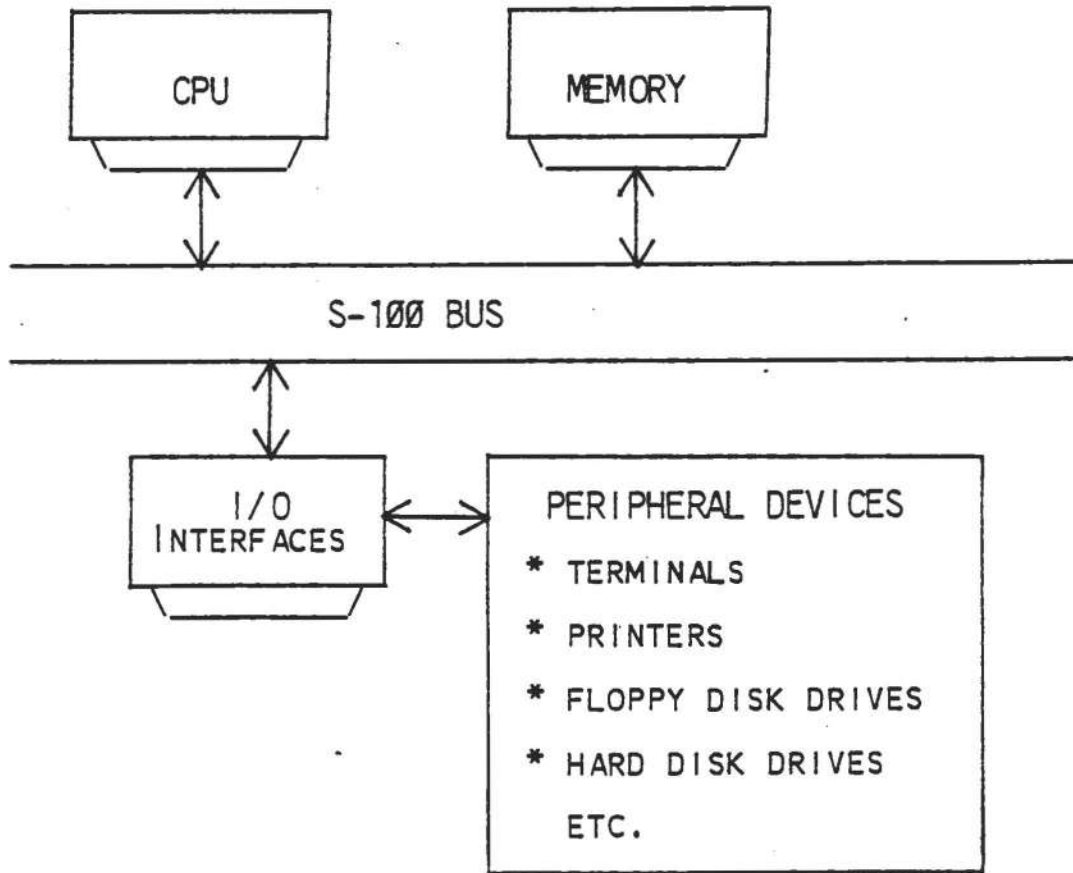
FOUR ELEMENTS  
MAKE UP A COMPUTER SYSTEM

- C P U
- MEMORY
- I/O CONTROL
- PERIPHERALS



S-100 BUS





CPU BOARDS

- ZPU
- SCC
- DPU

CPU BOARDS

ZPU

- Z-80A BASED
- 4 MHZ CLOCK
- 158 INSTRUCTIONS
- POWER-ON JUMP
- 0-4 WAIT STATES

CPU BOARDS

SINGLE CARD COMPUTER  
(SCC)

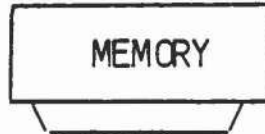
- Z-80A BASED
- 8 KBYTES ROM
- 1 KBYTES RAM
- 1 SERIAL I/O PORT
- 3 PARALLEL I/O PORT
- 5 INTERVAL TIMERS

*7 CDS  
System zero  
non  
essential basic*

CPU BOARDS

**DUAL PROCESSOR UNIT  
(DPU)**

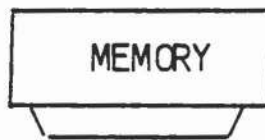
- Z-80A PROCESSOR
- 68000 PROCESSOR
  - 16/32 BIT
  - 8 MHZ CLOCK
- SOFTWARE CONTROLLED SWITCHING



SINGLE PORT RAM

SINGLE PORT ROM

TWO PORT RAM



## SINGLE PORT RAM

- 16K BYTE RAM (16KZ)
- 64K BYTE RAM (64KZ-11)
- 256K BYTE RAM (256KZ)

*may run Cromemco  
& SDICAMERI  
E PROM  
in APP Note -*

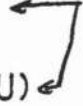
## SINGLE PORT ROM

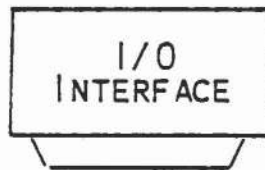
- 32K BYTESAVER (32KBS)



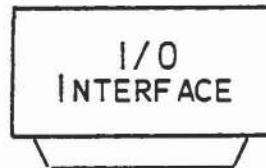


**16 BIT MEMORY BOARDS**

- MEMORY CONTROLLER UNIT (MCU) 
- 512K ECC MEMORY (512MSU)
- 256K MEMORY (256KZ)



- FLOPPY DISK & CRT
- DUAL SERIAL & PARALLEL PORTS
- PRINTER
- ANALOG
- HARD DISK
- 8 PORT PARALLEL
- 4 PORT PARALLEL



**FLOPPY DISK & CRT CONTROLLER**

- SERIAL I/O PORT
  - 110 - 76,800 BAUD
- INTERVAL TIMERS
- DOUBLE SIDED & DENSITY CONTROLLER (16FDC)
  - FOUR 5" OR 8" DRIVES (8" PERSCI INTERFACE)
  - DIAGNOSTIC SOFTWARE
- DOUBLE SIDED & DENSITY CONTROLLER (64FDC)
  - FOUR 5" OR 8" DRIVES (8" SHUGART INTERFACE)
  - DIAGNOSTIC SOFTWARE
  - OPTIONAL BOOT FOR HARD DISK

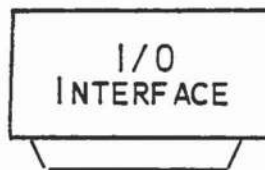


DUAL SERIAL & PARALLEL PORTS  
(TRT)

- 2 SERIAL PORTS
  - 110 - 76,800 BAUD
  - RS-232 OR 20 MA CURRENT LOOP
- 2 PARALLEL PORTS
  - DRIVE UP TO 20 TTL LOADS
- 10 INTERVAL TIMERS
  - 0 - 16.32 MSEC. INTERVAL

*OKAY  
for Parale  
printer*

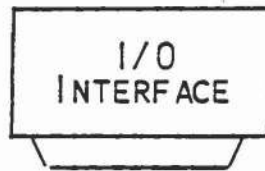
*is not a full  
RS232 implementation*



**PRINTER INTERFACE**

(PRI)

- DOT MATRIX PRINTER (CENTRONICS INTERFACE)
  - 3715
  - 3703
- FULLY FORMED CHARACTER PRINTER
  - 3355B



*8 bit resolution*

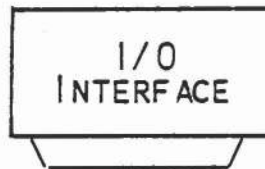
ANALOG-TO-DIGITAL

&

DIGITAL-TO-ANALOG

(D+7A I/O)

- 7 ANALOG-TO-DIGITAL INPUT PORTS
- 7 DIGITAL-TO-ANALOG OUTPUT PORTS
  - +2.54 TO -2.56 VOLT RANGE
  - 5.5 USEC. CONVERSION
  - 8 BIT RESOLUTION
- 1 PARALLEL I/O PORT

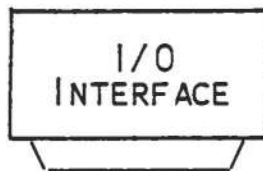


ANALOG-TO-DIGITAL  
(ADC12)

- 16 CHANNELS ANALOG-TO-DIGITAL
- 12 BIT RESOLUTION
- 2 CHANNELS PARALLEL I/O (HANDSHAKING)
- 25 USEC. CONVERSION TIME
- 5 ANALOG INPUT VOLTAGE RANGES  
+/- 2.5 +/-5 +/-10 0-5 0-10

*via multiplexer  
built 12 bit*

*all ports are  
the same*

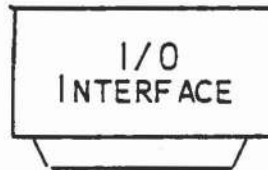


DIGITAL-TO-ANALOG  
(DAC12)

*each sup  
chips*

- 2 CHANNELS DIGITAL-TO-ANALOG
- 12 BIT RESOLUTION
- 2 CHANNELS PARALLEL I/O (HANDSHAKING)
- 5 USEC. CONVERSION TIME
- 5 ANALOG OUTPUT VOLTAGE RANGES  
+/-2.5 +/-5 +/-10 0-5 0-10

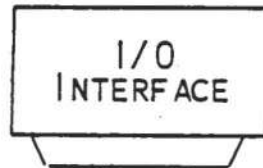




**HARD DISK CONTROLLER**  
(WDI-11)

- USED TO CONTROL THE IMI 5" AND 8"  
HARD DISK DRIVES

*20meg  
and earlier*

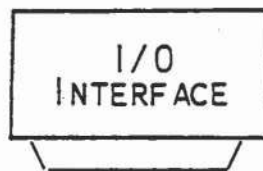


*Board & Software  
300<sup>02</sup>  
795<sup>00</sup>*

SMD HARD DISK INTERFACE  
(SMDI)

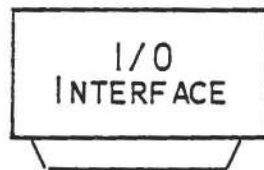
- USED TO CONTROL 1 OR 2 CDC PHOENIX OR AN EQUIVALENT HARD DISK DRIVE.
- 80 MEGABYTE FIXED, 16 MEGABYTE REMOVAL
- 30 MS AVERAGE ACCESS TIME, 9.67 MHZ DATA TRANSFER RATE

*Fixed & Removable*



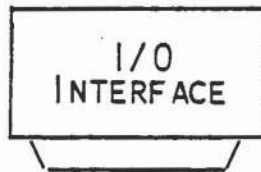
**8 PORT PARALLEL INTERFACE  
(8PI/O)**

- 8 8 BIT PARALLEL I/O PORTS
- 2 BITS OPTO-ISOLATED INPUTS
- 2 BITS RELAY-ISOLATED OUTPUTS
  - 28 VOLT AC OR DC AT 1 AMP
  - SPDT CONTACTS



**4-PORT ISOLATED PARALLEL INTERFACE  
(4PI/O)**

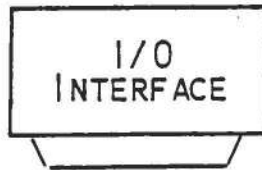
- 24 OPTO-ISOLATED INPUT BITS
- 16 OPTO-ISOLATED OUTPUT BITS
- 8 RELAY-ISOLATED OUTPUT BITS
- 11 OPTO-ISOLATED STROBE/HANDSHAKE BITS
- 1 OPTO-ISOLATED RESET BIT



*only short sample  
programs*

GENERAL PURPOSE INSTRUMENT BUS  
(GPIB)

- 4K BYTES RAM & UP TO 4K BYTES ROM
- INTERRUPT CAPABILITY
- IEEE-488 COMPATIBILITY
- 3 MODES OF OPERATION
  - CONTROLLER IN CHARGE
  - TALKER
  - LISTENER



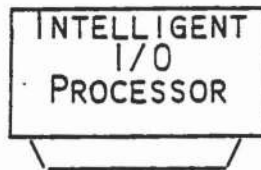
*Can only run  
one channel*

*#395-00*

TERMINAL INTERFACE  
(CTI)

(C-1 TERMINAL & KEYBOARD REQUIRED)

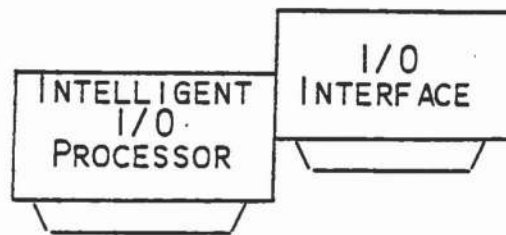
- 80 CHARACTERS X 25 LINES
- 25,000+ BAUD RATE
- 4 CHARACTER SETS
  - AMERICAN
  - AMERICAN BOLD
  - GRAPHIC
  - SCIENTIFIC



INTELLIGENT CONTROLLER  
(INPUT/OUTPUT PROCESSOR)  
(C-BUS CONTROLLER)  
(IOP)

- 4 MHZ Z-80A PROCESSOR
- 16K BYTES OF RAM
- UP TO 48K BYTES ROM
- 2 I/O PORTS OF HOST PROCESSOR
- MONITOR ROM INCLUDED
- SUPPORTS DOWNLOADING OF SOFTWARE

*Heart of Networking  
& Multi-procs*

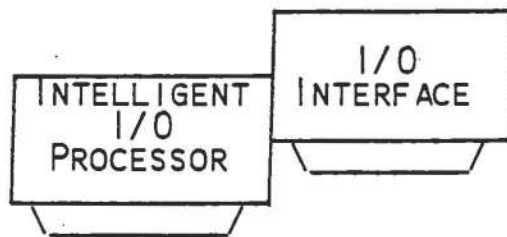


FOUR CHANNEL SERIAL INPUT/OUTPUT  
(QDRT)

- IOP REQUIRED
- ASYNCHRONOUS BYTE
- SYNCHRONOUS BYTE  
BISYNC
- SYNCHRONOUS BIT  
SDLC
- FULL HANDSHAKING

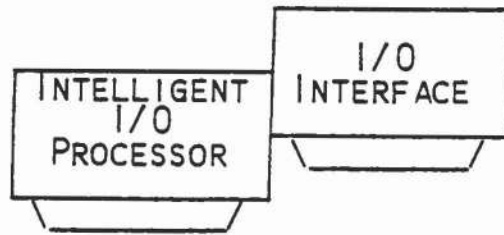
full RS-232  
all signals from  
C-Bus cabling  
to IOP





**SERIAL/PARALLEL INTERFACE  
(CSP)**

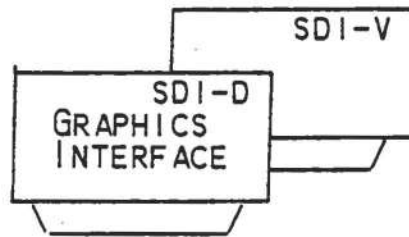
- IOP REQUIRED
- PARALLEL INTERFACE
  - 9 TRACK TAPE DRIVE COMPATIBLE ✓
- SERIAL INTERFACE
  - RS232C CONNECTION



**NETWORK INTERFACE**

(CNI)

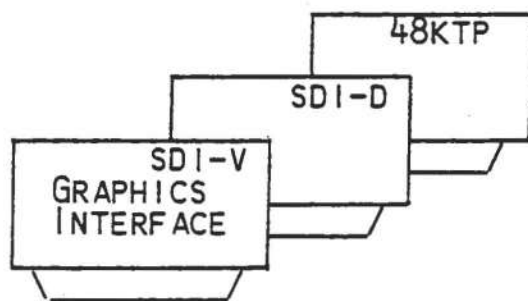
- IOP REQUIRED
- INTERFACE TERMINAL TO C-NET
- DATA TRANSFER RATES:
  - TERMINAL 75-19,200 BAUD
  - NETWORK 880 KBPS



**COLOR GRAPHICS INTERFACE**

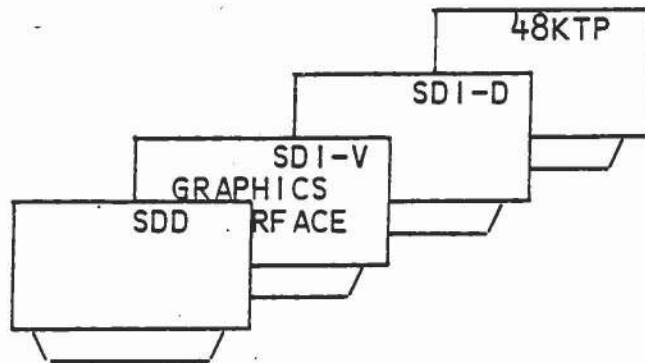
(SDI-D & SDI-V)

- UP TO 754 X 482 ELEMENT RESOLUTION
- MEETS NTSC BROADCAST STANDARDS \*
- UP TO 4096 COLOR CHOICES AVAILABLE
- RGB OUTPUT



**TWO PORT RAM**

- 48K RAM (48KTP)



### COLOR DIGITIZER BOARD (SDD)

WITH THE SDD INTERFACE AND A STANDARD TELEVISION CAMERA, IMAGES WITH UP TO 754 X 482-POINT RESOLUTION CAN BE DIGITIZED IN 1 TO 8 SECONDS AND STORED IN MEMORY OR ON DISK.