PRODUCT DATA SHEET

2200 PERIPHERALS

INTRODUCTION

The Wang 2200 Series product line supports a variety of peripherals and system options, including a wide choice of disk and diskette drives, a number of printer models with varying speeds and features, a nine-track magnetic tape drive, and a large number of industry standard telecommunications protocols. The availability of many different peripherals makes it easy to configure a system to fit current or future processing requirements and ensure expansion capabilities to keep pace with future growth.

The peripherals, with the exception of the nine-track tape drive, have complete high-level language support in Wang BASIC or BASIC-2. Such high-level support means that input/output (I/O) operations for the peripherals are straightforward and simple; no complex machine level programming is required. The nine-track tape drive and certain special controller boards are supported by a general purpose I/O statement, $GIO.

CONSOLES AND TERMINALS

The console or terminal is the means by which users communicate with the 2200 Series CPU. Each console or terminal consists of a Cathode Ray Tube (CRT) screen and a typewriter-like keyboard. Via the console/terminal, users enter program text or respond to prompts displayed by the system or the currently executing program.

The console/terminal and keyboard are designed for users who are familiar with standard typewriter keyboards and 10-key numeric keypads. The keyboards are divided into a number of "zones," each of which contains a group of keys dedicated to certain types of operations. These zones are the typewriter-like character entry zone, which is used to enter alphabetic, numeric and special characters; the numeric zone, which is designed as a standard 10-key numeric pad for rapid entry of numeric data; the System Command keys, which allow single keystroke entry of some common system commands; and the Special Function/Edit keys (the Special Function keys are user-definable keys whose meanings may be changed under program control; when in Edit mode, certain

- Systems Can Be Easily Configured
- System Expansion Ensured
- Full Range of Printer Styles and Printer Speeds
- Disk Capacities from 0.25 to 400 Megabytes
- Extensive Telecommunications Options Available
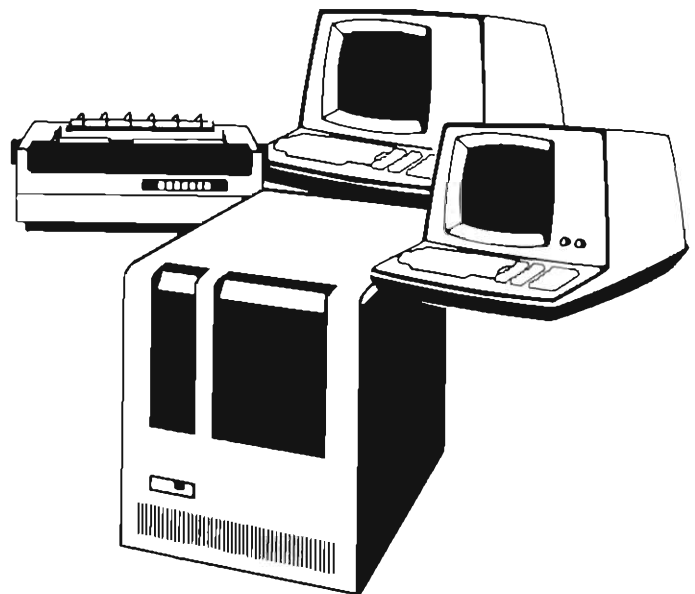
Special Functions keys become system-defined Edit mode operator keys).

The Model 2236DE Interactive Workstation may be used with a 2200MVP, LVP, SVP, or VP Central Processor. The Model 2236DE offers versatile display capabilities, including business graphics not normally offered on terminals in its price range. The 2236DE allows the programmer to create highlighted displays, utilize special graphic characters, or draw box graphics at any screen location. Screen displays may be altered, using various commands to allow maximum flexibility of program output. The 2236DE contains a 12-inch (30 cm) (diagonal measure) CRT with a 24-line, 80-character-per-line capacity. Any printer and/or plotter (except the 2232B Flatbed Plotter) may be connected to the printer connector on the 2236DE. The terminal itself can be either local or remote through an RS 232-C connection.

2236DE
Interactive Terminal

The Model 2236DW Integrated Terminal is a microprocessor-controlled terminal offering the same features as the 2236DE with a keyboard layout capable of supporting Wang 2200/WP Word Processing Software.

Additional Features of the 2236DW include cursor control and function keys supporting word processing and data processing functions. The 2200/WP Word Processing Software System allows the user to execute word processing functions quickly and efficiently. The software includes automatic indexing for superscripts and subscripts; automatic centering, indenting, and decimal alignment; global search and replace; text movement; text copy; and right-margin justification. The 2236DW is supported by the 2200 MVP, LVP, SVP, or VP Central Processing Unit.
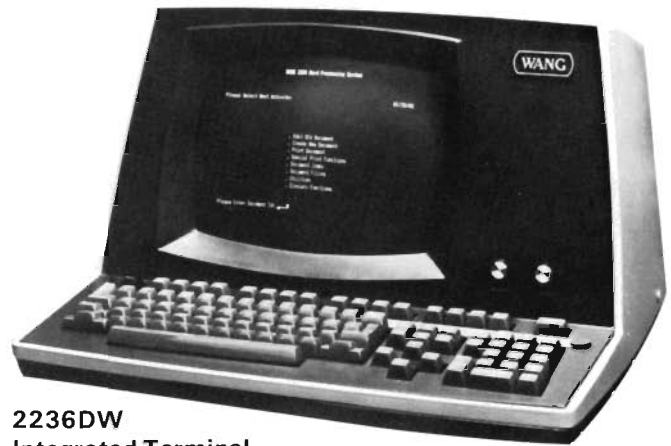
2236DW
Integrated Terminal

A single MVP CPU and three 2236MXD Terminal Processors can control up to 12 2236DE or 2236DW terminals. An LVP can support up to four terminals through a 2236MXD controller. The SVP supports one 2236DE or 2236DW terminal, which is connected via the built-in port provided in the CPU. The VP is also a single terminal system. If an MXD controller board is used in the VP, only Port 1 can be used for the 2236DE or 2236DW.

A 2232C triple controller can also be used to support one 2236DE terminal, a printer, and a disk or diskette. This controller is available for use in the VP, MVP, and LVP, and eliminates the need for separate controllers for disk/diskette and printer.

DISK AND DISKETTE DRIVES

The Wang disk and diskette drives provide easily accessible direct-access storage for 2200 systems. Several disk and diskette drives are available, providing a potential storage capacity per drive ranging from 26.8 to 80.4 megabytes (Mb). Several disk units can be attached to a CPU, thus increasing the potential storage capacity.

The Model 2270A Wang/3740 Compatible Diskette Drive supports all Wang BASIC and BASIC-2 disk operations when Wang diskettes are used. It also provides a 2200 LVP, VP, or MVP CPU with the ability to access IBM 3740-type diskettes for data retrieval and storage. The 2270A is available as single, dual, or triple diskette drives; the total on-line storage capacity is determined by the number of diskettes accessible on-line in the disk unit. (Each Wang diskette used with the 2270A provides storage area for 0.3 Mb of information; total on-line storage capacity for each 2270A ranges from 0.3 Mb to 0.9 Mb.) Single and dual diskette drives may be upgraded to the maximum three drives.

The Model 2260C Fixed/Removable Disk Drive holds one fixed and one removable disk platter. The 2260C is available in four models with different on-line storage capacities: the 2260C-1/4 provides approximately 1.25 Mb of fixed disk storage and 1.25 Mb removable disk storage, the 2260C-1/2 provides 2.5 Mb of fixed disk storage and 2.5 Mb removable disk storage, the 2260C provides 5 Mb of fixed disk storage and 5 Mb removable disk storage, and the 2260C-2 provides 10 Mb of fixed disk storage and 10 Mb removable disk storage. The 2260C-2 consists of two 2260C disk drives daisy chained together, providing four platters (two fixed and two removable). The smaller 2260C disk models can be expanded as processing demands increase.

2260C
Fixed/Removable Disk Drive

  2.5 megabytes (2260C-1/4)
  5.   megabytes (2260C-1/2)
10.   megabytes (2260C)
20.   megabytes (2260C-2)

When a 2280 Disk Drive is ordered it comes with a Disk Processing Unit (DPU) capable of controlling up to two 2280 disk drives. After the initial drive is installed, should a second drive be needed, a 2280N can be added. The 2280N is a drive without the DPU. It will be connected to the DPU installed with the initial drive.

The Model 2280 Fixed/Removable Disk Drive is available in three units: Model 2280-1 (26.8 Mb disk storage), 2280-2 (53.6 Mb disk storage), and 2280-3 (80.4 Mb disk storage). Each unit provides a single 13.4 Mb removable platter; the remainder of the storage area is fixed. The 2280-1 and 2280-2 may be upgraded to maximum capacity as processing demands increase.

2280/2280N
Fixed Removable Disk Drive

26.8 megabytes (2280-1)
53.6 megabytes (2280-2)
80.4 megabytes (2280-3)

The Model 2230 MXA-1/MXB-1 disk multiplexer permits up to four 2200 CPUs to share any Wang disk or diskette drive unit, except the 2280 disk drive unit. The disk multiplexer polls all participating systems on an "equal priority" basis until it finds a system attempting to access the disk. Control of the disk drive is given to the calling system to execute a single disk operation. When execution of the disk statement or command is completed, disk control reverts to the multiplexer, which resumes its sequential polling of the systems. A system can also request exclusive use of the disk ("hogging"); when a disk is hogged, polling is not continued until the system releases the disk back to the multiplexer.

The 2280 Disk Multiplexer provides the ability to multiplex a Model 2280 Disk Drive or pair of 2280 disk drives for increased storage capacity. The 2280 Multiplexer is a "star" configuration. In a star configuration, up to three VP, LVP, or MVP CPUs are individually connected directly to the 2280 Disk Processing Unit. This type of configuration provides several benefits. First, optimal access time is provided because each CPU is directly connected to the disk processing unit. Second, increased expansion is possible because the I/O slots in each CPU, which would have been used for additional disk storage, are

now free to support other peripherals. Third, optimal time is also provided since each CPU is independently connected to the disk drive. Fourth, since the 2280 Disk Processing Unit monitors which CPU is requesting disk access and is therefore I/O independent, faster throughput results.

The 2280 MUX multiplexer installs directly into a 2280 Multiplexable Disk Processing Unit (MDPU). Each system to be connected must have a 22C80 disk controller installed in the CPU. The multiplexer controls all communication between CPUs and the disk unit. The multiplexer polls sharing CPUs until it finds one trying to access the disk. That CPU is then allowed to execute a disk command, and polling continues. Multiplexing is transparent to the user and to user software.

It is also possible for one user to have exclusive uninterrupted access to the disk for such operations as MOVE or COPY. This is accomplished via Hog mode. A terminal with the disk in Hog mode can execute any number of disk commands while preventing other users from executing any operation on the hogged drive.

TAPE DRIVES

The 2209A Nine-Track Tape Drive provides the capability to read and record industry-compatible tape. The Model 2209A reads 1600 byte-per-inch (bpi) phase-encoded magnetic tape. It contains a dual-gap read/write head, full-width erase head, tape cleaner, and photoelectric sensors to detect reflective tape markers. It also provides read-after-write verification, automatic correction for single-track errors and detection of multiple-track errors. The 2209A may be used with the 2200T, VP, LVP, and MVP.

CARD READER

The Model 2244B Hopper-Feed Punched/Marked Sense Card Reader provides program and data entry capabilities from punched or marked sense cards to a 2200 VP, LVP, or MVP system. The 2244B can read the following types of cards.

1. Standard 80-column punched cards

2. Standard 80-column cards printed in reflective ink for marking and/or punching

3. Custom cards with fewer than 80 columns

4. BASIC Mark Sense Program Cards which are specially designed for Marking Program text and data

Cards read by the 2244B must conform to ANSI industry standards. The 2244B reads marked or punched cards at a maximum rate of 285 cards per minute.


**2209A
Reel-to-Reel Magnetic Tape Drive**

PRINTERS/PLOTTERS

A total of 13 printer models are available for the 2200 product line, ensuring that an appropriate printer can be chosen for virtually any output requirement. All 2200 systems can support one or more printers and/or plotters. The printers range in speed from 30 characters per second (cps) to 600 lines per minute (lpm), and include matrix, chain, wheel impact, band, and page printers. All 2200 printers ensure deselection without loss of text. All but the Models 2281W, 2281WC, and 2263 have a programmable audio alarm. The audio alarm automatically warns the operator when the printer is out of paper. The alarm can be programmed for such purposes as job completion or error conditions. For the image printer and all matrix printers, programmable expanded character size provides highlighted printing.

The Model 2221W Matrix Character Printer prints a full ASCII set of 96 characters at a rate of 200 cps. The 2221W can print up to 132 characters per line using a 7 x 9 dot matrix to form uppercase characters, and a 9 x 9 dot matrix to form lowercase characters. Output varies from 65 to 300 lpm, depending upon line length.

The Models 2231W-1, 2231W-2, 2231W-3 and 2231W-6 Matrix Character Printers print a full ASCII character set of 96 characters. The 2231W-1 prints a 112-character line in 10-pitch; the other models print a

132-character line in 12-pitch. The Model 2231W-6 high quality printer prints a 112-character line in 10-pitch, as well as a 132-character line in 12-pitch. The 2231W-1 produces characters at the rate of 120 cps using a 7 x 9 dot matrix. The Model 2231W-2 utilizes a 7 x 9 dot matrix to produce characters at a rate of 120 cps in 12-pitch. The 2231W-3 is a 10-pitch, 120 cps, 8 x 7 dot matrix printer which, when used with the Model 2282 Graphic CRT, provides a hard copy of the graphic information on the CRT. The Model 2231W-6 utilizes an extremely dense 20 x 12
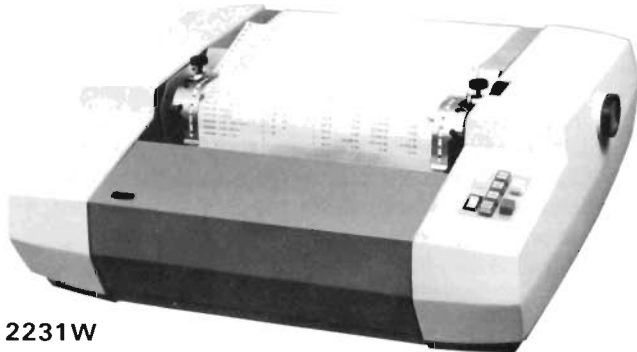
2231W
Line Printer

dot matrix to produce high-quality characters at a rate of 70 cps. The 2231 W-6 offers a variety of special features designed to increase formatting flexibility, including one-quarter line feed spacing for subscripts and superscripts.

The Model 2261W Line Printer prints an ASCII set of 96 characters at the rate of 220 lpm, in 10- and 12-pitch. The 2261W uses four print heads and 11 x 8 and 9 x 8 dot matrices to print bidirectionally.

The 2263-1, 2263-2, and 2263-3 Chain Line Printers are heavy duty, high performance solid character line printers. The 2263-1 and 2263-2 print a 64-character ASCII character set, including uppercase letters, numbers, and special symbols. For the 2263-1 and 2263-2, the standard print font is Gothic. The standard print font for the 2263-3 is a 96-character uppercase/lowercase Courier font. The 2263-1 and 2263-3 print at a rate of 400 lpm, while the 2263-2 prints at 600 lpm. All three models print a 132-character line.

The Models 2273-1 and 2273-2 Band Printers are medium duty, solid character impact printers. The 2273-1 and 2273-2 feature changeable print bands, and Wang offers a complete library of bands designed to meet both domestic and international requirements. Character sets, in different typefaces, containing 48, 64, and 96 characters are available. Bands are available in 10- and 15-pitch for the 2273-1, and in 10-pitch
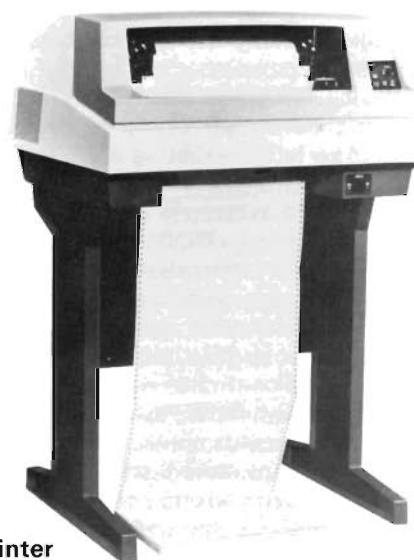
2273
Band Printer

only for the 2273-2. The Model 2273-1 provides nominal throughput of 250 lpm, and the Model 2273-2 provides nominal throughput of 600 lpm.

The Model 2281W Plotting Output Writer is a daisy character wheel printer, and functions as a digital plotter and an output writer. It bidirectionally prints an 86-character ASCII character set containing uppercase and lowercase letters, numerics, and symbols at a rate of 30 cps.

The Model 2281 WC is a bidirectional, wide carriage, impact printer. It can print either a 180-character (10-pitch) or 216-character (12-pitch) line at an average rate of 40 cps with paper widths up to 20.5 in. (52 cm). It has interchangeable print wheels containing 96 characters. Uppercase and lowercase letters, numerals, and symbols can be printed.

For the 2281W and 2281WC there are two options available: the Twin Sheet Feeder, an electronically controlled device which automatically and continuously feeds single sheets of paper, and the Bidirectional Forms Tractor which allows the continuous forward or reverse feeding of form paper.

The Twin Sheet Feeder can hold up to two hundred sheets of paper in each of two programmable, switch selectable feed bins. Operator intervention is only required to load paper into the bins. As each document is printed, paper automatically feeds, as needed, into the platen. When printing is complete, pages are ejected and stacked in the stacker tray. The Feeder can be easily removed when not needed.

The Bidirectional Forms Tractor provides the capability needed for forms filling, plotting, and

superscript/subscript printing. The tractor accommodates various paper widths and multiform combinations up to six parts.

The Model 2232B Digital Flatbed Plotter performs point and straight-line plotting with extreme accuracy over a plotting surface measuring 31.0 x 48.0 inches (78.7 x 121.9 centimeters). Plotting is $\pm$ 0.01 inch ($\pm$ 0.025 centimeters), with an additional cumulative deviation at the rate of $\pm$ 0.001 inch per inch.

The 2232B is a versatile plotter suitable for large-scale plots such as subdivision plans, highway vertical and horizontal plans, and large schematics, as well as for smaller scale plots requiring a high degree of accuracy. Plotting is controlled with the BASIC language PLOT statement. A Plotter Utility Package is available for alphanumeric character generation. It also contains generalized plotter routines and a number of special routines which perform commonly used plots such as straight lines, circles, grids, etc. This package must be ordered separately.

The 2272 Digital Drum Plotter provides point plotting, continuous line plotting and fully automatic alphanumeric lettering capability to the 2200 system. The 2272 provides a combination of features.

1. Digital control accuracy
2. Efficient plotting speeds
3. Plot-vector buffering for overlapped CPU-plotter processing
4. Automatic alphanumeric character generation
5. Virtually unlimited plotting area

The plotter has the extensive capability to prepare bar graphs, pie charts, graphs of standard mathematical functions and business curves, small and large engineering drawings, surveying drawings, machine components, and maps.

The Model 2282 Graphic CRT provides CRT plotting and fully automatic alphanumeric lettering capability for 2200 systems. All plotting output from the 2200 is displayed on the CRT. The 2282 has a 12-inch (30 cm) (diagonal measure) CRT screen. The plotting matrix on the screen consists of 800X by 512Y addressable locations (dots). The graphics image is displayed from graphic memory via standard raster scan techniques, providing a bright clear image under all ambient lighting conditions. In addition to plotting vectors, a 112-character ASCII set can be plotted in 15 different sizes. Selective vector and character erasure is also supported.

The Model 2211M Printer Multiplexer allows a single printer or plotter to be shared by up to four separate 2200 CPUs, thus reducing the per-user cost of hard copy output. All access to the printer is selected via the
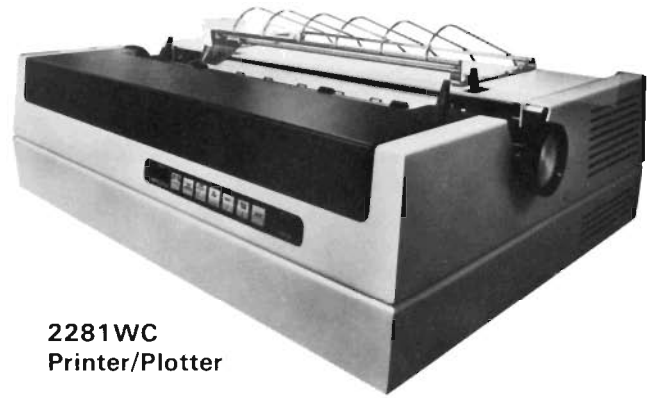
2281WC
Printer/Plotter

multiplexer select switch. Once the printer is selected, the 2211M permits the printing station to maintain exclusive control of the printer; no other system can use the printer until that system's print channel is selected. The 2211M is compatible with all Wang Series 2200 printers.

COMMUNICATIONS

The Model 2227B Buffered Asynchronous Communications Controller adds data transmission and reception capabilities to the stand-alone computer capabilities of a 2200VP, MVP, or LVP CPU. Two physically different but functionally equivalent versions of this controller, called the 2227B Controller or Option 27B Buffered Asynchronous Communications Controllers, are available. The 2227B is for Wang 2200VP, MVP or LVP systems. The Option 27B offers the same TC function for the SVP. A 2200 system can be user-programmed to emulate a variety of asynchronous terminals, or to communicate with another comparably equipped Wang system. Wang-developed asynchronous communications software is available for emulation of Teletype[R] or IBM Selectric[R] typewriter terminals.

The Model 2228B, or Option 28B Synchronous/Asynchronous Communications Controller, in conjunction with Wang-developed software, can emulate the binary synchronous communications (BSC) protocol of IBM 2780, 3780, or 3741 terminals and HASP multileaving workstations. With one of the BSC protocols, a 2200 system can operate as a remote batch terminal or a workstation in communication with an IBM 360/370 host computer and require no changes in existing IBM 360/370 software. The Wang system can also communicate with any mainframe computer which supports the

2780, 3780, 3741, or HASP multileaving protocols. For asynchronous communications, the Model 2228B or the Option 28B controllers support either user-developed or Wang-developed software.

The Model 2228C Synchronous/Asynchronous Communications Controller has the same capabilities as the Model 2228B controller and supports use of Wang-developed BSC software which emulates an IBM 3275 Display Station (Model 2). It can also emulate the binary synchronous communications protocol of IBM 2780, 3780, and 3741 terminals.

The Model 2228D and Option 28D Data Communications Controllers are designed to support high level data link protocols. The 2228D controller board adds communications capabilities to a Wang 2200 Series LVP or MVP central processor. The Option 28D adds the same functionality to the SVP.

The boards have switch selectable support for either the (EIA) RS-232-C or RS-449 standard. They also support the international CCITT counterpart V.24 to the EIA RS-232-C standard. These boards each have 2K of Erasable Programmable Read Only Memory, and 62K of Random Access Memory. Each controller also has its own microprocessor which allows separate tasks related to data transmission and reception to be performed by the controller and the central processor concurrently.

CONTROLLERS

Most I/O controllers used with 2200 Series peripherals control one device; however, some, such as the 22C11 Dual Controller (Printer and diskette), 22C32 Triple Controller (Disk/Diskette, 2236DE Terminal, Line Printer) and 2236MXD 4-port terminal controller, contain the logic necessary to control more than one peripheral.

On CPU models 2200VP, LVP, and MVP, the I/O controllers are separate boards which plug into the CPU chassis. I/O controllers may be easily added and/or replaced according to the user's needs. The VP and MVP support up to nine I/O controllers.

I/O controllers contain varying degrees of intelligence, depending upon the sophistication of the peripherals which are supported. Some controllers, such as the 2209A Tape Drive Controller, contain an I/O processor and memory buffer as well as controller logic. This allows I/O processing and CPU processing to occur concurrently, thus improving system throughput.

INTERFACES

The 2207A I/O Interface Controller allows direct interface of RS-232-C compatible equipment to a 2200 CPU. This controller supports asynchronous transmission rates up to 1200 baud and two modes of operation called ASCII and Binary. The 2207A interface plugs into any I/O slot in a CPU chassis and has a 25-pin female plug to facilitate direct connection of a Teletype or other equipment having a cable and an RS-232-C compatible male plug.

The 2250 I/O Interface Controller (8-Bit Parallel) allows external equipment to be interfaced directly to the CPU. The controller has a 36-pin female connector to facilitate direct connection of an 8-bit parallel input only, output only, or input/output device.

The Model 2250 implements the sequential transfer of information 1-byte-at-a-time under program control. Although Wang systems use an 8-bit character set consisting of 7-bit ASCII codes with the high-order eighth bit set to 0, individual characters in any single or packed 8-bit codes can be transmitted and received via the 2250 controller. Also, discrete binary information in an 8-bit format and the text of BASIC language programs can be transmitted and received. The 2250 Controller is only available on the 2200VP CPU.

The 2252A Scanning Input Interface Controller [Binary Coded Decimal (BCD) 1-to-10 Digit Parallel] is an input-only interface directly compatible with many digital meters for on-line applications using a 2200VP configuration.

The 2252A can accept, in parallel, a readout consisting of a 1-bit algebraic sign and up to ten decimal digits in BCD 8-4-2-1 notation, i.e., four bits per decimal. Switches on the controller board can be set to indicate the exact number of BCD digits to be processed per readout. By allowing selection of the number of digits to be processed less time is required to transfer each readout to the CPU, and less memory is required when storing multireadouts in alphanumeric arrays.

The 2254 IEEE-488 interface allows a 2200 series system to be compatible with other devices using the IEEE-488-1975 standard. Through this controller, the 2200 system can serve as either the system controller (controlling, talking or listening) or as a noncontroller (talking or listening). The 2254 can be set in the field to operate as a controller or noncontroller. The 2254 controller can only be used with the 2200VP CPU.

CONSOLES AND TERMINALS

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2236DE Interactive Terminal	CRT • 12-inch (30 cm) diagonal display screen • 24 lines, 80 characters per line • Manual controls for contrast and brightness • User-programmable cursor for next-character position • Programmable audio alarm • Box graphics • Character graphics • Screen Print KEYBOARD • Typewriter-like keyboard • Modes of operation: A/A, A/a • 16 user-programmable Special Function Keys/ Edit mode keys • Multicharacter buffering	• Transmission rate manually selectable for each terminal at 300, 600, 1200, 2400, 9600, or 19,200 bps. PRINTER • Contains a Printer controller equivalent to the 22C02.	• Physical Dimensions Height — 13.5 in. (34.3 cm) Depth — 20.5 in. (52.1 cm) Width — 19.75 in. (50.16 cm) • Weight 51 lb (23 kg) • Cabling 8.0 ft (2.4 m) cord to power source 2000.0 ft max (606.1 m) to CPU 50.0 ft max (15.2 m) to Modem	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 0.5 Hz 40 watts • Fuses 2.0 amps @ 115 VAC/60 Hz 1.0 amp @ 230 VAC/50 Hz • Operating Environment 50° F to 90° F (10° C to 32° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity	VP, MVP, LVP, SVP
Model 2236DW Integrated Terminal	CRT • 12-inch (30 cm) diagonal display screen • 24 lines, 80 characters per line • Manual controls for contrast and brightness • User-programmable cursor for next-character position • Programmable audio alarm • Box graphics • Screen Print KEYBOARD • Typewriter-like keyboard • Modes of operation: A/A, A/a • 16 user-programmable Special Function Keys/TAB GL, INSERT, DELETE, NEXT SCRN, and PREV SCRN keys • Edit keys and Cursor Control keys • Multicharacter buffering	• Transmission rate selectable for each terminal at 300, 600, 1200, 2400, 9600, or 19,200 bps. • Asynchronous full-duplex communications mode PRINTER • Contains a Printer controller equivalent to the 22C02.	• Physical Dimensions Height — 13.5 in. (34.3 cm) Depth — 20.5 in. (52.1 cm) Width — 19.75 in. (50.16 cm) • Weight 41.0 lb (18.6 kg) • Cabling 8.0 ft (2.4 m) cord to power source 25.0 ft (7.6 m) direct connect cable 2000.0 ft max (606.1 m) to CPU 50.0 ft max (15.2 m) to Modem	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 0.5 Hz 40 watts • Fuses 2.0 amps @ 115 VAC/60 Hz 1.0 amp @ 230 VAC/50 Hz • Operating Environment 50° F to 90° F (10° C to 32° C) 20% to 65% Recommended Relative Humidity	VP, MVP, LVP, SVP

DISK AND DISKETTE DRIVES

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2270A-1, 2270A-2, 2270A-3 IBM 3740 Compatible Diskette Drives	• On-line storage — 2270A-1 Single Diskette Drives: 315,392 bytes (each) — 2270A-2 Dual Diskette Drives: 630,784 bytes (each) — 2270A-3 Triple Diskette Drives: 946,176 bytes (each) • Allow 2200 CPU to access IBM 3740 type diskettes or Wang diskettes • Single and dual diskette drives are upgradable • May be multiplexed • 16 256-byte sectors/track	• Rotation Speed: 360 rpm • Average Access Time: 343 ms • Average Latency Time: 83.3 ms • COPY Time (entire platter): 2 minutes (approx.)	• Physical Dimensions Height — 19.0 in. (48.3 cm) Width — 17.5 in. (44.5 cm) Depth — 16.3 in. (41.4 cm) • Weight 2270A-1 74.0 lb (33.3 kg) 2270A-2 82.0 lb (36.9 kg) 2270A-3 94.0 lb (42.3 kg) • Cabling 12.0 ft (3.7 m) cable to CPU 8.0 ft (2.4 m) cord to power source	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 Hz 210 watts • Heat Output 716 Btu/hr • Fuses 1.75 amps @ 115 VAC/60 Hz 8.0 amp @ 230 VAC/50 Hz • Operating Environment 60° F to 90° F (16° C to 32° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity	VP, MVP
Model 2260C-1/4, 2260C-1/2, 2260C, 2260C-2, Fixed/Removable Disk Drives	• On-line storage — 2260A-1/4: 1.25 Mb fixed disk storage 1.25 Mb removable disk storage — 2260C-1/2: 2.5 Mb fixed disk storage, and 2.5 Mb removable disk storage — 2260C: 5 Mb fixed disk storage and 5 Mb removable disk storage — 2260C-2: 10 Mb fixed disk storage and 10 Mb removable disk storage • Can be expanded • 2260BC models may be multiplexed.	• Rotation Speed: 2400 rpm • Average Access Time: — 2260C-1/4: 20 ms — 2260C-1/2: 28 ms — 2260C: 40 ms — 2260C: 40 ms • Average Latency Time: 12.5 ms • COPY Time (entire platter) — 2260C-1/4: 2 1/2 min — 2260C-1/2: 5 min — 2260BC, 2260C: 10 min — 2260BC-2, 2260C-2: 10 min	• Physical Dimensions Height — 28.0 in. (71.1 cm) Width — 18.94 in. (48.11 cm) Depth — 30.7 in. (78.0 cm) • Weight 130.0 lb (58.5 kg) • Cabling 8.0 ft (2.4 m) power cable 10 ft (3 m) to CPU 5.0 ft (1.5 m) to previous drive	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 Hz 500 watts • Fuses 7 amps @ 115 VAC 3.5 amps @ 230 VAC • Heat Output 1050 Btu/hr • Operating Environment 50° F to 95° F (10° C to 35° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity	VP, MVP

DISK AND DISKETTE DRIVES (continued)

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2280-1, 2280-2, 2280N-1,2,3, 2280-3 Fixed/ Removable Disk Drives	● On-line storage — 2280-1: 13.4 Mb removable disk storage, and 13.4 Mb fixed disk storage — 2280-2: 13.4 Mb removable disk storage, and 40.4 Mb fixed disk storage — 2280-3: 13.4 Mb removable disk storage, and 67.3 Mb fixed disk storage ● The 2280-1 and 2280-2 may be expanded ● 64 256-byte sectors/track	● Rotation Speed: 3600 rpm ● Average Access Time: 38.3 ms ● Average Latency Time: 8.33 ms ● Average Seek Time: 30 ms ● COPY Time (entire platter): 2 min	● Physical Dimensions Height (with stand) 36.0 in. (91.4 cm) Width — 20.4 in. (51.8 cm) Depth — 32.6 in. (82.8 cm) ● Weight 175.0 lb (78.8 kg) ● Cabling 5.0 ft (1.5 m) cable to disk controller board in CPU 15.0 ft (4.6 m) to previous 2280 24.0 ft (7.3 m) to last drive 8.0 ft (2.4 m) to power source	● Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 Hz 1900 watts - start-up 950 watts - running 250 watts - stand by 120 VAC 50/60 15 amps ● Fuses 8 amps @ 120 VAC 4 amps @ 230 VAC ● Heat Output 2150 Btu/hr (running) 1050 Btu/hr (stand-up) ● Operating Environment 50° F to 95° F (10° C to 35° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity	VP, MVP, LVP

DISK AND MULTIPLEXERS

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2230MXA-1/ MXB-1 Disk Multiplexer	● Allows up to four independent 2200 CPUs to share a disk or diskette drive ● Consists of one MXA-1 master controller board and up to 3 MXB-1 slave controller boards.		● Cabling 12.0 ft (3.7 m) connector cable with each MXB-1 board. Optional 50.0 ft (15.2 m), 100.0 ft (30.4 m), 200 ft (61 m) extension cables. Total length of cable cannot exceed 536.0 ft (163.4 m)	● Fuses 7 amps @ 115 VAC/60 Hz 3 amps @ 230 VAC/50 Hz	VP, MVP
Model 2280 Disk Multiplexer	● Allows any combination of one, two, or three CPUs to share a Model 2280 Disk Drive or pair of disk drives ● "Star-type" multiplexer consisting of multiplexer board, individual connector cables, and a controller board for each CPU		● Cabling 12.0 ft (3.7 cm) connector cable Optional 25.0 ft (7.6 m), 50.0 ft (15.2 m), 100.0 ft (30.4 m), 250.0 ft (76.2 m), 500.0 ft (152.4 m), 750.0 ft (228.6 m), and 1000.0 ft (304.8 m) extension cables. Maximum acceptable distance between the DPU and CPU is 1012.0 feet (308.5 m).		VP, MVP, LVP

CARD READER AND TAPE DRIVES

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2209A Nine-Track Tape Drive	• On-line storage — 35 Mb • Reads and writes at 1600 bytes per inch in the phase Encoded Mode • Can hold up to 2400 ft (732 m) of 1/2 in. (1.27 cm) tape • Holds a standard 10.5 in. (26.7 cm) reel • Dual-gap, read-after-write head • Uses a 4K (4096 byte) buffer to read and write	• Tape Speed 75 inches per second bidirectional, 200 inches per second nominal during rewind • Data Transfer Rate 120 K bytes/sec (head to buffer), 20 K bytes/sec (buffer to 2200T), 100 K bytes/sec (buffer to 2200VP/MVP)	• Physical Dimensions Height — 34.5 in. (87.6 cm) Width — 24 in. (61 cm) Depth — 26 in. (66 cm) • Weight 170.0 lb (76.5 kg) • Cabling 12.0 ft (3.7 m) to controller 8.0 ft (2.4 m) to power source	• Power Requirements 115 or 230 VAC $\pm$ 10% 50 or 60 Hz $\pm$ 1 Hz 475 watts • Fuses 15 amps @ 115 VAC 8 amps @ 230 VAC 3 amps @ 115 VAC 1.5 amps @ 230 VAC 8 amps @ 115 VAC 4 amps @ 230 VAC • Operating Environment 60° F to 90° F (16° C to 32° C) 40% to 60% Relative Humidity, noncondensing • Heat Output 1623 Btu/hr	VP, MVP, LVP
Model 2244B Hopper-Feed/ Marked Sense Card Reader	• Can read the following types of cards — Standard 80-column cards printed in reflective ink for marking and/or punching — Custom cards with fewer than 80 columns — BASIC Mark Sense Program cards • Hopper can hold approximately 550 cards of 7 mm thickness • Stacker can hold approximately 550 cards of 7 mm thickness	• Reads marked or punched cards at the rate of 300 cards per minute	• Physical Dimensions Height — 11.0 in. (27.9 cm) Width — 19.0 in. (48.3 cm) Depth — 14.0 in. (35.6 cm) • Weight 60 lb (27 kg)	• Power Requirements 115 or 230 VAC $\pm$ 10% 60 Hz $\pm$ 1 cps 230 VAC $\pm$ 10% 50 Hz $\pm$ cps 1650 watts (max) starting load for 3 seconds 570 watts (max) running load • Fuses 14.3A amps @ 115 VAC (7.15A @ 230 V) Start-up 4.9 amp @ 115 VAC (2.45A @ 230 V) Running • Operating Environment 50° F to 90° F (10° C to 32° C) 40% to 68% Relative Humidity (noncondensing) • Heat Output 1938 Btu/hr	VP, MVP, LVP

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2221W Matrix Line Printer	• High quality 9 x 9 and 9 x 7 dot matrix impact printer • Expanded print capability • 132 characters per line • Full ASCII set of 96 characters • Full line buffering • Programmable audio alarm	• Print Speed 200 cps, 65 to 300 lpm depending upon line length	• Physical Dimensions Height — 12.0 in. (30.5 cm) Width — 29.0 in. (73.7 cm) Depth — 25.0 in. (63.5 cm) • Weight 85.0 lb (38.2 kg) • Cabling 6.0 ft (1.8 m) to power source 12.0 ft (3.7 m) to controller • Paper Width 14.9 in. (37.8 cm) maximum 3.5 in. (8.9 cm) minimum	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 Hz 300 watts • Fuses 4.0 amps (SB) @ 115 VAC 2.0 amps (SB) @ 230 VAC • Operating Environment 50° F to 90° F (10° C to 32° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity • Heat Output 1200 Btu/hr	VP, MVP, LVP, SVP
Model 22231W-1, 2231W-2, 2231W-3, 2231W-6 Matrix Line Printers	• 2231W-1: 112 characters per line, 10-pitch • 2231W-2: 132 characters per line, 12-pitch • 2231W-3: 112 characters per line, 2282 graphic CRT accessory printer • 2231W-6: 132 lines per inch, 10-pitch and 12-pitch fonts • Full ASCII set of 96 characters	• Print Speed — 2231W-1: 120 cps — 2231W-2: 120 cps — 2231W-3: 120 cps — 2231W-6: 70 cps	• Physical Dimensions Height — 10.0 in. (25.4 cm) Depth — 18.0 in. (45.7 cm) Width — 24 in. (61 cm) • Weight 2231W-1, -2: 60 lb (27 kg) 2231W-3: 82.0 lb (36.9 kg) 2231W-6: 70.0 lb (31.5 kg) • Cabling 12 ft (3.7 m) to CPU (when the 2231W-3 is used with the graphic CRT, the graphic CRT plugs into the printer controller board in the CPU and the printer cable plugs into the output connector of the graphic CRT.) 6 ft (1.8 m) to power source • Paper width 13.5 in. (34.3 cm) maximum 3.5 in. (8.9 cm) minimum	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 cps 150 watts • Fuses 1.5 amps (SB) @ 115 VAC .8 amps (SB) @ 230 VAC • Operating Environment 50° F to 90° F (10° C to 32° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity • Heat Output 600 Btu/hr	VP, MVP, LVP, SVP

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2261W Matrix Line Printer	• High quality 11 x 8 and 9 x 8 dot matrix impact printer • Expanded print capability • 132 characters per line (10-pitch format), or 160 characters per line (12-pitch format) • Full ASCII set of 96 characters • Switch selectable variable line density — 6 or 8 lines per inch • Full line buffering • 4 matrix impacter heads, bidirectional printing • Programmable audio alarm	• Print Speed 220 lpm independent of characters per line and pitch	• Physical Dimensions Height — 36.0 in. (91.4 cm) Depth — 26 in. (66 cm) Width — 27.0 in. (68.6 cm) • Weight 210.0 lb (94.5 kg) • Cabling 6.0 ft (1.8 m) to power source 12.0 ft (3.7 m) to controller • Paper Width 14.9 in. (37.8 cm) maximum 5.0 in. (12.7 cm) minimum	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 Hz 840 watts • Fuses 5.0 amps (SB) @ 115 VAC 2.5 amps (SB) @ 230 VAC • Operating Environment 50° F to 90° F (10° C to 32° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity • Heat Output 2864 Btu/hr	VP, MVP, LVP, SVP
Model 2263-1, 2263-2, 2263-3 Line Printers	• Chain Printer • 132 characters per line • Alarm Lamp • ASCII 64-character set • Accepts up to 6-part forms • Gothic print font for 2263-1 and 2263-2, Courier print font for 2263-3	• Print Speed 400 lpm for the 2263-1, and 2263W-3, 600 lpm for the 2263-2	• Physical Dimensions Height — 42.0 in. (106.7 cm) Width — 36.5 in. (92.7 cm) Depth — 32.0 in. (81.3 cm) • Weight 570 lb (256.5 kg) • Cabling 12 ft (3.7 in.) to power source, 50 ft (15.2 m) to controller • Paper width 19.5 in. (49.5 cm) maximum 3.5 in. (8.9 cm) minimum	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 cps 790 watts • Fuses 5.5 amps @ 115 VAC 3.0 amps @ 230 VAC • Operating Environment 40° F to 94° F (4° C to 34° C) 40% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity • Heat Output 2700 Btu/hr	VP, MVP, LVP, SVP
Model 2273-1, 2273-2 Band	• Band Printer • Operator-changeable • Solid-character impact printing technique • Accepts up to six-part forms • 132 characters per line	• Print Speed 250 1pm and 600 lpm (nominal) for the 2273-2	• Physical Dimensions Width — 30.5 in. (77.5 cm) Height — 43.75 in. (111.13 cm)* Depth — 25.1 in. (63.8 cm) • Weight 198.0 lb (89.1 kg) • Cabling 12.0 ft (3.7 m) cable with connector to CPU 6.0 ft (1.8 m) to power supply • Paper Width 16.0 in. (40.6 cm) maximum 3.0 in. (7.6 cm) minimum	• Power Requirements 115 or 230 VAC ± 10% 350 watts • Fuses 3.0 amps @ 115 VAC 1.5 amps @ 230 VAC • Operating Environment 50° F to 90° F (10° C to 32° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity • Heat Output 1200 Btu/hr	VP, MVP, LVP, SVP

* Height with stand, cover closed.
Height without stand
    14.5 in. (36.8 cm) cover closed
    29.5 in. (74.9 cm) cover open

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2281W Printer/Plotter	• Daisy character wheel printer/digital plotter • ASCII character set of 86 characters • 132 characters per line (10-pitch), 157 characters per line (12-pitch) • Full line buffering • Prints bidirectionally	• Print Speed 30 cps, bidirectional • Plotting Increments — Horizontal — 1/60 in. (0.0423 cm) per step — Vertical — 1/48 in. (0.0529 cm) per step	• Physical Dimensions Height — 9.0 in. (22.9 cm) Depth — 19.5 in. (49.5 cm) Width — 25.0 in. (63.5 cm) • Weight 70.0 lb (31.5 kg) • Cabling 12.0 ft (3.7 m) to controller 6.0 ft (1.8 m) to power supply • Paper Width 15.0 in. (38.1 cm) maximum	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 Hz 250 watts • Fuses 3 amps (SB) @ 115 VAC 1.5 amps (SB) @ 230 VAC • Operating Environment 45° F to 95° F (7° C to 35° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity • Heat Output 1000 Btu/hr	VP, MVP, LVP, SVP
Model 2281WC Wide Carriage Printer	• Wide platen with forms tractor • Bidirectional print capabilities • 180-character line in 10-pitch, 216 character line in 12-pitch • Interchangeable 96-character print wheels	• Print Speed 40 characters per second, average	• Physical Dimensions Height — 9.0 in. (22.9 cm) Depth — 19.5 in. (49.5 cm) Width — 28.75 in. (73.03 cm) • Weight 70.0 lb (31.5 kg) • Cabling 12.0 ft (3.7 m) to controller 6.0 ft (1.8 m) to power supply	• Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 Hz 250 watts • Fuses 3.0 amps (SB) @ 115 VAC 1.5 amps (SB) @ 230 VAC • Operating Environment 50° F to 90° F (10° C to 32° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity • Heat Output 1000 Btu/hr	VP, MVP, LVP, SVP

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2232B Flatbed Plotter	• Point and straight line plotting • Plotting area: 48.0 in. (121.9 cm) x 31.0 in. (78.7 cm)	• Plotting Speed 60 in./min • Plotting Accuracy $\pm$ 0.01 in. plus 0.001 in.	• Physical Dimensions Table Height — 9.50 in. (24.13 cm) Width — 60.25 in. (153.04 cm) Depth — 46.0 in. (116.8 cm) Weight — 112.0 lb (50.4 kg) • Physical Dimensions Control Unit Height — 19.0 in. (48.3 cm) Width — 18.0 in. (45.7 cm) Depth — 10.0 in. (25.4 cm) Weight — 30.0 lb (13.6 kg) • Cabling 10 ft (3 m) cable from control unit to CPU 10 ft (3 m) cable from control unit to plotter arm 8 ft (2.4 m) power supply	• Power Requirements 115 or 230 VAC $\pm$ 10% 50 or 60 Hz $\pm$ 1 Hz 175 watts • Fuses 2 amps @ 115 VAC 2 amps @ 230 VAC • Operating Environment 50° F to 104° F (10° C to 40° C) 30% to 80% Relative Humidity • Heat Output 595 Btu/hr	VP, MVP, LVP
Model 2282 Graphic CRT	• High contrast CRT plotting • Fully automatic lettering capability • Interfaces with the 2200 via the line printer controller board • 12-inch diagonal CRT screen with P39 phosphor	• 800X by 512Y addressable locations (dots) • Plotting time 0.048 sec (full screen horizontal vector)	• Physical Dimensions Height — 13.5 in. (34.3 cm) Depth — 20.5 in. (52.1 cm) Width — 19.75 in. (50.16 cm) • Weight 38.5 lb (17.3 kg) • Cabling 8.0 ft (2.4 m) to power source 12.0 ft (3.7 m) to CPU	• Power Requirements 115 or 230 VAC $\pm$ 10% 50 or 60 Hz $\pm$ 1 Hz 65 watts • Fuses 3.0 amps (SB) @ 115 VAC 1.5 amps (SB) @ 230 VAC • Operating Environment 45° F to 95° F (7° C to 35° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity • Heat Output 614 Btu/hr	VP, MVP, LVP, SVP

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Model 2272 Digital Drum Plotter	● Allows continuous line plotting with automatic alphanumeric lettering capability ● Switches to set axes ● 400 byte buffer	● Plotting Area — 16.0 in. (40.6 cm) wide by any length ● Plotting Accuracy — .01 in. plus 1% ● Speed — 3 in./sec	● Physical Dimensions Height — 10.2 in. (25.9 cm) Width — 33.0 in. (83.8 cm) Depth — 14.0 in. (35.6 cm) ● Weight — 68.0 lb (30.6 kg) ● Cabling 8.0 ft (2.4 m) cable to CPU 8.0 ft (2.4 m) power cord	● Power Requirements 169 watts 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 Hz ● Fuses 3.5 amps @ 115 VAC 1.5 amps @ 230 VAC ● Operating Environment 50° F to 90° F (10° C to 32° C) 20% to 80% Relative Humidity 35% to 65% Recommended Relative Humidity ● Heat Output 577 Btu/hr	VP, MVP, LVP, SVP
Model 2211M Printer/Plotter Multiplexer	● Allows up to four 2200 CPUs to share any Wang printer. ● Select switch ● Four channel indicator lamps		● Dimensions of chassis Height — 5.5 in. (14.0 cm) Width — 8.0 in. (20.3 cm) Length — 11.5 in. (29.2 cm) ● Weight of chassis — 15.0 lb (6.8 kg)	● Power Requirements 115 or 230 VAC ± 10% 50 or 60 Hz ± 1 cps 25 watts ● Operating Environment 50° F to 90° F (10° C to 32°C) 40% to 60% Relative Humidity	VP, MVP, LVP, SVP

PRINTER OPTIONS

DEVICE	GENERAL SPECIFICATIONS	PERFORMANCE SPECIFICATIONS	PHYSICAL SPECIFICATIONS	ENVIRONMENTAL REQUIREMENTS	COMPATIBLE WITH
Bidirectional Forms Tractor Option	● Allows the continuous forward or reverse feeding of form paper. ● Handles multipart forms up to 6 parts.	● Printing/Plotting registration is accurate to 0.010 in. (0.025 cm)	● Physical Dimensions Height — 6.75 in. (17.15 cm) Depth — 8.40 in. (21.34 cm) 2281W Weight — 6.0 lb (2.7 kg) Width — 21.50 in. (54.61 cm) 2281WC Weight — 6.50 lb (2.93 kg) Width — 26.40 in. (67.06 cm)		LVP, MVP, SVP, VP
Twin Sheet Feeder	● Easy to use Automatic Twin Sheet Feeder ● 200 sheet-per-bin capacity ● Programmable and switch selectable bin control ● Sequential stacking of printed documents		● Physical Dimensions Height — 15.0 in. (38.1 cm) Depth — 14.00 in. (36.56 cm) 2281W Weight — 6.0 lb (2.7 kg) Width — 21.50 in. (54.61 cm) 2281WC Weight — 6.50 lb (2.93 kg) Width — 26.40 in. (67.06 cm)		VP, LVP, MVP, SVP

TELECOMMUNICATIONS

CONTROLLER	CHARACTERISTICS	RESTRICTIONS	COMPATIBLE WITH
Model 2227B, Option 27B Buffered Asynchronous Communications Controller	• Protocols supported include: — Teletype terminal emulation — IBM 2741 emulation — Communication with another comparably equipped Wang system (a Wang Null Modem is available for direct communication to another Wang system) • Available line speeds: 50, 75, 100, 110, 134.5, 150, 200, 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600 bps • Character formatting options: — Parity (odd, even or no) — number of data bits (5, 6, 7, or 8) — number of stop bits (1, 1.5, or 2)	Modems not included 12.0 ft (3.7 m) cable included	Model 2227B: VP, MVP, LVP Option 27B: SVP
Model 2228B, Option 28B Synchronous/ Asynchronous Communications Controller	• Protocols supported include: — IBM 2780, 3780, 3741, or HASP multileaving protocols — Teletype and IBM 2741 terminal emulation — Burroughs poll/select • RS-232-C compatible • Controller contains a microprocessor, memory, buffers • A Wang Null Modem is available for direct communication to another Wang system	Modems not included 12.0 ft (3.7 m) cable included	Model 2228B: VP, MVP, LVP Option 28B: SVP
Model 2228C, Option 28C Synchronous/ Asynchronous Communications Controller	• Protocols supported include: — IBM 3275, 2780, 3780, 3741, or HASP multileaving protocols — Teletype and IBM 2741 terminal emulation — Burroughs poll/select • Controller contains a microprocessor, memory, and buffers	Modems not included 12.0 ft (3.7 m) cable included	Model 2228C: VP, MVP, LVP Option 28C: SVP
Model 2228D, Option 28D Data Communications Controller	• Power-up diagnostic allows immediate recognition of board status via rail-mounted LED • Switch Selectable compatibility with EIA RS-232-C or the EIS RS-449 • Four independent Direct Memory Access channels • Supports Wang Communications software	12.0 ft (3.7 m) cable included	Model 2228D: MVP, LVP Option 28D: SVP

CONTROLLERS

CONTROLLER	DEVICES CONTROLLED	COMPATIBLE WITH
22C02 Printer/ Drum Plotter Controller	• Model 2221W Line Printer • Model 2231W-1 Line Printer • Model 2231W-2 Line Printer • Model 2231W-3 Line Printer (graphic CRT Accessory Printer) • Model 2231W-6 Matrix Line Printer • Model 2261W Line Printer • Model 2263-1 Line Printer • Model 2263-2 Line Printer • Model 2273-1 Band Printer • Model 2273-2 Band Printer • Model 2281W Daisy Printer • Model 2281WC Wide Carriage Printer • Model 2282 Graphic CRT • Model IP41L Image Printer	VP, MVP, LVP
22C03 Disk/ Diskette Controller	• Model 2270A Diskette Drive	VP, MVP, LVP
22C11 Dual Controller (Printer and diskette)	• Model 2221W Line Printer • Model 2231W-1 Line Printer • Model 2231W-2 Line Printer • Model 2231W-3 Line Printer (graphic CRT Accessory Printer) • Model 2231W-6 Matrix Line Printer • Model 2261W Line Printer • Model 2263-1 Line Printer • Model 2263-2 Line Printer • Model 2273-1 Band Printer • Model 2273-2 Band Printer • Model 2281W Daisy Printer • Model 2281WC Wide Carriage Printer • Model 2282 Graphic CRT • Model 2270A Diskette Drive	VP, MVP, LVP

CONTROLLER	DEVICES CONTROLLED	COMPATIBLE WITH
22C12 Processing Unit and Controller	• Model 2260C Disk Drive	VP, MVP
22C32 Triple Controller (Disk/Diskette, 2236DE Terminal, Line Printer)	• Model 2221W Line Printer • Model 2231W-1 Line Printer • Model 2231W-2 Line Printer • Model 2231W-3 Line Printer (Graphic CRT Accessory Printer) • Model 2231W-6 Matrix Line Printer • Model 2261W Line Printer • Model 2263-1 Line Printer • Model 2263-2 Line Printer • Model 2281W Plotting Daisy Output Writer • Model 2281WC Wide Carriage Printer • Model 2282 Graphic CRT • Model 2270A Diskette Drive • Model 2236DE Interactive Terminal	VP, MVP, LVP
2236MXD Four-port Terminal Controller	• Controls up to four 2236DE terminals (only one on VP)	VP, MVP, LVP
22C80 Disk Controller	• Needed to multiplex CPU to 2280 multiplexer • Installed in CPU and connected to multiplexer board in MDPU.	VP, MVP, LVP

INTERFACES

INTERFACE	CHARACTERISTICS	COMPATIBLE WITH

Model 2207A I/O Interface Controller	• Allows direct interface of the following non-Wang equipment to a 2200 CPU
	  — RS-232-C compatible teletype®
	  — teletype equivalent terminal
	  — RS-232-C compatible, asynchronous transmission laboratory equipment
	• Transmission Rate 110, 150, 300, 600, and 1,200 band
	• Modes
	  — ASCII
	  — Binary
		VP

Model 2250 I/O Interface Controller	• Allows interface of external equipment that is 8-bit Parallel • Capable of sequential transfer of information at transfer rates up to 10,000 (8-bit) cps, asynchronously	VP
Model 2252A Scanning Input Interface Controller	• An input-only interface directly compatible with many digital meters for on-line data input	VP
Model 2254 IEEE-488 Interface	• Allows compatibility with other devices using IEEE-488-1975 standard • The 2200 can serve as either a controller or noncontroller	VP

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