FEATURES

- Single plug-in board for Data General Nova and Eclipse computers
- 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

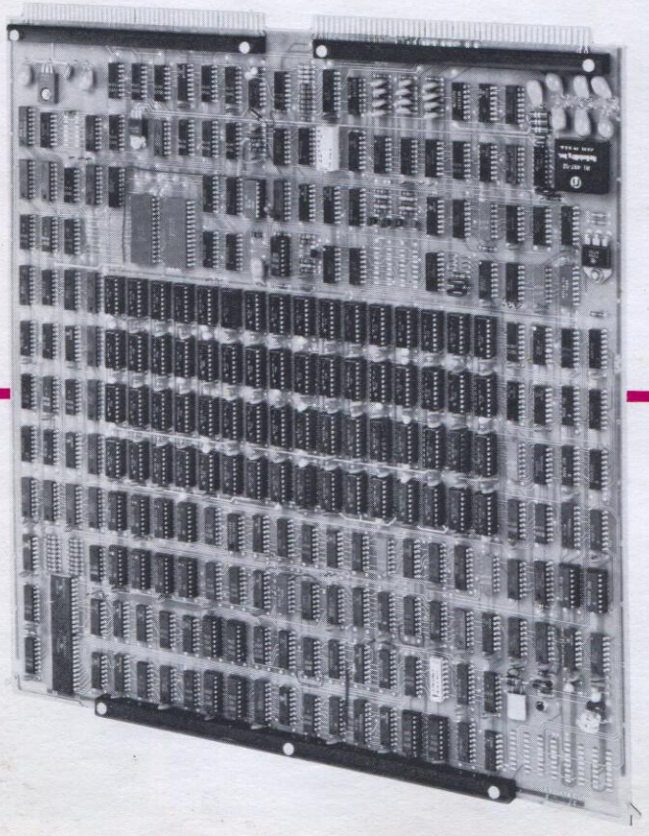
FLEXIBLE IMAGE PROCESSING

The Lexidata Model 200-D is a Video Graphics and Imaging display processor for Nova and Eclipse series 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 200-D is a self-contained, plug-in processor to these computers. The Lexidata design eliminates interfacing equipment such as controllers, power supplies, cables, etc.

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 200-D 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 200-D also provides full command I/O and maskable interrupt of the host computer.



MODEL 200-D
VIDEO IMAGE PROCESSOR

Lexidata Corporation

SEPT 77 - JUNE 81

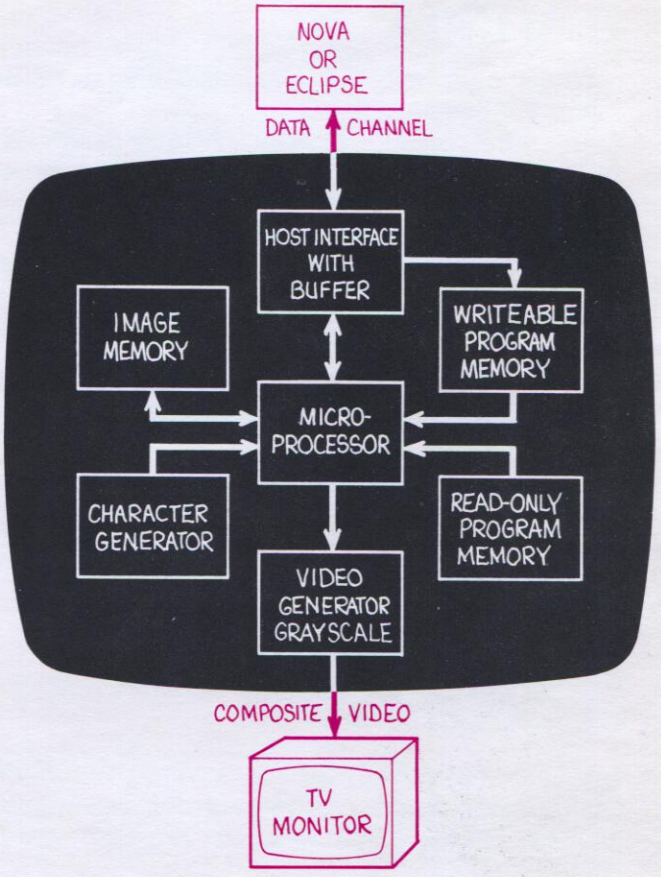
FLEXIBLE OUTPUT OPTIONS

Design Considerations

The Model 200-D is specifically designed for video imaging. It incorporates a high-speed, bi-polar microprocessor with a 100 nsec cycle time. This offers the Model 200-D as a versatile video image processor. Users can custom-program the unit to suit their application requirements; to format and process data or to store, retrieve, and output images. Lexidata supports the microprocessor with a library of subroutines, callable from the FORTRAN and BASIC programs in the Nova or Eclipse computers. Custom programming is also available. Control programs may reside in read-only memory (ROM), or for greater flexibility, the host computer can load these routines into writable program memory (RAM).

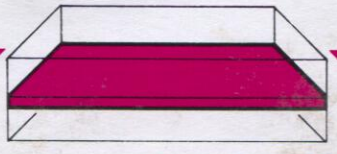
Applications such as blinking between multiple images, image enhancement, image feature extraction, bar and line graphs, vector and character generation, image scrolling, etc. are easily implemented on the Lexidata Model 200-D.

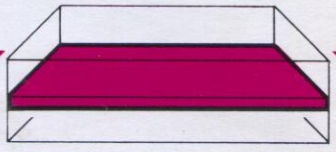
In fact, the Model 200-D is now used for CT and Emission scanner output, astronomical data analysis, financial and scientific data display, and process control. The possibilities have no limits.



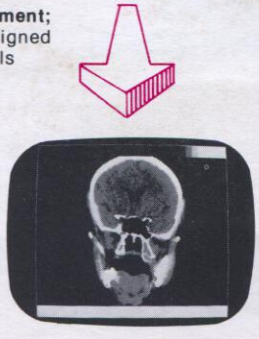
200-D operation is completely directed by its microprocessor. Input data formatting from the host computer, direct access to the host's memory, character and cursor generation, video generation, image storing, retrieval, and output. Microprogram memory is either read-only or writable from the host computer.

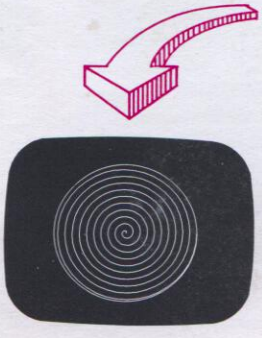
Choice of Single or Multiple Monitor Configurations

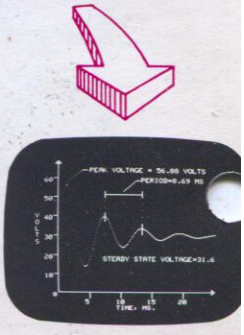




Single Monitor arrangement; 16 gray levels or preassigned colors at 256 x 256 pixels non-interlaced or monochrome at 512 x 512 pixels interlaced.

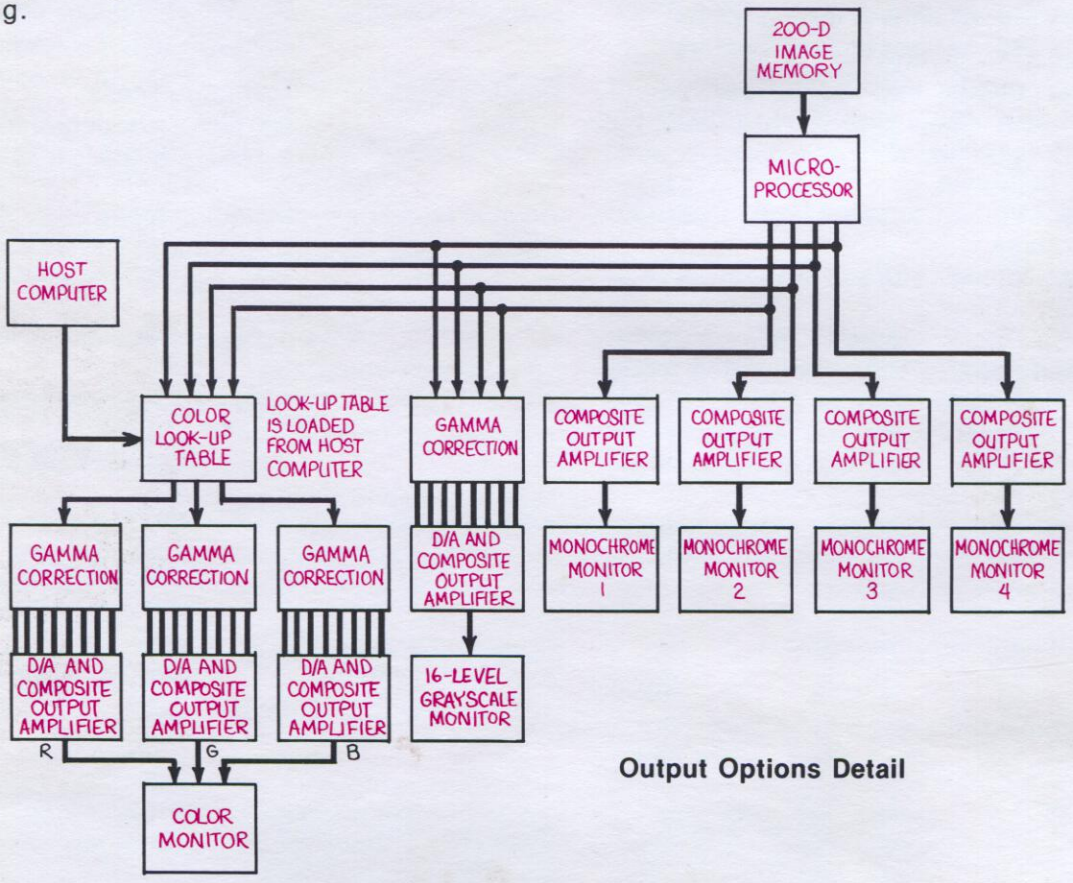






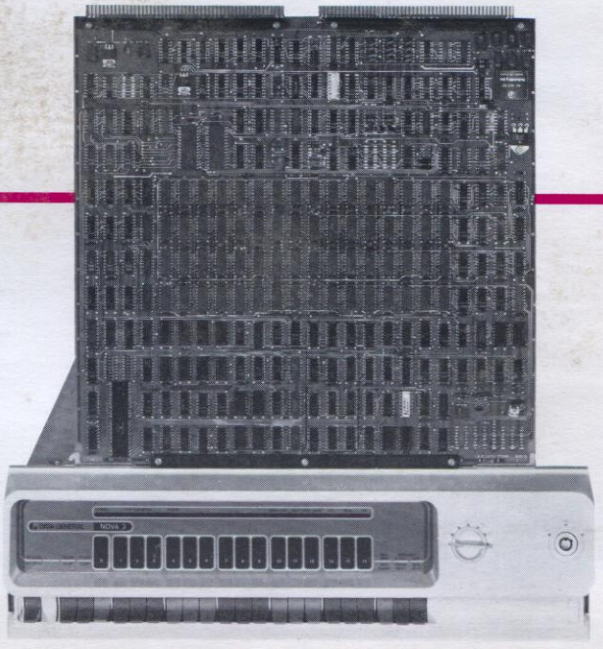
RELIABLE

Built with integrity, the Model 200-D is designed with 6-layer printed circuit board technology. All components undergo strict quality assurance tests (mil. std. 883 and mil. std. 750). All 200-D units undergo a 168 hour dynamic burn-in before delivery. Plug it in and it works and keeps on working.



Output Options Detail

Monitor arrangement; up to 4 different
eous monochrome outputs at
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 in a board separate from the 200-D.)

Image Memory: Up to 32K 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 200-D 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 μ sec/grayscale pixel
Display Mode to Update Mode changeover:	Including Mode Restoration; 1.2 μ sec

Compatibility: Nova or Eclipse Bus and Chassis; 15 x 15-inch board size

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

Power Requirements: +5 and +15 VDC from Nova or Eclipse Power Supply

Power Consumption:

	Memory Configuration Minimum	Maximum
Current at 5 Volts	4.8A	5.3A
Current at 15 Volts	260 mA	330 mA
Total Power Consumption	28W	32W

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

Weight: 2.25 pounds

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