COLUMBIA'S FAMILY OF IBM-PC COMPATIBLE COMPUTERS

The Columbia family: IBM-PC compatibility plus outstanding value and performance

Start ahead, stay ahead.

Choosing a Columbia computer is one of the best ways to prepare for the future. The entire family of Columbia computers is compatible with the IBM-PC, plus hundreds of IBM-PC compatible software packages, hardware add-ons and peripherals, too. In fact, all software is 100% interchangeable with Columbia computers—from the Columbia VP portable to the Columbia MPC and the MPC with hard disk.

No other computer manufacturer can make that claim.

More hardware compatibility for your money.

All Columbia computers are compatible model-to-model. So you can completely interchange both system and application software. And interchange expansion products, too!
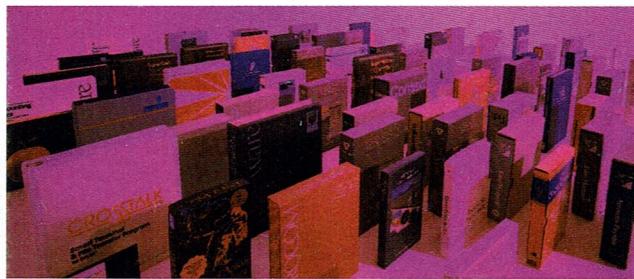
What's more, there are seven Columbia supported operating systems available. MS-DOS, CP/M-80, CP/M-86, MP/M-86, (available soon: Concurrent CP/M-86, Oasis-16, and Xenix.) All stretching Columbia's software compatibility beyond any other line of personal computers. Which means you'll be able to tailor your system to meet the exact demands of your business. Now. Or years from now.

You won't find a better value for the price.

Get a complete personal computer package plus thousands of dollars worth of FREE software.

Purchase a Columbia computer now, and you'll get the software free. It's a special package to help you get the most from your computer right away. Included is the entire self-teaching Perfect Software™ family: Perfect Writer™ for word processing; Perfect Speller™ a 50,000 word dictionary; Perfect Filer™ a data base manager, and Perfect Calc™ a financial forecasting and planning system.

In addition you get MS-DOS™ with RAM disk, CP/M-86, Macro/86 Assembler, Home Accountant Plus, MS-Basic, BASICA, Asynchronous Communications Support, Diagnostics and the Columbia

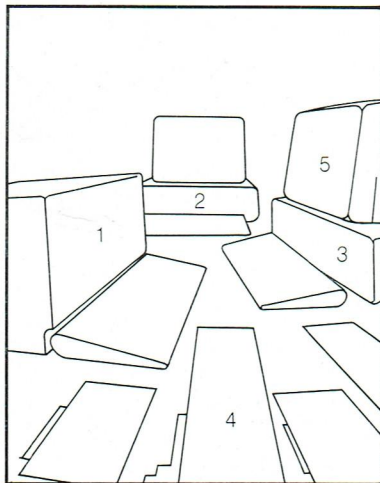
Shown are IBM-PC compatible programs. The Columbia MPC runs MS-DOS plus six other operating systems.

Tutor. You even get full color Fast Graphs, and the fun, fast action game of Space Commanders!

In addition to all the free software, you get complete compatibility with software made for the IBM-PC. So you can choose from hundreds of programs to run on your computer.

Made in the U.S.A.— with nationwide service from Bell & Howell.

The entire Columbia family is backed by Bell & Howell service, with 600 field service representatives and 175 service locations nationwide. Just check the yellow pages for the Bell & Howell service center nearest you. Software support is supplied by Perfect Software™ via a convenient, toll free phone number. You'll discover a whole new world of service and support to accompany your Columbia computer's performance and value. Just one of the reasons why choosing a Columbia is such an intelligent decision.

1. The new Columbia VP portable boasts two disk drives, graphics, one serial and one parallel port.
2. The Columbia MPC starts with two disk drives, graphics, two serial and one parallel ports.
3. Add hard disk drives and up to eight expansion boards to increase capability.
4. Expansion products enhance and personalize your Columbia computers.
5. Software comes FREE with every system.

The Columbia VP. Full feature performance in one package

IBM-PC compatibility for wherever business takes you.

You may have to remind yourself that the Columbia VP is "only" a portable. With its advanced board design you get all the functions you'd find in larger computers. In one convenient package. This same innovative technology not only provides incredible reliability, but also delivers the Columbia VP at a cost much lower than you'd expect.

Included with the VP are two disk drives, 128K/256K RAM, graphic capabilities, a standard IBM-PC keyboard, I/O ports to interface with printers and modems, and an IBM-PC compatible expansion chassis to add any one of hundreds of optional expansion boards. So you can greatly enhance your Columbia VP's function and personality. And make it grow.
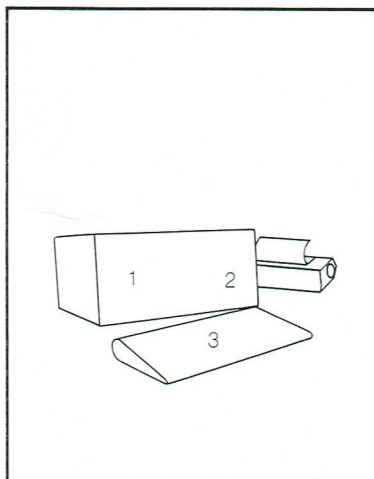
Lots of capability in just a little space.

The Columbia VP is the compact computer equipped to handle all major computing functions — fast. Even advanced application packages are no problem for the Columbia VP's 16-bit processor.

Of course, you need more than processing power to get the most from your computer. Which is why the Columbia VP comes with IBM-PC compatible software from Digital Research, Microsoft, Perfect Software, Continental Software and Innovative Software, Inc. — including two operating systems: MS-DOS® and CP/M-86®.

The practical portable.

The Columbia VP is compatible with all other Columbia MPC's and six operating systems. And a bundle of software worth thousands of dollars comes free.

The Columbia VP portable is an inexpensive way to have a full performance work station to call your own. Or to share with everyone in the office. Anyone can handle word processing, financial reports, presentation graphics, number crunching, planning, communications and much more.

Convenient for home or office, the Columbia VP features IBM-PC compatibility at an affordable price.

So if you're looking for your first IBM-PC compatible computer, or are adding more computers to your office, the Columbia VP is the perfect choice — both affordable and geared to go.

1. 9 inch screen with impressive graphics.
2. Two high-capacity floppy disk drives.
3. Standard IBM-PC keyboard to match all IBM-PC software documentation.

COLUMBIA MPC-VP PORTABLE 1600-VP SPECIFICATIONS

Processor:	8088 CPU 16-bit 4.77 MHz. Socket for 8087 numeric processor.
Memory:	EPROM 12K
	RAM 128K/256K (Piggyback PCB) 250 ns.
Peripheral Interfaces:	Floppy disk controller supporting two ½-high double-sided, double-density floppy disk drives.
	ASYNC serial interface RS-232, 110 to 19, 200 baud.
	Parallel printer port — Centronics compatible.
	Keyboard interface IBM-PC compatible.
	Display interface:
	Graphics mode: 640 x 200 pixels monochrome
	320 x 200 pixels monochrome
	Text Mode: 80 x 25 characters
	40 x 25 characters
	DMA controller-4 channels, 838 ns/ Byte transfer rate/channel.
	Eight level priority interrupt controller.
	One IBM-PC compatible expansion slot.

SYSTEM FEATURES:

Keyboard:	IBM-PC compatible.
CRT:	Green or amber phosphor, 9" diagonal, non-glare.
Mass Storage:	Two half-height 5¼" floppy disk drives. 320K bytes per drive.
Physical:	Size: 18" x 16" x 8" with cover. 18" x 14" x 8" in operation.
	Weight: 32 lbs.
	Power consumption: 100 watts, 110/220 VAC, 50/60 Hz.
Service:	Bell & Howell Service Company, nationwide.
	Software support from Perfect Software.

The Columbia MPC: IBM-PC and industry compatibility with lasting value

A fresh approach to personal, professional computing.

The Columbia MPC gives you every advantage of the IBM-PC, plus more. Because Columbia is the most compatible line of computers in the industry—hardware to hardware and software to software. It's compatible with software produced for the IBM-PC, plus dozens of other personal computers. That means the Columbia MPC gives you more than the IBM-PC, while costing you less!

Our standard packages gives you what others charge extra for. The Columbia MPC includes a 16-bit 8088 processor. 128K RAM with parity (up to 1 megabyte optional). Two RS-232 serial ports so you can connect to modems and printing devices. One Centronics printer interface (the IBM-PC standard printer interface). A DMA hard disk controller that simplifies adding hard disks. Eight levels of interrupts, dual floppy disk drives with 640K bytes storage and eight IBM-PC compatible expansion slots.

The Columbia MPC is a computer with a future.

Your new Columbia MPC handles today's toughest business and professional applications. And, when you add any of the hundreds of IBM-PC compatible products, including software, boards, multiprocessors, communication interfaces and peripherals, the Columbia MPC can handle the toughest business assignments of tomorrow.
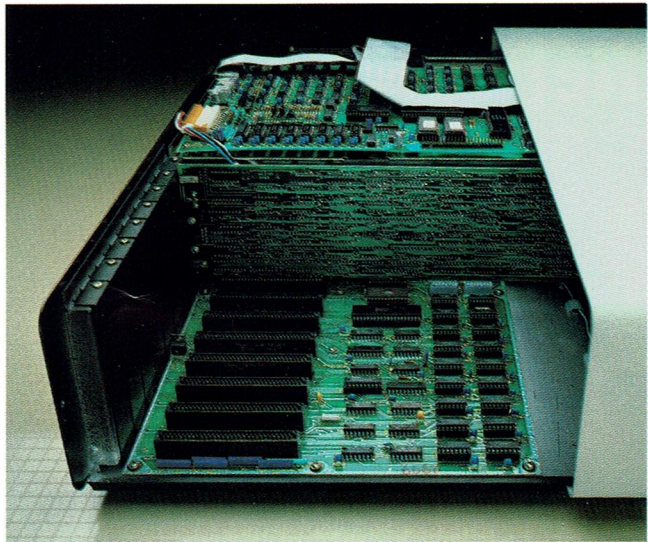
The Columbia MPC with hard disk.

The Columbia MPC with 12MB hard disk adds speed and high capacity storage for professional applications and large data files. A great time-saver where all your software can be on-line.

Buy Columbia MPC's for the entire office.

You get the best value from Columbia when you buy more than one. Take immediate advantage of Columbia's multi-user/networking capabilities. So no matter how fast your business grows, you'll have a computer system that won't slow you down.

Across the board value.

Bring the Columbia MPC to your office and put it right to work. Or, take a break, and try one of the fun new IBM fast-action video games and have some fun.

1. Color graphic capability.
2. Two high-capacity disk drives.
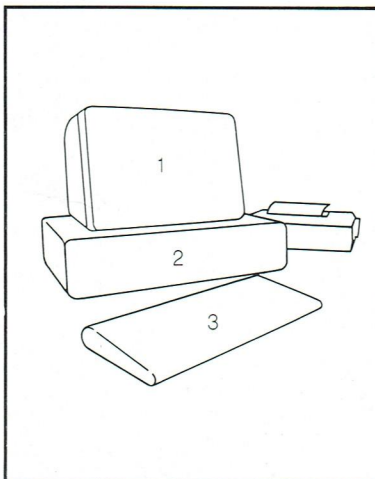**3.** IBM-PC standard keyboard.

The Columbia MPC features eight expansion slots for communications, additional memory, color graphics, special applications and all IBM-PC compatible expansion boards.

**MULTI-PERSONAL™ COMPUTERS
1600-1 (DUAL FLOPPY) AND 1600-4 (HARD DISK)
SPECIFICATIONS**

Processor:	8088 CPU 16-bit 4.77 MHz. Socket for 8087 numeric processor.
Memory:	EPROM 12K
	RAM 128K to 1MB 250 ns.
Peripheral Interfaces:	Floppy disk controller supporting two double-sided, double-density floppy disk drives (1600-1) or 12MB hard disk (1600-4)
	Two ASYNC serial interfaces RS-232, 110 to 19, 200 baud.
	Parallel printer port—Centronics compatible.
	Keyboard interface IBM-PC compatible.
	Display interface:
	Graphics mode: 640 x 200 monochrome.
	320 x 200 monochrome or color.
	Text Mode: 16 colors
	80 x 25 characters
	40 x 25 characters
	DMA controller-4 channels, 838 ns/ Byte transfer rate/channel.
	Eight level priority interrupt controller.
	Eight IBM-PC compatible expansion slots.

SYSTEM FEATURES:

Keyboard:	IBM-PC compatible.
Mass Storage:	Two 5¼" floppy disk drives. 320K bytes per drive or One 5¼" floppy disk drive 320K, and one 12MB hard disk drive.
Physical:	Size: 22.5" x 15" x 5".
	Weight: 25 lbs.
	Power consumption: 100 watts, 110/220 VAC, 50/60 Hz.
Service:	Bell & Howell Service Company, nationwide.
	Software support from Perfect Software.

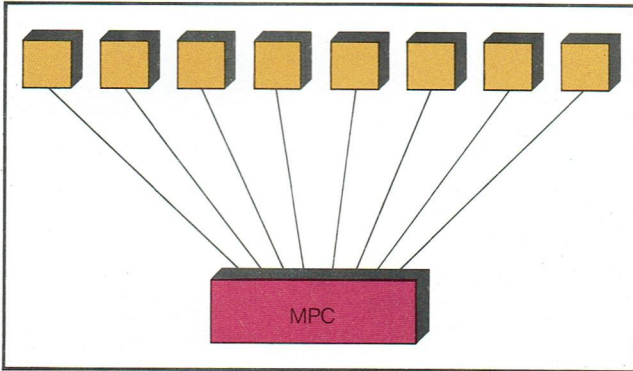# Columbia MPC Multi-User and Networking capabilities

The Columbia MPC in a multi-user capacity.

As your business expands, Columbia computers can expand with you. You can begin your investment with a single terminal and add up to seven more. This multi-user ability keeps the cost per user low—giving your business room to grow.

The economic multi-user configuration for the Columbia MPC.
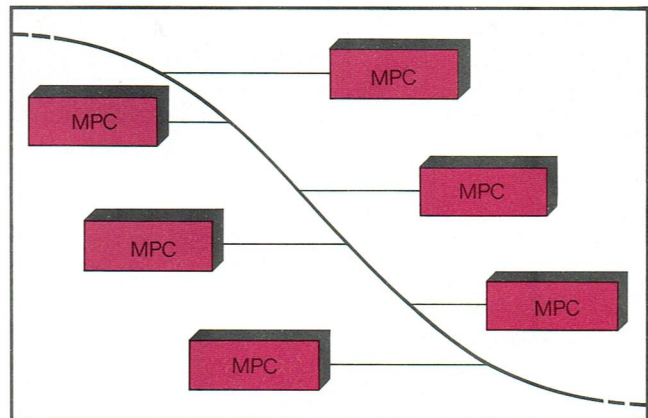
The Columbia MPC in a networking capacity.

What's more, with Columbia MPC's and VP's in a network configuration, your entire office can be completely integrated with full power computers. You and your staff will have immediate access to files, applications software and other important data at the touch of a button. So business can become more efficient, more productive, and more profitable.
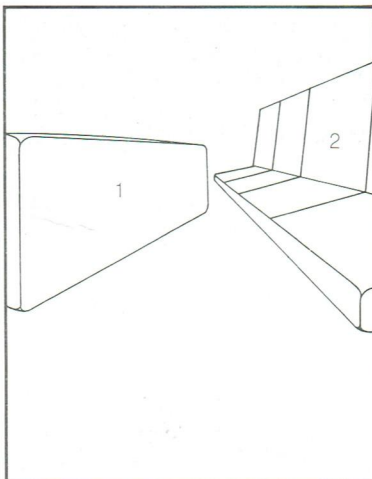
A total communications environment.

Communications technology has become central to office automation and planning. With the Columbia MPC you're prepared for today's working environment, and for changes in communications technology. When IBM-PC network protocols are announced you can integrate them with your Columbia. Plus, you can utilize other manufacturer's communications equipment and software. This gives you the capacity for general-purpose local area networking and gateway communication to mainframes or public networks.

You'll be able to tap into disk file information, time sharing services, newswires, stock reports, banking systems, and other data bases to obtain, manage, send and receive information important to business.

The Columbia gives you the expansion you need. And freedom of choice. So whatever the future holds, you can count on Columbia's high performance, value and compatibility to pull you through.

The Columbia MPC supports local area networking for high performance information systems.

1. The Columbia MPC master station.
2. Additional workstations in multi-user configurations.

Columbia expansion products

The Columbia expansion chassis provides high capacity storage.

Columbia hard disk expansion chassis.

For added capacity to combine work stations, expand storage, configure printers, color displays or other peripherals, Columbia offers the MPC hard disk expansion chassis. Featured are one or two 12 megabyte Winchester hard disks for up to 24 megabytes, plus dual floppy disk drives.

Columbia expansion boards.

Personalize your Columbia computers with optional boards for modem communications, color

Columbia expansion boards allow you to personalize your VP or MPC for communications, memory expansion, color graphics or other special applications.

graphics, memory expansion or other special applications as your needs grow.

To do this, Columbia offers three main boards:
☐ 128/256K x 9 RAM board.
☐ Dual serial board.
☐ Color graphics board.

Memory boards.

The 128/256K x 9 RAM board is a dynamic expansion board that contains parity checking. It's configured to start anywhere within the 1 megabyte memory range in 64K byte increments and is capable of being directly addressed by the 8088 processor located on the MPC or VP host board.

Multiple boards may be used to achieve a desired amount of memory in excess of 256K up to 1 megabyte.

The RAM board contains a personality module that only allows the memory on that board to be accessed and prevent "holes" in the memory map.

Dual serial board.

Our dual serial board controller is a dual-channel, multi-protocol serial controller designed to meet a wide variety of serial data communications requirements.
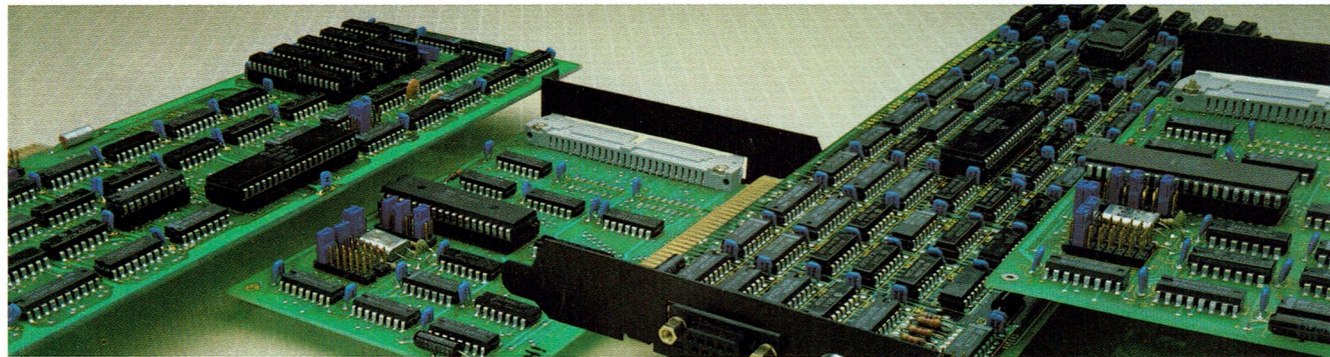
Its basic function is a serial to parallel and parallel to serial conversion capable of handling asynchronous and synchronous byte-oriented protocols such as IBM bisync and synchronous bit-oriented protocols such as HDLC and IBM SDLC.

The dual serial controller is capable of generating and checking CRC codes in any synchronous mode and can be programmed to check data integrity in several different modes. It also has facilities for modem control in both channels.

In addition, the dual serial controller features two independent serial channels; four independent DMA channels; programmable interrupt vectors and interrupt priorities; modem control signals; baud rates ranging from 300 to 38.4K baud, selection of interrupt and DMA or polling modes of operation.

Video controller board.

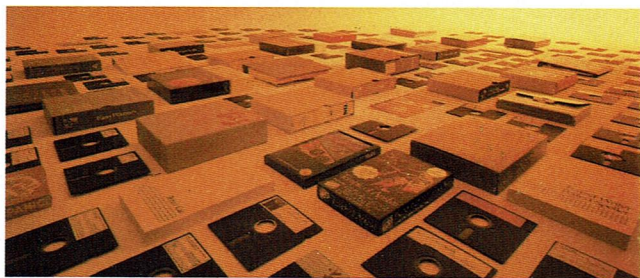The Columbia CRT Controller board provides you with advanced color graphics. This controller features both RGB color and composite monochrome video output. Display attributes include both 640/200 in monochrome and 320/200 pixels in monochrome or full color, with 80 x 25 or 40 x 25 character display.

Amdek monochrome monitor.

Columbia also makes available the Amdek monochrome monitor featuring high resolution and superb performance.

Software for the Columbia

A world of software is available for the Columbia including all IBM-PC compatible software, plus seven other operating systems—MS-DOS,® CP/M-80,® CP/M-86,® MP/M-86,® and (available soon) Concurrent CP/M-86,® Oasis-16,® and XENIX.™

No other personal computer starts like a Columbia.

That's because Columbia computers come with thousands of dollars worth of <u>free</u> software. And every Columbia is compatible with software made for the IBM-PC and other popular computers. So now it's easy to make short work of long problems. Problems like word processing, financial fore-casting, planning, graphics and data manipulation. Not to mention number crunching, file searching and fact-finding. And with our full color game software, you can make short work of invading aliens, too.

For business, you get software like **Perfect Calc,**™ an "electronic worksheet" that replaces papers, pencils and calculators. You can display answers to involved problems in just seconds. Problems that would have taken hours to solve by hand. And, you get seven files on-line. With multiple-file, split screen features and 17 different applications packages built in.

With **Perfect Writer**™ you have the software that puts your ideas into print faster and better than ever before. A few keystrokes let you correct typos, add or delete words, lines or paragraphs. Edit from up to seven files on-line. Relocate entire blocks of copy from file-to-file. Underline. Center. Justify. Indent. Change margins. Then print. And because all formats are automatic, you'll have a flawless finished document in minutes.

And **Perfect Speller**™ helps you with those documents because a 50,000 word memory makes corrections simple. As an in-context spelling checker, Perfect Speller™ lets you make changes without starting over. So there's no retyping. Or correction fluids. And that results in error-free manuscripts.

Perfect Filer™ helps you manage facts, figures, files and a myriad of information in a simple, easy to understand manner. It creates a working data resource to support financial projections, accounting functions, mass mailings, sales activity tracking, and more.

Fast Graphs™ helps you make sense of all your data. By giving you a variety of graphs: including bar graphs, pie graphs and easy-to-read line graphs, it helps you analyze information as quickly as possible. And it's integrated with your files from Perfect Calc™ and Perfect Filer.™

Home Accountant Plus™ can help with house-hold chores, too. Like budgets, keeping track of checkbooks, credit card expenses and other major expenditures. It can even flag major transactions for tax purposes. In fact Home Accountant Plus™ is the most thorough and powerful home financing package available.
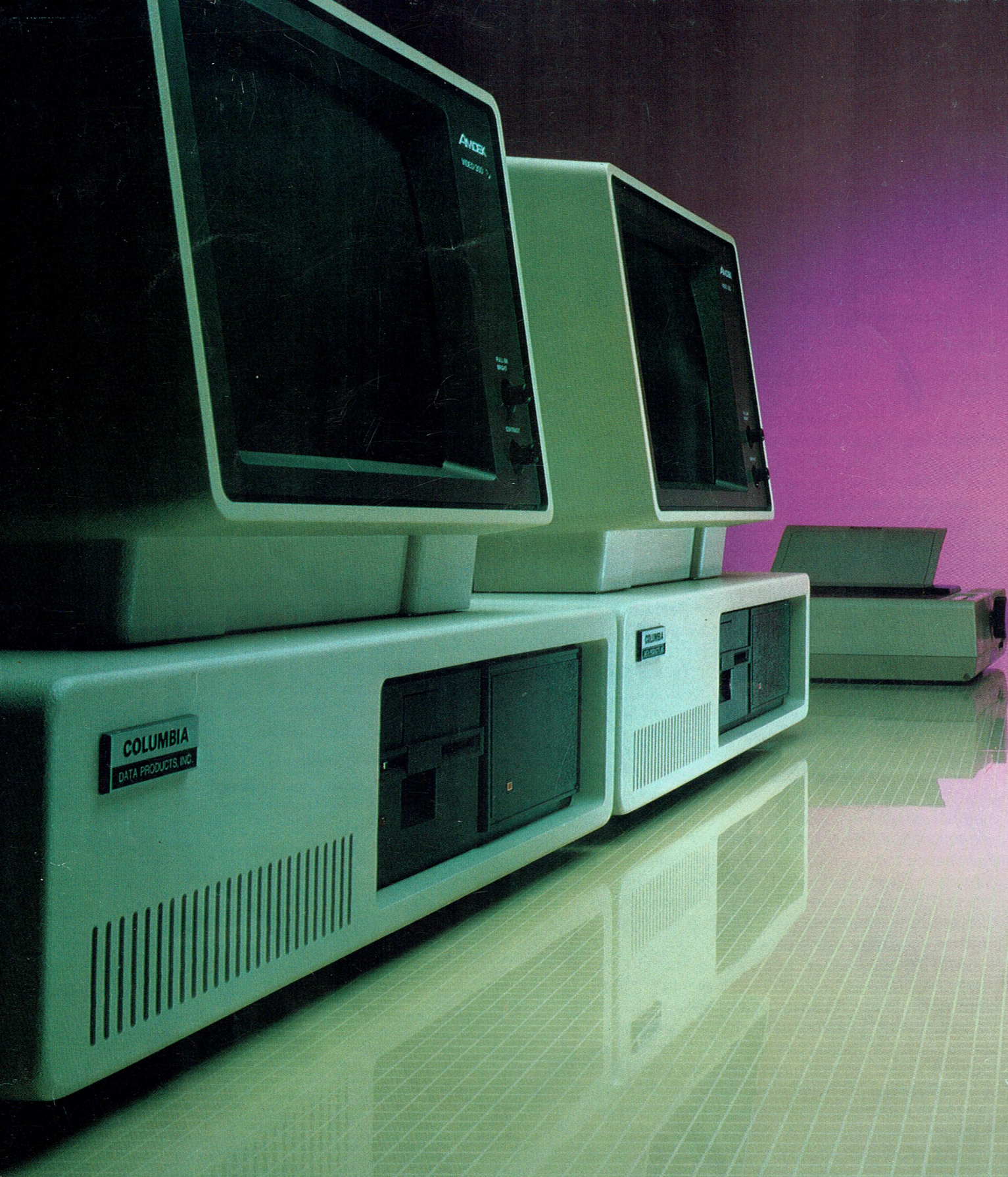
Take a look at all you get:
- ☐ MS-DOS® (Operating System) with RAM disk.
- ☐ CP/M-86 (Operating System)
- ☐ BASICA (With IBM-PC compatible color graphics).
- ☐ Macro Assembler.
- ☐ Asynchronous Communications Support.
- ☐ Perfect Writer™ (Word processor).
- ☐ Perfect Speller™ (Spelling checker).
- ☐ Perfect Calc™ (Electronic spreadsheet).
- ☐ Perfect Filer™ (Data base manager).
- ☐ Fast Graphs™ (Color graphics report generator).
- ☐ Home Accountant Plus™ (Personal accounting).
- ☐ Space Commanders (Color graphics action game).
- ☐ Diagnostics (Troubleshooting Guide package).
- ☐ Columbia Tutor (MPC tutorial package).
- ☐ Software Customer Support Hotline.

All the software listed below . . . and much more . . . runs on the Columbia MPC.

Perfect Writer	VISI Schedule	EZ Label +	Adventure in Serenia
Perfect Speller	dBASE II	EDIX	
Perfect Calc	TIM III	Personal Tax Planner	Perfect Software Tutor
Perfect Filer	Condor III-20		Star Cross
Fast Graphs	Visifile	Accounts Receivable	Viper
Home Accountant Plus	Superfile	Accounts Payable	Death Station
Asynchronous Communications	The Sort		PC-MAN
	Visitrend/Plot	General Ledger	CP/M 80
Space Commanders	The Graphics Generator	Financial Calculator	Amortizations and Depreciation
Columbia Tutor	Video Graph Plus	Flight Simulator	
Diagnostics	Wordstar	Decathalon	Typing Tutor
BASICA (GW BASIC)	Spellstar	Adventure	IBM Demo
MACRO Assembler	Mailmerge	Zork I/II/III	MS-FORTRAN 86
	Easywriter II (64K)	Deadline	MS-FORTRAN 87
MS-DOS	Volkswriter	Temple of APSHAI	MS-PASCAL 86
CP/M 86	SuperWriter	Space Strike	MS-PASCAL 87
Visicalc	The Benchmark- Mailing List	ZUTU	BASIC COMPILER
Supercalc	Peachtext	Snack Attack	COBOL
Context MBA		Air Traffic Controller	C-COMPILER
Lotus 1-2-3	Spelling Proofreader	Apple Panic	P-SYSTEM
Easy Planner	Mailing List	Executive Suite	Fact Track
Peachcalc	Type Faces	Floppy Frenzy	COHERENT
Statistics			

All software printed above in bold face type is included in the price of all Columbia MPC models. It's FREE software valued in the thousands of dollars . . . *only* from Columbia Data.

COLUMBIA
DATA PRODUCTS, INC.