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## ISO Tech News

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REPLY FORM

VS 4200 SERIES  
WORKSTATIONS  
ANNOUNCED  
by VS Product  
Marketing

#### DESCRIPTION

Wang Laboratories is pleased to announce the 4200 series of workstations for the VS product line. This series currently consists of two VS workstation models -- the 4210 and the 4220.

#### 4210 Workstation

The model 4210 is a general purpose workstation aimed specifically at the data processing marketplace. It combines data processing, basic word processing and graphics capabilities in a single workstation at a cost-effective price. Highlights of the 4210 include:

- . Local data processing
- . 800 x 300 dot resolution bit-mapped graphics
- . Basic word processing (see Figure 1, page 49)
- . Loadable character font
- . Self-testing diagnostics
- . RS-232 port for asynchronous or synchronous communications
- . Increased reliability
- . Available now for immediate shipment

#### 4220 Workstation

The model 4220 is a data processing workstation for remote users. It uses the same packaging as the 4210, but is designed for use over telephone lines to bring the DP power of a VS to a remote location. Highlights of the 4220 are:

- . Remote data processing
- . Character mode graphics
- . Downline loaded microcode
- . Loadable character font
- . Self-testing diagnostics
- . RS-232 port for synchronous communications
- . Parallel printer port and spare RS-232 port included
- . Increased reliability
- . Available November 1983

Attractive three-piece ergonomic design has been implemented for both the 4210 and the 4220 in the monitor, keyboard, and power supply/electronics chassis. The video display can tilt and swivel, and is easily adjusted to conform to a user's natural line of vision and preferred working posture. The 4210 and 4220 include the detachable low-profile Wang Universal keyboard which is a 101-key unit with 16 programmable function keys, numeric keypad and cursor control keys. The monitor and keyboard are identical to those on the Wang Professional Computer, and an upgrade to the Wang PC only requires a swap of the electronics chassis.

(continued)

VS 4200 SERIES  
WORKSTATIONS  
ANNOUNCED  
(continued)



4200 SERIES WORKSTATION

All 4200 series workstations use loadable fonts. This means that any workstation can be used for multiple languages by merely changing the font table which is in the workstation microcode. This eliminates the variety of character PROMs previously required for each type of workstation. Software-generated characters can be assigned one or more of the conventional character display attributes, giving the customer a flexible medium-resolution display that is compatible with current VS applications.

As an added feature, both workstation models perform self-testing diagnostics when powered on. These diagnostics check the workstation condition before use. If the unit fails one of the tests, a diagnostic error message alerts the customer to the failure, allowing a Wang Customer Engineer to quickly service the unit.

VS/IIS word processing (32K memory functions only) is supported in the 4210 by converting the conventional character display to a bit-mapped display. This enables users to perform word processing functions similar to those offered on the Model 2246C workstation at a reduced performance level. (The 2246C has been discontinued, as noted on page 54.) The 4210 is limited to 32K WP and cannot be upgraded to 64K WP because of the character-to-bit-map translation routines. These have to reside in the memory at the same time as the word processing software. The 4220 does not provide a word processing capability.

(continued)

VS 4200 SERIES  
WORKSTATIONS  
ANNOUNCED  
 (continued)

The 4220 workstation microcode is downline loaded from the VS when the unit is turned on. This allows the workstation functions to change with improvements to the VS Operating System, without changing the actual workstation hardware. All VS systems will require TC/IOP and Bus Processor PROM changes in order to use the 4220 workstation.

4220 graphics differ from 4210 graphics because different technologies are used. The 4220 uses the older character-type technology while the 4210 uses the newer bit-map technology. With 4220 graphics, the user can define the contents of each character space on the display. Straight lines are the easiest to use and the most commonly found with this type of technology. The 4210 bit-map technology is inherently more flexible. It can handle curved lines because each dot on the display can be addressed independently. The actual dot resolution of the screen, 800 x 300, is identical for the 4210 and the 4220.

Any data processing application that does not load microcode into the workstation can use the 4200 series transparently. This includes using the attribute character logic. Among the applications supported on specific VS workstation models are those listed in the Workstation Function Chart below.

FIGURE 1. VS WORKSTATION FUNCTION CHART

Workstation Type:	2246S-2B	2246C	2256C	4210	4220
<u>Functions</u>					
VS Workstn Zero	X	X	X		
Data Processing	X	X	X	X	X
Remote DP					X
Dot Graphics				X	
Block Graphics				X	X
Word Processing		X	X	X	
Sort Document		X	X	X	
List Management		X	X	X	
OIS Adv. Functions			X		
Spelling Verifier			X		
Readability Analysis			X		
Paragraph Retrieval			X		
Keyentry	X	X	X		
IBM 3270	X	X	X	Q2 FY84	
TTY	X	X	X	X	
Upgradable to Wang PC				X	X

(continued)

VS 4200 SERIES  
WORKSTATIONS  
ANNOUNCED  
(continued)

MARKETING STRATEGY

The 4200 series workstations were designed to take advantage of new manufacturing technologies and to integrate many of the more popular functions requested by customers. 4200 price/performance/function comparisons are different from the current workstation product lines, as shown below:

FIGURE 2. VS WORKSTATION RELATIVE FUNCTIONALITY

DP	WP	VS Alliance	Graphics
2246R			
2246S-2B			
2256C	2256C	2256C	
E-III	E-III	E-III	6300
4220			
4210	4210		4210

FIGURE 3. VS WORKSTATION RELATIVE PRICING (x \$000)

\$ 2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
	2246S-2B			2256C			6300
				2246R			
4220		4210		E-III			

Note that the VS the Operator's Console (workstation zero) cannot be a 4210 or 4220. It can however, be a Wang Professional Computer with the Local Connect Option, a 2246S-2B, a 2256C or an Ergo III.

VS local workstation support can consist of 4210 units for light typing loads. For heavy typing loads, the 2256C workstation would be more appropriate. Using the 4220 for remote support, VS mixed configurations become very competitive. This mix of locals and remotes is very important, because mixed configurations are the largest segment of the market.

The 4220 is a cost-effective remote workstation that can support messaging and other data processing functions. One way to qualify accounts as potential 4220 users is to review the installed base for customers that use 2246S/S-2B workstations or have not installed word processing. Many of these accounts have software they have developed for the DP environment. The question then is, "Would the customer benefit by having those same data processing functions available at remote locations?"

(continued)

VS 4200 SERIES  
WORKSTATIONS  
ANNOUNCED  
(continued)

4210 and 2256C Comparison

The 4210 is less expensive than the 2256C and has less word processing capability, but it offers graphics capabilities. The 4210 performance in word processing is slower than on the 2256C. Part of this performance difference is due to the graphics capability which adds processing overhead because of the character-to-bit-map translation activity in the 4210. Despite this speed difference, the 4210 will also out-perform most workstations in the DP market today. It is appropriate to sell the 4210 where price is a more important consideration than performance, and where the WP workload is light.

4210/4220 and 2246S-2B Comparison

There is no equivalent model in the 4200 product line for the 2246S-2B. Instead, the 4210 and 4220 bracket the 2246S-2B in price and function. The result is that the current 2246S-2B market will be divided between the 4210 and the 4220. The decision to use one or the other will be determined by price/performance/functional considerations.

The 4210 is higher priced for single quantities than the 2246S-2B. With the 4210 discount schedule, however, the pricing difference is minimal. The 4210 offers a greater range of functional capabilities than the 2246S-2B, including a 32K version WP. The 4210 overwhelms the 2246S-2B on a function basis, at a somewhat lower performance level, and is immediately available.

The price of the 4220 is lower than that of the 2246S-2B. While the capabilities are similar, the performance for the 4220 (RS-232 connection) is much slower. In addition, the 2246S-2B supports 3270 operation and the 4220 does not. For 3270 support, the 4210 must be used. The reason for this restriction is the performance delay that would be introduced by a second RS-232 connection on the 4220.

4220 and 2246R Comparison

The 4220 replaces the current remote workstation, the 2246R, at about half the price. The 4220 workstation, like the 2246R, is designed to operate over telephone lines to a VS computer system. 4220 workstations connect to a Telecommunications IOP for remote use, and can also be connected to a TC IOP with a null modem for local use.

The 2246R is often used with leased line circuits. The type of leased circuit used with the 2246R and the 4220 is synchronous at speeds of 2400 to 9600 baud. The modems which interface the workstation and the TC IOP to the circuits are also synchronous.

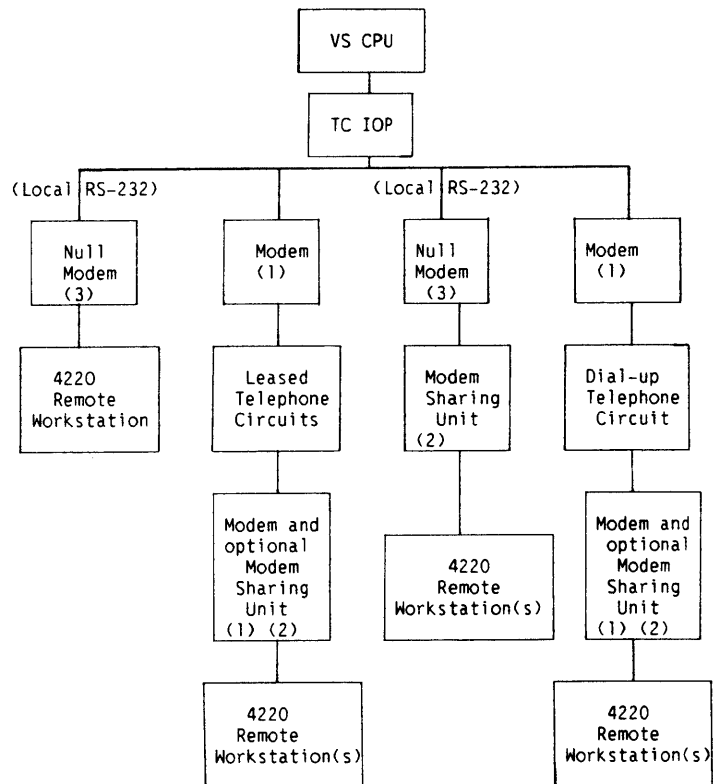
(continued)



VS 4200 SERIES  
WORKSTATIONS  
ANNOUNCED  
 (continued)

Dial-up or switched lines can also be used. In this configuration, there is only one workstation attached to the line at the VS TC IOP at any one time. The 4220 is capable of supporting lines speeds of 110 baud async to 9600 baud synch on two RS-232 ports. Initial support will be limited to synchronous operation as a 2246R replacement. Types of 4220 connections are shown in Figure 4.

FIGURE 4. 4220 CONNECTION TYPES



Notes:

- (1) Modems used with 4220 workstations must be synchronous, and operate up to 9600 baud, the maximum line speed supported by the 4220. Modems on dial-up or switched circuits may use auto-dial and auto-answer options, which are also supported.
- (2) Modem Sharing Units will support up to eight workstations located up to 2000 feet from the MSU.
- (3) Null modems cannot be multi-dropped on a telephone line. To get multiple workstations on one line with a null modem, a Modem Sharing Unit must be used, and all remote workstations must be within 2000 feet of the MSU.

(continued)

VS 4200 SERIES  
WORKSTATIONS  
ANNOUNCED  
 (continued)

ORDERING INFORMATION

For U.S. orders, the keyboard is included in the price and in the model number of the 4210 and 4220 workstations. There is sufficient inventory available for immediate volume shipment of 4210 workstations. 4220 shipments are expected to begin in November 1983. Prices are as follows:

<u>Model</u>	<u>Description</u>	<u>Quantity</u>	<u>Purchase Price/Unit</u>	<u>Monthly Maintenance</u>
4210-VS	Local Serial DP,	1-3	\$ 3,400	\$ .20
	Basic WP and	4-7	3,230	20
	Graphics	8-24	3,060	20
	Workstation	25+	2,890	20
4220-VS	Remote Data	1-3	\$ 2,200	\$ 18
	Processing	4-7	2,090	18
	Workstation	8-24	1,980	18
		25+	1,870	18

The following documentation is shipped with the 4200 series workstations:

- . Word Processing Reference Manual (700-7611A)\*
- . Operator's Reference Guide (700-5740C)
- . VS Programmer's Introduction (800-1101PI-06)
- . VS Program Development Tools (800-1307PT-03)
- . 4200 User Summary Card
- . Wang Ruler (700-4224A)

\*Not included with the 4220 model.

A 4210 Workstation Data Sheet is available from the Supplies Division as publication 800-2512-01. The 4220 Workstation Data Sheet is publication 800-2513-01.

VS WORKSTATION  
REPRICING AND  
DISCONTINUED  
MODELS  
 by VS Product  
 Marketing

In order to consolidate Wang's workstation offerings, easing workstation ordering and configuration procedures, and to increase Wang's competitive position while passing savings on to our customers, the following changes have been made:

- . Effective August 1, 1983, all existing 16K, 32K, and 48K VS workstations are discontinued, with the exception of the 2246S-2B and 2246R.
- . Effective September 30, 1983, all VS ERGO 2 workstations are discontinued, with the exception of the 2860-6 and 2860-7 archiving workstations, and the 2850-6 and 2850-7 expanded keyboard international archiving workstations.

Discontinued Workstation Models

The following VS workstation models are discontinued and may no longer be ordered:

2246C	2856C*	2866S-2
2246SKE-2	2856C4*	2866SKE-2
2266C-1	2856R*	2954C*
2266C-3	2856S-2*	2964C
2266S-1	2856SKE-2*	5200W/VS
2266S-2	2866C	5200W/VS-AUD
2266S-3	2866C4	5300/VS-DP
2850-1 through 5*	2866R	5300/VS-IIS32
2860-1 through 5		

\* International expanded-keyboard workstations

Existing support policies pertain for all discontinued models. Customers who own or lease 16K, 32K, or 48K workstations will continue to receive maintenance service and support for those products. Upgrade policies do not change with this announcement.

All upgrades that are currently offered will continue to be available. This includes upgrades from 16K to 32K or to 48K. Given the long-term market trends, however, it is suggested that upgrades be made to result in 64K workstations. 64K workstations are becoming a pre-requisite for a complete Office Automation system due to increased function, a greater reliance on applications, and an overall need for processing power.

Effective August 1, 1983, prices on many VS workstations were reduced as shown on the following page. Workstation add-on business should be stimulated by this repricing, as well as Wang's ability to compete where price is a critical factor.

(continued)

VS WORKSTATION  
REPRICING AND  
DISCONTINUED MODELS  
(continued)

Current VS workstation offerings are priced as follows:

<u>Model Number and Description</u>	<u>Former Purchase Price</u>	<u>New Purchase Price</u>
VS-4250 Wang PC Wkstn.	\$5,265	\$5,265
2246R Remote DP Wkstn.	4,200	4,200
2246S-2B Serial 32K Wkstn.	2,750	2,750
2256C Comb. DP/WP	4,900	4,000
2276C-1 AWS (HS Contrlr.)	8,300	8,300
2276C-3 AWS (HS/SS)	9,300	9,300
2850-6 Ergo Intl. AWS (HS)	8,600	8,600
2850-7 Ergo Intl. AWS (HS/SS)	9,600	9,600
2860-6 Ergo AWS (HS)	8,600	8,600
2860-7 Ergo AWS (HS/SS)	9,600	9,600
4210-VS DP/WP/Graphics	--	3,400
4220-VS Remote DP Wkstn.	--	2,200
5300/VS-IIS64 DP/WP Elect.	3,600	2,900
5300/VS-AL-AUD Aud. VS Alliance	4,500	3,600
5300W/VS DP/WP Ergo3 WangNet	4,200	3,500
5300W/VS-AUD Audio WangNet	5,100	4,200
5310 Audio Green Display	1,300	1,100
5320 Green Display	1,200	1,000
5330 Audio B/W Display	1,400	1,200
5340 Blk. on Wht. Display	1,300	1,100
6300/VS-64 Graphic Elect.	4,035	3,700
6340 B/W Graphic Display	1,450	1,300

Matching Customer Requirements to Workstations

Given the number of workstation models being discontinued, the following solutions are suggested for various VS customer requirements:

<u>Customer Requirement</u>	<u>Workstation to Offer</u>
Ergonomic low-speed (DP only)	4220 & null modem
Ergonomic high-speed (DP only)	4210
Ergonomic low-cost Remote Workstation	4220
Ergonomic low-cost (DP and WP)	4210
DP and full WP	2256C
Ergonomic DP and full WP	5300/VS-IIS64
5.25-inch Archiver	VS-4250 Wang PC
Operators Console	2256C
Ergonomic Operators Console	VS-4250 Wang PC
8-inch Archiver (DP only)	2276C-3
Ergonomic 8-inch Archiver (DP only)	2850-7/2860-7
8-inch Archiver (WP only)	2276C-1
Ergonomic 8-inch Archiver (WP only)	2850-6/2860-6
8-inch Archiver (DP and WP)	2276C-3
Ergonomic 8-inch Archiver (DP and WP)	2850-7/2860-7
Ergonomic WangNet direct attachment	5300W/VS
Ergonomic VS Alliance Audio	5300/VS-AL-AUD
Ergo. WangNet direct attach + Audio	5300W/VS-AUD

VS EZQUERY  
RELEASE 2,  
VERSION 2.07.00  
by VS R&D

#### DESCRIPTION

VS EZQUERY Release 2 is a relational query product used on data bases which have been defined with a new Record Description File facility. EZQUERY can be used as a stand-alone query and update tool or as an interface to the REPORT utility. A sample data base designed for training, demonstrating, and familiarizing the user with the software is included. EZQUERY Release 2 is available as version 2.07.00, containing the following enhancements:

- . A new facility called the Record Description File is provided to serve as a dictionary of the data base. The Record Description File is contained in the EXTCNTRL file included with the EZQUERY software.
- . Multiple record type files are supported.
- . Record descriptions which contain data item specifications with one level occurrence are supported.
- . Data files with compound keys are supported. (A compound key in an indexed data file is an index path which aligns with two or more contiguous fields specified in the corresponding Record Description File.)
- . Print functions, i.e. print queries and answers in both foreground and background, are supported.
- . Append record function is supported for consecutive files. Update record function is now supported for indexed files.
- . Record Description Files with data field gaps will now be accepted for masking of data fields.
- . Consecutive files utilize double buffering of records, and indexed files utilize buffer pooling of records.

#### HARDWARE PRE-REQUISITES

Any standard VS configuration. Users with limited amounts of disk space should be aware that EZQUERY disk space requirements depend on the complexity of the query and the size of the data base.

#### SOFTWARE PRE-REQUISITES

The minimum supported levels of software with which EZQUERY 2.07.00 will run are:

- . VS Operating System Release 5.01.51 or later
- . REPORT Utility Version 4.00.00 or later
- . VS 90/100 CPU Microcode 4.57.05 or later

(continued)

VS EZQUERY  
RELEASE 2,  
VERSION 2.07.00  
 (continued)

ALERTS

1. File WQXFORM must reside in library @SYSFRM@. The EZQUERY, EXTCNTRL, and WQXDD files must reside in library @SYSTEM@. The installed disk space required for these four files is 436 blocks.
2. The CONTROL utility will not function correctly with EZQUERY 2.07.00. Data bases for use with EZQUERY Release 2 must be defined within the EXTCNTRL Record Description File included with EZQUERY 2.07.00. This Record Description File cannot be used as a replacement for the CONTROL utility.
3. Tasks running EZQUERY require a minimum Segment 2 size of 512K.
4. Users of VS systems with limited disk space should be aware that EZQUERY disk requirements depend upon the complexity of the query and the size of the data base.

ORDERING INFORMATION

The VS EZQUERY utility, version 2.07.00, is available through normal order processing channels at a cost of \$4000. Customers who have purchased EZQUERY 1.02.00 are entitled to receive EZQUERY 2.07.00 free of charge. Available package numbers and their contents are:

<u>System</u>	<u>Model #</u>	<u>Media</u>
VS 50,80,85, 90,100	195-2304-3	Four SSSD diskettes: QUERY1, part # 705-0301B QUERY2, part # 705-0302B QUERY3, part # 705-0303B SAMPLE, part # 705-0368
VS 25,45,85, 90,100	195-2304-5	Two DSDD diskettes: QUERY1, part # 735-0026B SAMPLE, part # 735-0032

INSTALLATION INSTRUCTIONS

Log on the system as a Security Administrator. Perform a BACKUP using the QUERY1 diskette, specifying the following options:

INPUT Screen:  
 RANGE = VOLUME  
 VOLUME = QUERY1  
 FUNCTION = RESTORE  
 ERRDISP = YES  
 DEVICE = DISK  
 FILESEQ =         
 INCREMEN = NO

(continued)

VS EZQUERY  
RELEASE 2,  
VERSION 2.07.00  
(continued)

Options to be specified in the BACKUP utility during VS EZQUERY installation are continued below:

OUTPUT Screen:  
VOLUME = (Specify IPL Volume)  
DEVICE = DISK  
CLEAR = NO \*

BACKUP Screen:  
PROCEED = YES  
DUPFILES = SCRATCH

\* (Make sure CLEAR = NO on the OUTPUT Screen, or all other files on the volume will be lost.)

If single-sided single-density diskettes are being used, mount the QUERY2 through QUERY3 diskettes when prompted. When the End-of-Job EOJ Screen appears, press PF Key 16 or the ENTER key to terminate the backup, and then dismount the diskette.

#### PROBLEMS CORRECTED

1. An answer table file boundary violation by DMS has been corrected.
2. The problem of EZQUERY cancelling when temporary work file space was used up has been corrected.
3. Leading zeroes in the answer table are now suppressed.

#### KNOWN ANOMALIES

If a user runs a stored query from a foreground procedure with an invalid query, an error message appears on the screen. If the same procedure is run in the background, however, the job cancels with unpredictable error messages.

#### REFERENCES

VS EZQUERY Reference Manual (800-1129EQ-02)  
VS EZQUERY Data Sheet (800-2113-01)

VS SYSTEM  
ACTIVITY MONITOR,  
VERSION 0.09.30  
 by VS R&D

DESCRIPTION

The VS System Activity Monitor, SAM, is a software tool for analyzing the performance of a VS system or task. SAM continually collects and analyzes data from several system components. By identifying bottlenecks, SAM assists users in selecting the most appropriate areas for optimization. As well as being a performance monitoring tool, SAM offers the following capabilities:

- . Performance problem isolation
- . Task statistics of the overall system
- . Analysis of CPU, disk, and memory activity
- . Application design aid
- . Capacity planning
- . Sales aid

By installing SAM on existing VS systems, the resource utilization levels of a customer's present workload can be demonstrated. SAM provides tangible evidence on which to base recommendations for future application growth and system expansion.

HARDWARE PRE-REQUISITES

Any standard VS configuration

SOFTWARE PRE-REQUISITES

Any 5.03 VS Operating System release

ALERTS

1. SAM cannot be run as a background task since it uses workstation I/O. Attempts to run SAM as a background task will terminate with return code 2.
2. Release 0.09.30 of SAM does not check the operating system version number, and could give erroneous information if run on any VS OS releases other than 5.03.xx.
3. A program check may occur if the address of the control block being processed changes during an interrupt of SAM processing. It is also possible that data collected during erroneous address processing of this type can distort SAM statistics.

ORDERING INFORMATION

VS Systems Activity Monitor Release 0.09.30 is available through normal order processing channels at a cost of \$1000. Available package numbers and their contents are:

<u>System</u>	<u>Model #</u>	<u>Media</u>
VS 50,80,85, 90,100	195-2392-3	Two SSSD Diskettes: SAM1, media # 705-0337A SAM2, media # 705-0338A

(continued)



VS SYSTEM  
ACTIVITY MONITOR,  
VERSION 0.09.30  
 (continued)

<u>System</u>	<u>Model #</u>	<u>Media</u>
VS 25,45,85, 90,100	195-2392-5	One DSDD Diskette: SAM1, media # 705-0051

One copy of the VS System Activity Monitor Reference manual, 800-1324MU-01, is included with each package.

#### INSTALLATION INSTRUCTIONS

Log on the system as a Security Administrator. Perform a BACKUP using the SAM1 diskette, specifying the following options:

<u>INPUT Screen:</u>	<u>OUTPUT Screen:</u>
RANGE = <u>LIBRARY</u>	VOLUME = (User Specified)
VOLUME = <u>SAM1</u>	LIBRARY = (User Specified)
LIBRARY = <u>@SYSTEM@</u>	DEVICE = <u>DISK</u>
FUNCTION = <u>RESTORE</u>	CLEAR = <u>NO</u> *
ERRDISP = <u>YES</u>	
DEVICE = <u>DISK</u>	<u>BACKUP Screen:</u>
FILESEQ = <u>      </u>	PROCEED = <u>YES</u>
INCREMEN = <u>NO</u>	DUPFILES = <u>SCRATCH</u>

\* (Make sure CLEAR = NO on the OUTPUT Screen, or all other files on the volume will be lost.)

If single-sided single-density diskettes are being used, mount the SAM2 diskette when prompted. When the End-of-Job Screen appears, press PF Key 16 or the ENTER key to terminate the backup, and then dismount the diskette.

#### PROBLEMS CORRECTED

Not applicable; initial release.

#### KNOWN ANOMALIES

1. For combination fixed/removable disks, only the removable disk is displayed.
2. The following screen selections are misleading, and will be clarified in future SAM releases:
  - a. 'Profile of Program by State' implies that the user can profile system code, which is not allowed.
  - b. 'CPU Utilization' implies that the idle task, pager, or IO task can be profiled, which is not true.
  - c. 'Microcode PCW sampling' (not available to most users) implies that segments other than segment 0 can be profiled, which is not true.
3. If the user presses a PF key while SAM is calculating a new screen for periodic update, keystrokes can be lost due to the workstation protocol.

#### REFERENCES

VS System Activity Monitor Reference (800-1324MU-01)

WANG PC LOCAL  
INTERCONNECT  
OPTION ANNOUNCED  
by Wang PC  
Product  
Marketing

DESCRIPTION

The Wang Professional Computer Local Interconnect Option enables high-speed, baseband local-area communication between Wang Professional Computers. With this option, users in an MS-DOS environment can address and use printers and disk drives on other Wang PCs, share program and data files, and broadcast messages.

Wang PC Local Interconnect Option hardware and software allows users to:

- . Select records from data bases resident on other Wang PCs
- . Send messages to a single Wang PC system, a group of systems, or to every Wang PC on the network
- . Send word processing documents and other files to printers resident on other Wang PCs
- . Write programs that recall program files from other Wang Professional Computers
- . Establish levels of access protection for data and program files

Wang PC Local Interconnect Software is described on page 73. The Wang PC Local Interconnect Option consists of the following hardware components, as illustrated in Figure 1:

1. Local Interconnect Option Card
2. Local Interconnect Repeater
3. Local Interconnect Repeater Board
4. Cable

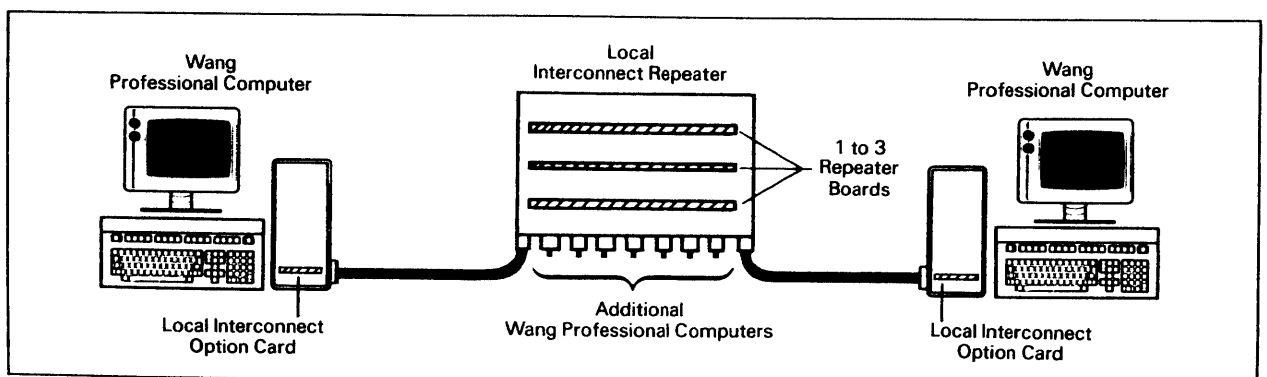


FIGURE 1. HARDWARE COMPONENTS OF THE LOCAL INTERCONNECT OPTION

(continued)

WANG PC LOCAL  
INTERCONNECT  
OPTION ANNOUNCED  
(continued)

Local Interconnect Option Card (PC-PM070)

The Local Interconnect Option Card is an internal communications controller for the Wang PC. It supports a single BNC connector for attachment of an RG-62A single coaxial cable. This cable either leads to the Local Interconnect Repeater or, if only two Wang PCs are involved, to another Local Interconnection Option Card. In addition to the Local Interconnect Option Card, it is recommended that a Memory Expansion Card be installed in the Wang Professional Computer (128K or greater). The addition of memory is dependent on the applications to be run. This option will require the MS-DOS operating system and the Local Interconnect Software (PC-SS080) described on page 73.

Local Interconnect Repeater (PC-PM071)

The Local Interconnect Repeater is used to form the central unit in a Wang Professional Computer communications cluster. This device has its own internal power supply and can contain from one to three Local Interconnect Repeater Boards. Local Interconnect Repeaters can be mounted on a wall or placed on a shelf. One Local Interconnect Repeater Board will be shipped with each Local Interconnect Repeater.

Local Interconnect Repeater Board (PC-PM072)

Up to three Local Interconnect Repeater Boards can be installed inside the Local Interconnect Repeater. Each board supports eight BNC connectors, which provide for the physical attachment of RG-62A coaxial cables. These cables lead to other repeaters or to Wang PCs that have the Local Interconnect Option Card installed. A stand-alone repeater equipped with three Local Interconnect Repeater Boards will support up to 24 Wang PCs to form a local cluster. Two or more repeaters can be connected by an RG-62A coaxial cable to form a cable-bus, as shown in Figure 2. The maximum distance between repeaters is 2500 feet (762 meters).

MARKETING STRATEGY

Personal computer networks (PCNs) are local networks designed specifically for PCs, allowing low-cost, shared access to network resources. Marketed as a limited local area network (LAN) solution, PCNs are designed to provide low-end office automation support to small businesses and groups within larger organizations. PCNs offer an upgrade path from one stand-alone DP/WP device to clustered PCs on a low-cost network. This low-end bridge allows Wang to offer stand-alone solutions that can be cost-effectively upgraded to larger office automation systems. PC clusters can develop in small business environments and larger organizations, functioning as a shared access node on a larger network or as a 3270 subsystem within an IBM mainframe-based system.

(continued)

WANG PC LOCAL INTERCONNECT OPTION ANNOUNCED  
(continued)

ORDERING INFORMATION

The Wang Professional Computer Local Interconnect Option may be ordered through normal order processing channels. Availability is currently estimated to be January 1984.

Costs of the Local Interconnect Option components are as follows:

Model	Description	Cost
PC-PM070	Local Interconnect Option Card	\$400
PC-PM071	Local Interconnect Repeater *	600
PC-PM072	Repeater Board	400
PC-AC075-25	Cable-25 Feet	100
PC-AC075-50	Cable-50 Feet	150
PC-AC075-200	Cable-200 Feet	200
PC-SS080	Local Interconnect Software	500

\* PC-PM071 includes one Repeater Board

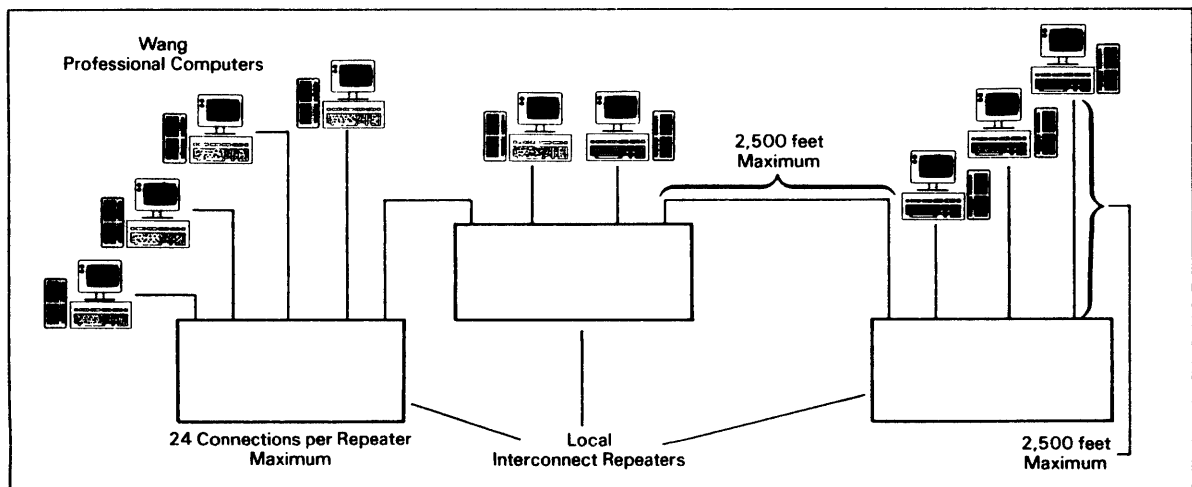


FIGURE 2. A SAMPLE WANG PC COMMUNICATION CLUSTER

WANG PC  
VOICE ATTACHMENT  
ANNOUNCED

by Wang PC  
Product  
Marketing

DESCRIPTION

The Wang PC Voice Attachment is a small, low-profile unit designed to fit under and work with the user's telephone. The PC Voice Attachment offers users an extensive range of capabilities that include telephone monitoring and control, auto-dial for voice and data transmissions, auto-answer, and telephone amplification. The PC Voice Attachment hardware performs the following functions:

- . Detects Dialtone, Ringback, Ring No Answer, Modem Answer, Voice Answer, Slow Busy, Fast Busy, and Incoming Ring signals.\*
- . Accommodates 25-pair multi-line keysets via the Wang multi-line adaptor, allowing use of the PC Voice Attachment with one of the multiple telephone lines.
- . Permits auto-dialing for both DTMF (Touch-Tone) and rotary-pulse dialing methods.
- . Accepts incoming calls through ring detection.
- . Receives DTMF signals through an integral DTMF receiver.
- . Contains an internal, originate/answer, 103J and 212A compatible modem that operates at 300 bps.
- . Supports attachment of a Wang Telemarketing Headset.
- . Contains an integral speaker and volume control for use as a telephone amplifier. This can also be used for auditory call-progression monitoring.

The PC Voice Attachment attaches to the PC via the RS-232-C asynchronous interface port and an RS-232-C cable. This cable is included in the PC Voice Attachment package. The unit attaches to a single telephone line and the telephone network via RJ11C modular telephone jack connections.

\* (Accurate detection of these signals is possible only where the precise tone signal levels supplied by the telephone system conform to EIA RE-464 or AT&T "Notes on the Network". If precise tone signaling is not available, call progress can be monitored through the internal speaker.)

(continued)

WANG PC  
VOICE ATTACHMENT  
ANNOUNCED

(continued)

Telephone Sets Supported

The PC Voice Attachment can be connected to the following types of telephone equipment:

- . 500 Sets (Rotary Dial) - standard single-line rotary dial telephone sets.
- . 2500 Sets (Touch-Tone) - standard single-line DTMF (Dual Tone Multi Frequency) telephone sets, which are the most common type of business telephone set.
- . Multi-Line Keysets - standard 25-pair keysets, supported by means of a Wang multi-line adaptor.

Some PBX or multi-keyset manufacturers, such as Rolm and Executone, make non-standard telephone sets that attach only to their own systems. These "proprietary telephone sets" may not support the PC Voice Attachment.

Note that the PC Voice Attachment will not presently answer the telephone when the user is away. Also, although the PC Voice Attachment cannot complete simultaneous transmissions of both voice and data, it can operate in one mode and be switched to the other mode through applications software.

An external higher-speed (in excess of 300 bps) direct-connect modem can be attached to alternately share the single telephone line. This high-speed modem is not included in PC Voice Attachment packaging.

Supporting Software

The PC Voice Attachment hardware facilities are controlled by the PC Voice Attachment Programmer Utilities (PC-SS070), a set of general purpose subroutines and device drivers. These utilities allow the user to address and control most aspects of the PC Voice Attachment from their application programs using standard, Wang supported, Microsoft high-level languages. Voice Attachment capabilities are integrated into the Wang PC Data Base, Wang PC Notebook, and Wang PC Asynchronous Communications application software.

MARKETING STRATEGY

The PC Voice Attachment can strengthen Wang's success in the Professional Computer marketplace in two important ways: (1) It provides a truly integrated Professional Computer with telephone processing for both verbal and data communications at very little incremental cost, and (2) It provides a means to promote the Wang PC in the rapidly expanding telemarketing industry.

(continued)

WANG PC  
VOICE ATTACHMENT  
ANNOUNCED  
(continued)

The PC Voice Attachment market can be divided into three primary segments:

- . Professional/Managerial
- . Telemarketing
- . Smart Modem Users

Professional/Managerial

The Wang PC Voice Attachment will enable managers and professionals to experience major gains in time management and operational efficiency -- at minimum incremental cost. The Wang PC allows customers to take advantage of voice processing without purchasing an expensive speech processing component. Possible uses are the following:

- . In purchasing departments, a data base of primary and secondary vendors' names, addresses, phone numbers, product descriptions, etc., can be created and the PC Voice Attachment can be used to order goods and services.
- . In customer service departments, the PC Voice Attachment can be used to maintain close contact with accounts and monitor customer service and satisfaction.
- . Accounting departments can use the PC Voice Attachment with the PC Data Base to track accounts receivables and payables and notify proper parties of the status of their accounts.
- . Attorneys can be guided in developing applications to help them track telephone time spent with clients.
- . Medical offices can use the PC Voice Attachment to confirm office appointments, check on laboratory results, and update patient records.

Telemarketing

Telemarketing is a promotional/sales tool whose time has come. With the cost of an average sales call edging toward \$200, companies are looking at the most cost-effective ways to market their products. Where potential Wang customers are interested in telemarketing applications, implementation of the Wang PC and the PC Voice Attachment can help to

- . Increase the speed of marketing/sales calls
- . Verify customer contact
- . Provide quick and accurate customer feedback
- . Promote products and services
- . Improve the sales-call-to-close ratio.

(continued)

WANG PC  
VOICE ATTACHMENT  
ANNOUNCED  
(continued)

With more businesses embracing telemarketing techniques, the PC Voice Attachment is the right product at the right time. Software applications such as the PC Data Base allow users to manipulate and store important data. Specialized telemarketing applications, such as credit collection, account management, and lead tracking can be developed using the PC Voice Attachment Programmer Utilities and PC high-level languages. Then, with the PC Voice Attachment, users control and monitor telephone connections. The application controls the telephone line and allows the user to concentrate on business. When complemented with a Wang Telemarketing Headset, the need for a hand-held telephone instrument is eliminated as well.

Smart Modem

Wang users can operate the PC Voice Attachment as a smart modem using its internal industry standard 103J and 212A compatible 300 bps asynchronous capability. Smart modems are direct-connect modems that can auto-dial and establish connections for data sessions running on the PC. The smart modem capability of the PC Voice Attachment is useful in establishing direct connections to a number of internal data bases, as well as for its quick and easy connection to external public access data bases.

The PC Voice Attachment smart modem enhances standard modem capability by including two important functions: auto-dialing for data sessions and establishing a connection with the remote computer. These functions free the user from manual dialing and verification of data session integrity.

The PC Voice Attachment Maintains data transparency. When transferring files in internal format, such as WP documents, this is particularly important.

ORDERING INFORMATION

Orders for the Wang PC Voice Attachment may be placed immediately, with first customer shipment expected in December 1983. Wang PC Voice Attachment Utilities software is targeted for availability in March 1984.

There is a limit of one PC Voice Attachment per Wang PC at present. The following hardware is required for the minimum PC Voice Attachment configuration:

- . A Wang Professional Computer
- . The Wang PC Voice Attachment, with one RJ-11C cable
- . An additional RJ-11C cable for the user's telephone set
- . An RS-232-C cable for attachment to the PC. (The Voice Attachment package includes one 7-foot RS-232-C cable.)

(continued)



WANG PC  
VOICE ATTACHMENT  
ANNOUNCED  
 (continued)

Optional equipment for the PC Voice Attachment includes:

- . Wang Telemarketing Headset -- direct connection of the ergonomically designed Telemarketing Headset permits "hands-free" use of the telephone.
- . Wang Multi-Line Adaptor -- allows attachment to 25-pair multi-line keysets.

<u>Model</u>	<u>Description</u>	<u>Purchase Price</u>	<u>Monthly Maintenance</u>
PC-VA300	PC Voice Attachment	\$ 500	\$ 5.00
PC-SS070	PC Voice Attachment Programmer Utilities	200	N/A
PC-VA304	Wang Telemarketing Headset	100	N/A
PC-VA305	Wang Multi-Line Adaptor	40	N/A

An Installation Guide will accompany all PC Voice Attachment purchases. Additional documentation includes:

PC Voice Attachment Data Sheet	700-8082
PC Voice Attachment Brochure	700-8183



MODEL PC-PM012  
PRINTER  
ANNOUNCED  
by Peripherals  
and Graphics  
Product  
Marketing

#### DESCRIPTION

Wang is pleased to announce the model PC-PM012 daisy printer for Wang Professional Computer Systems. The PC-PM012 printer offers letter-quality printing capability at a very attractive price. Standard PC-PM012 features include a removable print wheel for pitch and type style selection and a removable multi-strike ribbon cartridge. Print wheels can be changed without removing the ribbon.

Maximum print line widths are 132 characters at 10 pitch, 158 characters at 12 pitch, and 198 characters at 15 pitch. The character set contains 98 characters consisting of upper and lowercase letters, numbers, and symbols. Additional characters can be created using the overstrike capability. Up to five-part paper can be used with a minimum width of 3.5" (8.9 cm) to a maximum width of 15.2" (39.1 cm). Maximum paper thickness is .024" (.61 mm). Both continuous form and single-sheet paper can be used.

Reliability has been designed into the PC-PM012 by minimizing the number of moving parts, adjustments, and electrical components. The printer's operation is quiet (63 dba sound pressure), making it ideal for the office environment. The model PC-PM012 is a serial device and is connected by a cable attached to the RS-232C serial port on the Wang Professional Computer. A 12 foot (3.7 meter) RS-232C cable is included with printer.

The printer is 9.3 inches (23.6 cm) high, 17.4 inches (44.2 cm) deep, and 24.5 inches (62.2 cm) wide. It weighs approximately 50 pounds (22.5 kg.), including packaging. Power requirements of the PC-PM012 are 115 or 230 VAC, 50 or 60 Hz, 100 Watts. Operating environment specifications for the PC-PM012 printer are 50 to 90 degrees F (10 to 30 degrees C), and 20% to 80% relative humidity, noncondensing, with 35% to 65% humidity recommended.

#### MARKETING STRATEGY

The PC-PM012 is a cost-effective alternative to the current model PC-PM011 daisy printer offered on the Wang Professional Computer systems. The PC-PM012 offers the same breadth of function as the PC-PM011 at less than half the price. The PC-PM012 daisy printer differs from the PC-PM011 printer in that the model PC-PM012 has no "ribbon out" or "paper out" indicators, and printing in WP mode is unidirectional, slightly slowing the average print speed from 20 to 18 characters per second.

(continued)

MODEL PC-PM012  
PRINTER  
ANNOUNCED  
 (continued)

ORDERING INFORMATION

Domestic shipments of the Model PC-PM012 began in August 1983. Purchase price for the PC-PM012 20-cps daisy printer is \$1295, with a \$25 monthly maintenance charge. Quantity discounts are available as follows:

<u>PC-PM012 Orders</u>	<u>Purchase Price</u>	<u>Month. Maint.</u>	
		<u>On-Site</u>	<u>Mail-In</u>
Quantities of 1 to 19	\$1,295	\$25	\$15
Quantities of 20 to 49	1,140	25	15
Quantities of 50 to 149	1,090	25	15
Quantities of 150 to 249	1,040	25	15

A model BFT-20 Bidirectional Forms Tractor, which allows continuous forms feeding and enables the printing of subscripts and superscripts, may be ordered as an accessory for the PC-PM012 at a cost of \$275.

Ribbons and print wheels for the PC-PM012 are not compatible with those of the PC-PM011 Wang PC daisy printer. Print wheels for the PC-PM012 are notchless and hubless, fitting into an envelope-like enclosure to facilitate installation and removal. The model PC-PM012 uses the same 98-character plastic print wheels as the new model OIS-PTR20 printer. Print wheels from other Wang daisy printers cannot be used on the Model PC-PM012.

One Courier 10 print wheel (719-2676) is included with the printer. The following PC-PM012 print wheels are available from the Wang Supplies Division at a cost of \$13.50 per wheel when ordered separately, \$12.00 per wheel for orders of two to five wheels, and \$11.50 per wheel for orders of six or more wheels:

<u>Part Number</u>	<u>Print Style</u>
719-2676	Courier 10
719-2677	Courier 12
719-2620	Prestige Elite 12
719-2651	Letter Gothic 12
719-2623	Orator 12
719-2625	Letter Gothic 15

The PC-PM012 uses carbon film multi-strike ribbons (part number 725-1240-6) available from the Wang Supplies Division. The cost is \$53 per box when ordered separately, \$44 per box on orders of two to eleven boxes, and \$41 per box on orders of twelve or more boxes. There are six ribbons per box. One ribbon is included with the printer.

Automatic Enclosures with the PC-PM012 are:

- Courier 10 print wheel (719-2676)
- Multi-strike ribbon (725-1240)
- PC-PM012 User's Manual (700-8399)
- RS-232C Cable and Power Cord
- Software Diskette (includes printer driver)

WANG PC  
MAINTENANCE  
PRICE REDUCTIONS  
 by Wang PC  
 Product  
 Marketing

The following maintenance prices are now in effect for the Wang Professional Computer. These new maintenance prices represent significant reductions.

<u>Model #</u>	<u>Description</u>	<u>Maintenance Prices</u>	
		<u>On-Site</u>	<u>Mail-In</u>
PC-001	Base Unit (128 KB), with 360 KB Diskette Drive, Keyboard, MS-DOS Operating System & Interpretive BASIC	\$ 15	\$ 9
PC-002	PC W/Single Diskette Wang Monitor (Includes PC-001, PC-PM001 Wang Monochrome Monitor Card, PC-PM004 Wang Monochrome Monitor)	21	12
PC-003B	PC W/Dual Diskette & Wang Monitor (Includes PC-001, PC-PM001 Wang Monochrome Monitor Card, PC-PM004 Wang Monochrome Monitor, & PC-PM020 Diskette Drive)	29	17
PC-004A	PC W/Dual Diskette & Wang Monitor with Graphics Support (Includes PC-001, PC-PM001 Wang Monochrome Monitor Card, PC-PM002 Wang Graphics Card, PC-PM004 Wang Monochrome Monitor, and PC-PM020 Diskette Drive)	32	19
PC-005A	PC W/10MB Winchester Disk & Wang Wang Monitor with Graphics Support (Includes PC-001, PC-PM001 Wang Monochrome Monitor Card, PC-PM002 Wang Graphics Card, PC-PM004 Wang Monochrome Monitor, PC-PM030 Memory Expansion Card, and PC-PM021 10 MB Winchester Disk with Controller Card)	53	31
PC-PM001	Wang Monochrome Monitor Card (character only)	2	1
PC-PM002	Wang Graphics Card	3	2
PC-PM003	Industry Standard Monitor Card	5	3
PC-PM004	Wang Monochrome Monitor	4	2
PC-PM010	80-CPS Wang Matrix Printer (Single Sheet Feeder With Graphics Output)	7	4

(continued)

<u>WANG PC</u> <u>MAINTENANCE</u> <u>PRICE REDUCTIONS</u> (continued)	<u>Model #</u>	<u>Description</u>	<u>Maintenance</u> <u>Prices</u>	
			<u>On-Site</u>	<u>Mail-In</u>
	PC-PM011	20-CPS Bi-directional Daisy Printer	\$ 37	\$ 27
	PC-PM020	Diskette Drive (5 1/4", 360 KB)	8	5
	PC-PM021	Winchester Drive (5 1/4", 10 MB) Includes Winchester Controller Card	24	14
	PC-PM030	Memory Expansion Card with parity (128 KB)	5	3
	PC-PM031	Memory Expansion Card with parity (256 KB)	10	6
	PC-PM032	Memory Expansion Card with parity (512 KB)	15	9

WANG PC LOCAL  
INTERCONNECT  
SOFTWARE  
ANNOUNCED  
by Wang PC  
Product  
Marketing

#### DESCRIPTION

The Wang Professional Computer Local Interconnect Software allows the MS-DOS operating system to run in a shared mode among Wang Professional Computers. The Wang PC Local Interconnect Software uses a token-passing access method. Users can access another Wang Professional Computer by using an expanded file or path name. To access a file residing on another Wang Professional Computer, users follow the same procedures they would use to access files on their own system.

The cluster directory can be stored on a single Wang Professional Computer. Changes to the cluster directory can be made at the storing system and downloaded to other Wang PCs. This feature simplifies changes to the cluster and enables a single Wang PC user to administer the cluster.

The software provides three levels of file and directory security: cluster level, group level, and owner level. When users create a file or a directory, they have the option of assigning one of these security levels. The cluster level entitles any user on the cluster to have access to a file with this classification. A group level limits file access to a pre-defined group of users who are identified by their logon IDs. An owner level means that only the person who created the file or directory can have access to that file or directory.

#### MARKETING STRATEGY

With the Local Interconnect Option, the processing power and information storage capabilities of a stand-alone Wang PC become part of a cluster of Wang PCs. See page 62 of this publication for a discussion of personal computer network marketing strategy.

#### ORDERING INFORMATION

Local Interconnect Software may be ordered as model number PC-SS080 at a cost of \$500 in conjunction with the Local Interconnect Option hardware described on pages 61-63. The anticipated availability date for the Local Interconnect Software is January 1984.

WANG PC  
VOICE ATTACHMENT  
PROGRAMMER UTIL-  
ITIES ANNOUNCED

by Wang PC  
Product  
Marketing

DESCRIPTION

The Wang PC Voice Attachment Programmer Utilities have been announced as a set of general purpose subroutines and device drivers that enable control of the Wang PC Voice Attachment hardware facilities. Wang PC users can develop specialized applications programs by using the PC Voice Attachment Programmer Utilities together with Microsoft high-level languages available on the Wang PC. These Utilities enable applications programmers to use the PC Voice Attachment capabilities in customized programs to manage and monitor standard telephone line communications. In this manner, industry-specific vertical applications may be developed.

The following is a list of the routines that can be accessed using the PC Voice Attachment Utility. These routines can be linked into software applications running on the PC to make outgoing calls and answer incoming calls for voice and data communications.

- . Load device driver
- . Issue auto-dial request to the voice hardware
- . Monitor call progression status
- . Monitor hook status
- . Enable speaker
- . Enable internal modem for answer mode
- . Issue auto-answer request
- . Monitor incoming call status
- . Determine if incoming call is voice or data
- . Disconnect modem for incoming voice call
- . Issue a command to begin data transmission
- . Switch from voice to data
- . Switch from data to voice
- . Cancel the call
- . Close communications channel and device driver

MARKETING STRATEGY

PC Voice Attachment Programmer Utilities provide a valuable opportunity for users to develop individualized communications applications. These utilities further encourage the integration of voice and data telephone management with current business practices to increase productivity and decrease operating costs.

The PC Voice Attachment Utilities Package has been developed primarily for:

- . Software development houses
- . Customers with in-house programmers
- . Service bureaus distributing PCs
- . Third-party developers of professional/managerial workstations

(continued)

WANG PC  
VOICE ATTACHMENT  
PROGRAMMER UTIL-  
ITIES ANNOUNCED  
(continued)

The PC Voice Attachment Programmer Utilities make it easy and attractive for end users, vendors, and software houses to develop specific voice/data applications for the PC, as well as making the PC Voice Attachment more attractive to customers with in-house programming capabilities. There can be sizeable return on the investment of time and resources required to build PC Voice Attachment applications such as the following:

- . Telephone sales
- . Credit collection
- . Prospect identification and qualification
- . Lead tracking
- . Account management

The industry-specific groups listed below are particularly likely to be interested in PC Voice Attachment applications:

- . Legal Offices
- . Medical Offices
- . Financial Institutions
- . Political Organizations
- . Market Research Firms

ORDERING INFORMATION

The PC Voice Attachment Programmer Utilities package can be ordered as model number PC-SS070 at a cost of \$200. Anticipated availability of the package is March 1984. PC Voice Attachment hardware requirements are described on page 68.



WANG PC SNA/SDLC  
AND BSC EMULATION  
ANNOUNCED

by Wang PC  
Product  
Marketing

DESCRIPTION

Wang Laboratories has announced two new Wang PC data communications software products:

1. SNA 3270 Emulation (3276 SNA/SDLC Device)
2. BSC 3270 Emulation (3275 BSC and 3276 BSC Devices)

In conjunction with a Multi-port Controller Card, these new products allow communication between a Wang PC and IBM host to implement remote interactive on-line processing.

This announcement demonstrates Wang's continued commitment to IBM network and system interconnection and coexistence across the system product lines. The 3275 BSC and 3276 SNA/BSC emulators join the previously announced Asynch/TTY and 2780/3780 BSC emulators for the Wang Professional Computer.

These latest communication offerings also strengthen the Wang PC's position as a formidable entry in the desktop Office Automation arena. Using these new tools, in conjunction with the other supported communications packages, users can access their information sources from an ever-growing number of Wang systems in a multi-vendor environment. The Wang PC now can be listed along with the Wang VS, OIS, Alliance and 2200 as having IBM host access.

With the Wang 3276 SNA/SDLC and 3270 BSC emulations, communication is allowed with a variety of IBM mainframe computer systems. Host application programs such as the IBM Information Management System (IMS), Customer Information Control System (CICS), or Time Share Option (TSO), can be accessed without any changes to the host application program. Once these programs are accessed, a user can enter, modify, or delete the data that is being displayed by the host system.

As a 3275 bisynchronous control (BSC) terminal, the PC will emulate a Model 2 Display Station with an attached 3284 Printer. This particular model uses a 1,920 character display and operates on a dial-up line. 3275 BSC emulation offers the following features:

- . Switched (dial-up) line connection
- . Point-to-point operation
- . Line speeds up to 4800 bps
- . 1,920 character screen support (24 rows by 80 columns)
- . Use of EBCDIC character set

(continued)

WANG PC SNA/SDLC  
AND BSC EMULATION  
ANNOUNCED

(continued)

As a 3276 bisynchronous control (BSC) terminal, the PC will emulate a Model 2 Display Station with an attached 3287 Printer, using a leased line. 3276 BSC emulation offers the following features:

- . Leased or private line connection
- . Multi-point operation
- . Line speeds up to 9600 bps
- . 1,920 character screen support (24 rows by 80 columns)
- . Use of EBCDIC character set

As a synchronous data link control (SDLC) terminal operating in the IBM Systems Network Architecture (SNA) environment, the PC will emulate a 3276 Control Unit with a Model 12 Display Station and a 3287 Printer using leased and dial-up lines. 3276 SNA/SDLC emulation offers:

- . Leased line and dial-up connections
- . Point-to-point and multi-point operation
- . Physical Unit (PU) Type 2 device support
- . Logical Unit (LU) Type 2 terminal support
- . LU Type 1 SNA Character String (SCS) printer support
- . LU Type 3 Data Stream Compatibility (DSC) printer support

MARKETING STRATEGY

3270 emulation (now announced on the VS, OIS, Alliance, 2200 and the Professional Computer) strongly positions Wang in the network systems and application product segment. This new product offering, coupled with Wang's existing market presence in word processing and office automation, presents a convincing network systems product message.

The primary marketing thrust for the Wang PC is the professional and managerial market segment. In this market segment, the Wang PC offers the most cost-effective solution for individual desktop needs. Other Wang systems offering 3270 emulations are targeted at group, department, and division needs. For applications where there is extensive desktop uniqueness and a need for host application access, the PC with the SNA/SDLC or BSC Emulation package is the right customer solution.

Wang PCs sold in conjunction with VS or OIS systems offer an alternative vehicle for IBM host application access. For applications where there are closely-coupled desktop, departmental and IBM host access information requirements, either a Local Communications Option or Remote WangNet link (in conjunction with the COBINT software on a VS system) can be employed.

(continued)

WANG PC SNA/SDLC  
AND BSC EMULATION  
ANNOUNCED

(continued)

ORDERING INFORMATION

The Wang PC 3276 SNA/SDLC and 3270 BSC emulations require the Wang PC hardware configuration (PC-002), consisting of one diskette drive, a Wang monochrome monitor, a monitor card, and 128K of memory. Additionally, the following hardware is required:

- PC-PM042 Multi-port Communications Card (MCC)\*
- 220-0113 A 12-foot RS-232-C modem cable (Refer to Supplies Catalog for details.)
- WA3451 300/1200 bps Asynchronous/Synchronous Modem (or any other RS-232-C/CCITT V.24-compatible synchronous modem)

\* The MCC contains three RS-232-C ports, one of which is required for operation of the emulators.

PC-SS063, the Wang PC 3276 SNA package, will be available in October 1983. Anticipated availability for PC-SS062, the Wang PC 3276/3275 BSC package, is December 1983. Prices are as follows:

<u>Model</u>	<u>Description</u>	<u>Purchase Price</u>	<u>Monthly Maintenance</u>
PC-SS063	Wang PC 3276 SNA	\$400	N/A
PC-SS062	Wang PC 3276/3275 BSC	400	N/A
PC-PM042	Multi-port Communication Controller Card (MCC)	500	\$8

For more detailed information on the product, refer to the data sheet entitled PC 3276 SNA/SDLC and 3270 BSC Emulations, order number 700-8308.

WANG PC SCREEN  
MANIPULATION  
by the Wang PC  
Assistance  
Center

Specific screen operations may be initiated on the Wang PC by using standard ANSI escape sequences. Among the allowable operations is the setting of screen attributes, which serve the purpose of bringing attention to a specific area of the screen. For example, you might use screen attributes to highlight a prompt on the screen. Screen attributes can be set in both Interpretive and Compiled BASIC by using escape codes that the Wang Professional Computer recognizes. Since the Interpretive BASIC screen driver "strips out" the escape codes, however, you must send them directly to the system display driver by opening the device "CONS:" and directing the output to it via PRINT # statements. The format used to assign screen attributes in Interpretive BASIC is:

```
Set single attribute      ESC + "[x m"
Set multiple attributes  ESC + "[x;y; ... m"
```

where ESC represents the escape code, x indicates the first attribute, y indicates an additional attribute, and m indicates that screen or graphics attributes are specified. Among the allowable x and y values are the following:

<u>Attribute</u>	<u>Value Specified</u>
Cancel All Attributes	0
High Intensity	1
Subscript	2
Superscript	3
Underscore	4
Blink	5
Overscore	6
Reverse Video	7

A complete list of allowable screen attribute values appears on pages G-2 and G-3 of the Wang PC Program Development Guide, publication 700-8018.

An Interpretive BASIC Example

The sample Interpretive BASIC program presented below demonstrates several Wang PC screen attributes. CHR\$(27) is the escape code. For a further discussion of the CHR\$ function, refer to page 9-20 of the Wang PC BASIC Language Guide, publication 700-8019.

```
10  CLS:KEY OFF
20  OPEN "CONS:" FOR OUTPUT AS #1
30  REM   Line 40 will print a normal line
40  LOCATE 2,25:PRINT "WANG PC SCREEN ATTRIBUTES"
50  REM   Line 60 will set high intensity
60  PRINT #1, CHR$(27) + "[1m"
70  LOCATE 6,15:PRINT "HIGH INTENSITY":GOSUB 310
```

(continued)

WANG PC SCREEN  
MANIPULATION  
(continued)

```

80 REM Line 90 will set subscript
90 PRINT #1, CHR$(27) + "[2m"
100 LOCATE 6,40:PRINT "SUBSCRIPT":GOSUB 310
110 REM Line 120 will set superscript
120 PRINT #1, CHR$(27) + "[3m"
130 LOCATE 6,50:PRINT "SUPERScript":GOSUB 310
140 REM Line 150 will set underscore
150 PRINT #1, CHR$(27) + "[4m"
160 LOCATE 10,15:PRINT "UNDERSCORE":GOSUB 310
170 REM Line 180 will set blink
180 PRINT #1, CHR$(27) + "[5m"
190 LOCATE 10,40:PRINT "BLINK":GOSUB 310
200 REM Line 210 will set overscore
210 PRINT #1, CHR$(27) + "[6m"
220 LOCATE 14,15:PRINT "OVERSCORE":GOSUB 310
230 REM Line 240 will set reverse video
240 PRINT #1, CHR$(27) + "[7m"
250 LOCATE 14,40:PRINT "REVERSE VIDEO":GOSUB 310
260 REM Line 270 will set reverse video and blink
270 PRINT #1, CHR$(27) + "[7;5m"
280 LOCATE 18,18:PRINT "Combined Blink and Reverse Video
290 GOSUB 310:END
300 REM Line 310 will clear any 'set' attributes
310 PRINT #1, CHR$(27) + "[0m"
320 RETURN

```

Compiled BASIC Examples

To set screen attributes using Compiled BASIC, line 20 should be omitted from the sample program above, and the I/O file designation (#1,) should be omitted from each PRINT statement. Line 60, for example, should read:

```
60 PRINT CHR$(27) + "[1m"
```

For use with Compiled BASIC, the above program would also have to be modified so that the cursor is positioned via escape code rather than via the LOCATE verb, which is unsupported in Compiled BASIC. To do this, "LOCATE r,c" (where r specifies row and c specifies column) must be replaced with an escape sequence specifying cursor row and column position. Line 70, for example, would read:

```
70 PRINT CHR$(27) + "[06;15H";;
PRINT "HIGH INTENSITY":GOSUB 310
```

Note that cursor positioning is terminated by an H (or optionally, by an f) and that a semi-colon is required at the end of the string. Also, leading zeros are required, since cursor positions must be specified as two-digit numbers. Additional information regarding screen manipulation is included in Appendix G of the Wang PC Program Development Guide, publication 700-8018.

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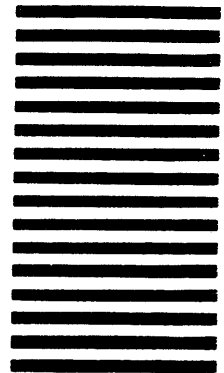


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