

- Update I -

4 2 0 X S E R I E S

S A L E S I N T R O D U C T I O N P A C K A G E

PURPOSE

**This is the First Update to the 420X Sales Introduction Package
Provided by Graphic Terminals Division Marketing on
November 4, 1986**

**December 8, 1986
Graphics Terminals Division Marketing**

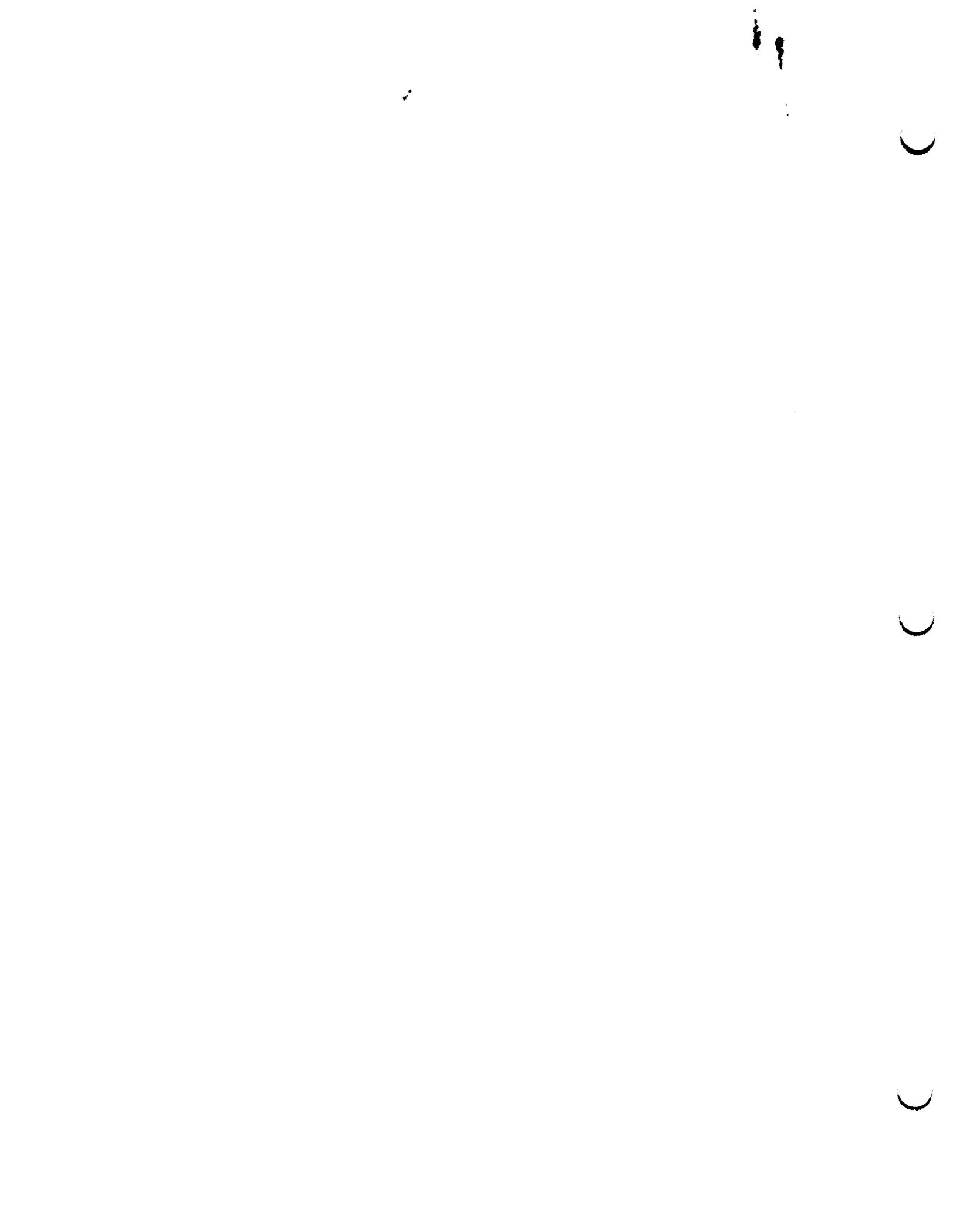


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I. THE PRODUCTS

SF4208:

Overview:

The SF4208 is aimed at extending the price/performance leadership of the new 4200 Series into manufacturing environments. We have already gathered some success with the 410X Series Family in Manufacturing Applications; however, now we are going to launch a concerted effort to establish Tektronix as a presence in manufacturing environments. We do this by offering a range of products to fit the specific application and environmental requirements of the user. The range is comprised of:

Standard 420X Series Terminal:

I am sure most of you have had at least some success in selling Standard 410X Series Products into manufacturing environments. This will undoubtedly continue with the new 420X Series, as this is the lowest-cost solution for modern plants or clean applications such as electronic assembly.

Standard 420X (or 4109A/4111) With a Sealed Keyboard:

This is the first level of Custom Shop Floor Graphics. For only \$200 additional, a terminal with a sealed keyboard will fit into those environments that are relatively clean, but require some sealing of the keyboard (where the bulk of the dirt ends up due to the interaction with the user). These applications are dirtier assembly, or light machining.

SF4208:

This is the bulk of the requirements. Most customers will find this the most economical solution as it is only \$500 more than the standard 4208, and includes the sealed keyboard. For heavy machining and process control/monitoring, this is the price/performance leader.



PRODUCT DESCRIPTION:

Standard 4208 Electronics and Firmware:

- Completely compatible with 4208.
- Software written for 4208 will work with SF4208.
- Takes advantage of 4208 packaging.

Sealed Keyboard:

- Full travel
- Compatible with standard keyboard.
- Both CX and Standard styles (and VT200 after standard keyboard is available).
- No option for mouse.
- Sealed for liquids, dust, chips.
- Also available as option to 4205, 4207, 4208, 4109A, CX4109A, 4111, and CX4111.

New Sheet Metal Enclosure:

- Rugged exterior, with better chemical resistance.
- Drip protected
- Molded plastic front panel

Filtered Cooling Air:

- Low cost, replaceable filter.
- Higher speed fan
- Positive pressurized box to help keep dust out.

Thermal Protection:

- Overheat sensor in case terminal gets too hot.
- Turns on a LED in Bezel.
- Indicates filter needs changing.
- Thermal shut down to protect terminal (if filter isn't changed).
- Usually won't shut down until several hours after overheat sensor lights up.
- Reset button on back of terminal.

CRT Shield:

- Replaceable shield in front of CRT.
- Anti-glare
- Anti-static
- Impact and scratch resistant



PRODUCT DESCRIPTION (Continued)

Higher Operating Environmentals:

- Operating temperature to 50^o C
- Operating humidity to 95%
- Needed for factory environments

In addition, not part of our initial announcements, but part of our follow-on plans are an optional touch screen and an optional NEMA-12 Rackmount Kit (for extreme environmental conditions) for OEM's or placement in a NEMA-12 cabinet (which we may supply, if needed).

The sealed keyboard price is an additional \$200 to standard product. (e.g. A 4205 with a sealed keyboard is \$2695.) The SF4208 price includes the sealed keyboard.

Price:

SF4208 price is \$5495 (End-User quantity one, U.S.).

NEMA-12¹ Rackmounted SF4208:

For severe environments, the SF4208 will have a NEMA-12 Option Rackmount. Details of this will be in a forthcoming MSR. With the bulk of a plant using SF4208s, only those particular bad spots need use this expensive option. For systems integrators, we will sell this in rackmount kit only, but will have a NEMA-12 cabinet available to put it into for a complete enclosure.

By offering such a broad range of environmentalized products, we will be assured of meeting the specific requirements of the customer. One frequent question is, why the SF4208, instead of the 4205 or 4207. The reason is that the packaging of the 4208 was designed so it could easily be altered to fit into manufacturing environments. For example . . . it has no top vents, and so when used with a sealed keyboard, is good price/performance for some environments. The 4205 and 4207 packaging was designed for high volume and low cost, and so would have been much more than only \$500 to alter (and also would have taken months longer to do). Also, the 4208 has more standard memory and video out, which will help out in shop environments.

¹NEMA-12 refers to a standard (National Equipment Manufacturer's Association) that pertains to the environmental protection of an electronics enclosure. It has many different levels, but NEMA-12 means dust-tight with no external cooling air and is by far the most common standard in manufacturing environments.



APPLICATIONS:

The typical purchaser of these products is a manufacturing site doing machining or assembly work, or a process control/monitoring plant. Typical of the needs of these customers is a centralized data base, and the need to increase information flow throughout the factory. Especially in America, as plants capacity grew, specific bottleneck operations were automated to meet excess demands. However, this led to an uncoordinated Computer-Integrated Manufacturing (CIM) Strategy, and to "islands of automation". Our terminals fit in as the window to the central database as computerized manufacturers start to implement a CIM process to their manufacturing. The specific goals that manufacturers have are:

- reduction of shop-floor paperwork,
- increased flexibility and productivity;
- quicker time-to-market,

plus the standard "higher quality for less cost". Some specific applications are:

Mechanical Drawing Preview:

The first step to eliminate paperwork is to eliminate blue prints. By putting them on-line, drawing control and revision is made much simpler. Our key features here are true local zoom/pan and fast graphics throughput. With the SF4208, the terminal can be right at the machine (where the machinist is).

NC Tool Paths:

After a part is designed in engineering, a drawing is made from which the part is created. The next step in Computer-Aided Manufacturing (CAM) is to eliminate the drawing. This is done both by having the machinist work directly from the engineering database, and by letting him or a Manufacturing Engineer create Numeric Control (NC) tool paths directly from the engineering database. Shops that do this have truly knocked down "the wall" between engineering and manufacturing. Any shop doing NC cutting with geometry coming from a central database is a natural for this, as now editing is possible at the machine site. Our graphics capabilities are key here, along with compatibility with Engineering Software.



APPLICATIONS (Continued)

Assembly or Machining Instructions:

Similar to mechanical drawing preview, most shops have thick process books describing how to assemble or machine a part (also called process plans). By putting these on-line, companies can be assured of eliminating out-of-date plans, and can easily switch parts and reissue the plans for the next part. Color is key here, as it is used to highlight and prioritize data.

Process Control/Monitoring:

We have had some success penetrating this marketplace already, but with a custom-designed terminal, the fit will be easier. These industries are typically oil, chemical, or paper pulp. The ability to be rackmounted will definitely help out here.

Manufacturing Engineer/Supervisor:

The Manufacturing Engineer is the critical, but often overlooked, link between Engineering and Manufacturing. They need to be able to use an engineering quality device out in a manufacturing environment. A shop supervisor should be able to use the same tools their office counter-parts can. Our terminals are the information link that will help bind together a plant, or manufacturing cell.

Typical of these and other shop floor applications is they use data, rather than create data, and are in non-office environments.

SOLUTION PACKAGES:

Integrated CAM with ANVIL-5000:

This can be used either to create tool paths in Manufacturing or as a CAD/CAM package to link Manufacturing to Engineering (run it out in the shop). There is no doubt this is one of the premier CAD/CAM packages today.

Mechanical Drawing Preview:

Using TekniCAD CADDPORT, an IGES Format File is converted to TekniCAD Format, which then can be displayed on the screen using TekPlot. The competition here is Baseview, by DEC, which uses VT241's with no local zoom and pan and much worse vertical resolution (which is needed to read dimensions and text).



TekniCAD

With its NC geometry output and integrated Bill-of-Materials, TekniCAD is becoming a useful tool for Manufacturing.

Other software is being pursued, and will be added as available. One advantage we have is that there is no set standard for shop floor graphics today, so by establishing a market presence early in manufacturing graphics applications (this area is fairly new), we can help drive software towards Tektronix. There is no clear-cut winner for graphics out in the shop floor, yet.

Schedule:

- Announced - November, 10, 1986
- Demo units - January, 1987
- Shipments - April, 1987

(For complete details, see your MSR of November 10, 1986, #GTD-004).



VT200 FEATURES:

Availability - May, 1987:

Order in May, when available, Option VT. Option VT replaces the Standard 420X Keyboard with our 420X VT Compatible Keyboard. This is a **NO CHARGE OPTION**. At this time, all 420X firmware will have the VT200 alphanumeric features. If the customer wants to fully utilize the VT200 features and have a VT-Compatible Keyboard, they should order Option VT.

Current Orders:

U.S.: Order S8, 420X Firmware Subscription Service for \$300, bundled with Option VT (N/C). In May, Service Marketing will send the customer the new firmware ROMs with VT200 features, a manual update, and the VT200 Compatible Keyboard.

International: Order F-Kit 4200FVT for \$450. This will be on PAL in January. 4200FVT contains new firmware ROMs, a manual update, and the VT200 Compatible Keyboard to be delivered in May, 1987.

Beta Test:

Beta testing will take place in March and April, 1987. This will occur at selected customer sites.

Update on 4200 VT200 Compatible Keyboard:

Our 4200 VT-Compatible Keyboard will be the same drawing as was sent out in your first 420X Introduction Packet Mailing. It will **not** be the VAXmate Keyboard.



Added features with VT200:

- VT200 alphanumerics is VT100 with extentions based on usage of the 8-bit command code. The **SELECT CODE** command now will include escape sequences to switch to ANSI mode and initialize the terminal for compatibility with VT200 terminals and with 8-bit ASCII. The setup mode version of this command will now have two parameters, e.g. "Code ANSI VT200" or "Code ANSI VT100".
- When the VT200-Compatible Keyboard is plugged in, the user can type characters of the 8-bit DEC Multinational Character Set, the 8-bit ASCII Character Set, or the 7-bit National Character Set.

VT200 Keyboard Photos:

If you need a photo of the 420X VT200 Compatible Keyboard to show a customer or prospect, please give me (Julie Nelson) a call at 685-3852, and I will supply you with one.

CX and CX GDDM Features:

Summary of CX differences between 420X and 410X:

- Data Stream Processing is now done at the terminal instead of at the IBM 3274 Control Unit.
- CX420X is plug compatible with IBM 3179G Graphics Terminal (with GDDM Firmware available May, 1987).
- 420X are capable of displaying up to five IBM host sessions (virtual terminals) and one ASCII session.
- Graphics throughput increases by up to 100% depending on controller type.

New GDDM Features:

CX420X Terminal will be plug compatible with IBM 3179G graphics. This provides compatibility with existing GDDM graphics applications. Full compatibility is provided with the exception that hard copy is provided by copiers or other Tek supported devices rather than the IBM plotters.



420X Firmware Levels and Contents:

<u>VERSION</u>	<u>PRODUCT</u>	<u>RELEASE DATE</u>	<u>CONTENTS</u>
10.0	4208	06/20/86	<ul style="list-style-type: none">- First release for 4208.- No CX support.
10.1	4208	08/22/86	<ul style="list-style-type: none">- Second release for 4208.- Support for CX in CUT Mode.- Support for CX in DFT Mode available for Non-SNA environments only (BSC and channel-attached).
10.2	4207	10/10/86	<ul style="list-style-type: none">- First release for 4207.- CX supported as in V 10.1.- Mousemap (mouse function as joydisk) added.- Mouse support for ICI (Interactive Color Interface) added.- 4510A support. SPRs outstanding on 4107A support of 4510A fixed. Not all 4510A functions are supported, such as multiple buffers in the 4510A to hook up multiple terminals.
10.3	4205	10/31/86	<ul style="list-style-type: none">- First release for 4205.- Same features as V 10.2 for 4207, except 4510A support.
10.6	420Xs	Jan. '87	<ul style="list-style-type: none">- Maintenance release for 420X Series.- Full DFT support will be available for both SNA and Non-SNA environments.- IBM 3174 and Workstation Adapter Interface will be supported.
11.0	420Xs	May '87	<ul style="list-style-type: none">- Second major release for 420X Series.- Will include DEC VT220 alphanumerics and IBM 3179G graphics compatibility.

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OTHER 420X PRODUCT INFORMATION:

CX F-Kits:

- There are 040 Service Kits available for adding CX features to a 420X. The kit number is 040-1218-02. This kit is for the 4205, 4207, or 4208, and contains CX Board; CX Keyboard; manuals.

4208 Rackmounting:

- There is **NO** 4208 Rackmount Kit. The 4208 is easier to rackmount because its external cabinet can be completely removed and mounting holes are incorporated in its internal enclosure. (See the section enclosed on Third Party Peripherals for availability of a 420X Rack.)

Future 4209:

This is **not** an announced product today. **Announcement date is January 12, 1987.**

We are planning that 75% of 4109A orders will convert to 4209s. Please Telex Joel Spinhirne of any orders that will not convert.

In this conversion process, we will be giving up \$2K, with the price reduction from \$8995 for the 4109A to \$6995 for the 4209.

For all of us to win by keeping our revenue stream up, let's try to give the customer an added product for their \$8995 order, (like a 4696 and Option N8) instead of giving up \$2K.

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II. 420X COMPETITION

DEC VAXMATE (Announced September 1, 1986)

POSITIONING:

The VAXmate is positioned to compete with PCs in a VAX environment. DEC wants it to be the "one window" to local and host data bases in a business environment. It assumes DECnet resources.

WEAKNESSES:

- Poor VT240 graphics resolution and aspect ratio.
- Monochrome only
- Expensive
- Limited support of Tek graphics (4010/4014 only) via VT240 emulation.

STRENGTHS:

- Direct DECnet networking and Ethernet support.
- IBM PC AT compatible
- MS windows
- ReGIS support through VT240 emulation.
- Comes with one year warranty in base price.

SPECS:

Resolution: (All in Monochrome)

800 x 240 in DEC mode
640 x 400 in MS windows mode
320/640 x 200 in IBM graphics mode (CGA)



Other:

80286 processor; 1MB RAM, expandable to 3MB; 64K bytes of ROM code for BIOS; one 5.25 inch diskette drive; Thinwire Ethernet; one serial printer port; one ASYNC. command port; revised VT200 keyboard (as our new VT Keyboard); three-button mouse; 14-inch green or amber monochrome monitor; MS-DOS; MS windows (for spreadsheet, graphics, word processing).

Pricing:

Base Price	\$4045
Options:	
Software License	\$ 250/300
Integral Modem	\$ 995
2 MB Memory	\$1600
80287 Coprocessor	\$ 500
Expansion Box with 20 MB Hard Disk	\$1945
LN03 Printer Cartridge	\$ 325
	<hr/>
TOTAL =	\$9710

The VAXmate is a DEC answer to the IBM PC. It is focused at VAX-based office/business environments and leverages DEC's networking strategy.

Graphics are provided by three modes: VT240 emulation, IBM CGA emulation, or MS windows. MS windows has a MS-Paint Graphics Program that is very easy and "MacIntosh-like" for novice users. (It is similar to MacPaint). Host-based graphics support is still in the VT240 emulation mode. The limitations found in running graphics in the VT240 mode still exist.

Hard copy choices are limited. No RS-232 direct from the VAXmate is provided. This limits tablet support.

The VAXmate is a competitor only to the extent that there is a VT200 emulator available that includes ReGIS support.

ReGIS UPDATE:

In the December 1st issue of Digital News, (page 15) an article appeared titled "DEC Says ReGIS is Strong as Ever". What it really looks like DEC is going to do is support ReGIS by a host emulation program. DEC is **not** planning to support ReGIS on their workstations.



VISUAL TECHNOLOGY

Overview:

Visual Technology (based in Lowell, MA) introduced at Comdex the week of November 10th, two new color graphics terminals. It's "4200" is claimed to emulate our 4208, and its 4300 is said to emulate our 4107. Other low-cost monochrome graphic terminals were also announced.

Monochrome Series:

	<u>601</u>	<u>602</u>	<u>603</u>	<u>604</u>	<u>605</u>
Price	\$695	\$725	\$1095	\$725	\$725
Resolution	1056 x 400 Non-interlaced				
	1056 x 800 Interlaced				
Screen Size	14"	14"	14"	14"	14"
Colors	Mono	Mono	Mono	Mono	Mono
Graphics	← Tek 4010/4014/REGIS →				
Zoom and Pan	No	No	No	No	No
DEC Compatibility	VT100	VT100	VT220	VT220	VT220
Display Processor	M68000	M68000	M68000	M68000	M68000
Peripherals	← Laser Printers, Mouse →				

All members of the Monochrome Series are white-page-phosphor for page layout applications.

These products are aimed at competing with vendors such as Wyse, Qume, DEC and Graphon. They are not serious, sophisticated color graphic competitors. They are aimed at page layout applications.



Color Series:

(Currently, I have limited information here. I am attempting to get more.)

	<u>4200</u>	<u>4300</u>
Price	\$2770 without Monitor	\$4495 without Monitor
Resolution	Probably 640 x 480	Probably 640 x 480
Screen Size	14"	14"
Colors	16	256
Graphics	"Emulates 4208"	"Emulates 4107"
Zoom and Pan	Yes (Claimed)	Yes (Claimed - may not be true, local zoom and pan.)
DEC Compatibility	Unknown	Unknown
Memory	512KB, Expandable to <u>1MB</u>	512KB, Expandable to <u>1MB</u>
Other		4-Card Slots for OEMs (for sale to OEMs only)
Monitor Price	+ \$525	+ \$525
GKS Option	+ \$200	+ \$200

Company:

Visual has had financial problems, and has been on the edge of bankruptcy. It has not introduced a product in fifteen months. "We're still operating in the red" admitted John Bruni, Visual's VP of Marketing and Sales, in the November 10th issue of Digital Review.

Positioning:

These products are aimed right at our 420X Series. Visual thinks it can compete with us because they have "plug-to-plug compatibility". As of yet, every 410X-clone has not been plug-to-plug compatible.



How We Win:

We have an experienced and knowledgeable direct Sales Force. Visual sells only through distributors. The 4200 and 4300 are top of their line. No 19". No upward migration path. We have a wide array of supporting products, copiers, and software.

Weaknesses:

- Small company in financial trouble.
- No direct Sales Organization.

Strengths:

- None know as of yet.
- 420X and 430X said to be shipping now.



III. 420X MARCOM

Additional Ad Placements:

In addition to Ad Placements as scheduled in the first November 420X Introduction Binder Mailing, the 420X Two-Page Ad will appear in Computer Graphics World in January, February, and March.

420X Ad Award:

Our 420X Two-Page Ad has been nominated for a 1987 Digital Review Target Award. (See Digital Review, November 10, 1986, pages 24 and 25.)

Direct Mail:

Enclosed are four sample direct mail letters for your use in direct mail campaigns. The four-page brochure, with a copy of our Ad (part number 11A-7031), is the intended direct mail literature piece.

Eight-Page Brochure Forthcoming:

We are actively working on an eight-page brochure for the 420X Series. This will be available in January, 1987. Its' focus is on introducing the 420X series and the benefits of a Tek Graphics Solution to a DP Manager level. The 4209 will be included in this brochure.

TEKniques Mailing Planned for January:

A direct mail campaign of the 420X Four-Page Direct Mail Brochure is planned for January, 1987. This will be directed to the TEKniques list.

New 420X Press Articles:

Enclosed are copies of several new 420X Press Articles that were developed as a result of our aggressive 420X Press Tour.

Hard Copy Cover Article Reprints:

These have been ordered from Hardcopy Magazine. We expect them soon and will ship you your copies ASAP.

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IV. 420X PROGRAMS

Third Party Peripherals:

Rackmount: A 4205, 4207 and 4208 rack is available from Bay R&D, Inc. (See attached price sheet.)

Trackball: A 420X Compatible Trackball is available from Evergreen Systems International. This is the Diamond I Trackball (See attached price sheet.)

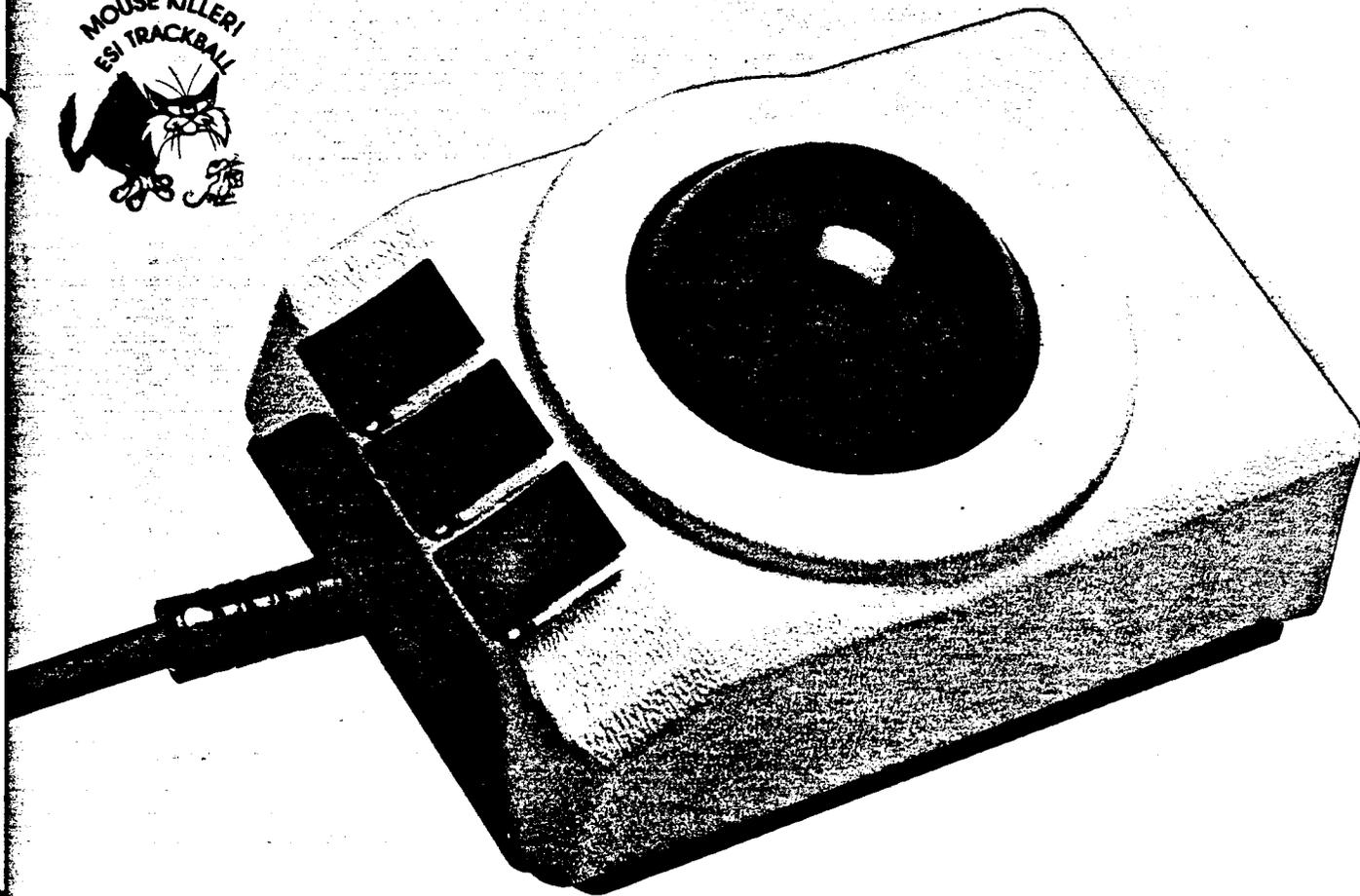
Demos:

The 420X demos shown at the IDG Marketing Conference are being converted to 6130s. They will be distributed to Field Sales Offices and U.S. RSCs in January, 1987. They'll be available in both 6130 and MicroVAX II versions.

NPEL:

The 420X Series is now on the NPEL (New Product Evaluation Lease) Program.





DIAMOND I TRACKBALL

The DIAMOND I TEK model of the DIAMOND Series is uniquely designed as a direct **plug-in** replacement for the "mouse" currently used with TEKTRONIX equipment.

- Compact, stand alone, put anywhere, use anywhere.
- Optical encoders, 2" ball, positive tactile and audible switches.
- Rugged mechanical incl. hardened shafts, shielded ball bearings.
- Designed for survivability by professionals for professionals.

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Price \$225.00 single unit

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Tektronix Intensifies Terminal Competition

By Wayne Howe

WILSONVILLE, Ore.—Firing another salvo in its battle to overcome competition from low-cost workstations and personal computers that perform like workstations, Tektronix continues to reduce prices and add features to its line of terminals.

Late last month, the company announced a direct memory access (DMA) interface for MicroVAX II computers that it said is faster and easier to install and allows as many as three or four terminals—depending on the application—to connect to a MicroVAX II and perform at workstation speed.

In addition, Tektronix last month gave its 4120-series terminals new life with a string of enhancements.

The DMA interface, slotted to work with the high-end Tektronix 4120, provides a high-speed data connection to the MicroVAX, which Tektronix said is useful for users with heavy CAD/CAM applications.

Unlike its predecessor, the new interface requires no software changes and no additional hardware purchases from DEC for use on the MicroVAX.

"We've had DMA before," said Morgan Howells, marketing manager for the company's Information Display Group, "but it took modifications to your software. This is easier to use because it comes with software drivers and can be used without changing the user's software."

Called the 4100F3F Option 10, the new interface costs about the same as the old one, Howells said. It allows single-path interactive communications at parallel DMA speeds between the 4120 and host. The company's older DMA interfaces use the parallel link only for block data transfers, employing an RS-232C standard interface line for interactive data.

The new DMA interface increases throughput in two ways, Tektronix said: First, it allows all data, from operating system interaction to bulk graphics data, to be transferred via the DMA link. Second, it eliminates the time that had been needed to switch between the RS-232C and DMA interfaces.

The DMA interface is for a single 4120 terminal. As many as three or four terminals, each with an interface, can run on a standard MicroVAX, Howells said.

"This system is for people doing heavy design work," Howells said. It would be especially valuable for 3-D graphics applications where the user needs high-speed interactive communication, he said.

The new system includes the DMA hardware, a DRV-11A interface card, internal cables and connectors for the MicroVAX, a software driver for the MicroVMS operating system and a parallel interface cable to connect the two systems.

The final result, Howells said, is workstation performance at a terminal price.

Meanwhile, Tektronix also has added features to the 4120 terminal itself. These include a binary command interpreter, extended memory addressability and new memory options, as well as new user-definable line widths, user-definable markers and VT100 extensions.

The binary command interpreter simplifies DMA by enabling host applications to send binary data rather than data in the encoded ASCII format.

The enhanced memory option consists of as many as three 2MB boards, a \$6,500 option that increases the previous capacity sevenfold.

The new varied line widths are useful in

such applications as cartography, architectural engineering and mechanical engineering. This feature saves the host program the work of emulating wide lines as multiple vectors drawn side by side.

User-created local markers, which remain a constant size during zooming operations, are often used to designate exact places on a map, such as the image of a tank or a ship, for example, to show an army or

naval installation.

The VT100 extension improves the system's alphanumeric capabilities, Howells explained, allowing it to offer better graphics and text compatibility.

These same 4120-series enhancements can be added to existing 4120 systems by installing the 4100F61 upgrade kit.

Earlier in October, Tektronix introduced a new series of 13-inch color graph-

ics terminals for the CAD market. The low-end 4205 sells for \$2,500 and the top-end 4208 sells for \$4,995.

Special features of the 4200 series include display graphics in 16 colors from a palette of 64 colors, an optional three-button mouse, downloadable custom character fonts and a two-speed joy disk. Eventually, the 4200 series could replace the 4100 series, according to Tektronix.

More information can be obtained by contacting Tektronix at P.O. Box 500, Beaverton, Ore. 97077, (503) 644-0161. ■



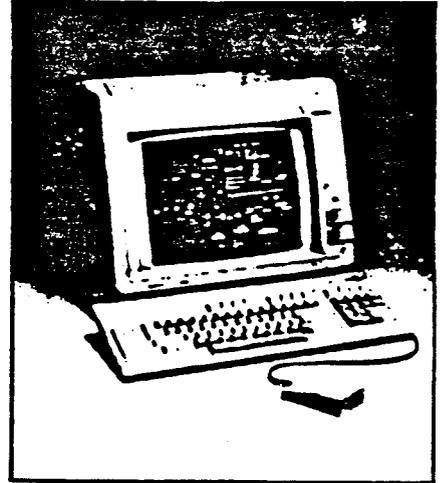
ELECTRONIC PRODUCTS
November 3, 1986

**Color graphics terminals
add performance, cut cost**

The 4200 series of intelligent color graphics terminals offers more features than its predecessor, the standard Tek 4107, yet prices begin at half as much.

The 4200 terminals perform local

graphics segmenting, true local zoom and pan, and multiple views, as well as displaying in 16 colors from a palette of 64. New features include a detachable keyboard with a two-speed joystick, an optional three-button mouse, downloadable custom characters, and copy spooling. The terminals are VT-100 compatible



with VT-220 compatibility on the way. In IBM 3270 environments, a CX option provides IBM 3179 alphanumeric emulation.

The 4205 terminal has a resolution of 480 x 360 pixels and provides entry-level access to local graphic capabilities. Both the 4207 and 4208 have resolutions of 640 x 480 pixels and support a tablet. The 4208 has additional features, such as more standard memory and video output. (4205, starting at \$2,495; 4207, \$3,995; 4208, \$4,995—available now.)

Tektronix, Inc., Beaverton, OR
Contact 800-225-5434;
in OR, 503-235-7207

see file 2000

CIRCLE 483

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Tektronix Debuts Cheaper Color Terminals

By Wayne Howe

WILSONVILLE, Ore.—Tektronix Inc. has introduced a new series of 13-inch color graphics terminals for the computer-aided design (CAD) market with an attractive price tag that may put a slice back into the user's budget pie.

In an aggressive move to capture a larger share of the scientific and technical engi-

neering application market, Tektronix has lopped more than 60 percent off the price of its entry-level VT100-compatible color graphics terminal with the introduction of the TEK 4205, the entry-level member of its new 4200 series.

The new 4205 doesn't just clobber the standard Tektronix TEK 4107 on price, the company said; it outperforms it as well. Priced at \$2,495, the 4205 is a full \$4,500

below the price of the 4107.

Donald E. Hershiser, program manager at Tektronix, said the improved price/performance ratio was due largely to more efficient systems integration and high-volume manufacturing techniques. This means an entry-level user can now access popular Tektronix features such as segments, pan and zoom at a much lower price, he said.

Industry observers, at first shocked by the price cut, later cooled to the news. They pointed out that with a 13-inch monitor and a screen resolution of 480 pixels by 360 pixels, the new terminal does not even match the performance of the IBM PC color display with an enhanced graphics adapter card. The discount price for an IBM color monitor with a 12-inch screen and a resolution of 640 pixels by 350 pixels is about \$1,200 with the graphics card.

Charles M. Foundyller, president of Daratech Inc., a Massachusetts CAD/CAM research group, said the new terminal was "too little too late" for Tektronix.

"It gives you roughly PC performance for people who need a Tektronix-type interface," Foundyller said. "To DEC users it's surely a convenience, but you'll be looking at pictures on your VAX that won't be any better than pictures on a PC."

At the next level in its 4200 series, Tektronix does have superior resolution to

the PC. The 4207 terminal, priced at \$3,995, comes with the same features as the 4205 and adds ports for graphics tablets, more memory (256KB compared to 128KB) and a screen resolution of 640 pixels by 480 pixels. Even so, this is far lower than the resolution of 1,024 pixels by 782 pixels offered by many graphics terminals in the DEC market.

The final member of the series, the 4208, is slanted toward original equipment manufacturers because it is more flexible, Hershiser said. Priced at \$4,995, it offers expanded memory and video support for more than one monitor.

A VT220-compatible terminal from Tektronix won't be ready until May. "We are a little slow," Hershiser said, "but the 220 demand hasn't been there. It's not a high priority."

Designing the new series of graphics terminals took about a year, Hershiser said. The 4208 is in production now and is available. The 4207 terminal is being field-tested with about 200 units finished, and delivery is slated for Nov. 1. Testing for the 4205 began last month, and it is expected to be available Nov. 15.

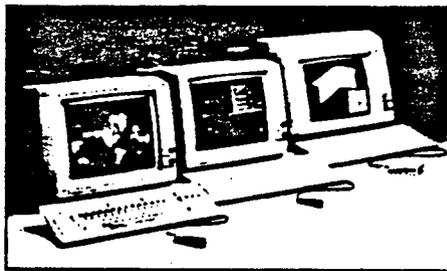
Special features of the new series include display graphics in 16 colors from a palette of 64 colors, an optional three-button mouse, downloadable custom character fonts, and a two-speed joystick.

Planned as a complete replacement for the 4100 series, the 4200 series will run all software programs now available for 4100-series terminals.

Hershiser said the 4200 series was designed with DEC's MicroVAX II computer in mind. Tektronix sees the terminals being used in a team-engineering environment with four to six terminals supported by the MicroVAX. "The DEC machine is our primary base," Hershiser said.

DEC's VT241 color graphics terminal, with a screen resolution of 800 pixels by 240 pixels, sells for \$3,195 but does not offer Tektronix 4100-series emulation.

Tektronix's Information Display Group can be contacted at P.O. Box 1700, Beaverton, Ore. 97070, (503) 627-7111. ■



Tektronix 4200-series terminals beat the 4100 series on price, features.



CONTROL ENGINEERING
October 1986

High-performance terminals

The manufacturer has introduced a line of color graphics terminals with a starting price of \$2,495. The 4200 Series is an intelligent color terminal that expands the feature set of the 4107 with prices beginning at less than one-half the 4107's price. Three models make up the series: the

4205 (\$2,495), 4207, and 4208 (\$4,995). All 4200 Series terminals are VT-100 compatible, with VT-220 compatibility to be available May 1987.

TEKTRONIX, INC., INFORMATION
DISPLAY GROUP,
Wilsonville, OR



SAMPLE 420X COVER LETTERS

THE INDUSTRY IS TALKING ABOUT 420X SERIES

In October, 1986, we introduced our new 420X Series of graphic terminals to replace several models of our 410X Series. The 420X Series provides an increase in functionality and a 40% to 65% decrease in price over the 410X Series.

The 4205 terminal, priced at \$2,495, provides an entry point to Tek graphics, including segments, and true local zoom and pan. Other new features include: Downloadable characters, background copy, CRT with .31mm dot pitch for finer text clarity, and a smaller footprint. Options include: Mouse, additional 1MB memory, and CX which offers the latest and most advanced form of IBM 3270 coaxial communications.

The 4207 terminal, at \$3,995, brings 640 x 480 resolution (60 Hz noninterlaced refresh) and standard memory of 256 kbytes. New features include those listed on 4205 plus HP LaserJet support.

The 4208, \$4995, has 512 kbytes of memory and video output to support camera systems and monitors. The 4208 has no vent holes on its top surface, making it a good fit to factory environments.

Following are what some of the industry publications are saying about our new 420X Series:

HARDCOPY: "New Technology Creates the Next Generation
Oct '86 of Graphics Terminals."

ELECTRONICS: "Clone-Stopper"
Oct. 2, '86 "Tek Graphic Terminals Do More for Much Less."

KLEIN NEWSLETTER: "Price/Performance Takes A Leap Forward."
Oct. '86

The 420X enhanced feature set and lower price have combined to achieve a true price/performance breakthrough in intelligent desktop color graphics.

The highest quality display, rich set of Tek local graphics features, COLOR graphics, are at prices below equivalent competitive products.

For more information on the new Tek 420X Series, complete and return the enclosed prepared card. Or call me today for immediate action at () - .

Sincerely,

TEKTRONX' NEW LINE LOWERS COST OF COLOR GRAPHICS

A strong message from customers is behind the introduction of the 420X Series Computer Graphic Terminals. The message was: "We'd prefer buying from Tektronx, but we can't justify the extra cost."

The 4205, 4207, and 4208 are the successors to the 4105/6/7 Series and offer more for less. The 420X products maintain the quality, reliability, and performance of the Tek 410X Series while adding significant new features.

420X SERIES FEATURE OVERVIEW

	<u>4205</u>	<u>4207</u>	<u>4208</u>
Screen Size	13"	13"	13"
Resolution	480 x 360	640 x 480	640 x 480
Graphic Colors	16*	16	16
Alpha Colors	8	8	8
Color Palette	64	64	64
Segments	Yes*	Yes	Yes
Zoom and Pan	Yes*	Yes	Yes
Segment Memory Std.	128K*	256K	512K
2 PPI	No	Yes	Yes
CX IBM Coax	Option*	Option	Option
1 Megabyte Memory Additional	Option*	Option	Option

* - New for 4205 vs 4105A

NEW FEATURES

Mouse	Option	Option	Option
Downloadable Characters	Standard	Standard	Standard
Background Copy	Standard	Standard	Standard
HP LaserJet Support	N/A	Standard	Standard
VDE Level B EMI	Standard	Standard	Standard
RGB Video Output	N/A	N/A	Standard
VT200 Alphanumerics and Keyboard**	Option	Option	Option
CRT Packaging	.31mm Dot Pitch NEW: Smaller Footprint	.31mm NEW: Smaller Footprint	.31mm NEW: Comparable to 410X
IBM Coax	Option	Option	Option

New IBM DFT support adds mutiple sessions
and increased graphics throughput.

For more information on the new Tek 420X Series, complete and return the enclosed prepaid card. Or call me today for immediate action at () - .

THE FUTURE IS YOURS TODAY WITH TEKTRONIX

Introducing the new 420X Series of multi-purpose, low-cost, high performance color graphic terminals. The 420X Series delivers a new level of graphics performance previously unavailable in the below \$5,000 price range. The 420X products maintain the quality, reliability, and performance of the Tek 410X Series while adding significant new features.

The new product family consists of:

- 4205 - Replacement for 4104A and 4105A \$2495
- 4207 - Replacement for 4106A and 4107A \$3995
- 4208 - Expands Product Line with
Additional Features \$4995

The 4205 provides the basic features found in the 4104 and 4105 plus segments, and true local zoom and pan; with 480 x 360 pixel resolution and 128 kbytes of memory. New features include: downloadable characters, background copy, a new CRT with .31mm dot pitch for finer text clarity, and a smaller footprint. Options include: Mouse, additional 1MB memory, compatibility with VT200 alphanumeric, and CX which offers the latest and most advanced form of IBM 3270 coaxial communications.

The 4207 brings resolution of 640 x 480 pixels (60 Hz noninterlaced refresh) and standard memory of 256 kbytes. New features include all those listed for 4205 plus: HP LaserJet support.

The 4208 has 512 kbytes of memory and video output features to support camera systems and monitors. The 4208 has no vent holes on its top surface, a good fit to factory environments.

The 420X enhanced feature set and lower price have combined to achieve a true price/performance breakthrough in intelligent desktop color graphics. (All three products share common firmware and thus are a strong product family offering.)

NOW! An unbeatable value can be yours with the new 420X Series. The highest quality display, rich set of Tek local graphics features, COLOR graphics, are at prices below equivalent competitive products.

For more information on the new Tek 420X Series, complete and return the enclosed prepaid card. Or call me today for immediate action at () - .

Sincerely,



TEK GRAPHICS POWER IS EASILY YOURS

Tektronix is pleased to announce the new 420X Series of color graphics terminals.

The benefits of Tek-quality color computer graphics are yours, starting at 2495!

If you've been waiting for the right price, now you can move to the TEK graphics standard.

If you need to add more stations to your TEK graphics system, the 420X Series is your low-cost solution.

With the new 420X Series, you get the proven benefits of the powerful Tektronix family of graphics products:

- Clear, precise, high-impact graphic presentation
- A wide choice of copier support
- DEC compatibility
- IBM coax communications
- World class software support from PLOT 10, ISSCO, SAS, Precision Visuals, MCS, SDRC, PDA, and many more
- Reliability built-in
- Upward compatibility with Tek's 410X, 4110, and 4120 product families
- New powerful features, including:
 - . mouse support
 - . background copy spooling
 - . downloadable characters
 - . RGB video output

Now! The powerful TEK graphics standard is more easily yours!

For more information on the new TEK 420X Series, complete and return the enclosed prepaid card. Or call me today for immediate action at () - .

Enclosure

