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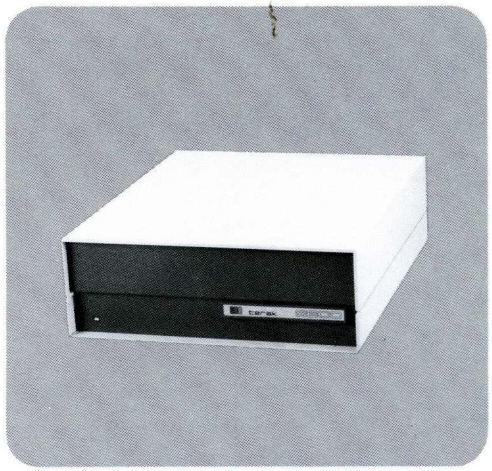
GRAPHICS COMPUTER SYSTEM



HARDWARE MODEL 8600 COLOR DISPLAY ELECTRONICS UNIT

The 8600 Color Display Electronics Unit (DEU) is a microprocessor based system designed by Terak for use with the 8510 data processor. Based on the INTEL 8086 microprocessor, the 8600 Display processor manages vector to raster conversion, color mapping, memory or display changes and data packet communication with the 8510 data processor over a parallel Q-Bus extension.

The 8600 features a viewable memory of 640 by 480 bits with an available color display of up to 64 simultaneous colors chosen from a palette of 512 color, intensity and hue combinations. Eight color palettes allow the user to select 8 different color maps of 8 individual colors each when in 8 palette mode. Depending on the optional memory selected, 3 or 6 color planes are available allowing the user to have up to 6 individual 640 by 480 display surfaces that can be displayed singly or as an additive image for transparency effects. Color mapping techniques offer a wide variety of picture effects, including blinking and animation.

The 8600 performs concurrent display processes with the 8510 data processor's computational functions. The GEMINI operating system is down-loaded at boot time providing full color graphics display functionality.

The GEMINI O/S features the following capabilities:

- ☐ Dynamic color map/color palette definition
- ☐ User-definable graphics and console zones
- ☐ Up to 9 user-definable variable size character fonts
- ☐ Vector to raster conversion
- ☐ User selectable screen and color resolution
- ☐ Box and crosshair cursors
- ☐ Local cursor movement
- ☐ Inquire cursor location
- ☐ Rectangular flood with user defined patterns
- ☐ Complex polygon flood performed by display processor
- ☐ Angular character display
- ☐ Screen to World/World to Screen coordinate conversion
- ☐ Pixel value set and test
- ☐ Split screen of up to 4 variable size zones
- ☐ Independent scrolling of alphanumeric or graphic data
- ☐ Smooth scrolling-forward; reverse; horizontal and vertical
- ☐ Zoom and pan
- ☐ Save and restore pixel image on screen

Hardware features include:

- ☐ Scanner—scans the display buffer and maps portions of the display buffer to the display screen.
- ☐ Q-Bus Interface—extends the processor bus of the 8510 data processor to the DEU Direct Memory Access to Functional Display Packets as produced by user's application program on the 8510. Requires one dual-wide slot in 8510 or 8515 Q-Bus backplane.
- ☐ Display Processor—contains the microprocessor and memory for the GEMINI operating system. Controls the scanner and Q-Bus interface.
- ☐ Frame Buffer Memory—one or two boards containing the mapped display buffer. Memory size range is 128K Bytes or 256K Bytes.

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SPECIFICATIONS

Processor	
Type	Intel 8086
Word Length	16-bit 5MHz
Memory Access	DMA
Clock (60Hz)	Real Time Interrupt
Memory	
Type	16-bit MOS RAM (Dynamic) 16-bit MOS ROM
Size	
Terminal Emulator	4K Bytes ROM
8600 O/S	64K Bytes RAM
Frame Buffer	128K Bytes RAM min. 256K Bytes RAM max.
Power Requirements	
Voltage	50Hz to 60Hz 110, 220 VAC
AC Power Consumption	275 Watts max.
Data Transfer Rate	
Type	DMA
Q-Bus to T-Bus	6 micro seconds
Vector to Raster Conversion	20 micro seconds
Physical Dimensions	
Height	6.65 inches (16.63 cm)
Width	17 inches (42.5 cm)
Depth	19.5 inches (48.75 cm)
Weight	43 pounds (19.5 kg)
Environmental Conditions	
Operating Temperature	10° C to 40° C
Relative Humidity	20% to 80% (no condensation)
Storage Temperature	–40° C to 75° C
Relative Humidity	5% to 98% (no condensation)

HARDWARE OPTIONS

Videographics Module (NTSC to RGB) with graphics overlay onto video

SOFTWARE SUPPORTED

RT-11 V 4.0 Operating System with Graphics Library or UCSD Pascal V 2.0 Operating System with Gemini V 2.5

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