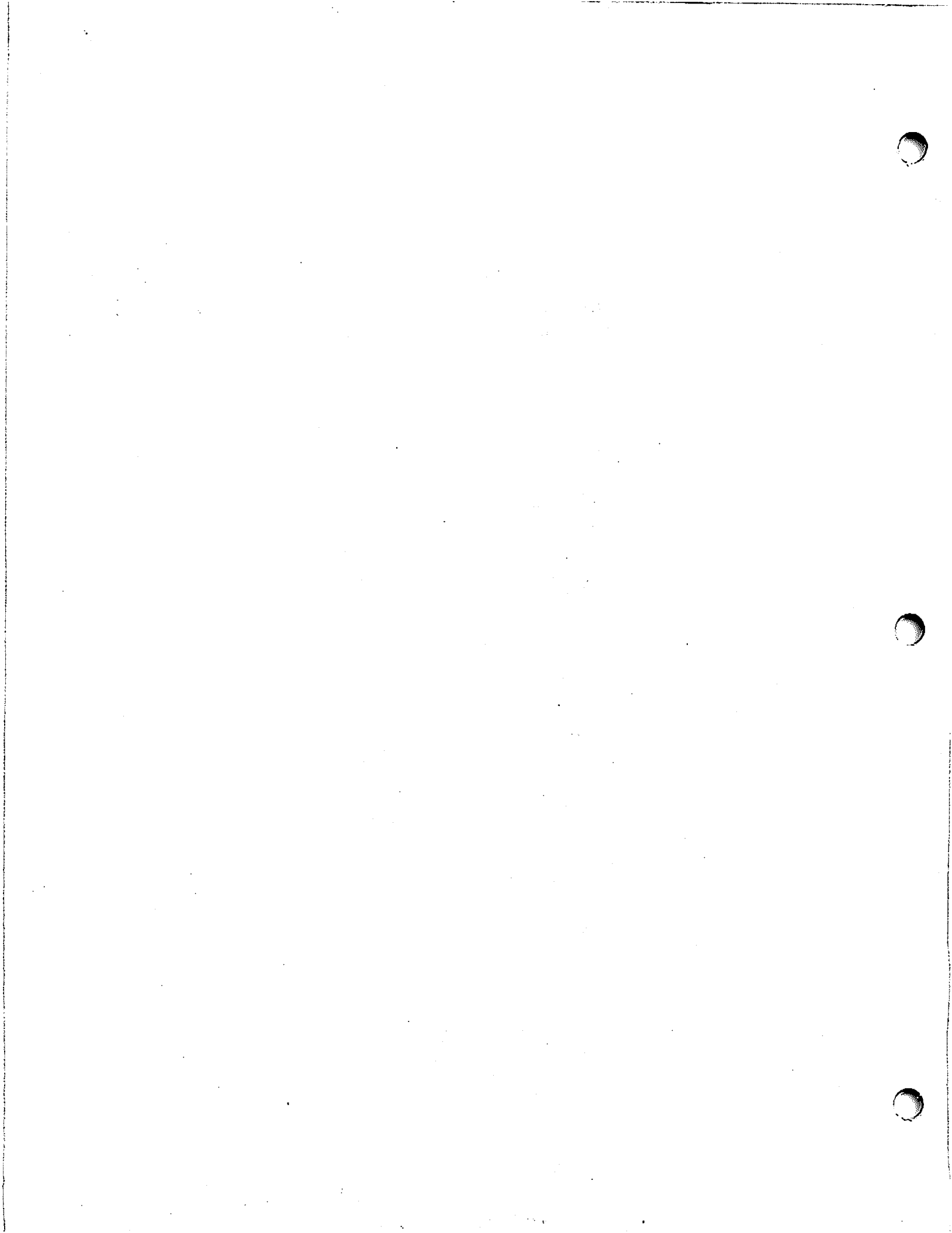


WANG

2200 HARDWARE CONFIGURATION GUIDE

SYSTEM 2200





2200 HARDWARE CONFIGURATION GUIDE

© Wang Laboratories, Inc., 1976



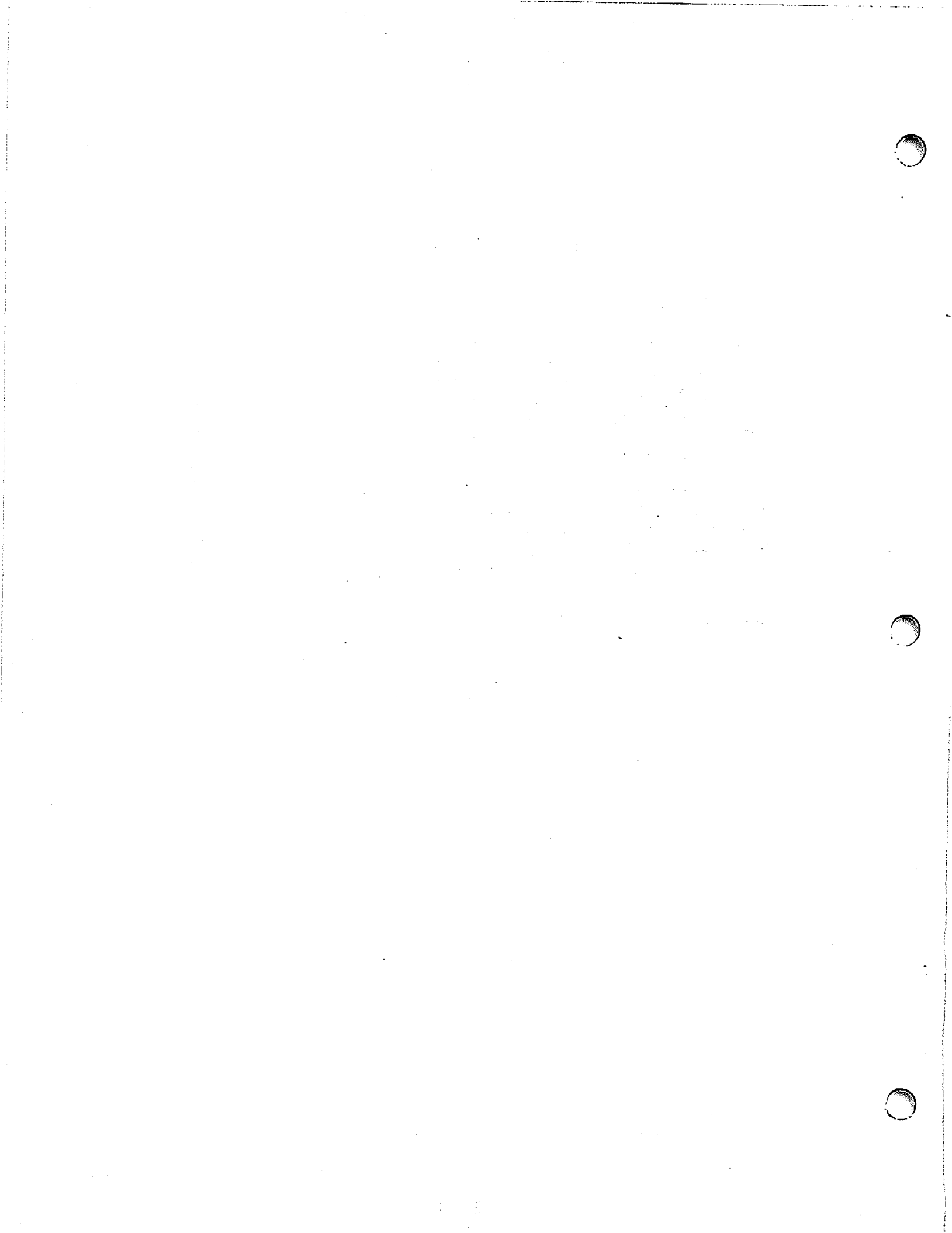
LABORATORIES, INC.

ONE INDUSTRIAL AVENUE, LOWELL, MASSACHUSETTS 01851, TEL. (617) 851-4111, TWX 710 343-6769, TELEX 94-7421



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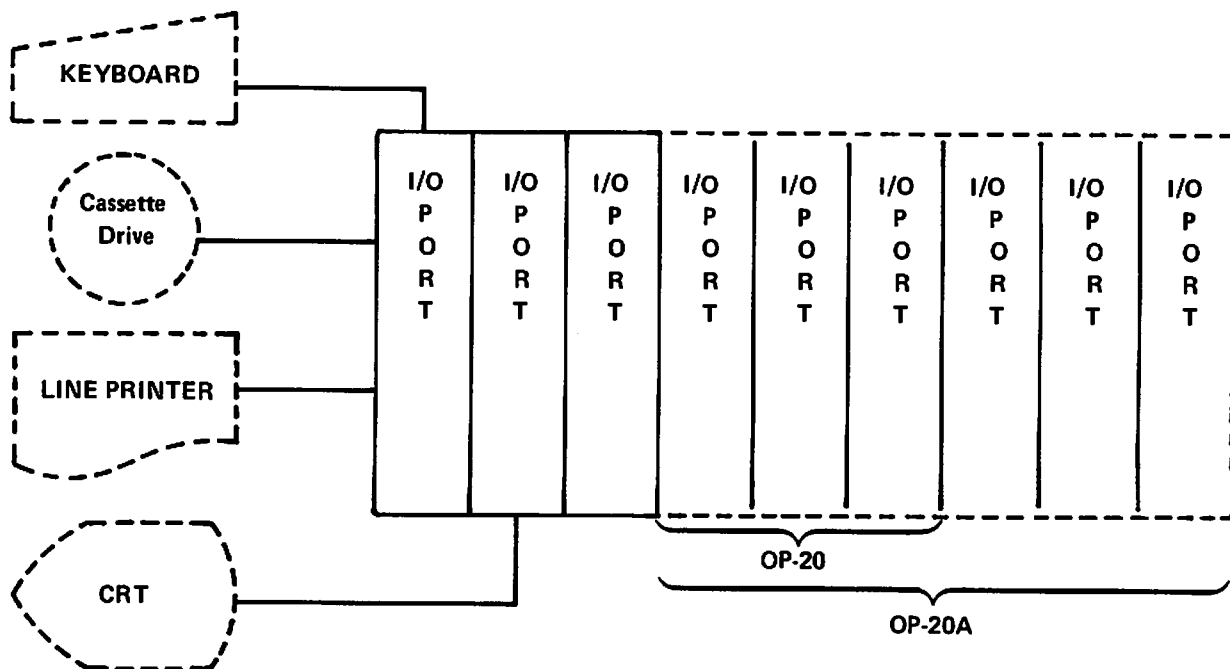
INTRODUCTION

The purpose of the Wang 2200 Hardware Configuration Guide is to provide a tool for the Salesman, Prospect, or User to configure a viable and efficient system, or to add on various peripherals and/or options to an existing system.

The configuration guide contains information pertinent to the following models — 2200S, 2200T, WCS-10, WCS-20, WCS-30, PCS, WCS, and 2200VP. For Central Processing Units (CPU) that contain Input/Output (I/O) ports a section is provided for a work area to allocate ports for various peripherals and/or options selected. Input, Output, and Storage peripherals available for each model are listed. Telecommunication controllers, miscellaneous options and stands are listed where applicable. Memory expansion options are listed with corresponding model numbers.

2200S-CPU

- Standard
- - - - Optional
- OP- Required ROM Option
- OP- Recommended ROM Option



INTERFACE CONTROLLERS (One I/O Port required for each)

2207A	OP-22	I/O Interface Controller (RS-232-C) Selectable BPS	
2227	2227N	OP-23	Asynchronous Communications Controller
2227B	OP-23	Buffered Asynchronous Communications Controller	
2228	OP-24	Bisynchronous/Asynchronous Communications Controller	
2250	OP-23	8-Bit Parallel I/O Interface Controller	
2252A	OP-23	Scanning Interface Controller (BCD 1 to 10 Digit Parallel)	
2254		IEEE-48 Interface Controller	

ROM OPTIONS

- OP-21 Matrix Statements
- OP-22 Matrix and Advanced Programming Statements
- OP-23 Matrix Advanced Programming and General I/O Statements
- OP-24 Matrix, Advanced Programming, General I/O, Disk and Sort Statements

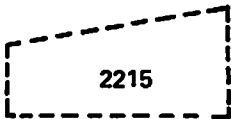
MISCELLANEOUS OPTIONS

- OP-4 Audio Alarm (for 2216)
- OP-30 Upper/Lowcase CRT (for 2220, 2226)
- OP-31 Audio Alarm (for 2220, 2226)
- OP-32 Keyboard Clicker

2200S-PERIPHERALS

INPUT DEVICES

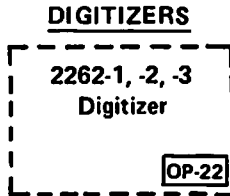
KEYBOARDS



CARD READERS

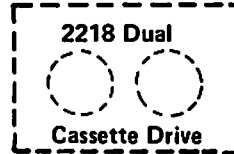


PUNCHED TAPE READERS

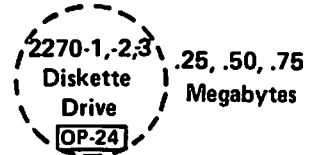
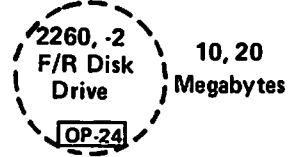
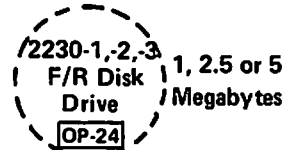
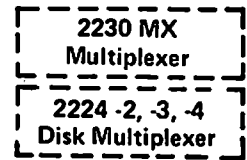


STORAGE DEVICES

TAPE UNITS



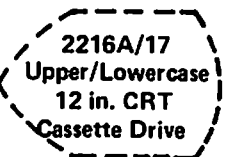
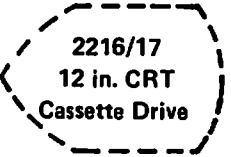
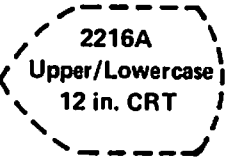
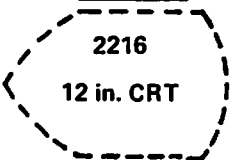
DISK UNITS



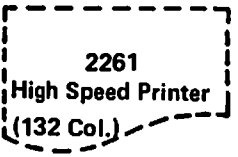
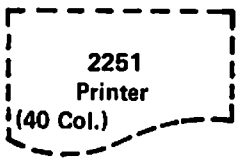
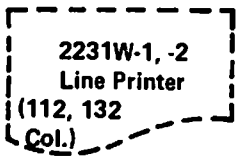
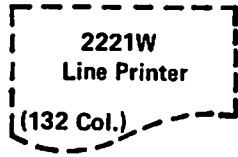
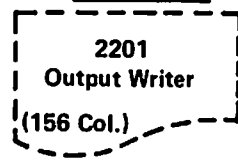
NOTE:
In general, each peripheral requires a separate I/O port. However, the disk(ette) or cassette, printer, and keyboard all can be plugged into a triple controller which requires only one I/O port.

OUTPUT DEVICES

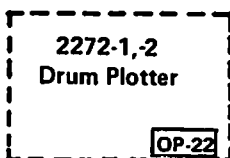
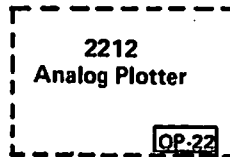
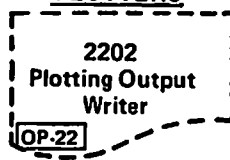
CRT's



PRINTERS



PLOTTERS



CONSOLES

(combined units)



STANDS

(no I/O ports needed)

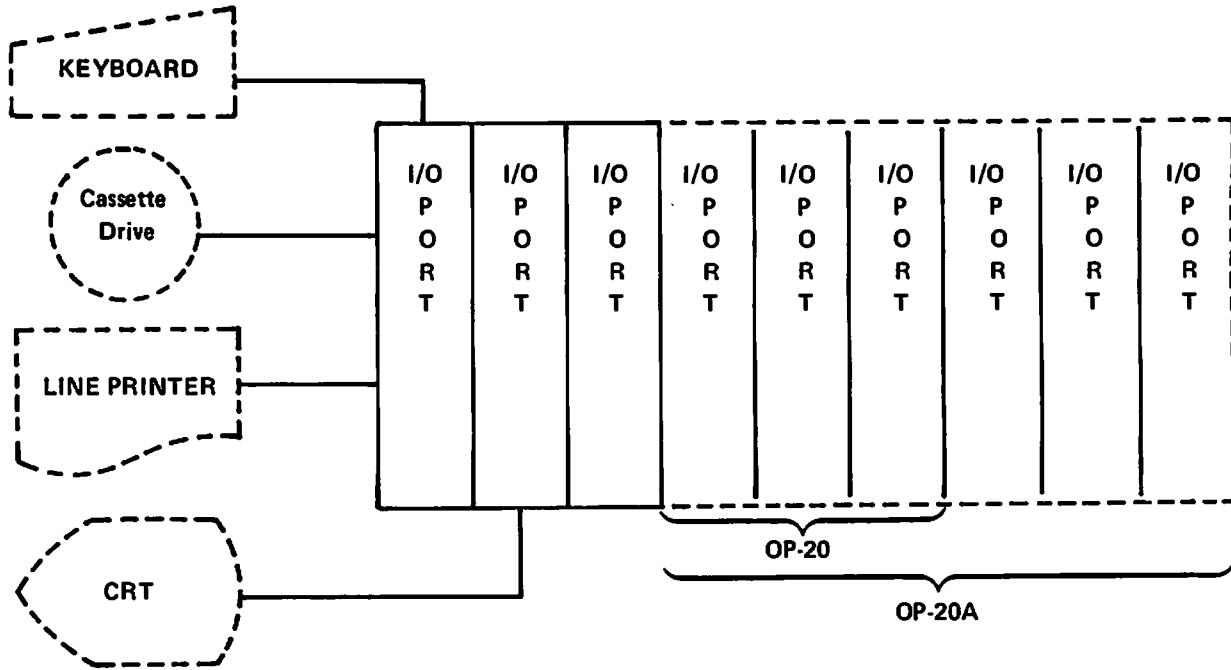


MEMORY (available in 8K & 16K increments)

2200S-1	4K
2200S-2	8K
2200S-4	16K
2200S-6	24K
2200S-8	32K

NOTE:
If ordering a 2221W, 2231W, 2251 or 2272, without a CPU, the controller board must be ordered separately.

2200T-CPU



INTERFACE CONTROLLERS (One I/O Port required for each)

2207A	I/O Interface Controller (RS-232-C) Selectable BPS
2227	Asynchronous Communications Controller
2227B	Buffered Asynchronous Communications Controller
2228	Bisynchronous/Asynchronous Communications Controller
2250	8-Bit Parallel I/O Interface Controller
2252A	Scanning Interface Controller (BCD 1 to 10 Digit Parallel)
2254	IEEE-48 Interface Controller

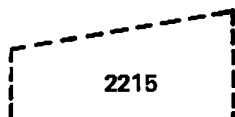
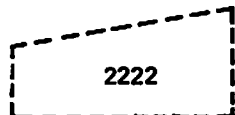
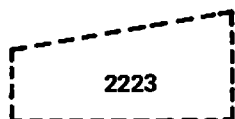
MISCELLANEOUS OPTIONS

- OP-4 Audio Alarm (for 2216)
- OP-30 Upper/Lowercase CRT (for 2220, 2226)
- OP-31 Audio Alarm (for 2220, 2226)
- OP-32 Keyboard Clicker
- OP-33 80x24 Upper/Lowercase CRT

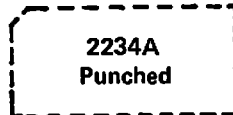
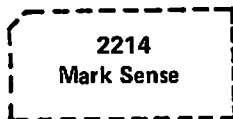
2200T-PERIPHERALS

INPUT DEVICES

KEYBOARDS



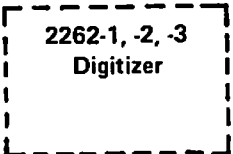
CARD READERS



PUNCHED TAPE READERS

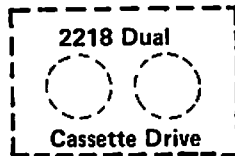


DIGITIZERS

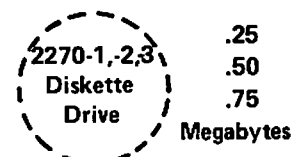
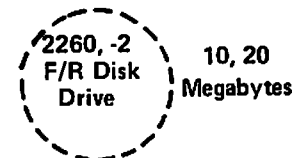
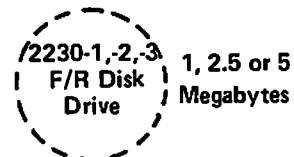
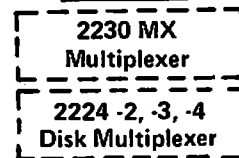


STORAGE DEVICES

TAPE UNITS



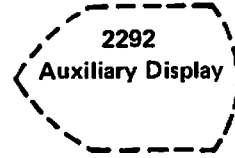
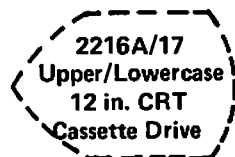
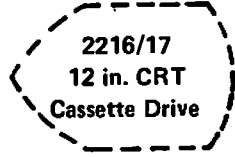
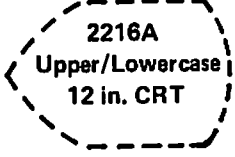
DISK UNITS



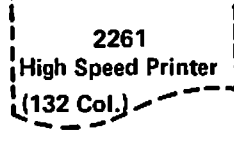
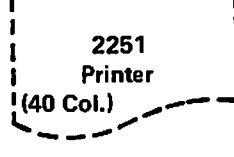
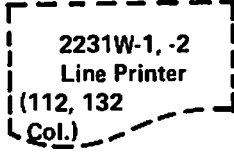
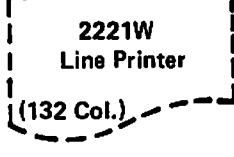
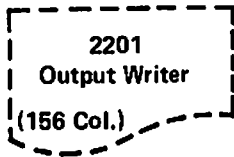
NOTE:
In general, each peripheral requires a separate I/O port. However, the disk(ette) or cassette, printer, and keyboard all can be plugged into a triple controller which requires only one I/O port.

OUTPUT DEVICES

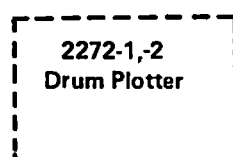
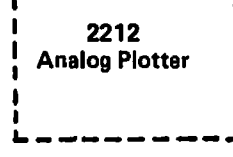
CRT's



PRINTERS



PLOTTERS



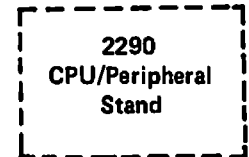
CONSOLES

(combined units)



STANDS

(no I/O ports needed)



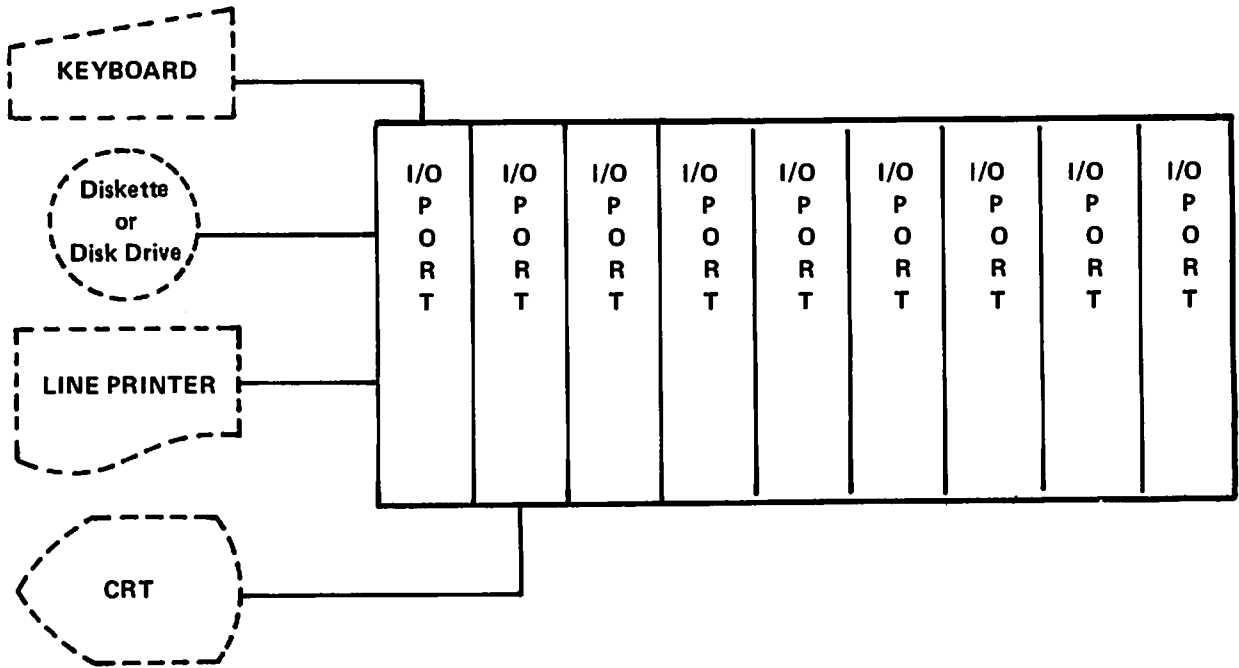
MEMORY (available in 8K & 16K increments)

2200T-2	8K
2200T-4	16K
2200T-6	24K
2200T-8	32K

NOTE:
If ordering a 2221W, 2231W, 2251, or 2272, without a CPU, the controller board must be ordered separately.

2200VP-CPU

_____ Standard
 - - - - - Optional



INTERFACE CONTROLLERS (One I/O Port required for each)

2207A	I/O Interface Controller (RS-232-C) Selectable BPS
2227	Asynchronous Communications Controller
2227B	Buffered Asynchronous Communications Controller
2228	Bisynchronous/Asynchronous Communications Controller
2250	8-Bit Parallel I/O Interface Controller
2252A	Scanning Interface Controller (BCD 1 to 10 Digit Parallel)
2254	IEEE-48 Interface Controller

MISCELLANEOUS OPTIONS

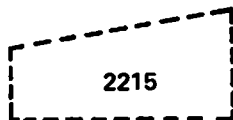
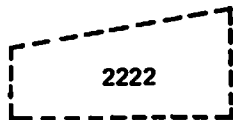
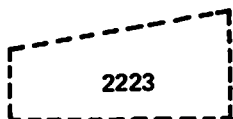
- *OP-4 Audio Alarm (for 2216)
- OP-30 Upper/Lowercase CRT (for 2220, 2226)
- *OP-31 Audio Alarm (for 2220, 2226)
- OP-32 Keyboard Clicker
- *OP-33 80x24 Upper/Lowercase CRT

*Recommended Option

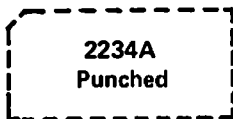
2200VP-PERIPHERALS

INPUT DEVICES

KEYBOARDS



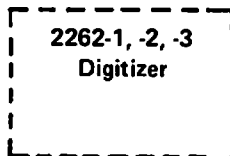
CARD READERS



PUNCHED TAPE READER



DIGITIZERS

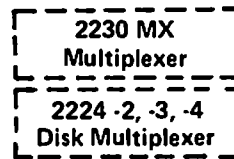


STORAGE DEVICES

TAPE UNITS



DISK UNITS



1, 2.5 or 5
Megabytes



10, 20
Megabytes



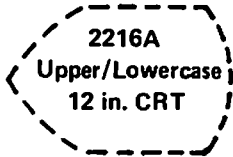
.25
.50
.75
Megabytes

NOTE:

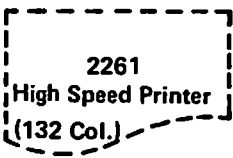
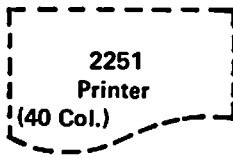
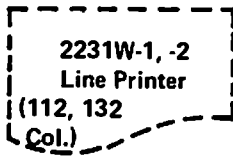
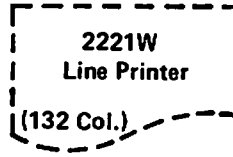
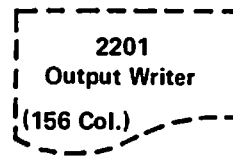
In general, each peripheral requires a separate I/O port. However, the disk(ette) or cassette, printer, and keyboard all can be plugged into a triple controller which requires only one I/O port.

OUTPUT DEVICES

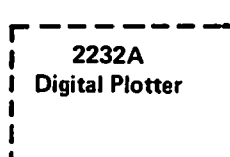
CRT's



PRINTERS



PLOTTERS



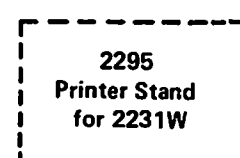
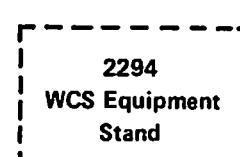
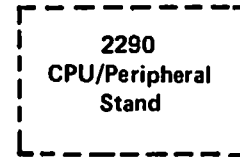
CONSOLES

(combined units)



STANDS

(no I/O ports needed)



MEMORY

2200-VP-4	16K
2200-VP-8	32K
2200-VP-12	48K
2200-VP-16	64K

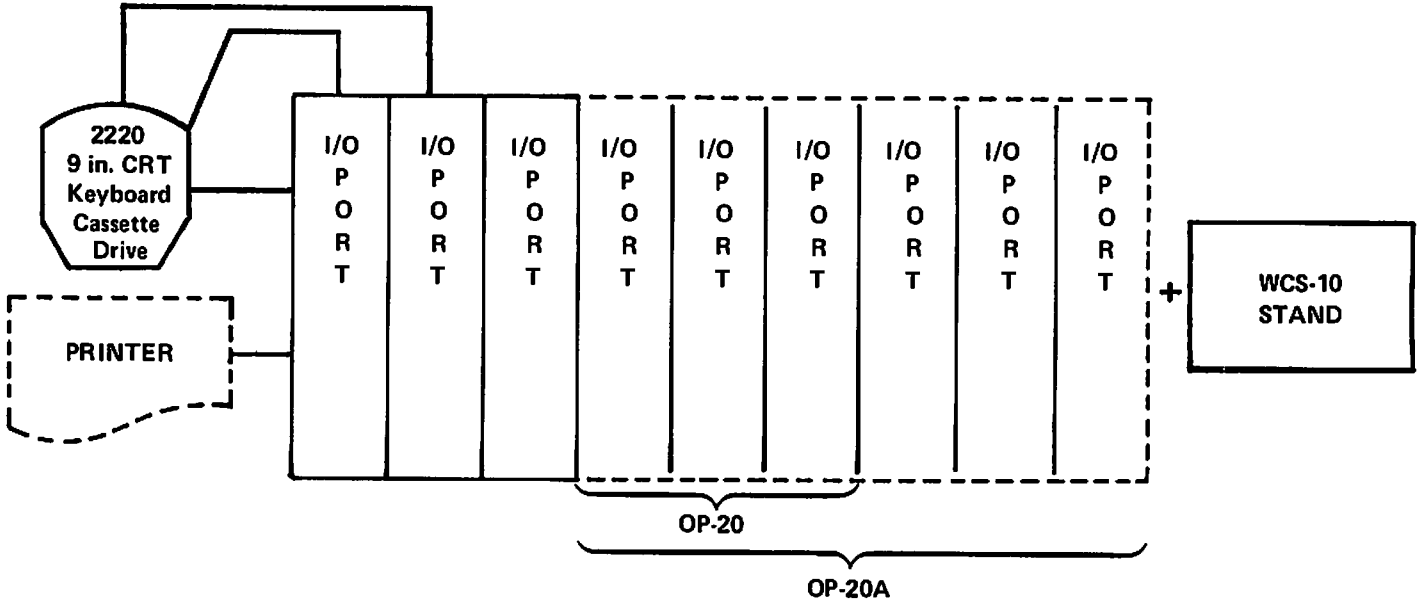
(available in 16K increments)

NOTE:

If ordering a 2221W, 2231W, 2251, or 2272, without a CPU, the controller board must be ordered separately.

WCS-10

- Standard
- - - - - Optional
- OP- (solid box) Required ROM Option
- OP- (dashed box) Recommended ROM Option



INTERFACE CONTROLLERS (One I/O Port required for each)

2207A	OP-22	I/O Interface Controller (RS-232-C) Selectable BPS	
2227	2227N	OP-23	Asynchronous Communications Controller
2227B	OP-23	Buffered Asynchronous Communications Controller	
2228	OP-24	Bisynchronous/Asynchronous Communications Controller	
2250	OP-23	8-Bit Parallel I/O Interface Controller	
2252A	OP-23	Scanning Interface Controller (BCD 1 to 10 Digit Parallel)	
2254		IEEE-48 Interface Controller	

ROM OPTIONS

- OP-21 Matrix Statements
- OP-22 Matrix and Advanced Programming Statements
- OP-23 Matrix Advanced Programming and General I/O Statements
- OP-24 Matrix, Advanced Programming, General I/O, Disk and Sort Statements

MISCELLANEOUS OPTIONS

- OP-30 Upper/Lowcase CRT (for 2226)
- OP-31 Audio Alarm (for 2226)
- OP-32 Keyboard Clicker

WCS-10-PERIPHERALS

INPUT DEVICES

CARD READERS

2214
Mark Sense
OP-22

2234A
Punched
OP-22

2244A
Mark Sense/
Punched OP-22

PUNCHED TAPE READER

2203
Punched Tape
OP-22

DIGITIZERS

2262-1, -2, -3
Digitizer
OP-22

STORAGE DEVICES

TAPE UNITS

2217
Cassette
Drive

2218 Dual
Cassette Drive

2209
Nine-Track
Drive
OP-23 12K

DISK UNITS

2230 MX
Multiplexer

2224 -2, -3, -4
Disk Multiplexer

/2230-1, -2, -3
F/R Disk
Drive
OP-24

2260, -2
F/R Disk
Drive
OP-24

2270-1, -2, -3
Diskette
Drive
OP-24

1, 2.5 or 5
Megabytes

10, 20
Megabytes

.25, .50, .75
Megabytes

NOTE:
In general, each peripheral requires a separate I/O port. However, the disk(ette) or cassette, printer, and keyboard all can be plugged into a triple controller which requires only one I/O port.

OUTPUT DEVICES

CRT's

2292
Auxiliary Display

PRINTERS

2201
Output Writer
(156 Col.)

2221W
Line Printer
(132 Col.)

2231W-1, -2
Line Printer
(112, 132 Col.)

2251
Printer
(40 Col.)

2261
High Speed Printer
(132 Col.)

PLOTTERS

2202
Plotting Output
Writer
OP-22

2212
Analog Plotter
OP-22

2232A
Digital Plotter
OP-22

2272-1, -2
Drum Plotter
OP-22

STANDS

(no I/O ports needed)

2294
WCS Equipment
Stand

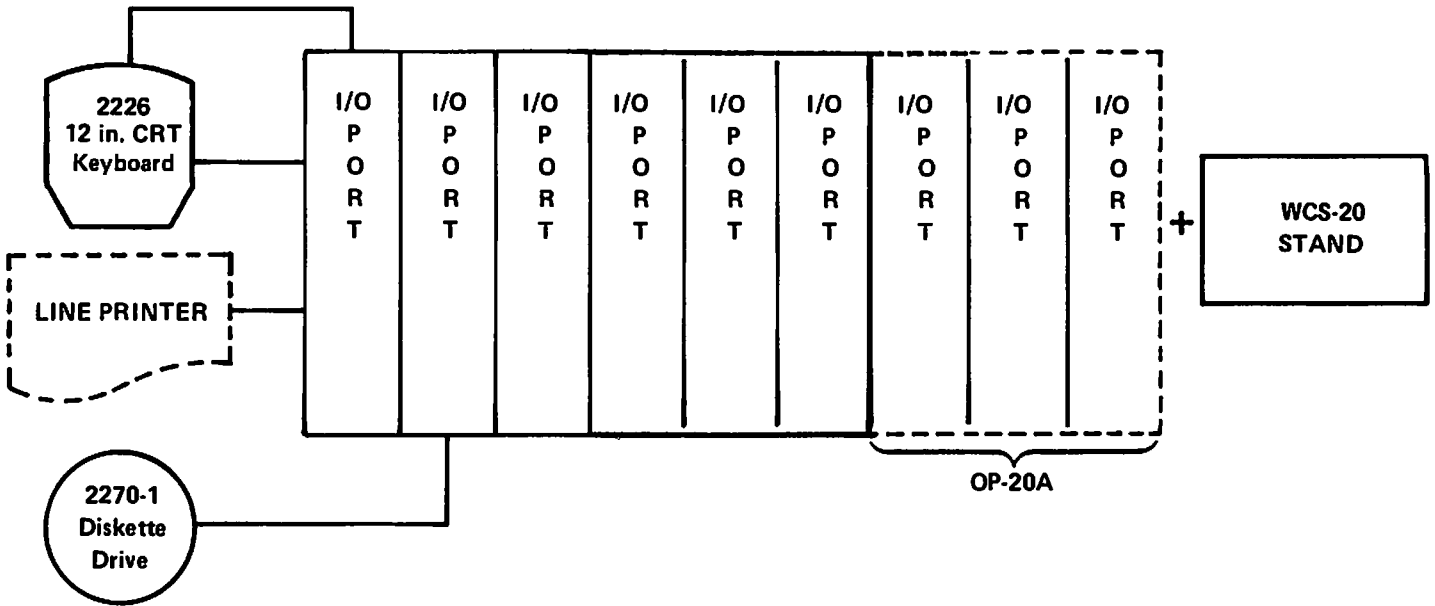
2295
Printer Stand
for 2231W

MEMORY (available in 8K & 16K increments)

WCS 10-2 8K
WCS 10-4 16K
WCS 10-6 24K
WCS 10-8 32K

NOTE:
If ordering a 2221W, 2231W, 2251, or 2272, without a CPU, the controller board must be ordered separately.

WCS-20



INTERFACE CONTROLLERS (One I/O Port required for each)

2207A	I/O Interface Controller (RS-232-C) Selectable BPS
2227	Asynchronous Communications Controller
2227B	Buffered Asynchronous Communications Controller
2228	Bisynchronous/Asynchronous Communications Controller
2250	8-Bit Parallel I/O Interface Controller
2252A	Scanning Interface Controller (BCD 1 to 10 Digit Parallel)
2254	IEEE-48 Interface Controller

MISCELLANEOUS OPTIONS

- OP-30 Upper/Lowercase CRT (for 2226)
- OP-31 Audio Alarm (for 2226)
- OP-32 Keyboard Clicker
- OP-33 80x24 Upper/Lowercase CRT

WCS-20-PERIPHERALS

INPUT DEVICES

CARD READERS

2214
Mark Sense

2234A
Punched

2244A
Mark Sense/
Punched

PUNCHED TAPE READER

2203
Punched Tape

DIGITIZERS

2262-1, -2, -3
Digitizer

STORAGE DEVICES

TAPE UNITS

2217
Cassette
Drive

2218 Dual
Cassette Drive

2209
Nine-Track
Drive
12K

DISK UNITS

2230 MX
Multiplexer
2224 -2, -3, -4
Disk Multiplexer

2230-1,-2,-3
F/R Disk
Drive

1, 2.5 or 5
Megabytes

2260, -2
F/R Disk
Drive

10, 20
Megabytes

2270-1,-2,3
Diskette
Drive

.25
.50
.75
Megabytes

NOTE:
In general, each peripheral requires a separate I/O port. However, the disk(ette) or cassette, printer, and keyboard all can be plugged into a triple controller which requires only one I/O port.

OUTPUT DEVICES

CRT's

2292
Auxiliary Display

PRINTERS

2201
Output Writer
(156 Col.)

2221W
Line Printer
(132 Col.)

2231W-1, -2
Line Printer
(112, 132
Col.)

2251
Printer
(40 Col.)

2261
High Speed Printer
(132 Col.)

PLOTTERS

2202
Plotting Output
Writer

2212
Analog Plotter

2232A
Digital Plotter

2272-1,-2
Drum Plotter

STANDS

(no I/O ports needed)

2294
WCS Equipment
Stand

2295
Printer Stand
for 2231W

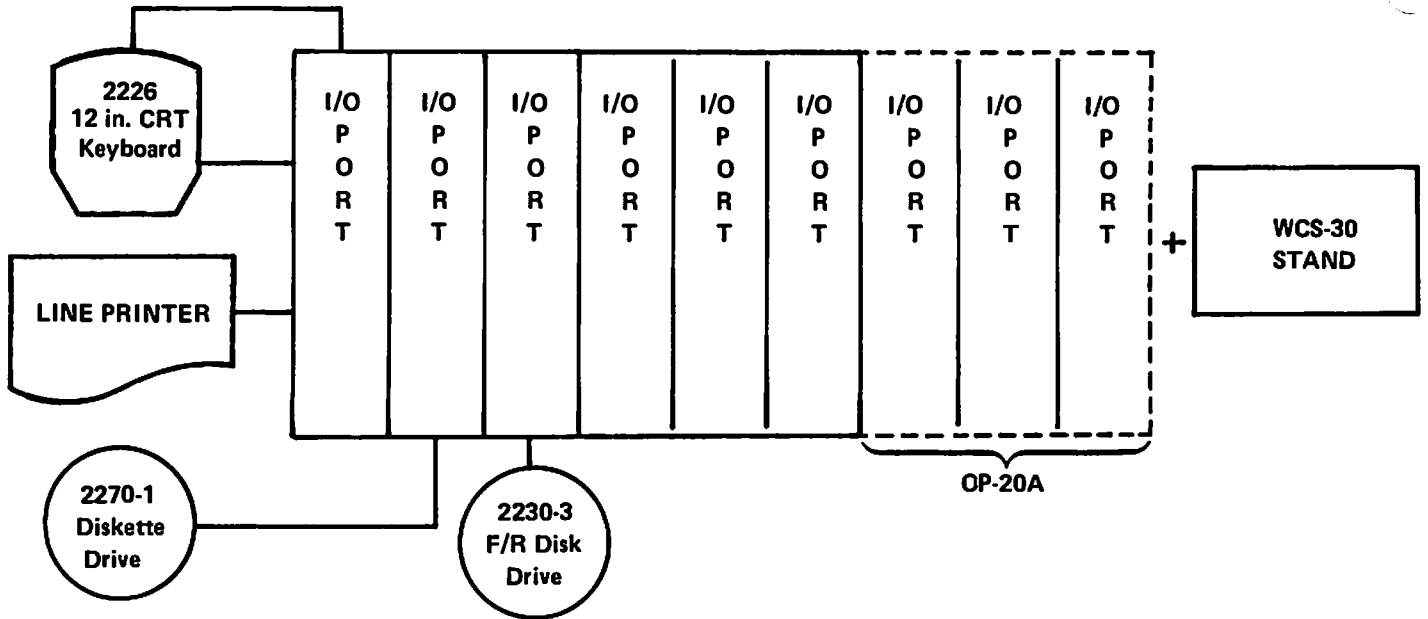
MEMORY (available in 8K & 16K increments)

WCS 20-2 8K
WCS 20-4 16K
WCS 20-6 24K
WCS 20-8 32K

NOTE:
If ordering a 2221W, 2231W, 2251,
or 2272, without a CPU, the
controller board must be ordered separately.

WCS-30

_____ Standard
 - - - - - Optional



INTERFACE CONTROLLERS (One I/O Port required for each)

2207A	I/O Interface Controller (RS-232-C) Selectable BPS
2227	Asynchronous Communications Controller
2227B	Buffered Asynchronous Communications Controller
2228	Bisynchronous/Asynchronous Communications Controller
2250	8-Bit Parallel I/O Interface Controller
2252A	Scanning Interface Controller (BCD 1 to 10 Digit Parallel)
2254	IEEE-48 Interface Controller

MISCELLANEOUS OPTIONS

- OP-30 Upper/Lowercase CRT (for 2226)
- OP-31 Audio Alarm (for 2226)
- OP-32 Keyboard Clicker
- OP-33 80x24 Upper/Lowercase CRT

WCS-30-PERIPHERALS

INPUT DEVICES

STORAGE DEVICES

CARD READERS

2214
Mark Sense

2234A
Punched

2244A
Mark Sense/
Punched

PUNCHED TAPE READER

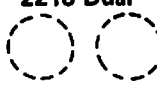
2203
Punched Tape

DIGITIZERS

2262-1, -2, -3
Digitizer

TAPE UNITS

2217
Cassette
Drive

2218 Dual

Cassette Drive

2209
Nine-Track
Drive

DISK UNITS

2230 MX
Multiplexer

2224 -2, -3, -4
Disk Multiplexer

2260, -2
F/R Disk
Drive

10, 20
Megabytes

2270-1,-2,3
Diskette
Drive

.25
.50
.75
Megabytes

NOTE:
In general, each peripheral requires a separate I/O port. However, the disk(ette) or cassette, printer, and keyboard all can be plugged into a triple controller which requires only one I/O port.

OUTPUT DEVICES

STANDS

CRT's

2292
Auxiliary Display

PRINTERS

2201
Output Writer
(156 Col.)

2221W
Line Printer
(132 Col.)

2231W-1, -2
Line Printer
(112, 132
Col.)

2251
Printer
(40 Col.)

2261
High Speed Printer
(132 Col.)

PLOTTERS

2202
Plotting Output
Writer

2212
Analog Plotter

2232A
Digital Plotter

2272-1,-2
Drum Plotter

(no I/O ports needed)

2294
WCS Equipment
Stand

2295
Printer Stand
for 2231W

MEMORY (available in 8K & 16K increments)

WCS 30-4 16K
WCS 30-6 24K
WCS 30-8 32K

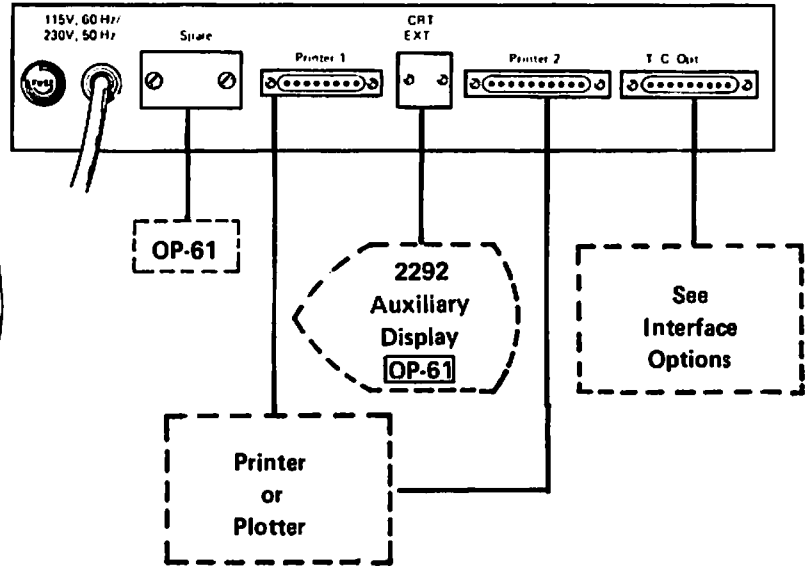
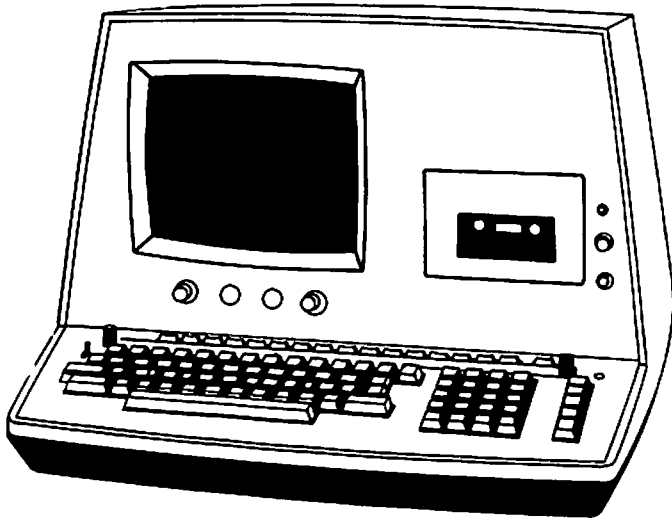
NOTE:
If ordering a 2221W, 2231W, 2251, or 2272, without a CPU, the controller board must be ordered separately.

- Standard
- - - Optional
- OP- Required Option

2200-PCS

STANDARD CONSOLE (9 in. CRT, Keyboard, Cassette Drive, CPU)

REAR PANEL



PERIPHERALS

PRINTERS
2221W
Line Printer
(132 col.)

PLOTTERS
2272-1, -2
Drum Plotter

STANDS
2292
WCS Equipment
Stand

CRT'S
2292
Auxiliary Display
OP-60

2231W-1, -2
Line Printer
(112, 132 col.)

2295
Stand for the
2231W

2251
Printer
(40 col.)

FOR OUTPUT WRITER
see OP-61

MISCELLANEOUS OPTIONS

- OP-60 Keyboard Clicker, Audio Alarm and Auxiliary CRT Connector
- OP-61 Output Writer (156 Columns/15 CPS) w/Controller

INTERFACE OPTIONS

- OP-62 Buffered Asynchronous Communications Controller
- OP-65 IEEE 488-1975 Interface Controller
- OP-67 8-Bit Parallel I/O Interface Controller

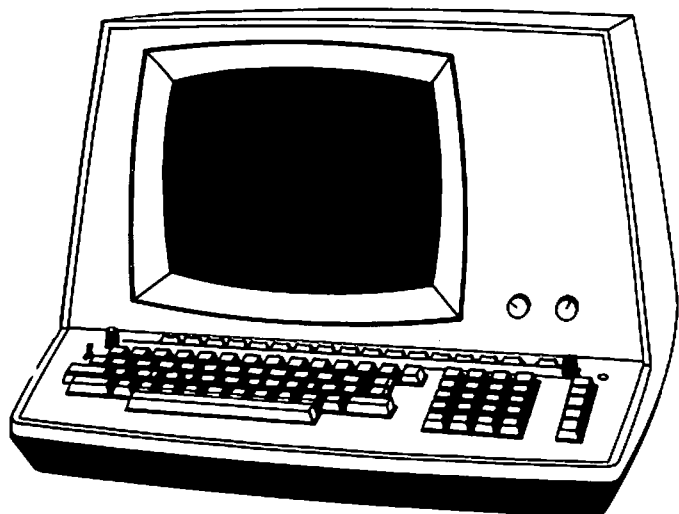
MEMORY

- 2200-PCS-2 8K
 - 2200-PCS-4 16K
 - 2200-PCS-6 24K
 - 2200-PCS-8 32K
- (Available in 8K & 16K increments)

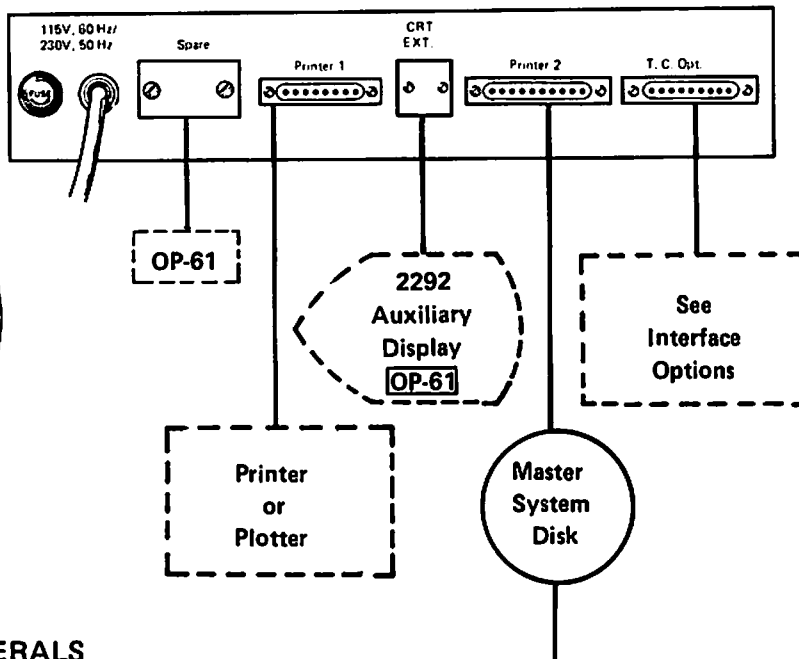
2200-WS

- Standard
- - - - - Optional
- OP- Required Option

STANDARD CONSOLE (12 in. CRT, Keyboard, CPU)



REAR PANEL



PERIPHERALS

PRINTERS

2221W
Line Printer
(132 col.)

2231W-1, -2
Line Printer
(112, 132 col.)

2251
Printer
(40 col.)

PLOTTERS

2272-1, -2
Drum Plotter

STANDS

2292
WCS Equipment
Stand

2295
Stand for the
2231W

CRT'S

2292
Auxiliary Display
OP-60

NOTE:
Work Stations must
be used with
Hard (F/R) Disk

FOR OUTPUT WRITER
see OP-61

MISCELLANEOUS OPTIONS

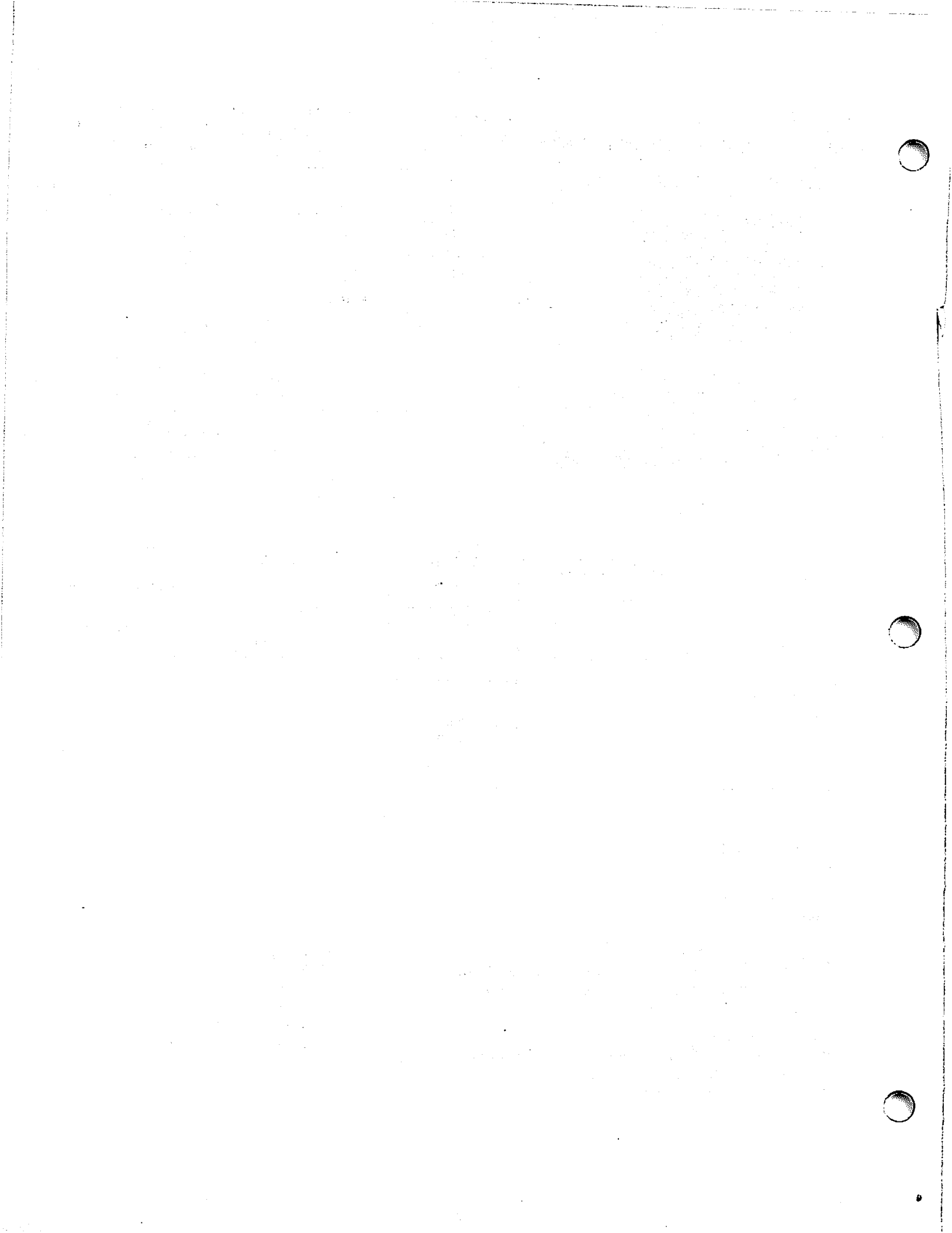
- OP-60 Keyboard Clicker, Audio Alarm and Auxiliary CRT Connector
- OP-61 Output Writer (156 Columns/15 CPS) w/Controller
- OP-66 80x24 Upper/Lowercase CRT

INTERFACE OPTIONS

- OP-62 Buffered Asynchronous Communications Controller
- OP-65 IEEE 488-1975 Interface Controller
- OP-67 8-Bit Parallel I/O Interface Controller

MEMORY

- 2200-WS-2 8K
 - 2200-WS-4 16K
 - 2200-WS-6 24K
 - 2200-WS-8 32K
- (Available in 8K & 16K increments)



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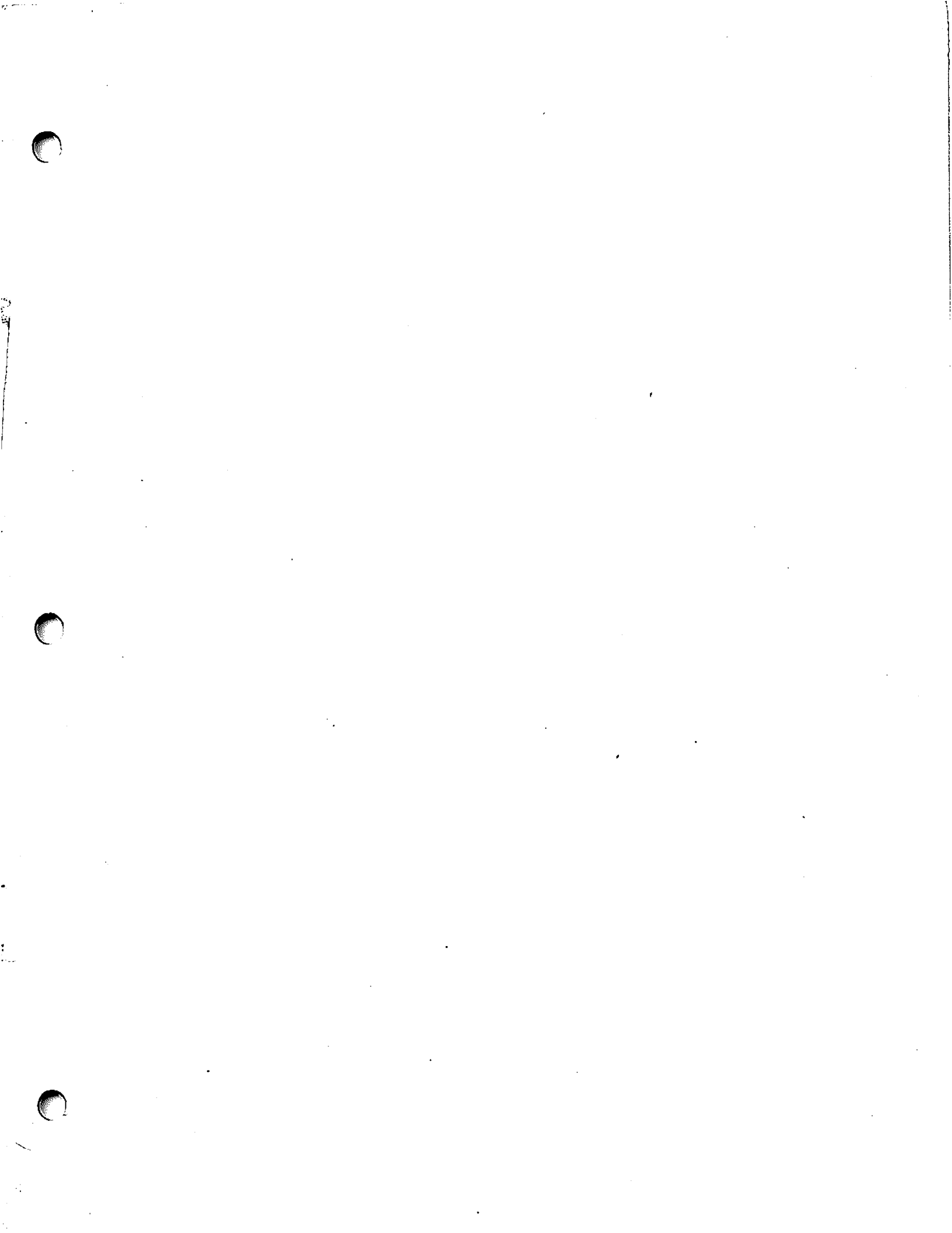
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NOTES

NOTES



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