**Explore a new world
of color graphics with
Jupiter 7.**
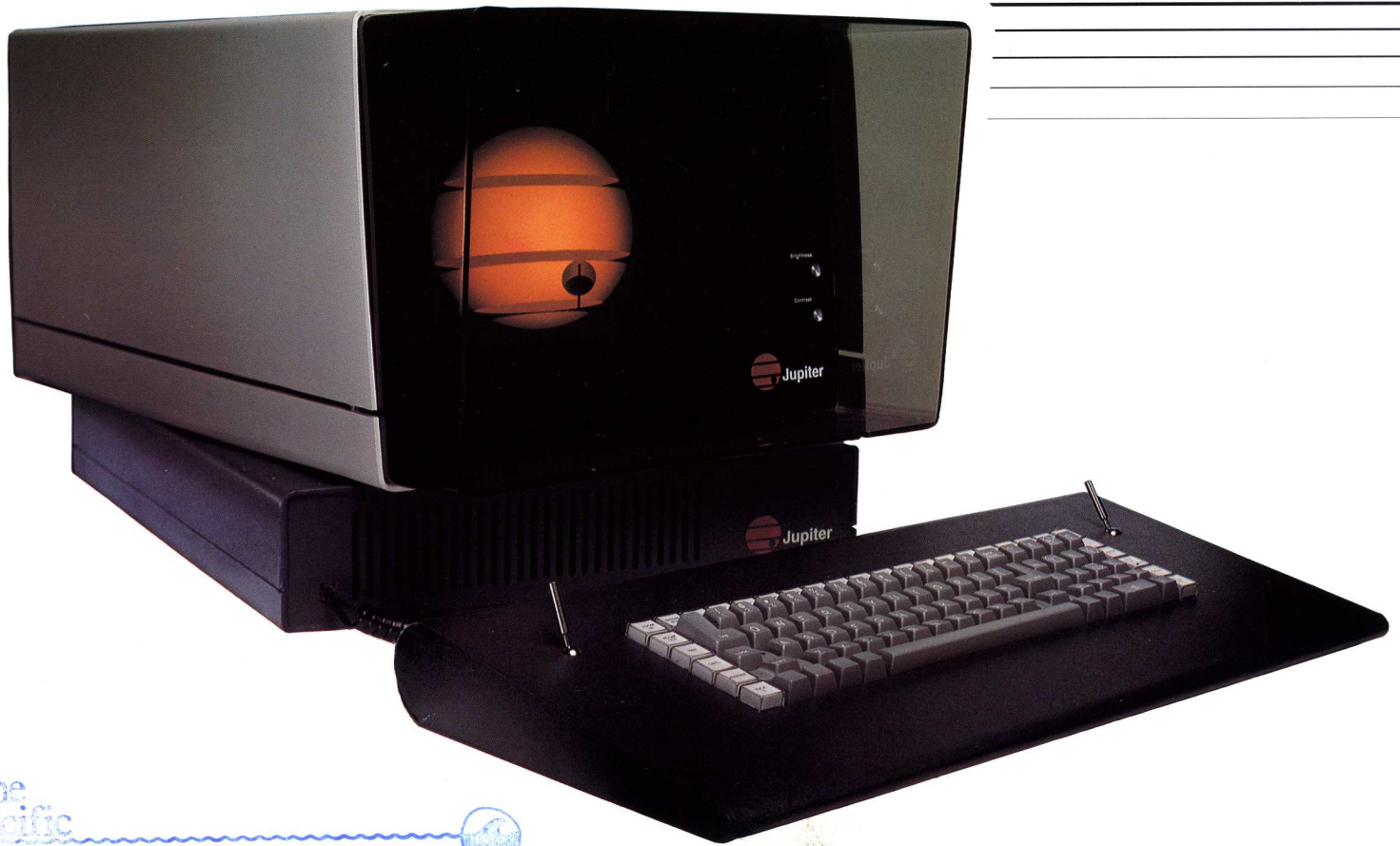
Jupiter 7
offers a universe of capabilities, at a down to earth price.

If you're including color graphics in your system, Jupiter 7 could make an enormous contribution. It combines a 1024 x 1024 display memory, 768 x 575 display window, 16.7 million color palette, and high speed processing with powerful image display and manipulation features. Yet the price is far below any comparable graphics terminal. The result is a better picture, more efficient use of your host computer, improved operator controls, and a less expensive system.

Although this brochure describes many of the technological break-throughs and operator advantages of Jupiter 7, it falls far short of an actual demonstration. Please arrange to spend a few minutes on Jupiter as soon as possible. Once you do, we know you'll never settle for an ordinary earthbound color graphics terminal.

Everything looks better on Jupiter.

No matter how you use color graphics, Jupiter 7 will improve your image.

768 x 575 Image, 8 Planes Deep

The large image area of Jupiter 7 (nearly twice the pixels of a 512 x 512 display), combined with up to eight planes of memory, provides high resolution of complex images.
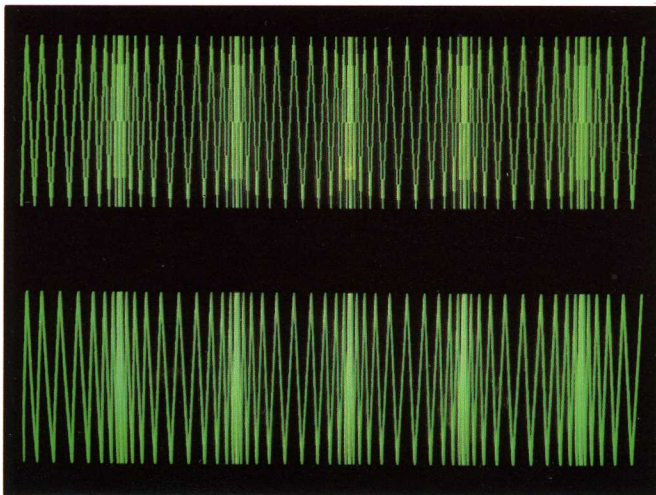
16.7 Million Colors

The Jupiter 7 color lookup table system generates up to 256 colors for simultaneous display out of a palette of 16.7 million.

Anti-aliasing

A proprietary edge filtering system resident in the terminal clears away the confusion of rasterized vectors by generating more realistic shapes, more pleasing lines. With the Jupiter 7's eight memory planes, 16 colors each with 16 intensities can be used for anti-aliasing. Terminals with only four planes can dejag only one color at a time.

Selectable Image Formats

Image formats are operator selectable at 768 x 575 (European TV), and 640 x 480 (American TV) at standard or flicker-free rates.

Graphics Generation

Circles, ellipses, lines, solid polygons and stipple-filled polygons (including seed-filling) can be generated by the Jupiter 7. A hardware grid display with three levels of blue aids layout.

Alphanumerics

An alphanumeric character generator provides the full ASCII character set. 96 characters (5 x 8 or 7 x 12 pixels) can be displayed in any color at any location. Double size characters are available in either font, as are programmable fonts.

Standard (top)
Jupiter 7 anti-aliasing (bottom)

Large display window and a megabyte of picture storage.

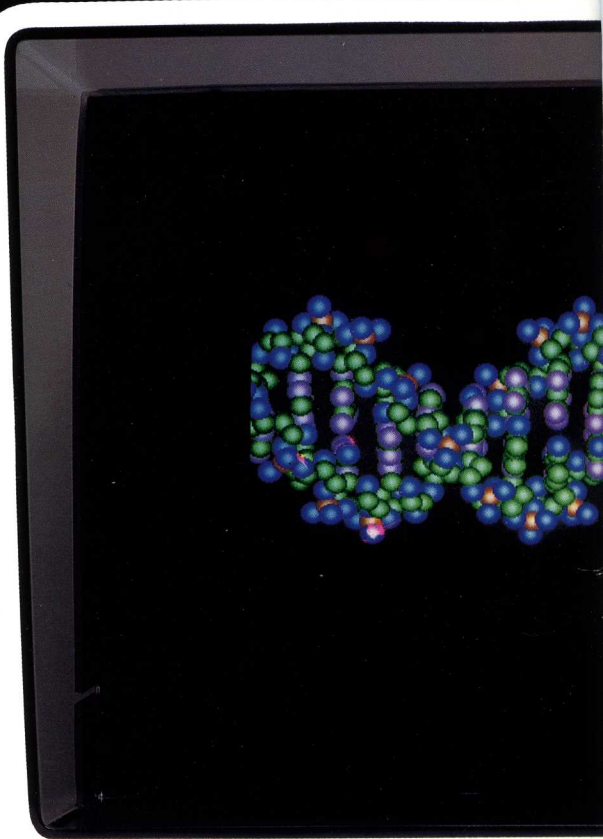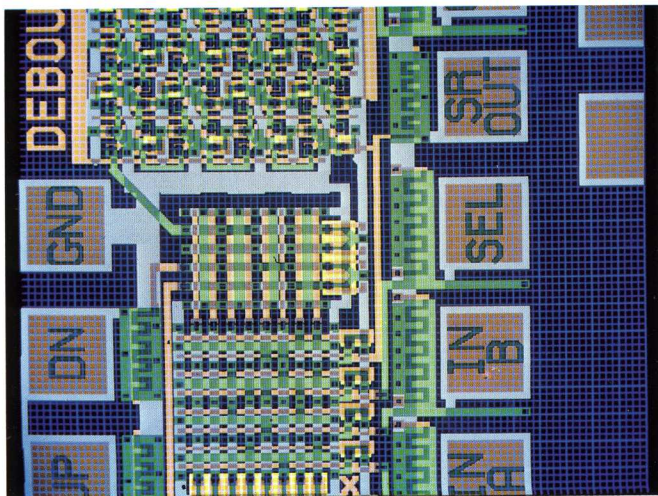512 x 512

768 X 575

1024 X 1024 STORED
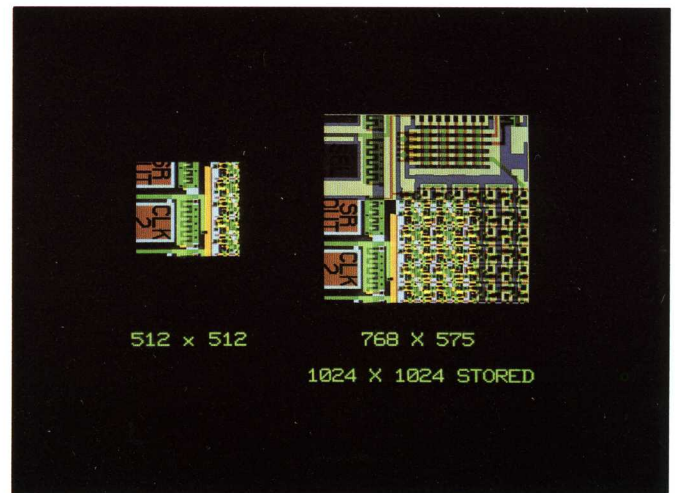
Jupiter 7 features life support for the systems designer.

Every aspect of Jupiter 7 has been designed to make systems integration easier. The hardware is plug compatible with the AED 512 & 767, and emulates the Tektronix 4014. Jupiter 7 is a field-proven system, so it's ready to go to work in nearly any color graphics application.

A number of applications packages can be run with Jupiter 7, including the following:
KIC & CAESAR (U.C. Berkeley)
PRIME-AIDS (PRIME Computer)
SYNTHA-VISION (Control Data)
DISPLA & TELL-A-GRAF (ISSCO)
ID5000 (Precision Visuals)
PLOT 10 (Tektronix)

In addition, the Jupiter 7 is one of a family of color graphics terminals. They are compatible with one another, giving users the ability to upgrade as their graphics needs become more demanding.

Jupiter 7 also simplifies the system designer's job by making the host computer's job easier. Systems can run faster or provide more sophisticated image manipulations.

Systems customers will appreciate the flexibility of the Jupiter 7 Genlock feature, including its ability to be used on closed circuit TV.

Hardware grid aids layout.

Close-up of anti-aliased vectors.
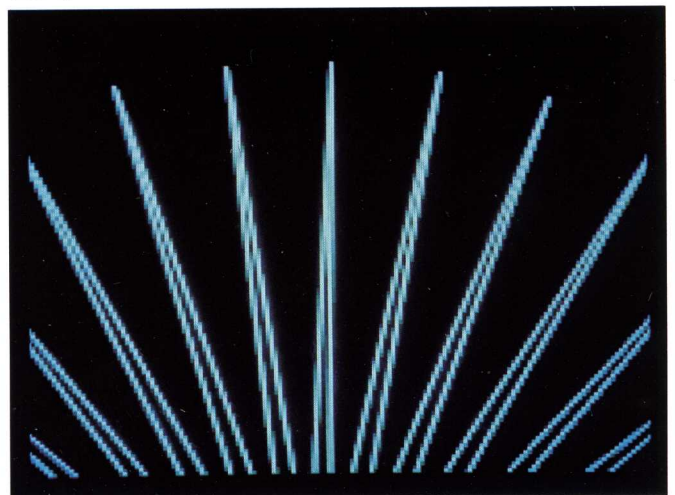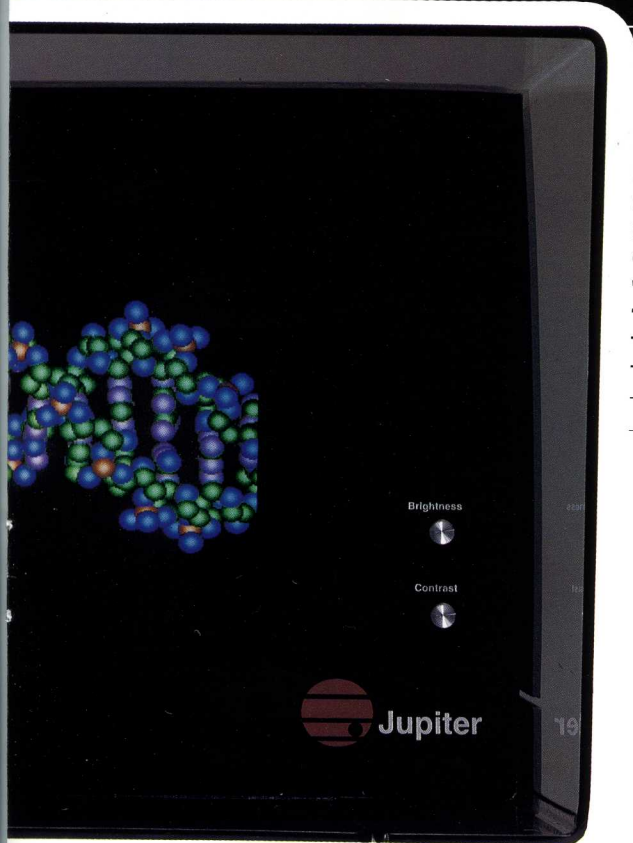
Jupiter 7 flexibility opens a broad spectrum of applications possibilities.

Jupiter 7 was designed to solve as many graphics problems as possible. Thus you will find that you can take off for an endless variety of systems configurations from this one terminal.

Programmable Console

The detachable keyboard has a full standard ASCII set plus 30 special function keys that can be programmed to suit your application. There is also a hexadecimal keypad and dual joysticks. The keyboard and monitor can be located up to 1000 meters from the controller.

Personality Memory

System configuration data, including display format and serial line parameters, are stored in non-volatile memory. This eliminates the need for internal DIP switches, jumpers, and back panel controls.

Flexible I/O

Input devices supported by Jupiter 7 include a graphics tablet, foot pedal, and track ball.

Expandable Memory Planes

The basic Jupiter 7 configuration has four memory planes, however it can be expanded to 8 planes. These yield either of the following configurations:

Four memory planes: 16 colors per frame out of 16.7 million color palette, using the color lookup table.

Eight memory planes: 256 colors per frame out of 16.7 million color palette, using the color lookup table.

256 colors or shades of gray.
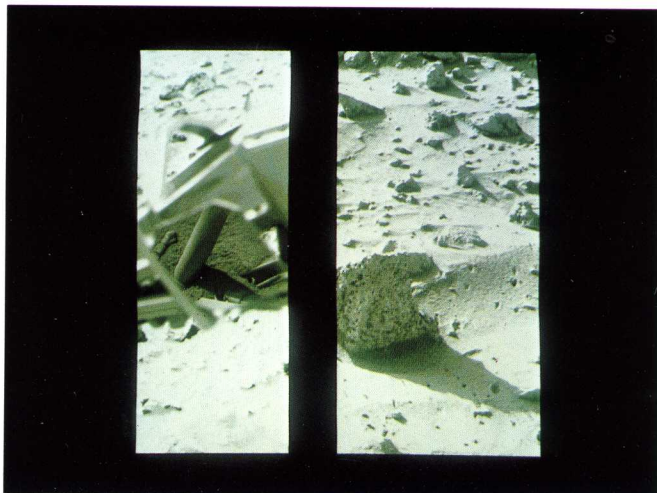
Detached Keyboard Console

Jupiter's detached keyboard console lets the operator arrange his work station for optimum productivity and comfort.

Setable Pan and Scroll Origins

Origins may be set to a single pixel location for smooth movement.

Position Mode Control

Position mode joystick control of horizontal and vertical pan results in fast, positive movements and a better sense of relative location within the picture area.

Blueline Grid

A hardware grid system with keyboard brightness control is built into the Jupiter 7. It provides three levels of blue grid for quick location and precise alignment of graphic elements.
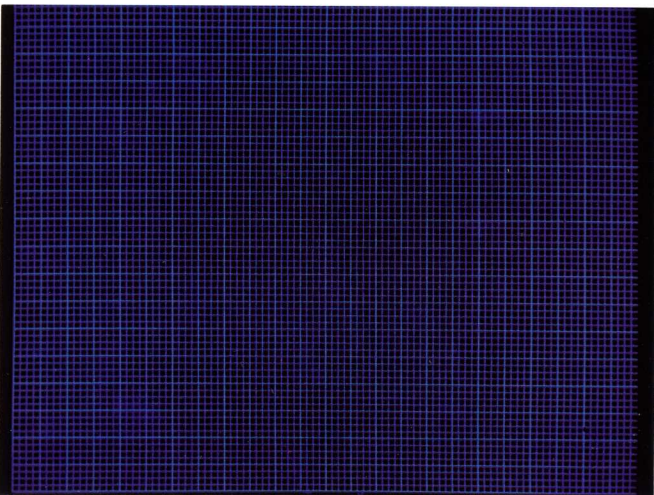
Versatile Dual Joysticks

The dual joysticks can be used independently for faster manipulation of the screen. For instance, one can be assigned to cursor positioning, the other to panning. A joystick can also serve as a color selector, displaying the full palette of colors in a 360° rotation.

Selectable Center of Zoom

The continuous zoom function allows the center of zoom to be selected as either the cursor location or center of frame.
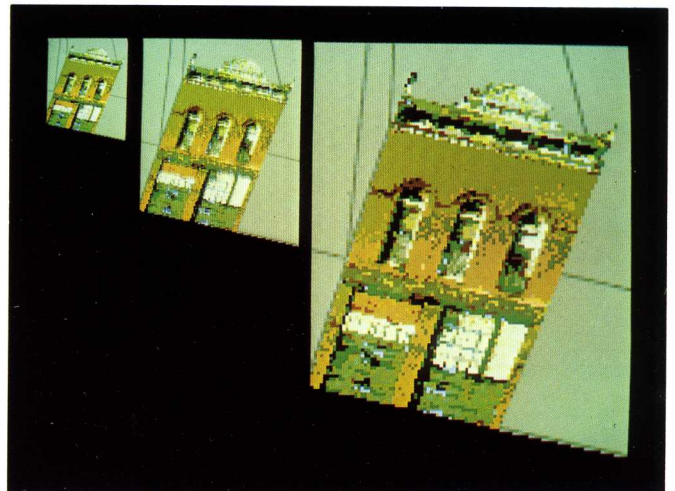
Specifications

Colors Available

Up to 256 colors per frame can be selected from a 16.7 million color palette.

Refresh Rate

Display Format	Standard Monitor	Optional Monitor
768 x 575	38 Hz	50 Hz Non-interlace
640 x 480	45 Hz	60 Hz Non-interlace
512 x 512	45 Hz	60 Hz Non-interlace

Processor

An on-board 500 nanosecond microprocessor controls terminal and I/O functions and performs character, vector, circle, and filled polygon generation. Emulation of the Tektronix 4014 with enhanced graphics option permits running of PLOT 10.® Terminal has up to 42K bytes of RAM/ROM.

Performance

Oblique vectors generated at 105K pixels/second. Horizontal lines and rectangle fill at 4 million pixels/second.

Memory

64K Dynamic MOS, organized in 4 or 8 planes of 1024 x 1024. 256 simultaneously displayable colors.

Video DACs

8 bit DACs for RGB provide a palette of 16.7 million colors.

Video Output

Red, Green and Blue outputs on back panel are composite video and sync. Monochrome output of least significant memory plane allows operator interaction in normal or reverse video on a separate monitor without disturbing color display. Chroma key and special effects are supported. All video outputs will drive multiple monitors or video hard copy devices.

Encoding Formats

Binary, ASCII hexadecimal, ASCII decimal. Images can be sent from the host to an arbitrary window in run-length coded format.

Pattern Generation

Lines and filled areas can be drawn according to downloaded templates.

Masking Registers

The Write Mask allows only selected planes to be modified. The Read Mask allows only select image planes to be displayed.

Console

Detached console with a 106 key array, including full ASCII character set. Thirty special function keys with LED indicators are programmable through a microprocessor in the console. Dual joysticks built in. N-key rollover, auto repeat, shift lock.

Monitor

Optional 14" or 19" long-persistence and standard phosphor monitors are available.

Input/Output

DMA interfaces to popular mini- and micro-computers are available, allowing byte or 16-bit word parallel transfers at 500K bytes/second. Commands or pixels may be transferred via DMA.

Hardware Blink

Up to 8 pixel values may be blinked at differing programmable rates between their normal color table definitions and arbitrary red, green, and blue alternate values. All rates and duty cycles are specifiable in multiples of the picture refresh rate.

Drivers

Jupiter 7 device drivers are available for several popular mini- and microcomputer operating systems.

External Connections

All cables are shielded for minimum emanations.
   Host Serial Interface – 25 pin "D"
   Parallel Direct Video Memory Access –
      50 pin Scotchflex®
   Aux. Serial – 6 pin modular, telephone style
   Red, Green, Blue composite video –
      BNC connectors
   Monochrome/2-level Hard Copy –
      BNC connector
   External Sync/Mix (Genlock) –
      BNC connector
   Console to Controller – 8 pin modular jacks
      located on front and rear of controller.

Power

115/220 VAC +/− 10%, 47-63 Hz, 300 VA, with integral RFI filters.