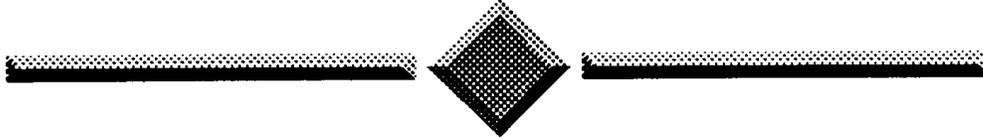


TVGA 9440AGI



User's Manual

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July, 1994

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P/N : 430-02003-703

TVGA9440AGI Ver 3 User's Manual

1. Introduction

Thank you for using our VGA Local-Bus graphics board. The adapter works with your Local-Bus system to bring you high resolution, True Color capability, fast screen redraw and GUI accelerator function, compatibility with the most software and hardware.

Compatibility

- VESA Local-Bus or PCI systems
- Register compatible with EGA and VGA.
- Non-interlaced or interlaced monitor support.
- Compatible with Multi-Sync and PS/2 monitors.
- Support 72Hz VESA standard (800x600 resolution).
- 1024 x 768 70Hz refresh.

Resolution features

RESOLUTION	1MB DRAM	2MB DRAM
640 x 480	256, 64K, 16M	256, 64K, 16M
800 x 600	16, 256, 64K	16, 256, 64K, 16M
1024 x 768	16, 256	16, 256, 64K
1280 x 1024	16 *	256 *

* Monitor with high-scan rate may be needed.

Extended test display

- 80-column text modes in 30, 43, and 60 rows.
- 132-column text modes in 25, 30, 43 and 60 rows.

Software drivers supported

- AutoCAD
- Autoshade
- GEM Desktop
- Lotus
- MS Windows
- MS Word
- OS/2 2.X (OPTIONAL Diskette)
- Quattro Pro
- Symphony
- Ventura
- WordPerfect
- MS Windows NT

2. Configuring Your VGA Adapter

2.1.1. TVGA9440AGI/SMT VL-BUS card.

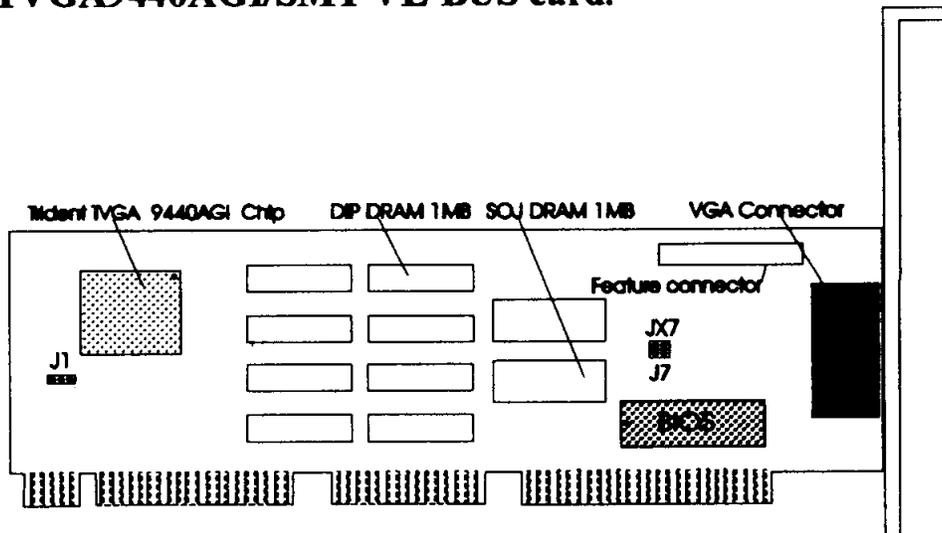


Figure-1 Diagram of TVGA9440AGI/SMT VL-BUS card.

DRAM Upgrade are shown as follows :

BUFFER SIZE	POSITION	DRAM
1 MB	U3, U4	256KB x 16 SOJ
2 MB	U51 - U58, U3, U4	256KB x 4 DIP and 256KB x 16 SOJ

OR.

BUFFER SIZE	POSITION	DRAM
1 MB	U(51-58)	256KB x 4 DIP
2 MB	U(51-58), U(3-4)	256KB x 4 DIP and 256KB x 16 SOJ

2.1.2. TVGA9440AGI/SOJ/SMT VL-Bus card.

TVGA 9440AGI/SOJ/SMT / 4L / V3 (Trident '34)
 BIOS V.15.7

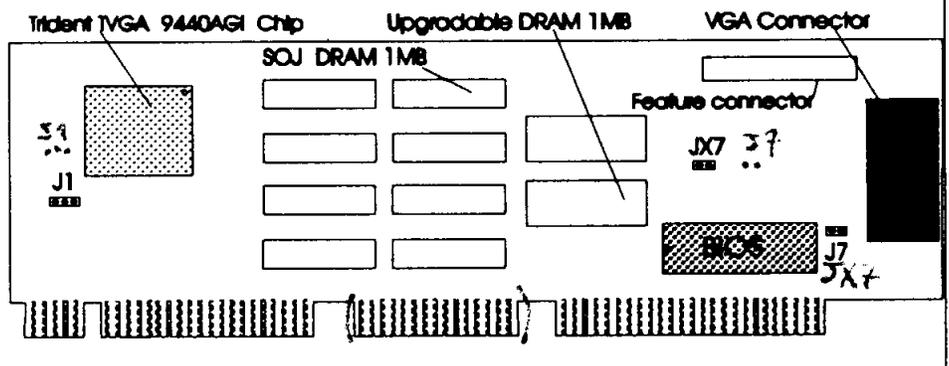


Figure-2 Diagram of TVGA9440AGI/SOJ/SMT VL-BUS card.

DRAM Upgrade are shown as follows :

BUFFER SIZE	POSITION	DRAM
1 MB	U(51-58)	256KB x 4 SOJ
2 MB	U(51-58), U(3-4)	256KB x 4 SOJ and 256KB x 16 SOJ

2.1.3. TVGA 9440/SMT/2L VL-BUS Card

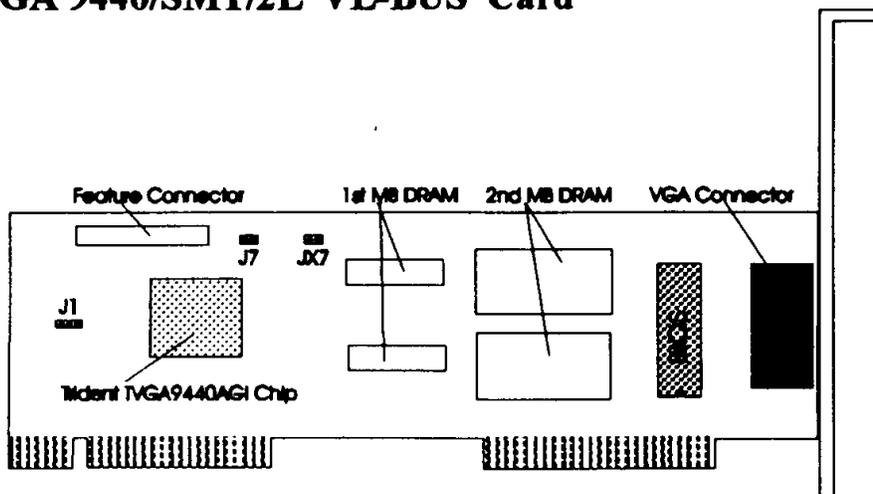


Figure-3 Diagram of TVGA9440 AGI/SMT/2L VL-Bus Card

DRAM Upgrade are shown as follows:

BUFFER SIZE	POSITION	DRAM
1 MB	U3, U4	256KB x 16 SOJ
2 MB	U3, U4, U3A, U4A	256KB x 16 SOJ

2.2. Jumper settings (For figure - 1 , 2 , 3)

JUMPER	SETTINGS	DESCRIPTIONS
J1	2-3 *	VL-Bus standard timing
	1-2 **	VL-Bus alternate timing
J7	Open	Non-Interlaced mode, Monitor can scan at 48.7KHz
	Close *	Interlaced mode,
JX7	JX7 Open**	CPU clock <= 33MHz.
	JX7 Close	CPU clock > 33MHz.

* Default setting # For some motherboards ** For some CPU. eg With Cyrix DX2/50 or OPTI 895MB

2.3 TVGA9440AGI/SMT PCI card.

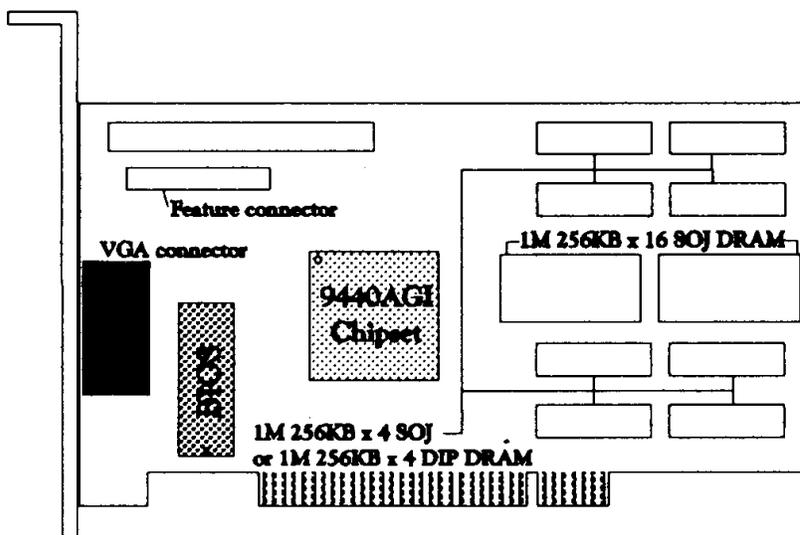


Figure-4 Diagram of TVGA9440AGI/SMT PCI card.

DRAM Upgrade are shown as follows :

BUFFER SIZE	POSITION	DRAM
1 MB	U4, U5	256KB x 16 SOJ
1 MB	U51 - U58	256KB x 4 SOJ
1 MB	U61 - U68	256KB x 4 DIP
2 MB	U4, U5, U61 - U68	256KB x 4 DIP and 256KB x 16 SOJ
2 MB	U4, U5, U51 - U58	256KB x 4 SOJ and 256KB x 16 SOJ

3. Technical Reference

3.1. Display mode descriptions

Your monitor must be capable of displaying the mode you choose, Table-1 lists all available display modes for the adapter and some helpful information.

Table-1 Display modes descriptions

Resolution X*Y	Color Depth Bit	Refresh Rate Hz	Scan Order I/NI	Video Clock Frequency MHz	Memory Clock Frequency MHz	Minimum DRAM MB	Acceleration Scheme P/A/N
640x480	4	60	NI	25.175	58.000	1/2	P
640x480	4	75	NI	31.500	58.000	1/2	P
640x480	8	60	NI	25.175	58.000	1/2	A
640x480	8	75	NI	31.500	58.000	1/2	A
640x480	15/16	60	NI	25.175	58.000	1	A
640x480	15/16	75	NI	31.500	58.000	1	A
640x480	24	60	NI	25.175	58.000	1	N
640x480	24	75	NI	31.500	58.000	1	N
800x600	4	60	NI	40.000	58.000	1/2	P
800x600	4	75	NI	49.500	58.000	1/2	P
800x600	8	60	NI	40.000	58.000	1/2	N
800x600	8	75	NI	49.500	58.000	1/2	N
800x600	8	60	NI	40.000	58.000	1	A
800x600	8	75	NI	49.500	58.000	1	A
800x600	15/16	60	NI	40.000	58.000	1	N
800x600	15/16	75	NI	49.500	58.000	1	N
800x600	15/16	60	NI	40.000	58.000	2	A
800x600	15/16	75	NI	49.500	58.000	2	A
800x600	24	43	I	29	58.000	2	N
1024x768	4	60	NI	65.000	58.000	1/2	P
1024x768	4	75	NI	78.750	58.000	1/2	P
1024x768	8	60	NI	65.000	58.000	1	A
1024x768	8	75	NI	78.750	58.000	1	A
1024x768	15/16	43	I	44.9	58.000	2	A
1280x1024	4	43	I	75.000	58.000	1	P
1280x1024	4	60	NI	108.00	58.000	1	P
1280x1024	8	43	I	75.000	58.000	2	A
1280x1024	8	60	NI	108.00	75.000	2	A

Note : Acceleration scheme :

P - means accelerated by VGA graphic controller

A - means accelerated by graphic engine

N - means partial acceleration

3.2. Sync and polarity specifications

Table-2 Sync and polarity specifications

Mode #	Resolution/Colors	Pixel Freq	Hor Freq	Vert Freq	MEM	Addr	PG #	Text Res.	Font	Type	Feature
0H, 1H	320x200-16	28	31.4	70	All	B800	8	40x25	8x8	Text	
2H, 3H	640x200-16	28	31.4	70	All	B800	8	80x25	8x8	Text	
4H, 5H	320x200-4	25	31.4	70	All	B800	1	40x25	8x8	Graph	
6H	640x200-2	25	31.4	70	All	B800	1	80x25	8x8	Graph	
7H	720x350-Mono	28	31.5	70	All	B000	8	80x25	9x14	Text	
DH	320x200-16	25	31.4	70	All	A000	8	40x25	8x8	Graph	
EH	640x200-16	25	31.4	70	All	A000	4	80x25	8x8	Graph	
10H	640x350-16	25	31.4	70	All	A000	2	80x25	8x14	Graph	

Table continue

Mode #	Resolution/Colors	Pixel Freq	Hor Freq	Vert Freq	MEM	Addr	PG #	Text Res.	Font	Type	Feature
11H	640x480-2	25	31.4	60	All	A000	1	80x30	8x16	Graph	
12H	640x480-16	25	31.4	60	All	A000	2	80x30	8x16	Graph	
13H	320x200-256	25	31.4	70	All	A000	1	40x25	8x8	Graph	
50H	640x480-16	25	31.5	60	All	B800	0	80x30	8x16	Text	
51H	640x473-16	25	31.5	60	All	B800	0	80x43	8x8	Text	
52H	640x480-16	25	31.5	60	All	B800	0	80x60	8x8	Text	
53H	1056x350-16	40	31.3	70	All	B800	0	135x25	8x14	Text	
54H	1056x480-16	40	31.3	60	All	B800	0	132x30	8x16	Text	
55H	1056x473-16	40	31.3	60	All	B800	0	132x43	8x8	Text	
56H	1056x480-16	40	31.3	60	All	B800	0	132x60	8x8	Text	
57H	1188x350-16	45	31.3	70	512K	B800	0	132x25	9x14	Text	
58H	1188x480-16	45	31.3	60	512K	B800	0	132x30	9x16	Text	
59H	1188x473-16	45	31.3	60	512K	B800	0	132x43	8x8	Text	
5AH	1188x480-16	45	31.3	60	512K	B800	0	132x60	8x8	Text	
5BH_1	800x600-16	36	35.2	56	All	A000	1	100x75	8x8	Graph	NI
5BH_2	800x600-16	50	48.1	72	512K	A000	1	100x75	8x8	Graph	NI
5CH	640x400-256	25	31.6	70	1M	A000	4	80x25	8x16	Graph	NI
5DH_1	640x480-256	25	31.6	60	512K	A000	5	80x30	8x16	Graph	NI
5DH_2	640x480-256	32	38.2	72	512K	A000	5	80x30	8x16	Graph	NI
5EH_1	800x600-256	36	35.5	56	512K	A000	8	100x37	8x16	Graph	NI
5EH_2	800x600-256	50	48.3	72	512K	A000	8	100x37	8x16	Graph	NI
5FH_1	1024x768-16	45	35.5	87i	512K	A000	2	128x48	8x16	Graph	I
5FH_2	1024x768-16	65	48.5	60	512K	A000	2	128x48	8x16	Graph	NI
5FH_3	1024x768-16	75	56.5	70	512K	A000	2	128x48	8x16	Graph	NI
60H	1024x768-16	45	35.7	87i	512K	A000	2	128x48	8x16	Graph	I
61H	768x1024-16	45	37.3	70i	512K	A000	2	96x64	8x16	Graph	I
62H_1	1024x768-256	45	35.5	87i	1M	A000	C	128x48	8x16	Graph	I
62H_2	1024x768-256	65	48.5	60	1M	A000	C	128x48	8x16	Graph	NI
62H_3	1024x768-256	75	56.5	70	1M	A000	C	128x48	8x16	Graph	NI
62H_4	1024x768-256	80	59.5	75	1M	A000	C	128x48	8x16	Graph	NI
63H_1	1280x1024-16	75	46.9	87i	1M	A000	10	160x64	8x16	Graph	I
63H_2	1280x1024-16	108	63	60	1M	A000	10	160x64	8x16	Graph	NI
64H_1	1280x1024-256	75	46.9	87i	2M	A000	20	160x64	8x16	Graph	I
64H_2	1280x1024-256	108	63.0	60	2M	A000	20	160x64	8x16	Graph	NI
65H_1	1600x1200-16	108	54.5	87i	1M	A000	20	160x64	8x16	Graph	I
66H_1	1600x1200-256	108	54.5	87i	2M	A000	1	100x75	8x16	Graph	I
6AH_1	800x600-16	36	35.2	56	All	A000	1	100x75	8x8	Graph	NI
6AH_2	800x600-16	50	48.1	72	512K	A000	1	100x75	8x8	Graph	NI
6BH	320x200-16M	40	31.6	70	512K	A000	4	40x25	8x8	Graph	NI
6CH	640x480-T	75	31.4	60	1M	A000	F	80x30	8x16	Graph	NI
6DH	800x600-T	108	34.7	56	2M	A000	16	100x37	8x16	Graph	NI
70H	512x480-32	40	31.4	60	512K	A000	8	64x30	8x16	Graph	NI
71H	512x480-64	40	31.4	60	512K	A000	8	64x30	8x16	Graph	NI
72H	640x400-32K	50	30.2	70	512K	A000	8	80x25	8x16	Graph	NI
73H	640x400-64K	50	30.2	70	512K	A000	8	80x25	8x16	Graph	NI
74H_1	640x480-32K	50	31.4	60	1M	A000	A	80x30	8x16	Graph	NI
74H_2	640x480-32K	65	40.1	72	1M	A000	A	80x30	8x16	Graph	NI
75H_1	640x480-64K	50	31.4	60	1M	A000	A	80x30	8x16	Graph	NI
75H_2	640x480-64K	65	40.1	72	1M	A000	A	80x30	8x16	Graph	NI
76H	800x600-32K	72	35.2	56	1M	A000	F	100x37	8x16	Graph	NI
77H	800x600-64K	72	35.2	56	1M	A000	F	100x37	8x16	Graph	NI
78H	1024x768-32K	88	34.7	87i	2M	A000	18	128x48	8x16	Graph	I
79H	1024x768-64K	88	34.7	87i	2M	A000	18	128x48	8x16	Graph	I
7EH	320x200-32K	25	31.4	70	512K	A000	2	40x25	8x8	Graph	NI
7FH	320x200-64K	25	31.4	70	512K	A000	2	40x25	8x8	Graph	NI

Table-3 Sync and polarity specifications

Group	Information	640x480	800x600	1024x768	1280x1024
0	VGA	60	--	--	--
1	VGA_Enh.	60	87i	--	--
2	SVGA	60	56	87i	--
3	SVGA_Enh.	72	56	87i	--
4	SVGA_Enh_NI	72	72	60	87i
5	HIFUNC	72	72	70	87i
6	Over HIFUNC	--	--	75	60

4. Driver/Utility Software Description

4.1. Start the Driver/Utility program on DOS

To start the Driver/Utility program on DOS, insert Disk one into drive A. From drive A type: README [Enter]. Choose a drive (C:, D:, E:, etc) that you would like to expand the contents of the utility disk.

Once all files have been copied/expanded to the hard drive, the driver/utility program may be started by typing README from the TVGAUTIL directory on the hard drive you selected , you will then be prompted to proceed.

4.2. Utilities Summary

SVMEXE

SVM is a menu-driven program designed to help you to select and test all video modes available to the adapter.

SMONITOR

Switches between color and monochrome display.

TVGACRTC

The TVGACRTC program allows you to adjust video display parameters so that images will be optimally sized and centered on the screen. Adjustable parameters include horizontal size and position, vertical size and position, and pixel frequency. A list of monitors with pre-programmed CRTC parameters is provided. If your monitor is not listed, you will need to create your own entry.

TPATCH

The TPATCH provides several patch files to correct screen display problems. TPATCH corrects the display problems for IBM 3270 Emulation, Grasp 4.0(4.0C), EZ-Menu, and LOGIN with hercules mode. To run, just type TPATCH at the DOS prompt. The TPATCH displays a list of patch files. Just select the patch you need and provide the directory of your application software. TPATCH will modify the display driver provided by your application software.

4.3. Installation of Windows drivers

Disk two contains TVGA 9440AGI Windows drivers, run FILE MANAGER under windows, select to run TINSTALL.EXE in disk two, choose the resolution, color and refresh rate in the menu, then you can follow the prompt to finish the installation of Windows drivers.

Please refer to README.TXT file for detail descriptions.

4.4. Driver summary

The following display drivers are provided with the TVGA card :

- AutoCAD (AutoDesk) — Release 9, 10
- AutoCAD/386 Rel 10/11/12 AutoShade 2.0, 3D Studio
- Lotus 1-2-3 — Release 2.x
- Symphony — Release 2.x
- GEM Desktop — Release 3.xx
- Ventura — Version 2.x & 3.x
- Wordperfect — Release 4 or above
- MS Word — Version 5.0
- MS Windows — Version 3.x
- MS Windows NT — Version 3.1
- Quattro Pro — Version 2.x
- OS2 — Version 2.x (Optional disk)

Please learn how to install the drivers from README in TVGAUTIL directory.

IMPORTANT NOTE

Because we are continuously updating the existing utilities and drivers for popular software applications, your Driver & Utility Diskette may contain drivers which are not listed in the manual. The README file contains a full listing of current drivers and detailed installation procedures. Please read them carefully before you use the programs.

5. Appendix

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules, Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undersized operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one of more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

The user may find the following prepared by the Federal Communications Commission helpful : "How to Identify and Resolve Radio/TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Note : In order for an installation of this product to maintain compliance with the limits for a class B devices, shielded cables and power cord must be used.

DRAFT: 60 ns