FEATURES

- Works with any 8, 16, or 32 bit minicomputer
- Full refresh, flicker-free 60 Hz raster scan rate
- Up to 512 x 512 pixel image display area
- Color look-up table
- Gamma-corrected grayscale video output
- Rapid pixel update times — as fast as 45 nsec
- Composite video outputs
- Up to 4 different simultaneous monochrome outputs
- Dynamic segmentation of Refresh Memory
- Alphanumeric character generator
- Special characters or symbols
- Light-Pen, Keyboard, Trackball or Joystick
- Memory readback
- Housed in its own compact chassis with power supply

FLEXIBLE IMAGE PROCESSING

The Lexidata Model 400 is a Video Graphics and Imaging display processor peripheral for most standard computers. It provides data formatting and output of computer generated images to ordinary TV monitors operating at either 30 or 60 Hz scan rate. Other scan rates are available.

The Model 400 is entirely self-contained in its own chassis with a power supply, cooling, front panel and appropriate cabling to the host computer.

The processor generates a composite video output signal with full vertical and horizontal synchronization. The visual result is a flicker-free display which is suitable for many high speed monochrome, gray level or color applications.

Because the computer views the Model 400 as an intelligent peripheral, the video processor operates the display without host interaction during operations not requiring image update. It performs this function from a self-contained image memory with a capacity for variable memory configurations. Alternatively, it may also generate the display from the host computer memory by direct memory access (DMA). The Model 400 also provides full command I/O and maskable interrupt of the host computer.

MODEL 400 VIDEO IMAGE PROCESSOR

Lexidata Corporation

APRIL 78

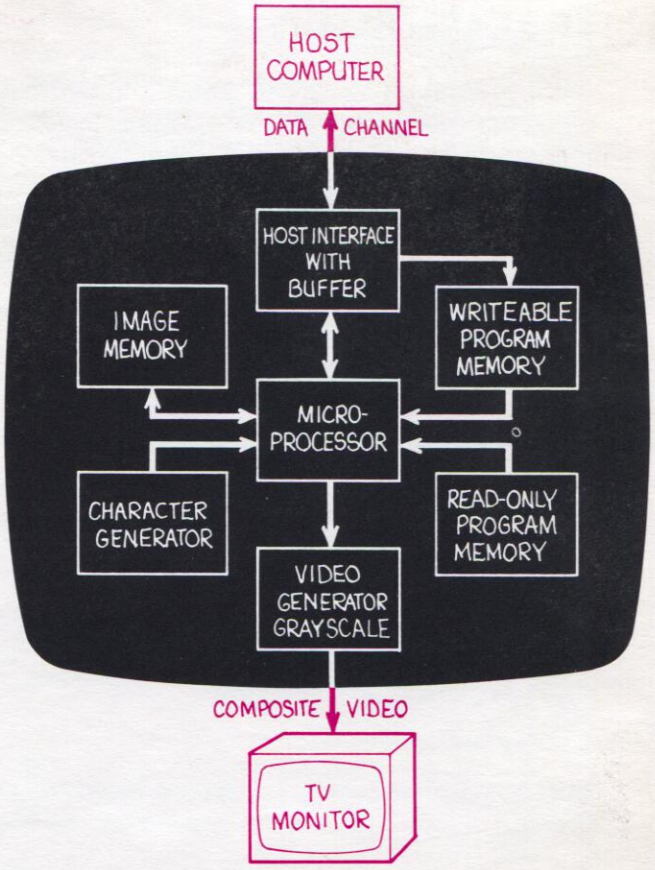
FLEXIBLE OUTPUT OPTIONS

Design Considerations

The Model 400 is specifically designed for video imaging. It incorporates a high-speed, bi-polar microprocessor with a 100 nsec cycle time. This offers the Model 400 as a versatile video image processor. Users can custom-program the unit to suit their application requirements; to format and process graphics data or to store, retrieve and output images. Custom programming from Lexidata is also available. Control programs may reside in read-only memory (ROM), or for greater flexibility, the host computer can load these routines into writeable program memory (RAM). This means, for example, that the display may be reformatted from 512 x 512 x 1 bit to 256 x 256 x 4 bits under software control.

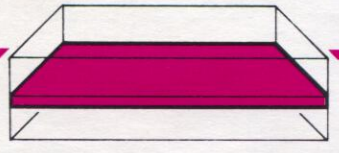
Applications such as blinking between multiple images, image enhancement, image feature extraction, bar and line graphs, vector and character generation, image scrolling, etc. are easily implemented on the Lexidata Model 400.

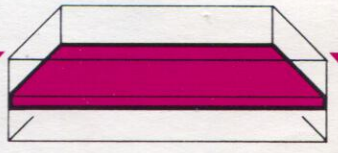
In fact, the Model 400 is now used for CT and Emission scanner output, astronomical data analysis, financial and scientific data display, and process control. The possibilities have no limits.



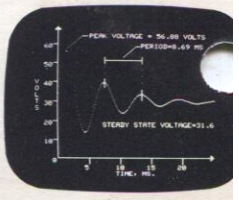
400 operation is completely directed by its microprocessor: Input data formatting from the host computer, direct access to the host's memory, character and cursor generation, video generation, image storing, retrieval, and output. Microprogram memory is either read-only or writeable from the host computer.

Choice of Single or Multiple Monitor Configurations



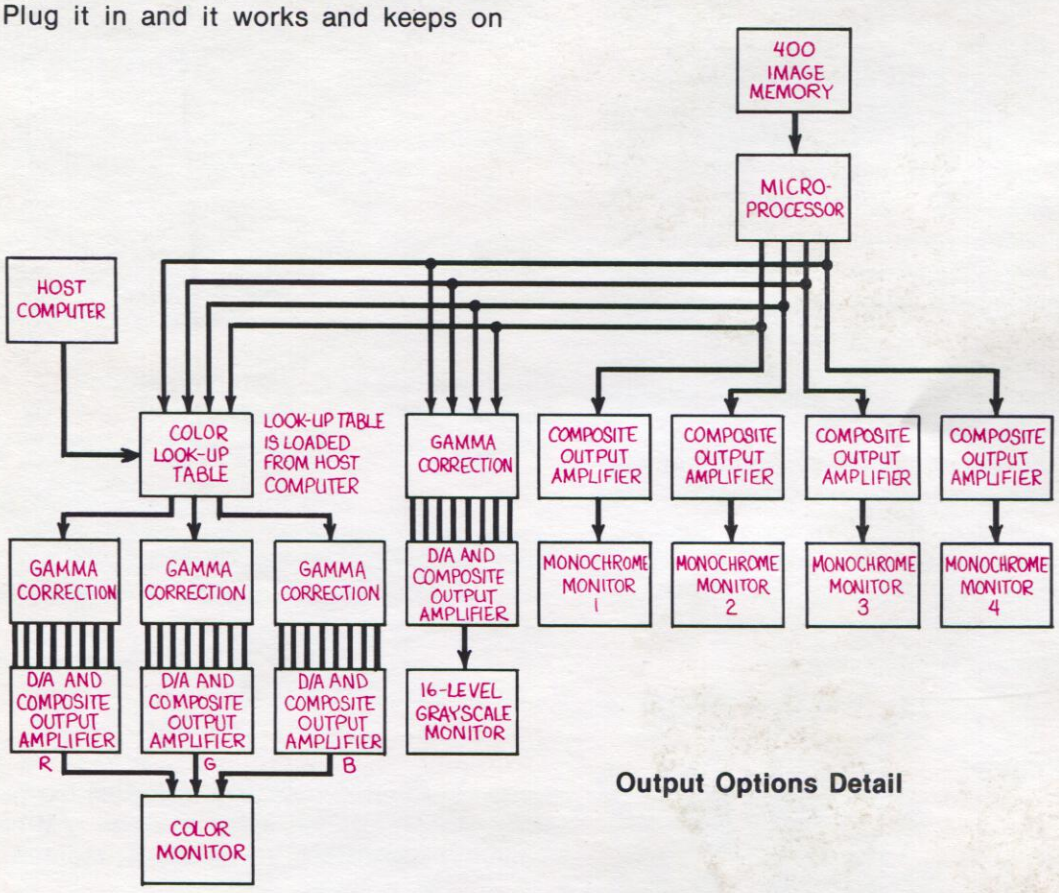


Single Monitor arrangements; 16 gray levels or preassigned colors at 256 x 256 pixels non-interlaced or monochrome at 512 x 512 pixels interlaced.



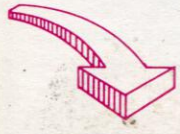
RELIABLE

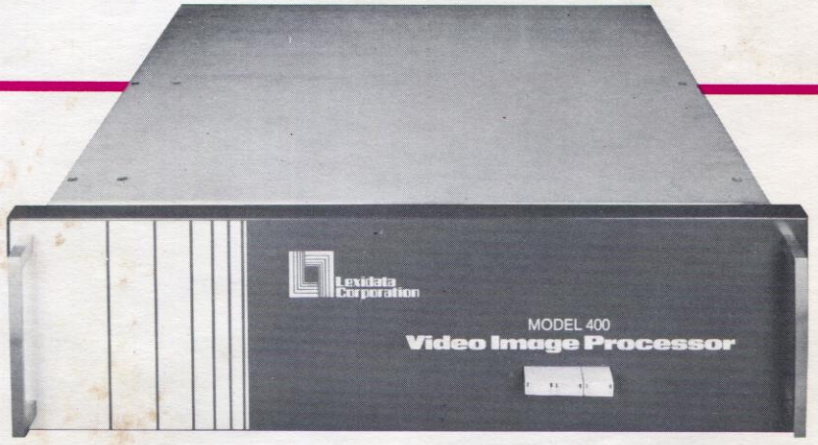
Built with integrity, the Model 400 is designed with 6-layer printed circuit board technology. All components undergo strict quality assurance tests (mil. std. 883 and mil. std. 750). All 400 units undergo a 168 hour dynamic burn-in before delivery. Plug it in and it works and keeps on working.



Output Options Detail

le Monitor arrangement; up to 4 different
aneous monochrome outputs at
56 pixels each, non-interlaced.





SPECIFICATIONS

Video Output: EIA composite sync and blanking, 60 Hz vertical scan rate; 15.75 KHz horizontal; 0 to -1 Volt into 75 Ohms; microprogram selectable interlaced/non-interlaced displays. Scan rate can also be set to 25, 30 or 50 Hz

Alphanumeric Character Generation: 5 x 7 Dot Matrix: 512 x 512; 64 lines at 85 characters
256 x 256; 32 lines at 42 characters
Standard 64 character ASCII upper case font supplied, but other fonts or special symbols are also available on special order

Cursor: User definable

Grayscale: 16 Gamma-Corrected levels from 256-level look-up table

Color: 16 preassigned colors to a standard RGB Color Monitor

Color Look-Up Table: Optional look-up table; maps 4 intensity bits to three 4-bit video levels for standard RGB Color Monitor
Up to 16 out of 4096 colors may appear at one time (This table is contained on a separate board in the 400)

Image Memory: Up to 32 K bytes of MOS dynamic memory. Various memory segmentations are possible under software control

Standard Configurations

	Pixels	Bit(s)
B & W monochrome	512 x 512	x 1
	512 x 480	x 1
16-level gray or color	256 x 256	x 4
	256 x 240	x 4

Data Update: Either over DMA or Command I/O

Input Device Options: Joystick, Trackball, Keyboard and Light-Pen

Pixel Update Times: Based on average times to update Model 400 Image memory from new data in input buffer

16 pixels updated simultaneously:	Sequential Access; 45 nsec/monochrome pixel 140 nsec/grayscale pixel Random Access; 90 nsec/monochrome pixel 190 nsec/grayscale pixel
Single pixel Update:	Random Access; 800 nsec/monochrome pixel 2 μsec/grayscale pixel
Display Mode to Update Mode changeover:	Including Mode Restoration; 1.2 μsec

Compatibility: Will interface to most 8, 16, or 32-bit minicomputers over 16-bit parallel, bi-directional TTL data bus or standard RS-232

Data Transfer Rate: Up to 2 Megabytes per second from host computer

Power Requirements: 110/220 VAC, 50/60 Hz ± 10%, 0.5A at 110 VAC

Total Power Consumption: 60W

Environmental Requirements: 0 to 55°C operating, -35 to +70° storage. Relative humidity to 90% operating, to 95% storage. Altitude to 10,000 ft. operating, to 50,000 ft. storage

Weight: 26 pounds

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