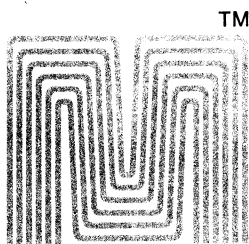# Microdata 3200 SERIES COMPUTERS PRICE SCHEDULE

Effective

August 1, 1975

Microdata

TM

Microdata Corporation
17481 Red Hill Avenue
Irvine, California 92705

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GENERAL INFORMATION

Pricing:
Prices quoted are effective August 1, 1975, FOB Irvine, California and apply in the continental U.S. only. Federal, state and local taxes are not included. Prices are for factory installation; option prices and field installation prices will be quoted upon request. All prices are subject to Microdata Corporation's Standard Terms and Conditions. Prices are in U.S. currency.

Prices for Microdata's 3200-series supplies and spare parts will be quoted upon request.

Ordering Guidelines:
When an order does not include a central processor, it must specify the computer model in which the equipment ordered will be installed.

For items that include a double asterisk (**), if the required controller channel is available on a previously ordered Multipurpose I/O Interface (MPIO), append the part number with -5, specify "Without Controller" and subtract $890.00 from list price. Configure +5 vdc power accordingly.

Cables:
Prices of equipment normally include the price of necessary cables. Cable prices are included in this price list for the convenience of customers ordering conversion, replacement, or special cables.

Warranty:
The warranty for 3200 series equipment is 90 days for parts and labor and one year for workmanship from date of shipment or as otherwise specified. Warranty is on a return-to-factory basis only.

Maintenance:
Hardware maintenance is available on a yearly contract or on a per-call basis. This maintenance is provided on a per-diem basis for time, materials and travel expenses.

Diagnostics:
One set of appropriate hardware diagnostic programs with descriptions is delivered with the first system. Additional sets may be obtained from Microdata for a nominal reproduction fee.

Documentation:
A complete set of schematics is provided with the first system delivered. Additional sets may be obtained from Microdata for a nominal reproduction fee.

Item No.	Description	Prerequisite	Amps @ +5V Required/ Supplied	Discount	Integration Required	Price
	STANDARD SYSTEMS					

3251	32/S general purpose computer system. Includes 3250-5 CPU, 16K words (16-bit) of main memory with parity, 3015 programmer's console, 2006-1 single-bay cabinet, 3400 rack mounting hardware, 3751 CRT system, 3815 magnetic tape system
	Software included:
	    Genasys and MPL Compiler
	    (Object Code only)
		---	21/35	Yes	No	$30,650

3252	32/S general purpose computer system. Includes 3250-2 CPU, 32K words (16-bit) of main memory with parity, 3015 programmer's console, 2006-1 single-bay cabinet, 3400 rack mounting hardware, 3751 CRT system, 3815 magnetic tape system, 3954 disc system
	Software included:
	    Genasys/D with MPL Compiler
	    (Object Code only)
		---	26.8/35	Yes	No	49,250

3252-1	Same specifications as 3252 with 2007-1 double-bay cabinet instead of 2006-1 single-bay cabinet	---	26.8/35	Yes	No	49,900

Item No.	Description	Prerequisite	Amps @ +5V Required/ Supplied	Discount	System Integration Required	Price
	CENTRAL PROCESSORS					
3200-5	Microdata 3200 general purpose microprogrammable computer: 135 ns processor cycle time, card cage with 12 available assembly slots, 35 amp power supply, 32 general purpose hardware registers, power failure, auto restart and real time clock. Accommodates up to 2048 words (32-bit) of control memory. (A20003200-5)	3010 or 3015	9.4/35	Yes	Yes	$6,300
3290-5	Microdata 3290 general purpose microprogrammable computer with 512 words (32-bit) control memory for firmware boot load, 135 ns processor cycle time, card cage with 12 available slots, 35 amp power supply, 32 general purpose hardware registers, power failure, auto restart and real time clock. Accommodates 1536 additional words of control memory (A20003290-5)	3010 or 3015	10/35	Yes	Yes	6,750
3250-5	Microdata 32/S stack-architecture microprogrammable computer with 2048 words (32 bit) control memory, 135 ns processor cycle time, card cage with 12 available assembly slots, 35 amp power supply, power failure, auto restart and real time clock (A20003250-5)	3010 or 3015	11.8/35	Yes	Yes	8,050
	MAIN MEMORIES					
1300-5	8K x 18 bit MOS memory module including parity, 350 ns write cycle time, 350 ns read access time, 450 ns read cycle time, requires one computer assembly slot (A20001300-5)	Any CPU	.4/0	Yes	No	4,310
1300-6	4K x 18 bit MOS memory module including parity, 350 ns write cycle time, 350 ns read access time, 450 ns read cycle time, requires one computer assembly slot (A20001300-6)	Any CPU	.4/0	Yes	No	2,930

Item No.	Description	Prerequisite	Amps @ +5V Required/Supplied	Discount	Integration Required	Price

CONTROL MEMORIES

1313-x — Add-on control memory assembly which accommodates up to 4096 words (32-bit) of programmed (PROM) or masked read only memory (BROM) with customer supplied firmware. THIS ASSEMBLY DOES NOT INCLUDE ANY READ ONLY MEMORY. Requires one assembly slot (A20001313)*

To Accommodate	Append Part Number With	Prerequisite	Amps @ +5V Required/Supplied	Discount	Integration Required	Price
512 words	-1	Any CPU	.5/0	Yes	No	$ 700
1024 words	-2	Any CPU	.5/0	Yes	No	715
1536 words	-3	Any CPU	.5/0	Yes	No	730
2048 words	-4	Any CPU	.5/0	Yes	No	745
2560 words	-5	Any CPU	.5/0	Yes	No	760
3072 words	-6	Any CPU	.5/0	Yes	No	775
3584 words	-7	Any CPU	.5/0	Yes	No	790
4096 words	-8	Any CPU	.5/0	Yes	No	805

*NOTE: Do not order this assembly when PROM or BROM is to be installed on CPU control board. CPU control board accommodates up to 2048 words of control memory.

3000-xx — Read only memory with customer supplied firmware (A20003000-xx)

Specify programmable read only memory (PROM) or masked read only memory (BROM).

Using PROM:

Words	Prerequisite	Amps @ +5V Required/Supplied	Discount	Integration Required	Price
512 words		.6/0	Yes	No	600
1024 words	1313-x	1.2/0	Yes	No	1,200
1536 words	or 3200	1.8/0	Yes	No	1,800
2048 words		2.4/0	Yes	No	2,400
2560 words	3200	3.0/0	Yes	No	3,000
3072 words	with	3.6/0	Yes	No	3,600
3584 words	1313-x	4.2/0	Yes	No	4,200
4096 words	or 1313-x	4.8/0	Yes	No	4,800

NOTE: One time charge for production set-up of each 512-word page of PROM control memory — Consult Factory

Using BROM:

Words	Prerequisite	Amps @ +5V Required/Supplied	Discount	Integration Required	Price
512 words		.6/0	Yes	No	300
1024 words	1313-x	1.2/0	Yes	No	600
1536 words	or 3200	1.8/0	Yes	No	900
2048 words		2.4/0	Yes	No	1,200
2560 words	3200	3.0/0	Yes	No	1,500
3072 words	with	3.6/0	Yes	No	1,800
3584 words	1313-x	4.2/0	Yes	No	2,100
4096 words	or 1313-x	4.8/0	Yes	No	2,400

NOTE: One time charge for production set-up and semiconductor masks for each 512-word page of BROM control memory. — Consult Factory

Customer supplied firmware to be submitted to Microdata in form of paper tape output generated by Microdata micro assembly program. PROM and BROM may be intermixed both within the computer system and on single control memory assembly.

Item No.	Description	Prerequisite	Amps @ +5V Required/ Supplied	Discount	System Integration Required	Price
	CONTROL MEMORIES (continued)					
1353	Writeable control memory (WCM) 512 words (32-bit). Requires one computer assembly slot (A20001353)	3250-5 or 3290-5	7.4/0	No	No	$3,000
	NOTE: When ordering WCM, consult Microdata factory for special power requirements which may be necessary in certain system configurations.					
	FRONT PANELS					
3010	Basic panel includes: six position keylock switch, load and interrupt switches and cable assembly (A20003010)	Any CPU	--	Yes	No	400
3015	System programmer's console includes: 18 address/data entry switches, 18 address display indicators, 18 data display indicators, 18 display selection switches with indicators, cable and interface to Monobus. Provides full address/data entry, display, and scanning, breakpoint on Monobus or Control Memory Address buses, control memory simulation from panel switches, single firmware or software step. Indicators for breakpoint, instruction execution, bus activity, clock, lock, on, and memory validity. Requires one computer assembly slot. For use with Microdata Model 3250 computer system (A20003015)	Any CPU	5.6	Yes	No	1,600
	GENERAL PURPOSE AND UTILITY INTERFACES					
1311	General purpose I/O wire wrap board. Blank with hole pattern which accommodates up to 126 units of 14 or 16 pin IC sockets and 4 units of 24 pin IC sockets. Requires two computer assembly slots (A20001311)	--	--	Yes	No	150
1311-1	General purpose I/O wire wrap board including 100 sixteen pin sockets, four 24 pin sockets, and two 50 pin cable headers. Requires two computer assembly slots (A20001311-1)	--	--	Yes	No	550
1314	Multipurpose I/O interface (MPIO) includes: teletype interface for use with standard 20 mA 33 ASR, 33 KSR or 35 KSR Model Teletypes or standard RS-232-C interface with strappable baud rates from 75 to 9600 baud. Separate input channel with 12 bit data transfers for use with paper tape reader or card reader. Separate output channel with 8 bit data transfers for use with paper tape punch or line printer. Requires one computer assembly slot (A20001314)	Any CPU	3.8/0	Yes	No	890

Item No.	Description	Prerequisite	Amps @ +5V Required/ Supplied	Discount	System Integration Required	Price
	COMMUNICATIONS INTERFACES					
1330-1	Asynchronous communications controller provides simultaneous operation of four full duplex asynchronous channels. Each channel can select (by switch or jumpers) one of ten standard baud rates (75 to 9600 baud), one of four character lengths, one or two stop bits, and parity checking. EIA Standard RS-232-C or teletype 20 mA current loop. Requires one computer assembly slot (A20001330-1)	Any CPU	2.0/0	Yes	No	$ 1,100
	PERIPHERAL SYSTEMS					
3710	Paper tape system consisting of: 300 cps fanfold 8-channel paper tape reader, 75 cps fanfold 8-channel paper tape punch, cables, and MPIO controller. Unit is rack mountable 10.5" high. Requires one computer assembly slot (A20003710)	Any CPU	**	No	Yes	4,630
3710-1	Paper tape system consisting of: 300 cps rolled 8-channel paper tape reader, 75 cps rolled 8-channel paper tape punch, cables, and MPIO controller. Unit is rack mountable 10.5" high. Requires one computer assembly slot (A20003710-1)	Any CPU	**	No	Yes	4,630
3711	Paper tape reader system 300 cps fanfold, 8-channel paper tape reader including MPIO controller and cable set. Requires one computer assembly slot (A20003711)	Any CPU	**	No	Yes	2,500
	NOTE: Spooler can be specified by appending part number with -1.	--	--	No	No	250
3721-1	Card reader system, cable and MPIO controller. 200 cpm, 20 column cards, 1000 card hopper, 1000 card stacker. Punched cards only. Requires one computer assembly slot (A20003721-1)	Any CPU	**	No	No	4,200
3733	Line printer system, 132 column, 64 character set, 300 lpm, cables and MPIO controller included (A20003733)	Any CPU	**	No	No	10,500
3734	Line printer system, 132 column, 96 character set, 200 lpm, cables and MPIO controller included (A20003734)	Any CPU	**	No	No	12,000
3733-1	12 channel vertical format unit (VFU) (A20003733-1)	3733 or 3734	--	No	No	500

**See Special Note on page 3.

Item No.	Description	Prerequisite	Amps @ +5V Required/ Supplied	Discount	System Integration Required	Price
	PERIPHERAL SYSTEMS (continued)					
3737	Line printer 165 characters per second, 60 lpm, 132 characters per line, 64 character set, includes cable and MPIO (A20003737)	Any CPU	**	No	No	$ 5,800
3751	CRT alpha-numeric display and keyboard, 1920 displayable characters in 24 lines of 80 characters each. Switch selectable baud rates from 110 to 9600 baud. Complete with cable and MPIO (A20003751)	Any CPU	**	Yes	No	3,850
3815	Magnetic tape system, including one 9-track, 800 bpi, 25 ips magnetic tape transport, 10.5" reels, 1 x 1 NRZI formatter, controller and cables. Requires one computer assembly slot (A20003815)	Any CPU	2.0/0	Yes	Yes	7,500
3835	Magnetic tape system including one 9-track, 1600 bpi, 25 ips magnetic tape transport, 10.5" reel, 1 x 4 phase encoded formatter, controller and cables. Includes one reel of magnetic tape and take-up reel. Requires one computer assembly slot (A20003835)	Any CPU	2.0/0	Yes	Yes	8,700
3845-x	Add-on magnetic tape drive, 9-track, 1600 bpi, phase encoded tape transport. Includes daisychain cable, one reel of magnetic tape and take-up reel (A20003845-x)	3835	--	Yes	Yes	4,700
	NOTE: Specify number of daisychain units by appending part number with -x.					
3954	Disc system including top loading moving head disc drive with one fixed disc and one removable cartridge, 100 tpi, 1500 rpm, 5 million bytes of storage, 35 msec average random access, controller, slide mounts and cables. Requires two computer assembly slots (A20003954)	Any CPU	5.0/0	Yes	Yes	10,000
3954-1	Same specifications as 3954 except rotational speed is 2400 rpm (A20003954-1)	Any CPU	5.0/0	Yes	Yes	10,200
3956	Disc system including top loading moving head disc drive with one fixed disc and one removable cartridge, 200 tpi, 1500 rpm, 10 million bytes of storage, 35 msec average random access, controller, slide mounts and cables. Requires two computer assembly slots (A20003956)	Any CPU	5.0/0	Yes	Yes	11,000
3956-1	Same specifications as 3956 except rotational speed is 2400 rpm (A20003956-1)	Any CPU	5.0/0	Yes	Yes	11,200

**See Special Note on page 3.

Item No.	Description	Prerequisite	Amps @ +5V Required/ Supplied	Discount	System Integration Required	Price
	PERIPHERAL SYSTEMS (continued)					
3961	Add-on disc drive, includes fixed disc and removable cartridge, 100 tpi, 1500 rpm, 5 million bytes of storage, slide mounts and daisychain cables (A20003961)	3954	--	Yes	Yes	$7,250
3961-1	Same specifications as 3961 except rotational speed is 2400 rpm (A20003961-1)	3954-1	--	Yes	Yes	7,400
3963	Add-on disc drive, includes fixed disc and removable cartridge, 200 tpi, 1500 rpm, 10 million bytes of storage, slide mounts and daisychain cable (A20003963)	3956	--	Yes	Yes	7,700
3963-1	Same specifications as 3963 except rotational speed is 2400 rpm (A20003963-1)	3956-1	--	Yes	Yes	7,850
	POWER SUPPLIES					
3025	External power supply, rack mountable in standard 19" rack, supplies +5 @ 20 amps	Any CPU	0/20	Yes	Yes	1,000
3027	Battery option consisting of: gell-cell batteries to provide backup power for maintaining critical voltages for MOS memories during powerfail. Provides backup power for 32K words MOS for one day at 25°C (A20003027)	Any CPU	--	Yes	Yes	400
	EXPANSION CHASSIS					
3050	Expansion chassis for standard Microdata 3200 series computer including: 35 amp integral power supply, Monobus extension, interface with cables. Provides 14 assembly slots (A20003050)	Any CPU	0/35	Yes	Yes	4,100
	CABLES					
2502	Flat cable (10') and 50 contact 3M connector for use with general purpose I/O wire wrap boards (A20002502)	1311 or 1311-1	--	Yes	No	20
2502-1	Twisted pair flat cable (10') and 50 contact connector for use with general purpose I/O wire wrap boards (A20002502-1)	1311 or 1311-1	--	Yes	No	25
2503-xx	Same as 2502-1 except customer specifies length in feet (A20002503-xx)	1311 or 1311-1	--	Yes	No	25 + $1/ft.

Item No.	Description	Prerequisite	Amps @ +5V Required/ Supplied	Discount	System Integration Required	Price
	ENCLOSURES AND CABINETS					
2006-1	Single bay cabinet providing 54-1/4" of vertical mounting space, 19" wide and 36" deep. Has 7/8 length rear door, 30 amp receptacle and 20 amp circuit breaker on rear panel, power bus strip inside, removable side doors, and both casters and leveling legs. Includes 600 cfm blower and 15 amp power cable (A20002006-1)	Any CPU and 3400	--	Yes	No	$ 950
2007-1	Double-bay cabinet providing 54-1/4" of vertical mounting space, 19" wide and 36" deep in each bay. Has 7/8 length rear doors, 30 amp receptable and two 20 amp circuit breakers on rear panel, two power bus strips inside, removable side doors and both casters and leveling legs. Includes 600 cfm blower and 30 amp power cable (A20002007-1)	Any CPU and 3400	--	Yes	No	1,600
3400	Standard 19" rack mounting hardware (A20003400)	Any CPU	--	Yes	No	85
3401	Table top enclosure for use with standard card cage (A20003401)	Any CPU	--	Yes	No	250

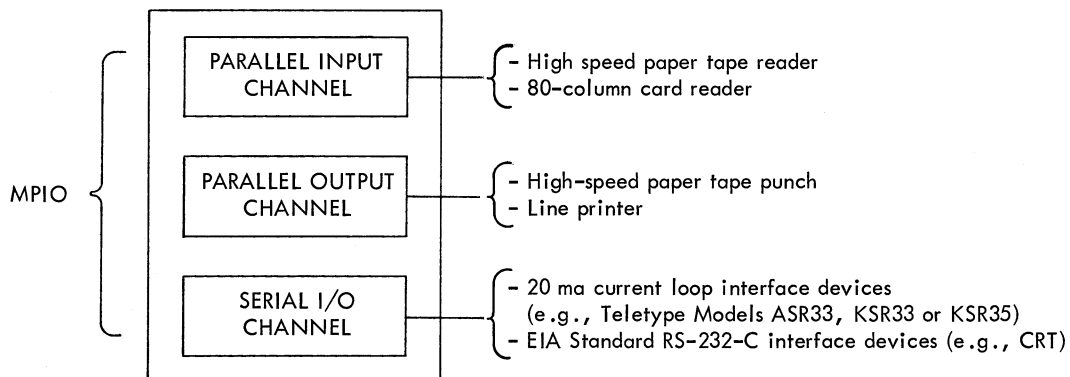| Part Number	Description	Price

SOFTWARE PRODUCTS

Specify medium desired:

MT: 9-Track Magnetic Tape (800 bpi)
C: Cards (80-column)
PT: Paper Tape

11139 GENASYS: BASIC 32/S debugging package. Resides in main memory and includes a loader, I/O system, debug package and expression processor.
Minimum configuration: 3251 System

	Source Code (MT)	$ 75
	Program Listing	100
	Object Code (MT)	50

11159 GENASYS/D: Disc oriented version of GENASYS. It includes a monitor I/O system, loader, linker and librarian.
Minimum configuration: 3252 System

	Source Code (MT)	75
	Program Listing	100
	Object Code (MT)	50

11141 MPL Compiler: Translates MPL statements into 32/S instructions.
Minimum configuration: 3251 System

	Source Code (MT)	75
	Program Listing	200
	Object Code (MT)	75

11146 MPL Cross Compiler: Translates MPL statements into 32/S instructions.
Minimum configuration: XPL System; e.g., IBM System 360/370 under OS or VM/CMS

	Source and Object Code	250
	Program Listing	100

11147 CAP-32 Microassembler: Translate microassembly statements into 3200 microinstructions.
Minimum configuration: IBM System 360/370 with PL/1 compiler, Level F.

	Source Code (MT)	300
	Object Code (MT)	300

11156 SYSDJINN 32/S: System generation program; creates self-loading object modules.
Minimum configuration: 3251 System

	Source Code (MT)	75
	Program Listing	50
	Object Code (MT)	75

11138 NUCLOAD: Loader that binds a set of MPL external procedures into a single executable segment.
Minimum configuration: 3251 System

	Source Code (MT)	25
	Object Code (MT)	25

11150 DF32/S: Utility program that formats the disc surfaces.
Minimum configuration: 3250 CPU, 3010 or 3015 panel, any disc system and peripheral system to handle input medium.

	Source Code (MT)	75
	Program Listing	75
	Object Code (MT)	50
	Object Code (PT)	75
	Object Code (C)	75

Part Number	Description	Price

SOFTWARE PRODUCTS (continued)

11134   32/S Firmware: BASIC 32/S instruction set.
Minimum configuration: 3290-5 CPU, 3010 panel, and 4 additional 1353 WCM.

	Source Code (MT)	$100
	Program Listing	100
	Object Code (MT)	100
	Object Code (PT)	100
	Object Code (C)	100

11160   32/S Firmware Loader: Loads output generated by CAP32 into writeable control memory.
Minimum configuration: 3250-5 CPU, 3010 panel, 1353 WCM and peripheral system to
handle input medium.

	Source Code (MT)	50
	Program Listing	50
	Object Code (MT)	25
	Object Code (PT)	25
	Object Code (C)	25

CONFIGURATION GUIDE

 1. MPIO – Multipurpose I/O Interface (Part Number 1314).

   This interface has the capability of communicating with the following devices:

```
                     ┌──────────────────┐        ┌─ High speed paper tape reader
                ┌─   │ PARALLEL INPUT   │────────┤
                │    │ CHANNEL          │        └─ 80-column card reader
                │    └──────────────────┘
                │    ┌──────────────────┐        ┌─ High-speed paper tape punch
   MPIO  ┤      │    │ PARALLEL OUTPUT  │────────┤
                │    │ CHANNEL          │        └─ Line printer
                │    └──────────────────┘
                │    ┌──────────────────┐        ┌─ 20 ma current loop interface devices
                └─   │ SERIAL I/O       │────────┤    (e.g., Teletype Models ASR33, KSR33 or KSR35)
                     │ CHANNEL          │        └─ EIA Standard RS-232-C interface devices (e.g., CRT)
                     └──────────────────┘
```

   The MPIO can accommodate one device per channel and one, two or all channels may be connected to devices.
Therefore, if a configuration requires a CRT, 80-column card reader and a line printer, only one MPIO is required.

 2. System Integration

   When a cabinet is ordered with the system, there will be a system integration charge of 5% of the non-discounted
price for all items which include 'Yes' under the "System Integration Required" column.

   Standard systems include a cabinet and the system integration charge is included in the price of the system.
However, the 5% system integration charge shall apply to any additional items ordered following the rule
described above.

MAINFRAME

	Model Number	Description	+5 vdc Current	Price
1		CPU Data Board		
2	3250-5	CPU Control Board		*
3		Monobus Interface		
4	1313-3	RCS		
5	1314	MPIO		
6		DISK		
7		CONTROLLER		
8		MT CONTROLLER		
9	1300-5	MOS MEMORY		
10	1300-5	" "		
11		4 ASYNCH PORTS		
12				
13				
14				
15	This slot used for bus extender if expansion chassis ordered.			
16	SYSTEM POWER SUPPLY			

NOTE: If mainframe +5 vdc current total is greater than 35 amperes, external power is required.

Total ____

*Card cage, CPU, and Power Supply included.

Sub Total #1 ____

EXPANSION CHASSIS

	Model Number	Description	+5 vdc Current	Price
1	3050	Bus Extender		*
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16	EXPANSION POWER SUPPLY			

Total ____

*Card cage, bus extender, and power supply included.

Sub Total #2 ____

PERIPHERALS

Model Number	Description	AC Power	Vertical Rack Space	Price
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
			Sub Total #3	_____

CABINETS AND ENCLOSURES

Model Number	Description	AC Power	Vertical Rack Space	Price
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

SPECIAL CABLES

Model Number	Description	Length	Function	Price
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
			Sub Total #4	_____

SOFTWARE PRODUCTS

Part Number	Description	Price
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
	Sub Total #5	_____

ITEMS REQUIRING SYSTEM INTEGRATION

Model Number	Description	Price
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
	Sub Total	_____
	System Integration Charge (5% of above figure)	_____

SUB TOTALS

Sub Total #1	Mainframe	_____
Sub Total #2	Expansion Chassis	_____
Sub Total #3	Peripherals	_____
Sub Total #4	Cabinets and Enclosures and Special Cables	_____
Sub Total #5	Software Products	_____
	List Price	_____
	System Integration Charge	_____
	Sub Total	_____
	Less Discount	_____
	Total	_____

National Sales Offices
  New York City 201/224-9550
  Boston 617/862-1862
  Detroit 313/649-1650
  Chicago 312/948-9440
  Washington, D.C. 301/881-6282
  Dallas 214/239-8186
  Los Angeles 714/540-6730
  San Francisco 415/786-1155