

PRODUCT DATA SHEET

SYSTEM OVERVIEW

The Model 2200LVP Central Processing Unit (CPU) is a high-performance processor that can support up to 13 terminals and up to 16 jobs concurrently in a multiprogramming environment. The 2200LVP offers state-of-the-art disk storage, data communications capabilities, and an extremely low overhead operating system. Designed for simplicity of operation and flexibility in system configuration, the 2200LVP can easily be adapted to meet each user's unique processing requirements.

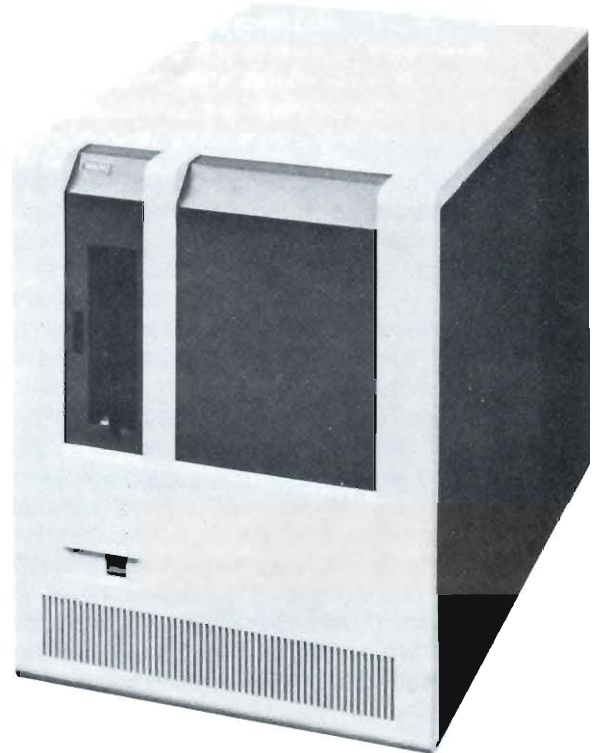
The Model 2200LVP is also available in an alternate version, the Model 2200LVPC. The 2200LVP is programmable in the popular BASIC-2 language and supports memory expansion up to 256K bytes. The LVPC, which incorporates all features of the LVP, also includes both the 2200 COBOL and BASIC-3 languages and a new disk management system that provides efficient volume and file management. In addition, the 2200LVPC supports memory expansion up to 512K bytes. For further details, refer to the table, "Summary of Differences Between the 2200LVP and the 2200LVPC."

The 2200LVP utilizes a user-defined, fixed-partition memory configuration and an extremely fast and efficient central processor that provides multi-programming capabilities to all system users. In a fixed-partition memory scheme, user memory is divided into a number of distinct areas called *partitions*. Each partition can contain a separate program, and, when using the LVPC, one partition can execute a COBOL program while another partition executes a BASIC-3 program. The central processor allocates intervals of processing time to each partition in turn; thus the program in an individual partition executes for a brief time slice before the central processor services the next partition. Response time, an important consideration in a multiuser environment, is extremely fast for all users, regardless of the number of partitions or type of program currently executing.

2200

LVP

- **Multuser/Multiprocessing Capabilities**
- **Dual-Sided, Double-Density Diskette Drive**
- **Fixed Disk with up to 32 Megabytes of Storage**
- **Memory Expansion to 512K Bytes**
- **Wang Enhanced BASIC-2 Language**
- **BASIC-3 and COBOL Languages**
- **Advanced Communications Capabilities**



WANG

SUMMARY OF DIFFERENCES BETWEEN THE 2200LVP AND THE 2200LVPC

LVP	LVPC
<p>BASIC-2 Multiuser Operating System: BASIC-2 Language</p>	<p>BASIC-2 Multiuser Operating System: BASIC-2 Language</p> <p>BASIC-3/COBOL Multiuser Operating System: BASIC-3 and COBOL Languages</p>
<p>Available with 32K, 64K, 128K, and 256K bytes of user memory</p>	<p>Available with 64K, 128K, 256K, 384K, and 512K bytes of user memory</p>
<p>3 I/O slots</p>	<p>7 I/O slots</p>
<p>Multiuser task control</p>	<p>Multiuser task control and disk management system</p>

State-of-the-art disk technology enhances the speed and versatility of the 2200LVP. Two types of disk drives are available with the 2200LVP: a dual-sided, double-density (DSDD) diskette drive and a fixed disk, Winchester-style drive. The DSDD diskette drive supports an expanded-capacity diskette that can be used to obtain faster backup with fewer platters. The fixed disk drive, available with up to 32 megabytes of storage, provides fast data access in a compact space, without the mechanical or environmental problems associated with removable disk drives. Both storage devices represent the latest developments in cost-effective, high speed, mass storage peripherals.

System users communicate directly with the 2200LVP by using either a Model 2236DE or Model 2236DW Terminal, both of which provide business graphics capabilities. Each terminal consists of a large, easy to read, 24 by 80 (24 lines, 80 characters per line) Cathode Ray Tube screen display and a typewriter-style keyboard. To accelerate communication and increase response time, the system performs automatic data compression on information transmitted to each terminal. Each terminal can also support a local printer to perform all standard printing operations, as well as screen dumps. Both terminals generate extensive bar and line graphics using standard program statements to provide valuable displays for business applications. The 2236DW Integrated Terminal supports an optional 2200 Word Processing Software package, thus enabling users to perform both word processing and data processing applications at the same terminal.

Terminals can be attached to the 2200LVP either locally at distances ranging up to 2,000 feet (609.6 meters), or remotely by using modems and telephone lines. Optionally, the 2200LVP can be equipped with communications controllers so that remote devices can be attached directly to the CPU and accessed by a user at the terminal. Asynchronous, synchronous, and advanced bit-oriented protocols are supported by the 2200LVP processor.



Model 2236DE Terminal

Additionally, the 2200LVP supports a wide range of other peripheral devices. These devices include a selection of flexible and hard disk drives, plus an extensive array of printers and plotters. To accommodate these peripherals, the LVP chassis contains three input/output (I/O) slots and the LVPC chassis contains seven I/O slots. Each I/O slot can contain a controller that directs one or more peripherals.

HIGH-SPEED PERFORMANCE

The 2200LVP central processor is a high-performance, custom-designed MSI processor built from fast and reliable components. Central processor memory cycle time, usually sufficient to execute and retrieve a control memory instruction as well as to read 2 bytes of user memory, is 600 nanoseconds. When combined with the extremely low overhead operating system and incremental compiler, the 2200LVP provides exceptional response time for all system users. To illustrate the speed of the central processor, a representative selection of BASIC floating-point arithmetic operations is listed in the table below along with the times required for each computation. These times represent average execution times and assume full 13-digit precision for each operation.

Operation	Central Processing Time
Addition (+)	0.11 msec
Subtraction (-)	0.11 msec
Multiplication (*)	0.39 msec
Division (/)	0.79 msec
Exponentiation (↑)	6.40 msec
LOG	3.30 msec
LGT	2.90 msec
EXP	3.40 msec
SQR	1.80 msec
SIN	4.60 msec
COS	4.70 msec
TAN	8.00 msec
ARCSIN	12.90 msec
ARCCOS	13.00 msec
ARCTAN	10.20 msec
RND	0.28 msec
MOD	1.10 msec
ROUND	0.12 msec
Matrix Inversion (10 x 10)	0.57 sec
Matrix Inversion (20 x 20)	4.30 sec

The 2200LVP also provides high-speed, alphanumeric-string processing capabilities. For example, the following times were measured when the specified BASIC operations were performed upon an alpha array consisting of 1000 eight-character elements.

Operation	Central Processing Time
Search for a specified value	0.02 sec (maximum)
Memory sort of random data	1.68 sec

EASY OPERATION

The 2200LVP is simple to operate and easy to program. There are no special job control languages or elaborate operating procedures. System resources are allocated through a supplied partition generation program that guides the user through the process of configuring user memory. By running this program, the user creates partitions and assigns them to terminals. Each terminal can control one or more partitions.

Once the system memory has been configured, each partition functions independently. Within each partition, a user can develop and execute a program as if the partition were alone on a single-user system.

Because each user communicates with the system interactively, a program can request needed information with clear, nontechnical prompts. For the programmer, interactive operation greatly simplifies the tasks of program development and maintenance. Programs can be entered, edited, and run directly from the terminal keyboard. In addition, the 2200LVP processor performs a range of error checks that detect and identify many different types of errors, and provides an extensive set of edit functions to facilitate error correction.

STATE-OF-THE-ART DISK STORAGE

The 2200LVP features two disk drive units that incorporate the latest advances in hardware design. Both the dual-sided, double-density (DSDD) diskette drive and the Winchester-style fixed disk drive offer the user an exceptional cost per unit storage value, while surpassing many fixed/removable drives in performance. When the disk drives are combined with the 2200LVP processor, a total cost-effective, disk-based system is created for small business systems users.

Dual-Sided, Double-Density Diskette Drive

Standard equipment on the 2200LVP includes a dual-sided, double-density diskette drive that can store approximately 1 megabyte of data. Because the DSDD diskette drive doubles the density at which data is recorded and utilizes both sides of the diskette, the ordinary storage capacity (1/4 megabyte) for diskettes is increased fourfold. When used with the fixed disk drive, the DSDD provides a means of backup that is cost effective and easy to use, since fewer diskettes are needed. In addition to providing backup capabilities, the DSDD diskette also serves as the medium for archiving data and transferring system software and application packages. The DSDD diskette drive is compatible with industry standard format, and has an exceptionally quick data transfer rate for a flexible disk unit.

Fixed Disk Drive

Available as optional equipment on the 2200LVP is an 8-inch, fixed disk drive utilizing new head technology. The fixed disk approach eliminates the costly mechanical and electronic requirements of combining a removable platter with a fixed platter. Fixed-type heads provide a fast, yet economical, method of data access due to both a decrease in head loading force and a minimizing of the air gap between the heads and the disk surface. The decrease in the size of the air gap permits a greater data density than was previously possible, enabling the user to access data faster and store more data in the same space.

Additionally, this fixed disk drive uses lubricated disk surfaces that permit the head to "take-off" and "land" on the platter surface during power-up and power-down procedures. This technology greatly reduces the possibility of a "head crash," helps ensure the integrity of the data, and lessens the expensive downtime that accompanies a crash. The combination of these features creates a compact disk drive that retains the performance and reliability of other models. Wang Laboratories, Inc., offers the fixed-disk drive as system options available in 2-, 4-, 8-, 16-, and 32-megabyte capacities.

Both the DSDD diskette drive and an optional fixed-disk drive are mounted directly within the compact, office-style cabinet. The cabinet also contains the central processor, thus saving the space that separate drives would customarily occupy. In summary, a 2200LVP can be configured with one of the following combinations.

- One DSDD diskette drive (standard)
- One DSDD diskette drive and a fixed Winchester-style disk drive (optional 2, 4, 8, 16, or 32 megabytes)

FUNCTIONAL ORGANIZATION

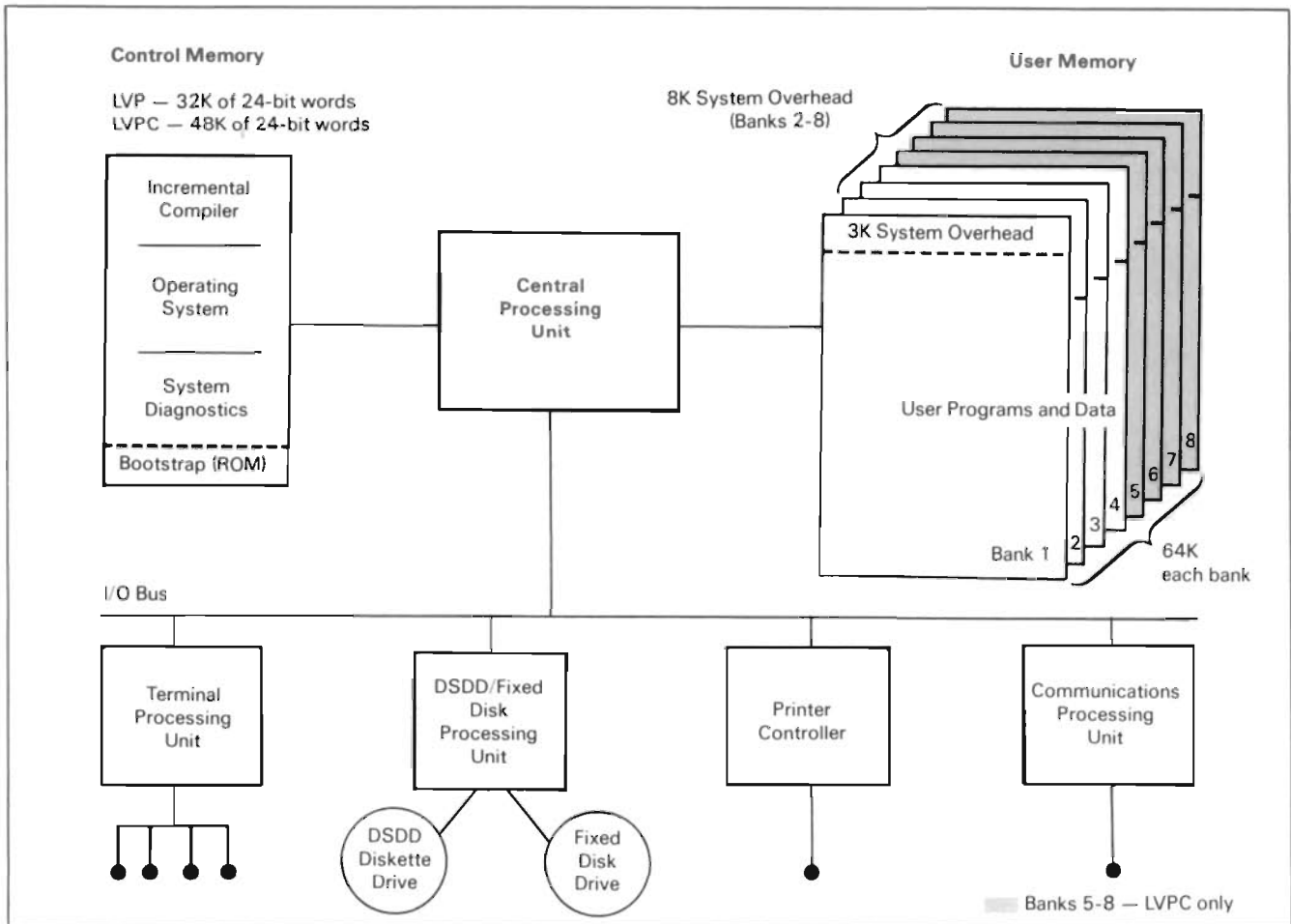
The 2200LVP consists of a microprogrammed MSI processor coupled with a number of special purpose LSI input/output (I/O) processors and controllers. The operating system and incremental compiler reside in a dedicated control storage memory that is independent from user data memory. The operating system and incremental compiler direct the execution of the CPU and coordinate communication with the I/O processors. The independent I/O processors permit the overlap of CPU and I/O processing. Thus, the CPU is relieved of the responsibility for controlling peripherals that would otherwise require frequent or dedicated CPU attention. Refer to the figure, "Logical Organization of the 2200LVP" for an illustration of the 2200LVP architecture.

MEMORY ORGANIZATION

The efficient memory organization of the 2200LVP is one of its most significant features. The 2200LVP does not store its system programs (the incremental compilers, the operating system, and system diagnostics) in the same memory area used to store the application software. System programs are stored in a separate memory area called control memory. The 2200LVP contains 32K of 24-bit words of control memory; the 2200LVPC contains 48K of 24-bit words of control memory. When powering on the system, the operator loads the system programs from a platter into control memory, where the system programs reside until the operator powers off or reinitializes the system. Because control memory is a separate memory area that cannot be accessed by the user or the user's programs, system programs are protected against accidental interference or destruction by a user program.

User memory is the area of memory available to the user's programs and data. User memory on the 2200LVP can be increased from a minimum of 32K bytes to a maximum of 256K bytes, organized into one to four banks of 64K bytes. User memory on the LVPC ranges from 64K bytes to 512K bytes, organized into one to eight banks of 64K bytes.

The user can divide each memory bank into a number of partitions of fixed size, each of which can execute a separate program. Partitions cannot span bank boundaries. The operating system and incremental compilers require 3K bytes of memory in the first bank for storage of control information; in each subsequent bank, 8K bytes of memory are unavailable to the user. Thus, a total of 61K bytes of memory in Bank 1 and 56K bytes of memory in Banks 2 through 8 is available for partitioning. In addition, the system reserves 1K bytes of memory in each user partition for tracking the state of the partition, e.g., what files the partition has open. Using the BASIC-3/COBOL disk management system requires a



Logical Organization of the 2200LVP

minimum of 5K bytes of user memory. Because the system programs are stored separately, all remaining memory in each partition is available for user programs and data.

The 2200LVP utilizes a unique "atomization" technique to automatically condense each program line. The condensed format not only conserves the memory needed for program storage but also contributes to fast program execution.

OPERATING SYSTEMS

The BASIC-2 Multiuser Operating System supports the BASIC-2 Languages and runs on both the 2200LVP and 2200LVPC. The BASIC-3/COBOL Multiuser Operating System supports the simultaneous operation of BASIC-3 and

COBOL programs and runs on the LVPC. Since each language provides unique features for performing certain types of jobs, functional portions of a system can be implemented in the language best suited to the specific problem.

Both the BASIC-2 and BASIC-3/COBOL Multiuser Operating Systems provide facilities for program coordination and the sharing of system resources. The operating systems protect multiple users from disk and printer contention problems through BASIC language features that enable a program to seize temporary control of a device and subsequently release it. The BASIC language also prevents interprogram conflict through the use of global variables, which are specified by the user as accessible to several BASIC programs.



Both of the 2200LVP operating systems enable users to prevent unauthorized access of important files and unauthorized execution of critical programs by selecting Disabled Programming mode. In Disabled Programming mode, a terminal functions exclusively under program control. The operator can neither enter nor modify program text from the specified terminal and the operator's ability to interact with the system and obtain access to disk files is completely determined by the program controlling the terminal. The program can implement custom-designed security measures, such as password protection and specific file access rights for users working at the terminal.

The BASIC-2 Multiuser Operating System includes a set of BASIC-2 instructions for handling disk operations. These operations allow the programmer to choose between Automatic File Cataloging mode, in which the system automatically performs the tasks associated with disk maintenance, and Absolute Sector Addressing mode, in which the programmer can directly access any sector on the disk.

The BASIC-3/COBOL Multiuser Operating System includes a new disk management system that provides efficient volume and file management. The shared file management system facilitates language-independent sharing of data files created by COBOL and BASIC-3. Other disk management features of the operating system include dynamic space allocation, file access modes, indexed file organization, variable length records, print spooling, and file recovery procedures.

FOREGROUND/BACKGROUND OPERATION

Since each terminal on the system can be assigned more than one memory partition, several different jobs can run concurrently on each terminal. The terminal communicates with only one job at a time. The job currently communicating with the terminal is said to be running in the *foreground*. The job or jobs associated with a terminal but not currently communicating with the terminal are said to be running in the *background*. A terminal can be switched from one partition to another, shifting the current foreground job into the background and shifting a particular background job into the foreground, to permit operator communication with that program. A typical example of foreground/background operation might involve running a batch-type job requiring minimal operator interaction (such as payroll processing) in the background, while a more interactive job (such as word processing) runs in the foreground.

SINGLE-USER OPERATION

The 2200LVP can be configured as a single-user, stand-alone system with the same features and language capabilities as the multiuser arrangement. Unlike most single-user systems, the 2200LVP enables a single terminal to control several programs executing concurrently, while maintaining fast execution speeds. A single-user LVP can be upgraded to a multiuser LVP. Thus, the 2200LVP is an excellent choice for the first-time user because it combines high-performance computing with the capacity for extensive future expansion.

COMMUNICATIONS CAPABILITIES

The 2200LVP supports a full range of data communications options between remote terminals and the CPU and between the 2200LVP and other computer systems. Wang Laboratories, Inc., also offers a number of software packages to emulate common communications protocols.

Each terminal is connected to the 2200LVP by a Wang Model 22C32 Triple Controller or a Model 2236MXD Terminal Processor. These devices control input/output operations between the CPU and the terminals. Line handling between the CPU and each terminal is asynchronous and full-duplex, with

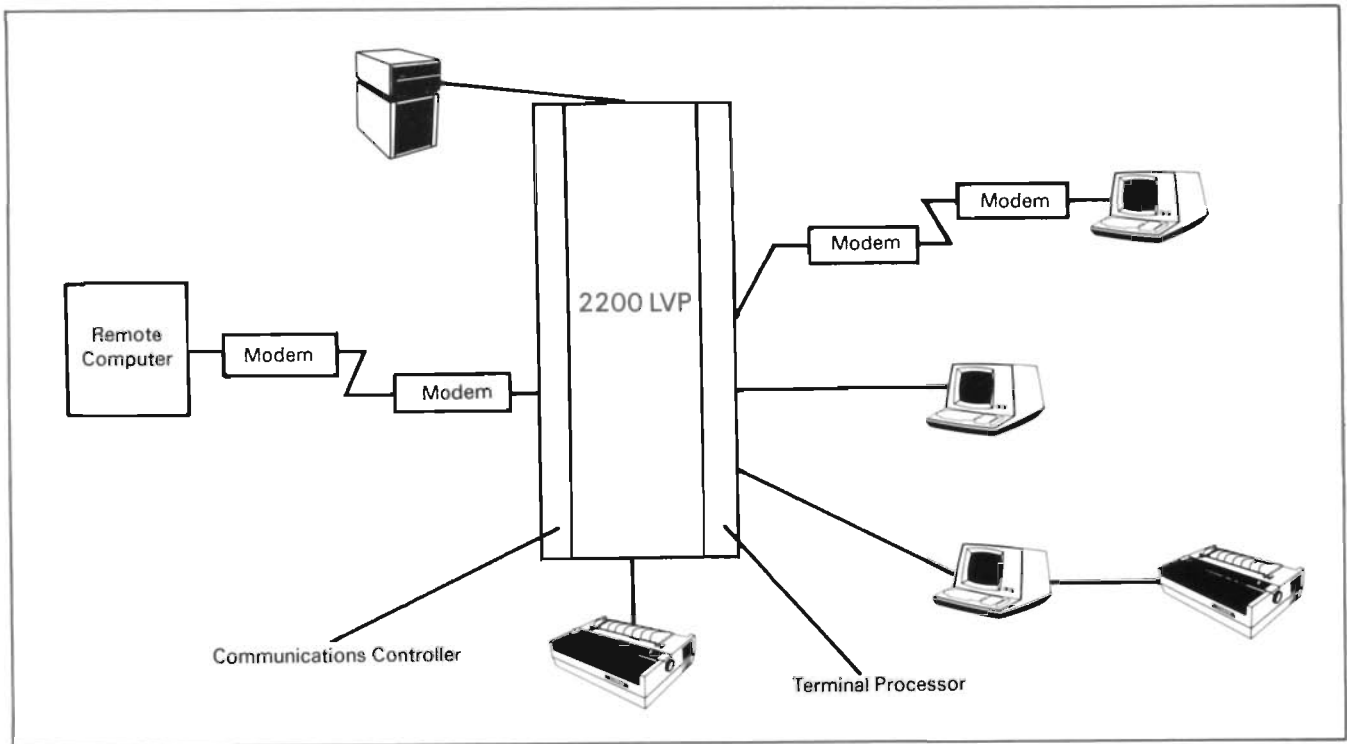
selectable line speeds ranging from 300 to 19,200 bits per second (bps). For remote connection, two RS-232-C compatible modems, e.g. Wang WA3451, are required to provide the communications link. Remote terminals located miles from the CPU can function exactly like local terminals, communicating directly with the system to perform operations within their assigned partitions. Both remote and local terminals can have their own local printers to produce hard copy output at the terminal site. Refer to the illustration for an example of a typical communications configuration.

For communicating with other computer systems, the 2200LVP can be equipped with Wang communication controllers, Models 2227B, 2228B, 2228C, or 2228D. The Model 2227B supports asynchronous-only communications in half- or full-duplex, at line speeds ranging from 300 to 9600 bps. The Model 2228B and Model 2228C offer a choice of synchronous or asynchronous

communications at speeds ranging from 300 to 4800 bps. Additionally, the Model 2228C supports 3275 Emulation. The Model 2228D Communications Controller offers synchronous communications at speeds ranging from 300 to 19,200 bps and supports the following protocols.

- MAILWAY®
- 2780/3780
- 3274 SNA
- ASYNC — Teletypewriter Emulation
- VS Remote Cluster Facility (VS/RCF)
- TELETEX
- X.25 Packet Network Access
- 3274 BSC (3271)

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**Typical Communications Configuration
on the 2200LVP**

BASIC-2

BASIC-2, available on both the LVP and the LVPC, is a high-level programming language designed for interactive programming and ease of use. Wang Laboratories, Inc., has developed a variety of extensions and enhancements that are included in BASIC-2 to facilitate the tasks of writing, documenting, and debugging programs, and to provide flexible language capabilities for a wide range of applications.

The BASIC-2 instruction set is both comprehensive and extremely powerful. The math package includes numerous system-defined mathematical and trigonometric functions; the results obtained are accurate to 13 digits and can be either rounded or truncated. Alphanumeric data can be compared, analyzed, and modified with an extensive array of data manipulation statements. These statements permit the programmer to manipulate characters at the bit and byte levels and to perform various Boolean and binary arithmetic operations. A group of BASIC-2 system commands enable each user to control system operations in each partition from the terminal keyboard. The system commands also serve as extremely efficient debugging tools.

In addition to the standard general-purpose BASIC statements, BASIC-2 provides several groups of special-purpose statements that perform such specialized operations as code conversion, sorting, matrix arithmetic, and customized I/O control. Language enhancements within BASIC-2 also include statements that enable the user to share program text, manage shared resources, and define system configurations.

The BASIC-2 Operating System cannot be run concurrently with the BASIC-3/COBOL Operating System.


BASIC-3

BASIC-3, a greatly enhanced version of the popular Wang BASIC-2 language, includes most features of BASIC-2 plus a variety of extensions and unique capabilities. BASIC-3 offers multicharacter variable names and program labels, extended loop control, descriptive error messages, indexed files, and shared files. These enhancements improve program readability and documentation, facilitate program development and debugging, and provide access to new file management services. BASIC-3 is powerful, extremely

versatile, and well suited for both technical and commercial applications. BASIC-3 can be run concurrently with COBOL.

2200 COBOL

Wang 2200 COBOL is an interactive version of the COBOL language that includes most nucleus features of ANSI (X3.23-1974) Level 1 COBOL, plus many features of Level 2. COBOL is a standardized programming language that is extremely popular in business settings, due to the ease with which it handles complex hierarchical data structures for applications such as inventory, billing, and payroll. COBOL is ideal for tasks requiring large-file handling and output formatting with typical business calculations such as price extensions, discounting, and commissions. Wang 2200 COBOL, with its interactive extensions, provides special programming capabilities not available with most standard versions of the language. Wang 2200 COBOL can be run concurrently with BASIC-3.



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IDENTIFICATION DIVISION.
000010 IDENTIFICATION DIVISION.
000020 PROGRAM-ID.                TESTPROG.
000030 ENVIRONMENT DIVISION.
000035 CONFIGURATION SECTION.
000040 SOURCE-COMPUTER.            WANG-2200.
000045 OBJECT-COMPUTER.         WANG-2200.
000060 DATA DIVISION.
000070 FILE SECTION.
000080 FD TAX-FILE LABEL RECORDS ARE OMITTED.
000090 01 TAX-RECORD.
000100 05 TAX-FIELD-1          PIC X(04).
000130 WORKING-STORAGE SECTION.
000140 01 SUB1                 PIC 9(05).
000145 01 SUB2                 PIC 9(08).
000150 01 RECEIVER-FIELD     PIC X(04).
000160 01 NAME1.
000161 05 NAME2 OCCURS 10 TIMES.
000163 10 NAME4 OCCURS 12 TIMES.
000164 15 NAME6              PIC X(04).
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Sample 2200 COBOL Screen

COMPATIBILITY WITH OTHER 2200 SYSTEMS

Software compatibility is an important consideration in the selection of a new system. The 2200LVP has been designed to preserve maximum compatibility with single-user and multiuser 2200 Series systems. Since the 2200LVP is compatible with the 2200MVP, multiuser software written for the 2200MVP functions correctly on the 2200LVP.



The BASIC-2 language supported on the 2200LVP is identical to BASIC-2 on the 2200VP, MVP, and SVP. The BASIC-3 and COBOL languages supported on the 2200LVPC are identical to BASIC-3 and COBOL on the 2200MVPC. Additionally, the 2200LVP supports Wang BASIC syntax, providing a significant degree of compatibility with all earlier Wang 2200 systems. Since each 2200LVP terminal functions as a single-user 2200 system for program development purposes, this language compatibility means that programmers familiar with other 2200 systems can quickly become productive on the 2200LVP.

The 2200LVP offers several features that enable the programmer to use the memory available for multiuser

programs with maximum efficiency. A programmer who must adapt a single-user program for multiuser operations on a 2200LVP can generally capitalize upon these features with a minimum amount of program modification. When memory space is not a problem, however, the program can generally be loaded and run intact in each partition.

SYSTEM UPGRADES

Any existing 2200LVP can be upgraded to a 2200LVPC to support the BASIC-3 and COBOL languages. Both user memory and disk capacity can also be upgraded.

2200LVP/LVPC SPECIFICATIONS

Size

Height: 28.0 in. (71.1 cm)
Width: 20.4 in. (51.8 cm)
Depth: 30.0 in. (76.2 cm)

Weight

166 lb (75.5 kg)

User Memory Size

LVP: 32K bytes (standard), expandable to 64K, 128K, and 256K bytes

LVPC: 64K bytes (standard), expandable to 128K, 256K, 384K, and 512K bytes

Control Memory Size

LVP: 32K bytes of 24-bit words
LVPC: 48K bytes of 24-bit words

I/O Slots

LVP: 3
LVPC: 7

Memory Cycle Time

600 nsec

Power Requirements

115 VAC \pm 10%, 60 Hz \pm 1 Hz
230 VAC \pm 10%, 50 Hz \pm 1 Hz
317 W (maximum)

Fuses

5.0 amps (SB) for 115 V/60 Hz
2.5 amps (SB) for 230 V/50 Hz

Heat Output

1,084 Btu/hr

Operating Environment

Temperature
50° F to 90° F (10° C to 32° C)
Relative Humidity, noncondensing
35% to 65% recommended
20% to 80% allowable

Operating System Specifications

Memory Available for User Partitions:

29K (29,696) bytes for 32K machines
61K (62,464) bytes for 64K machines
117K (119,808) bytes for 128K machines
229K (234,496) bytes for 256K machines
341K (349,184) bytes for 384K machines
483K (463,872) bytes for 512K machines

Overhead per Partition: 1K (1,024) bytes

Maximum Number of Partitions: 16

Minimum Partition Size: 1.25K (1,280) bytes

Maximum Partition Size

Bank 1: 61K (62,464) bytes

Banks 2 - 8: 56K (57,344) bytes

Maximum Number of Terminals: 13

ORDERING SPECIFICATIONS

The interactive, multiuser Central Processing Unit must contain a BASIC-2 incremental compiler, an operating system, and system diagnostics. The standard CPU must have 32K bytes of user memory and must be incrementally expandable to a maximum of 256K bytes. There must be 32K bytes of 24-bit words of control memory. The CPU must be available in an option that includes 48K bytes of 24-bit words of control memory and supports a BASIC-3 and COBOL incremental compiler a disk management system, and memory expansion up to 512K bytes. The operating system and incremental compilers must reside in a separate control memory. The memory cycle time must be 600 nanoseconds. Full memory parity must be provided throughout both user and control memory. User memory must be divisible into 16 separate partitions. The system must be able to support up to 13 interactive terminals concurrently, and provide a complete set of input/output statements to control standard system peripherals. The system must also support a dual-sided, double-density diskette drive and an optional fixed-only disk drive. There must be available both synchronous and asynchronous communications hardware on a single board for installation directly within the processor.

Standard Warranty Applies

Disk Specifications

	1-Megabyte (DSDD) Diskette Drive (Standard)	2-Megabyte Fixed Disk Drive (Option B)	4-Megabyte Fixed Disk Drive (Option C)
Tracks	149	254	510
Sectors/Track	26	32	32
Total Sectors	3,874	8,128	16,320
Bytes/Sector	256	256	256
Total Bytes	991,744	2,080,768	4,177,920
Average Access Time	91 msec	70 msec	70 msec
Average Latency Time	83.3 msec	9.6 msec	9.6 msec
Speed	360 rpm	3,125 rpm	3,125 rpm
Transfer Rate	0.5 megabit/sec	4.34 megabits/sec	4.34 megabits/sec
	8-Megabyte Fixed Disk Drive (Option D)	16-Megabyte Fixed Disk Drive (Option E)	32-Megabyte Fixed Disk Drive (Option F)
Tracks	1,020	2,044	4,088
Sectors/Track	32	32	32
Total Sectors	32,640	65,408	130,816
Bytes/Sector	256	256	256
Total Bytes	8,335,840	16,744,448	33,488,896
Average Access Time	70 msec	60 msec	60 msec
Average Latency Time	9.6 msec	10 msec	10 msec
Speed	3,125 rpm	3,000 rpm	3,000 rpm
Transfer Rate	4.34 megabits/sec	4.34 megabits/sec	4.34 megabits/sec

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