

# SMART EGA™

from NSI Logic

## Universal Graphics Adapter Board

**Run any software.  
In any mode.  
On any EGA monitor.**

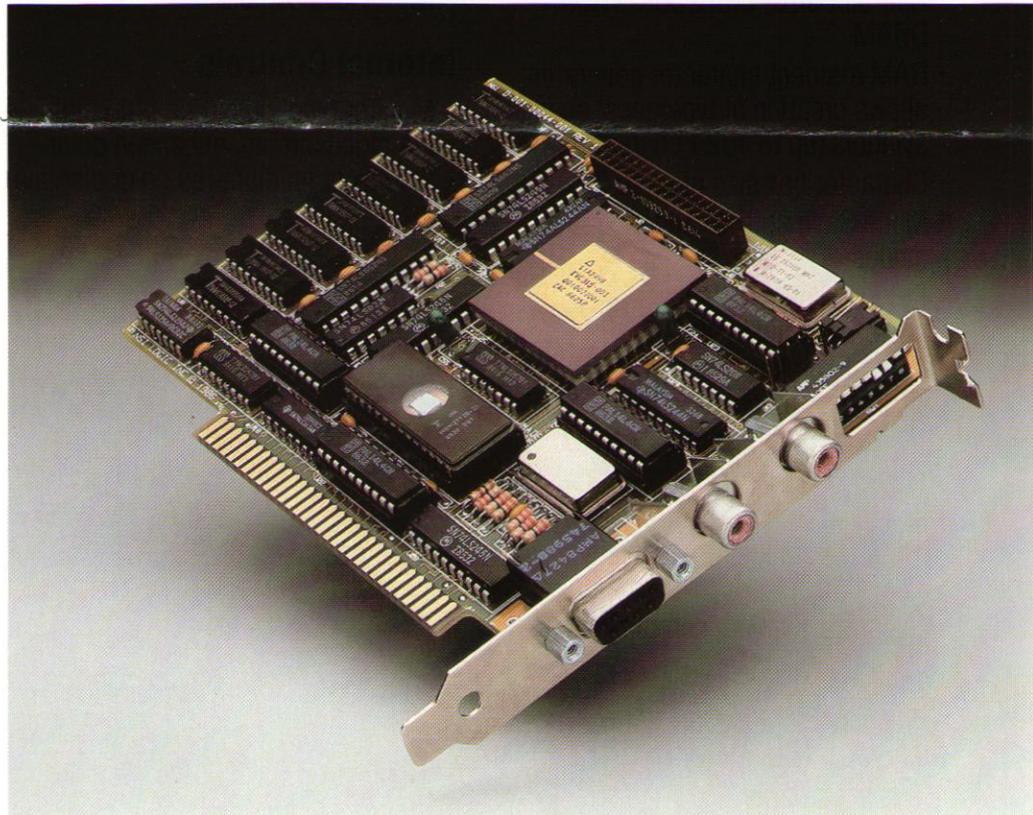
Now a single graphics board is right for any PC application. SMART EGA.

NSI Logic's innovative, half-slot graphics board employs proprietary SMART technology (Single Monitor Adapter Technology) to run EGA, CGA, MDA, or Hercules modes—all on a single color EGA monitor.

And any PC software is guaranteed to run without special patches, updates or emulation routines, because SMART EGA's VLSI graphics chip meets all BIOS and hardware specifications in all modes. And that's the kind of performance that PC Magazine called "beyond comparison" in its grueling comparison of EGA boards.

**Standard features make SMART EGA more powerful and easy to use.**

SMART EGA's **Mode Save** feature lets you easily select any display mode using simple keyboard commands, and even retains that mode selection through a warm reboot. Mode Save has been



found to be a superior alternative to the problems inherent in automatic switching.

**Palette Save** lets you customize foreground and background colors in a flash. Other utility software is included which allows you to disable the cursor from blinking, and the eight position DIP switch is externally located for easy access.

Like all NSI products, SMART EGA is manufactured in the United States and comes with a full three year warranty.

# SMART EGA

from NSI Logic

## Features

- Supports EGA, CGA, MDA, and HGC modes
- Runs any mode on a single color EGA monitor
- Fully compatible with all PC software
- Half-slot size, with 256K Bytes DRAM
- RAM resident character generator allows creation of typefaces, special symbols (up to 1024 characters)
- Character box size of up to 32 x 8
- Mode Save selects and maintains modes
- Palette Save customizes foreground and background colors
- Smooth, flicker-free horizontal and vertical scrolling
- Supports CGA or MDA as primary or secondary adapter
- Improved memory access over IBM EGA in high resolution mode (640 x 350)
- Supports blinking/non-blinking cursor
- 3 year warranty

## Monitor Compatibility

- IBM 5151 high resolution monochrome, IBM 5153 medium resolution color, IBM 5154 high resolution enhanced color, or equivalents

## Video Adapter Compatibility

- Replaces IBM EGA, CGA, and MDA adapters, and the Hercules Graphics Card
- Totally compatible at both BIOS and hardware levels

## External Controls

- SMART Mode enable/disable switch
- 4 switches for power-up mode selection and primary/secondary adapter assignment
- I/O address port selection with BIOS ROM disable

## Internal Controls

- Monitor type indication (IBM high-res monochrome, enhanced color display or medium-res color display)

## Software Utilities

- PALETTE.COM specifies and changes display colors through keyboard
- HCOLOR.COM specifies and changes display colors through keyboard in HGC mode
- CURSOR.COM specifies blinking/non-blinking cursor
- Also included are utilities to change modes through keyboard

With this monitor:	You can run software written for:	In these resolutions:
Monochrome	Monochrome Display Adapter (MDA)	80 character text
	Hercules Graphics Card (HGC)	720 by 350 B&W
	EGA monochrome mode	640 by 350 B&W
Standard RGB	Color Graphics Adapter (CGA)	40 or 80 column text 320 by 200 by 4 colors 640 by 200 B&W
	EGA	640 by 200 up to 16 colors
	Enhanced RGB	Monochrome Display Adapter (MDA)
Enhanced RGB	Hercules Graphics Card (HGC)	720 by 350 color
	Color Graphics Adapter (CGA)	40 or 80 column text 320 by 200 by 4 colors 640 by 200 B&W
	EGA	320 by 200 up to 16 colors 320 by 350 up to 16 colors 640 by 200 up to 16 colors 640 by 350 up to 16 colors

IBM is a trademark of International Business Machines.  
Hercules, HGC are trademarks of Hercules Computer Technologies.  
SMART EGA is a trademark of NSI Logic, Inc.

NSI LOGIC, Inc.  
257B Cedar Hill Road  
Marlboro, MA 01752  
(800) 772-3742

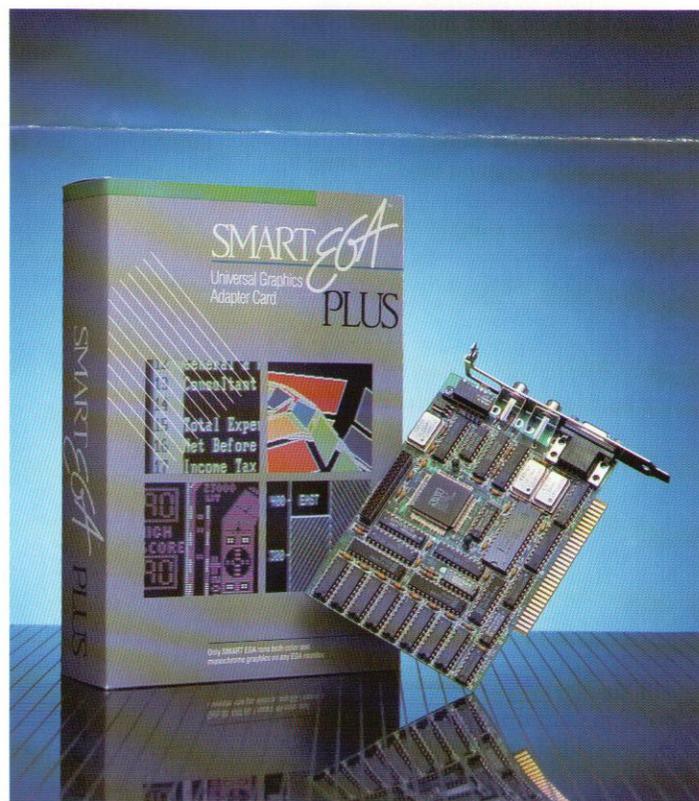
# SMART EGA PLUS<sup>TM</sup>

from NSI Logic

## Extended EGA Plus High Resolution and VGA Graphics

### The Graphics Adapter Designed For Your Multisynchronous Monitor

NSI Logic's SMART EGA PLUS is designed to drive your multisynchronous monitor to the limit. It not only supports both 640 x 480 and 752 x 410 Extended EGA modes, but high resolution 800 x 600 graphics mode, which puts over twice as many pixels on the screen as standard EGA mode. With the SMART EGA PLUS, your multisynchronous monitor will display high performance software—from desktop publishing to CAD—the way it should be: at the highest possible resolution. And the SMART EGA PLUS is software compatible with the VGA 640 x 480 standard of the IBM Personal System 2. So you will have access to new software as it is released for the PS/2, thus protecting the investment you have made in your system. And of course, the SMART EGA PLUS runs MDA, Hercules, CGA, 132 column text and EGA software on an Enhanced Color Display or multisynchronous monitor.



### The SMART EGA Just Got Smarter

Because it's a SMART (Single Monitor Adaptor Technology) design, you can display everything from Hercules monochrome graphics to high resolution color graphics on your multisynchronous monitor. NSI's exclusive Mode Save feature allows you to switch back and forth between modes from the keyboard, without having to reset any switches, and without any of the compatibility problems which can arise with automatic switching schemes. And Palette Save gives you the power to "lock in" your color selections from one program to the next, even through system warm boots!

### The VLSI Solution

At the heart of the SMART EGA PLUS is NSI's proprietary VLSI (Very Large Scale Integration) graphic controller chip that meets all IBM specifications while providing complete hardware emulation of all supported PC display modes, without any special patches or RAM resident programs. Add to it the maximum amount of video RAM possible, plus a feature connector and video input/output connectors for future expansion — all on a compact, half length expansion card. It all adds up to a clean, reliable design. And NSI Logic warrants the SMART EGA PLUS against manufacturing defects for a full three years. Made in the U.S.A.

# SMART EGA PLUS

from NSI Logic

## Display Mode Support

- Hardware support of MDA, CGA and EGA display modes — For compatibility with all major IBM PC display adapters
- Hardware support of Hercules (HGC) Full and Half modes (displayable in color) — Gives you access to an extensive base of graphics software
- Hardware support of 132 col x 25 line and 132 col x 43 line text modes — Lets you display up to 3 times the data than at standard EGA resolution
- Hardware support of both 640 x 480 and 752 x 410 Extended EGA resolutions; emulates other popular EEGA adapters — So you can run a wide variety of high performance software
- Hardware support of high resolution 800 x 600 graphics — To fully utilize the performance of your multi-frequency monitors in CAD, desktop publishing, other high resolution applications
- Software support (via on-board BIOS) of IBM PS/2 VGA 640 x 480 resolution — For compatibility with PS/2 software using your PC with a multi-frequency monitor
- 16 colors from palette of 64 supported in all color modes — For a full range of color selections
- Drivers provided on disk for running popular programs at 640 x 480, 752 x 410, and 800 x 600 resolutions — To bring an immediate performance benefit to existing software

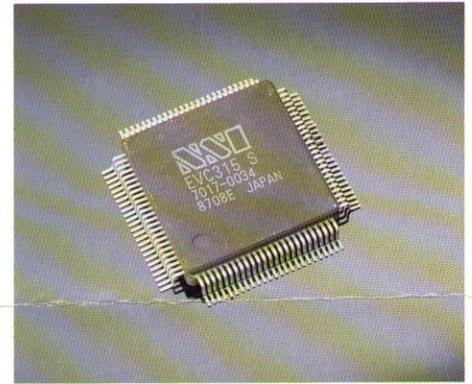
## Convenience Features

- SMART MODE lets you run all display modes on a multisynchronous monitor (can be disabled) — One hardware configuration handles all your software requirements
- Keyboard mode change utilities provided — So you don't have to manually reset switches
- MODE SAVE "locks in" selected mode; survives warm boots — Handy for your self-booting programs
- Palette SAVE lets you "lock in" 16 colors from a palette of 64; survives warm boots (may be disabled) — Lets you specify the colors you want for other programs
- Color for Hercules graphics (palette of 64) — To enhance your productivity
- Command to select hardware supported blinking or non-blinking cursors — Another way you can customize your computing environment

## External Connectors/Controls

- SMART MODE enable/disable switch
- Switches for power on mode selection and primary/secondary adapter assignment
- I/O address port selection with BIOS ROM disable
- DB9 monitor connector
- RCA-type video input and output jacks
- IBM-type feature connector
- Light pen interface header

Chip shown actual size.



## Performance Features

- NSI's proprietary EVC-315 graphic controller chip emulates all PC display modes in hardware; no software trapping (e.g., non-maskable interrupts) or RAM resident programs are used — For completely compatible, reliable performance
- Split-cycle timing scheme yields video memory accesses twice as fast as the IBM EGA — For faster screen updates; noticeable with applications that update screen often, such as CAD software
- Smooth horizontal and vertical scrolling — For less fatigue
- Fully expandable via feature connector, video in/out connectors — To support options or custom development
- Full 256K video RAM — The maximum addressable video memory in PC systems
- Three year limited warranty — For peace of mind

Modes Supported \ Compatible Displays	Multisync. Color	Dual Freq. Enhan. Color	Single Freq. Mono. (TTL)	Single Freq. Color (RGB)
CGA (all modes)	*	*	*	
MDA (all modes)	*	*	*	*
EGA (all modes)	*	*	*	*
132 Col x 25 Line Text	*	*	*	
132 Col x 43 Line Text	*	*	*	
Hercules	*	*	*	
Hercules in color	*	*		
Extended EGA 640 x 480	*			
Extended EGA 752 x 410	*			
High Res 800 x 600	*			
PS/2 VGA 640 x 480	*			

**NSI Logic, Inc.**  
**259 Cedar Hill Road**  
**Marlboro, MA 01752**  
**1-800-772-3742**  
**617-460-0717**