

USER'S GUIDE



RX Series

Version 5.0
December 2004
G52-V1ARX05



N1996

FCC-B Radio Frequency Interference Statement

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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

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 undesired operation.

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 Micro Star International MS-8962	 Micro Star International MS-8964	 Micro Star International MS-8976
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MSI Patent Notice

MSI has been working on graphics products for years and has achieved a superior accomplishment in various graphics series. MSI is not only devoted to delivering the best product quality, but also to bringing up the most novel solutions. Here MSI presents the patents that MSI obtained for users reference.

Taiwan	Patent number:	446864
	Patent number:	192403
United State	Patent number:	6629259B2
Mainland China	Patent number:	605251

Important Safety Precautions

Always read and follow these basic safety precautions carefully when handling any piece of electronic component.

1. Keep this User's Manual for future reference.
2. Keep this equipment away from humidity.
3. Lay this equipment on a stable, flat surface before setting it up.
4. The openings on the enclosure are for air convection, hence they protect the equipment from overheating.
5. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
6. Place the power cord in a way that people are unlikely to step on it. Do not place anything on the power cord.
7. Always Unplug the Power Cord before inserting any add-on card or module.
8. All cautions and warnings on the equipment should be noted.
9. Never pour any liquid into the opening that could damage the equipment or cause an electrical shock.
10. If any of the following situations arise, get the equipment checked by a service personnel:
 - ❶ The power cord or plug is damaged
 - ❷ Liquid has penetrated into the equipment
 - ❸ The equipment has been exposed to moisture
 - ❹ The equipment has not functioned properly or in accordance with the User's Guide
 - ❺ The equipment was dropped and damaged
 - ❻ The equipment has obvious signs of breakage
11. DO NOT LEAVE THE EQUIPMENT IN AN UNCONDITIONED ENVIRONMENT WITH A STORAGE TEMPERATURE OF 60°C (140°F) OR ABOVE. IT MAY DAMAGE THE EQUIPMENT.

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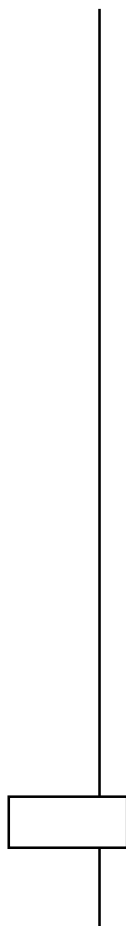
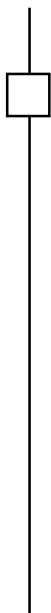
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Note



1

GETTING STARTED

This user's guide is designed for a series of VGA cards. Read this chapter first, and it will give you a clear instruction on how to use this guide.

1.1 How to Use this Guide

This user's guide is designed for a series of VGA cards. Before you start reading this guide, find out the product name of the VGA card you have just purchased on the gift box, and look for the specification and function description in next chapter in accordance with the product name of your VGA card .

Chapter 2, INTRODUCTION, provides the brief specification and function of each VGA card. For detailed description of all functions, you may refer to the rest of the chapters. Note that the VGA card you purchased may not cover all functions mentioned herein; therefore, it is recommended to read the "Reference" information first, which indexes the corresponding function description of each different VGA card, and then find the proper function description for your VGA card in the other chapters.

Chapter 3, HARDWARE INSTALLATION, tells you how to install your VGA card into your computer correctly, and the function of each connector on the VGA card. Also note that your VGA card may not cover all functions mentioned in this chapter. Check on Chapter 2, INTRODUCTION, for the specification of the VGA card you purchased if you have any problem finding the proper function description for your card.

Chapter 4, SOFTWARE INSTALLATION, describes how to install MSI VGA card software for Windows XP, or 2000, including the driver and useful utilities.

Chapter 5, MSI LIVE UPDATE 3, a useful utility for you to upgrade your MSI mainboard and VGA card. Because of this powerful capacity of this utility, you are allowed to easily download and automatically upgrade the BIOS and the up-to-date drivers on-line, without spending extra time on searching Web sites to find the desired BIOS or drivers.

1.2 Conventions of this Guide

Read the conventions of this guide, and it will give you an idea about how this guide is designed and how this guide should be used.

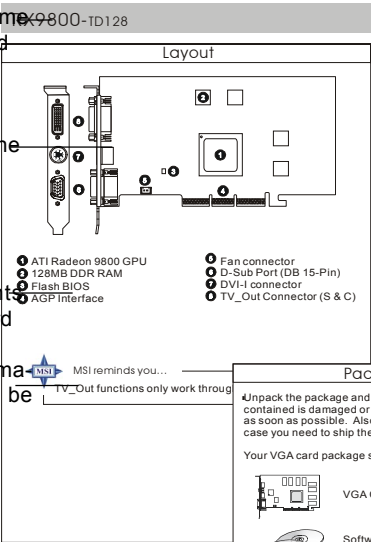
The product name of the VGA card

The layout of the VGA card

The components on the VGA card

Important information that should be paid attention to

Corresponding function for each particular VGA card





The package contents of this VGA card


Package Contents

Unpack the package and inspect all the items carefully. If any item contained is damaged or missing, please contact your local dealer as soon as possible. Also, keep the box and packing materials in case you need to ship the unit in the future.

Your VGA card package should contain the following items:

 VGA Card

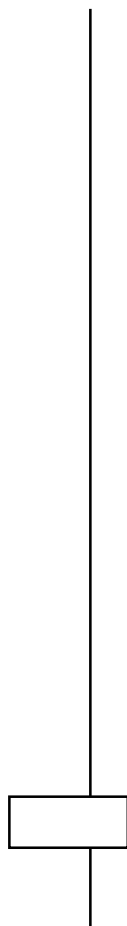
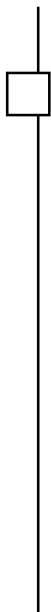
 Software Pack Cds

 Users' Manual

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Note



2

INTRODUCTION

This chapter provides the brief specification and function of each VGA card. For detailed description of all functions, you may refer to the rest of the chapters. Note that the VGA card you purchased may not cover all functions mentioned herein; therefore, it is recommended to read the “Reference” information first, which indexes the corresponding function description of each different VGA card, and then find the proper function description for your VGA card in the other chapters.

2.1 System Requirements

To install the VGA card, your system needs to meet the following



Computer

Intel® Pentium II/III/4 processor,
Intel® Celeron processor, or
compatible system



Expansion Slot

AGP / PCI EXPRESS slot



Monitor

VGA support, minimum 640 x 480
resolution



Operating System

Windows® 2000, XP



CD-ROM Drive

Double Speed or Higher

2.2 Card List

RX850 Series

Features & Specifications

- Twelve extreme parallel pixel pipelines
- Six programmable vertex shader pipelines
- 256-bit quad-channel GDDR3 memory interface
- AGP 8X or PCI Express support
- Support for Microsoft® DirectX® 9.0 programmable vertex and pixel shaders data format
- Direct X 9.0 Vertex Shaders
 - Vertex programs up to 65,280 instructions with flow control
 - Single cycle trigonometric operations
- Direct X 9.0 Extended Pixel Shaders
 - Up to 1,536 instructions and 16 textures per rendering pass
 - 2nd generation F-buffer technology accelerates multi-pass pixel shader programs with unlimited instructions
 - 32 temporary and constant registers
 - Facing register for two-sided lighting
 - 128-bit, 64-bit & 32-bit per pixel floating point color formats
 - Multiple Render Target (MRT) support
- Complete feature set also supported in OpenGL® via extensions
- 2x/4x/6x Anti-Aliasing modes
 - Sparse multi-sample algorithm with gamma correction, programmable sample patterns, and centroid sampling
 - Temporal Anti-Aliasing
- 2x/4x/8x/16x Anisotropic Filtering modes
 - Up to 128-tap texture filtering
 - Adaptive algorithm with bilinear (performance) and trilinear (quality) options
- High quality 4:1 Normal Map Compression
- Works with any two-channel data format
- 3-level Hierarchical Z-Buffer with Early Z Test
- Lossless Z-Buffer Compression (up to 48:1)
- Fast Z-Buffer Clear
- Z Cache optimized for real-time shadow rendering
- Seamless integration of pixel shaders with video in real time
- FULLSTREAM™ video de-blocking technology for Real, DivX, and WMV9 formats

Features & Specifications

- VIDEOSOAP™ noise removal filtering for captured video
- MPEG1/2/4 decode and encode acceleration
 - DXVA Support
 - Hardware Motion Compensation, iDCT, DCT and color space conversion
- Adaptive Per-Pixel De-Interlacing and Frame Rate Conversion (temporal filtering)
- 0.11-micron low-k process technology for higher levels of integration and higher operating clock speeds.

PERFORMANCES (for RX850XT PLATINUM series) (For Reference Only)

- Memory Bandwidth: 37.8GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 207 billion floating point operations/sec.
- Peak Pixel Fill Rate: 8.6 GB/s
- Transform Rate: 810 million vertices/sec.
- Textures applied per pass: supports up to 16 textures per pass

PERFORMANCES (for RX850XT series)(For Reference Only)

- Memory Bandwidth: 34.6GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 200 billion floating point operations/sec.
- Peak Pixel Fill Rate: 8.3 GB/s
- Transform Rate: 780 million vertices/sec.
- Textures applied per pass: supports up to 16 textures per pass

PERFORMANCES (for RX850PRO series)(For Reference Only)

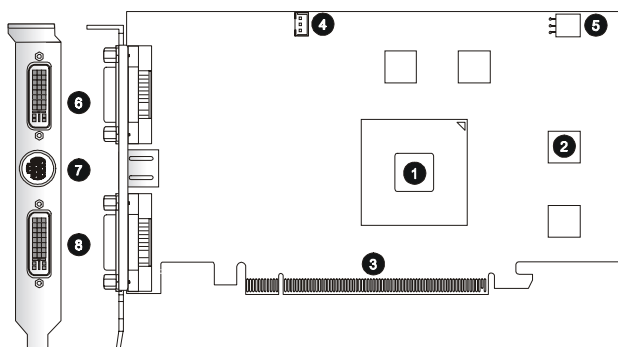
- Memory Bandwidth: 24.6GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 159 billion floating point operations/sec.
- Peak Pixel Fill Rate: 6.2 GB/s
- Transform Rate: 780 million vertices/sec.
- Textures applied per pass: supports up to 12 textures per pass

Features & Specifications

- Operating Systems Support Windows® XP / 2000
- Power supply of 350 (and up) watt is highly recommended for system stability
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

RX850XT Platinum-VT2D256E
RX850XT Platinum-VT2D128E
RX850XT -VT2D256E
RX850XT -VT2D128E
RX850PRO -VT2D256E
RX850PRO -VT2D128E

Layout



- ① ATI Radeon X850XT Platinum GPU/
ATI Radeon X850XT GPU/
ATI Radeon X850PRO GPU
- ② 256MB DDR3 RAM or
128MB DDR3 RAM
- ③ **PCI Express Interface**

- ④ Fan Connector
- ⑤ Power Connector
- ⑥ DVI-I Connector
- ⑦ TV_Out / Video_In
Connector (S&C)
HDTV intergated
- ⑧ DVI-I Connector



MSI reminds you...

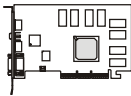
Note that the VGA card shown above may vary from the actual card. For further information, please visit MSI website at <http://www.msi.com.tw>

Package Contents

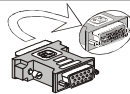
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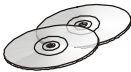
(All accessories are subject to change without notice.)



VGA Card

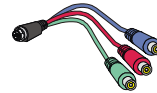


DVI-I / VGA
Adapter

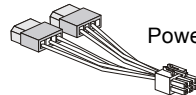


Software
Pack CDs

S-Video to HDTV
Connecting Cable



User's Manual



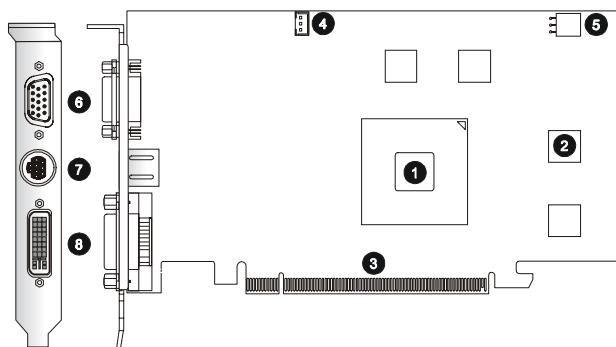
Power Cord

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RX850XT-TD256E
RX850XT-TD128E
RX850PRO-TD128E
RX850PRO-TD256E

Layout



- | | |
|--|---|
| ❶ ATI Radeon X850XT GPU or
ATI Radeon X850PRO GPU | ❺ Power Connector |
| ❷ 256MB DDR3 RAM or
128MB DDR3 RAM | ❻ D-Sub Port (DB 15-Pin) |
| ❸ PCI Express Interface | ❼ TV_Out Connector (S)
HDTV intergated |
| ❹ Fan Connector | ❽ DVI-I Connector |



MSI reminds you...

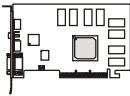
Note that the VGA card shown above may vary from the actual card. For further information, please visit MSI website at <http://www.msi.com.tw>

Package Contents

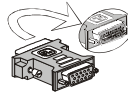
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Your VGA card package should contain the following items:

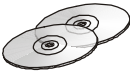
(All accessories are subject to change without notice.)



VGA Card

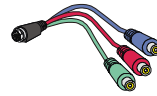


DVI-I / VGA
Adapter

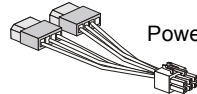


Software
Pack CDs

S-Video to HDTV
Connecting Cable



User's Manual



Power Cord

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RX800 Series

Features & Specifications

- Twelve extreme parallel pixel pipelines
- Six programmable vertex shader pipelines
- 256-bit quad-channel GDDR3/ GDDR memory interface
- AGP 8X or PCI Express support
- Support for Microsoft® DirectX® 9.0 programmable vertex and pixel shadersI data format
- Direct X 9.0 Vertex Shaders
 - Vertex programs up to 65,280 instructions with flow control
 - Single cycle trigonometric operations
- Direct X 9.0 Extended Pixel Shaders
 - Up to 1,536 instructions and 16 textures per rendering pass
 - 2nd generation F-buffer technology accelerates multi-pass pixel shader programs with unlimited instructions
 - 32 temporary and constant registers
 - Facing register for two-sided lighting
 - 128-bit, 64-bit & 32-bit per pixel floating point color formats
 - Multiple Render Target (MRT) support
- Complete feature set also supported in OpenGL® via extensions
- 2x/4x/6x Anti-Aliasing modes
 - Sparse multi-sample algorithm with gamma correction, programmable sample patterns, and centroid sampling
 - Temporal Anti-Aliasing
- 2x/4x/8x/16x Anisotropic Filtering modes
 - Up to 128-tap texture filtering
 - Adaptive algorithm with bilinear (performance) and trilinear (quality) options
- High quality 4:1 Normal Map Compression
- Works with any two-channel data format
- 3-level Hierarchical Z-Buffer with Eany Z Test
- Lossless Z-Buffer Compression (up to 48:1)
- Fast Z-Buffer Clear
- Z Cache optimized for real-time shadow rendering
- Seamless integration of pixel shaders with video in real time
- FULLSTREAM™ video de-blocking technology for Real, DivX, and WMV9 formats

Features & Specifications

- Operating Systems Support Windows® XP / 2000
- Power supply of 350 (and up) watt is highly recommended for system stability
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

Features & Specifications

PERFORMANCES (for RX800XT Platinum series)

(For Reference Only)

- Memory Bandwidth: 35.8GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 200 billion floating point operations/sec.
- Peak Pixel Fill Rate: 8.3 GB/s
- Transform Rate: 780 million vertices/sec.
- Textures applied per pass: supports up to 16 textures per pass

PERFORMANCES (for RX800XT series)(For Reference Only)

- Memory Bandwidth: 32.0GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 192 billion floating point operations/sec.
- Peak Pixel Fill Rate: 8.0 GB/s
- Transform Rate: 750 million vertices/sec.
- Textures applied per pass: supports up to 16 textures per pass

PERFORMANCES (for RX800XL series)(For Reference Only)

- Memory Bandwidth: 31.4GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 154 billion floating point operations/sec.
- Peak Pixel Fill Rate: 6.4 GB/s
- Transform Rate: 600 million vertices/sec.
- Textures applied per pass: supports up to 16 textures per pass

PERFORMANCES (for RX800PRO series)(For Reference Only)

- Memory Bandwidth: 28.8GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 145 billion floating point operations/sec.
- Peak Pixel Fill Rate: 5.7 GB/s
- Transform Rate: 713 million vertices/sec.
- Textures applied per pass: supports up to 12 textures per pass
- Core Speed: 475e
- Memory Speed: 450m

Features & Specifications**PERFORMANCES (for RX800 series)(For Reference Only)**

- Memory Bandwidth: 22.4GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 120 billion floating point operations/sec.
- Peak Pixel Fill Rate: 4.7 GB/s
- Transform Rate: 588 million vertices/sec.
- Textures applied per pass: supports up to 12 textures per pass

**PERFORMANCES (for RX800SE PCI-Express series)
(For Reference Only)**

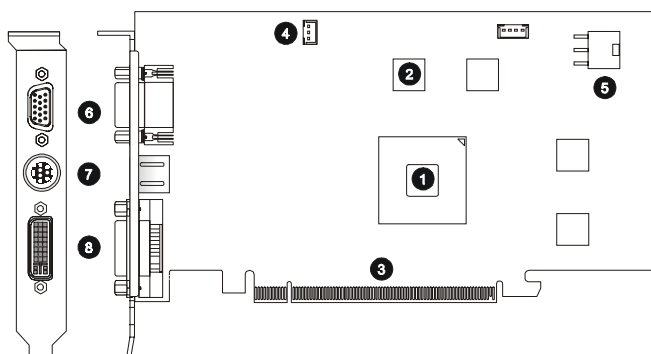
- Memory Bandwidth: 22.5GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 97 billion floating point operations/sec.
- Peak Pixel Fill Rate: 3.4 GB/s
- Transform Rate: 683 million vertices/sec.
- Textures applied per pass: supports up to 8 textures per pass

**PERFORMANCES (for RX800SE AGP series)
(For Reference Only)**

- Memory Bandwidth: 25.6GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- GigaFLOPS: 97 billion floating point operations/sec.
- Peak Pixel Fill Rate: 3.4 GB/s
- Transform Rate: 683 million vertices/sec.
- Textures applied per pass: supports up to 8 textures per pass

RX800XT Platinum-TD256E RX800XT-TD256E

Layout



- | | |
|---|--------------------------|
| ❶ ATI Radeon X800XT Platinum GPU /
ATI Radeon X800XT GPU | ❺ Power Connector |
| ❷ 256MB DDR3 RAM | ❻ D-Sub Port (DB 15-Pin) |
| ❸ PCI Express Interface | ❼ TV_Out Connector (S) |
| ❹ Fan Connector | ❽ DVI-I Connector |



MSI reminds you...

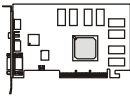
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Package Contents

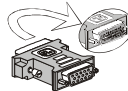
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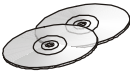
(All accessories are subject to change without notice.)



VGA Card



DVI-I / VGA
Adapter



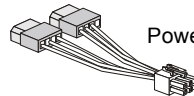
Software
Pack CDs



S-S Cable



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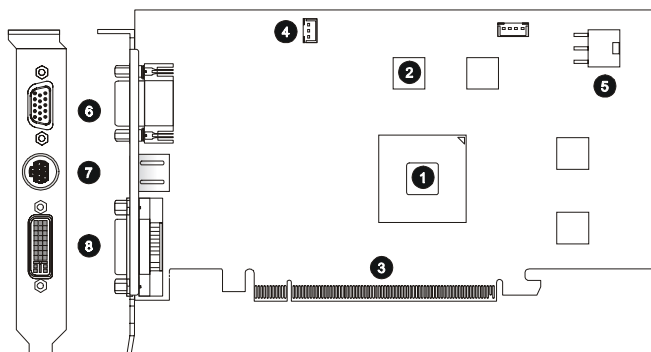
Power Cord

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RX800XT Platinum-VTD256E RX800XT-VTD256E

Layout



- | | |
|---|--|
| ① ATI Radeon X800XT Platinum GPU /
ATI Radeon X800XT GPU | ⑤ Power Connector |
| ② 256MB DDR3 RAM | ⑥ D-Sub Port (DB 15-Pin) |
| ③ PCI Express Interface | ⑦ TV_Out / Video_In
Connector (S&C) |
| ④ Fan Connector | ⑧ DVI-I Connector |



MSI reminds you...

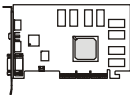
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Package Contents

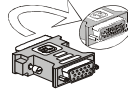
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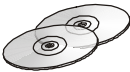
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VGA Card

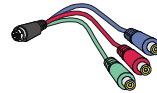


DVI-I / VGA
Adapter

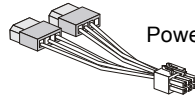


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5.7 Contact Us	5-22
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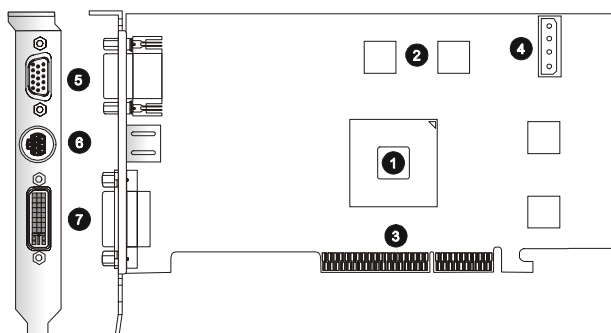
RX800XT Platinum-VTD256

RX800XT-VTD256

RX800PRO-VTD256

RX800SE-VTD256

Layout



- | | |
|---|--|
| ❶ ATI Radeon X800XT Platinum GPU/
ATI Radeon X800XT GPU/
ATI Radeon X800PRO GPU/
ATI Radeon X800SE GPU | ❷ Power Connector |
| ❸ 256MB DDR3 RAM | ❹ D-Sub Port (DB 15-Pin) |
| ❹ AGP Interface | ❺ TV_Out / Video_In
Connector (S&C) |
| | ❻ DVI-I Connector |



MSI reminds you...

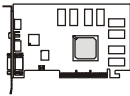
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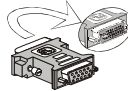
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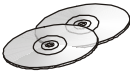
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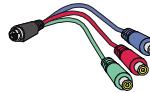
VGA Card



DVI-I / VGA
Adapter



Software
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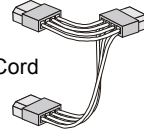


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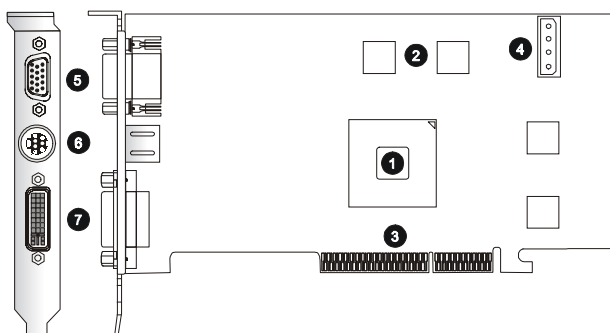
RX800XT Platinum-TD256

RX800XT-TD256

RX800PRO-TD256

RX800SE-TD256

Layout



- | | |
|---|--------------------------|
| ❶ ATI Radeon X800XT Platinum GPU/
ATI Radeon X800XT GPU/
ATI Radeon X800PRO GPU/
ATI Radeon X800SE GPU | ❸ AGP Interface |
| ❷ 256MB DDR3 RAM | ❹ Power Connector |
| | ❺ D-Sub Port (DB 15-Pin) |
| | ❻ TV_Out Connector (S) |
| | ❼ DVI-I Connector |



MSI reminds you...

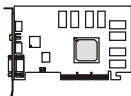
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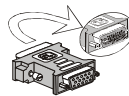
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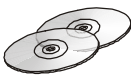
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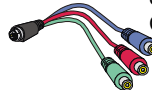
VGA Card



DVI-I / VGA
Adapter



Software
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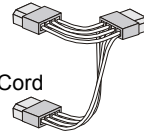


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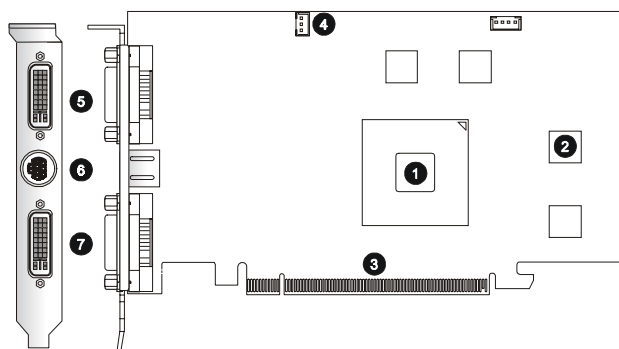
RX800XL-VT2D256E

RX800XL-VT2D128E

RX800-VT2D256E

RX800-VT2D128E

Layout



❶ ATI Radeon X800XL GPU/
ATI Radeon X800XL GPU

❷ 256MB DDR3 RAM or
128MB DDR3 RAM

❸ **PCI Express Interface**

❹ Fan Connector

❺ DVI-I Connector

❻ TV_Out / Video_In
Connector (S&C)
HDTV intergated

❼ DVI-I Connector



MSI reminds you...

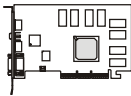
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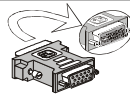
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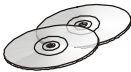
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VGA Card

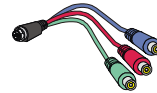


DVI-I / VGA
Adapter

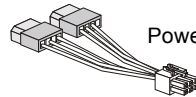


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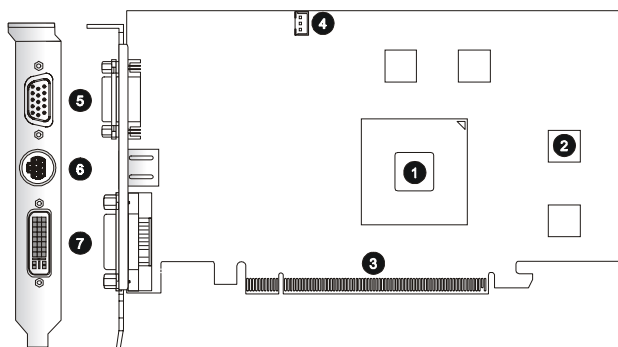
RX800XL-VTD256E

RX800XL-VTD128E

RX800-VTD256E

RX800-VTD128E

Layout



❶ ATI Radeon X800XL GPU/
ATI Radeon X800 GPU

❷ 256MB DDR3 RAM or
128MB DDR3 RAM

❸ **PCI Express Interface**

❹ Fan Connector

❺ D-Sub Port (DB 15-Pin)

❻ TV_Out / Video_In
Connector (S&C)
HDTV intergated

❼ DVI-I Connector



MSI reminds you...

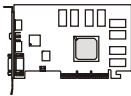
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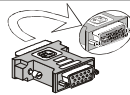
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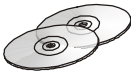
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VGA Card

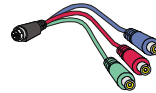


DVI-I / VGA
Adapter

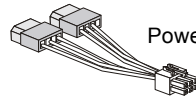


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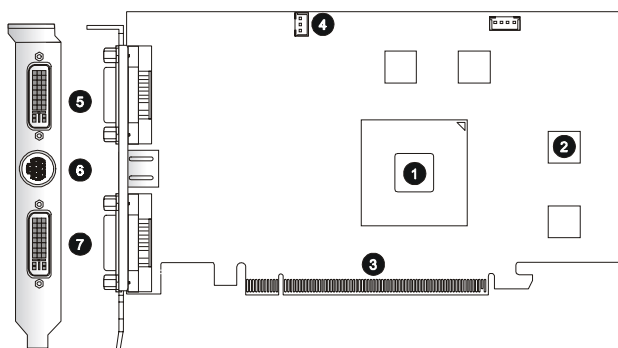
RX800XL-T2D256E

RX800XL-T2D128E

RX800-T2D256E

RX800-T2D128E

Layout



❶ ATI Radeon X800XL GPU/
ATI Radeon X800 GPU

❷ 256MB DDR3 RAM or
128MB DDR3 RAM

❸ **PCI Express Interface**

❹ Fan Connector

❺ D-Sub Port (DB 15-Pin)

❻ TV_Out Connector (S)
HDTV intergated

❼ DVI-I Connector



MSI reminds you...

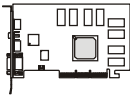
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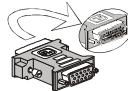
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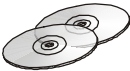
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VGA Card



DVI-I / VGA
Adapter



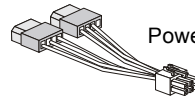
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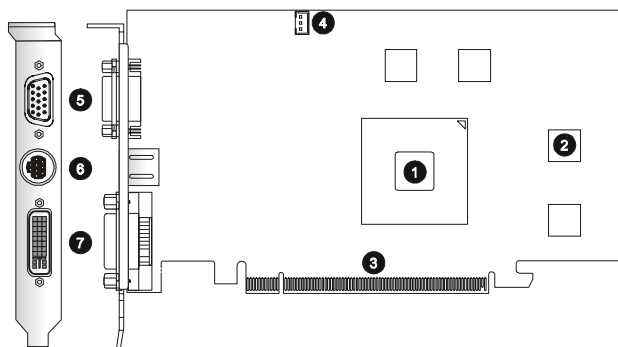
RX800XL-TD256E

RX800XL-TD128E

RX800-TD256E

RX800-TD128E

Layout



❶ ATI Radeon X800XL GPU/
ATI Radeon X800 GPU

❷ 256MB DDR3 RAM or
128MB DDR3 RAM

❸ **PCI Express Interface**

❹ Fan Connector

❺ D-Sub Port (DB 15-Pin)

❻ TV_Out Connector (S)
HDTV intergated

❼ DVI-I Connector



MSI reminds you...

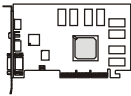
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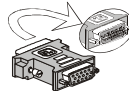
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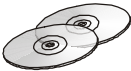
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VGA Card



DVI-I / VGA
Adapter



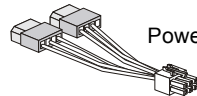
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RX700 Series

Features & Specifications

SMARTSHADER™ 2.0

- SMARTSHADER™ defines the level of realism in latest 2D/3D games and applications
- Complete hardware-accelerated Microsoft® DirectX® 9.0 programmable vertex and pixel shader support
- Full hardware support for OpenGL® 2.0

SMOOTHVISION™ 2.1

- SMOOTHVISION™ improves image quality by smoothing jagged edges, improving blurriness and refining background details during on-screen motion and at lower resolutions
- 2x/4x/6x Anti-Aliasing (AA) modes
 - Sparse multi-sample algorithm with gamma correction, programmable sample patterns and centroid sampling
 - Loss-less Color Compression (up to 6:1) at all resolutions
- 2x/4x/8x/16x Anisotropic Filtering (AF) modes
 - Up to 128-tap texture filtering
 - Adaptive algorithm with bilinear (performance) and trilinear (quality) options.

HYPERZ™ III

- HYPER Z™ ensures optimal hardware performance by discarding irrelevant object data that is not visible to end-user on their display.
- Leverages key features from ATI's third generation HYPER Z™ III technology that conserves video memory bandwidth for improved performance in demanding 2D/3D games and applications
- Lossless Z-Buffer Compression (up to 48:1)
- Fast Z-Buffer Clear
- Z Cache optimized for real-time shadow rendering

VIDEOSHADER™

- Seamless integration of pixel shaders with video in real time
- FULLSTREAM™ video de-blocking technology for Real, DivX, and WMV9 formats
- VIDEOSOAP™ noise removal filtering for captured video
- MPEG 1/2/4 decode and encode acceleration
- DXVA Support
- Hardware Motion Compensation, iDCT, DCT and color space conversion
- Adaptive Per-Pixel De-Interlacing and Frame Rate Conversion (temporal filtering)

Features & Specifications

ADDITIONALFEATURES

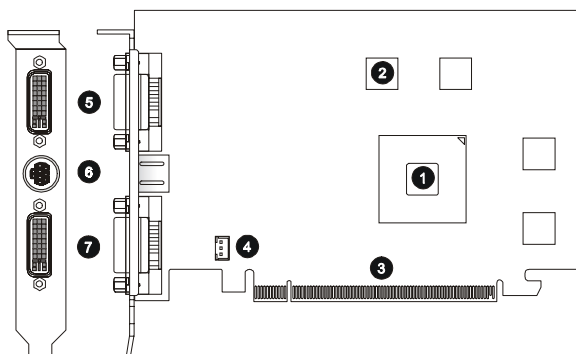
- Dual integrated display controllers
- Dual integrated 10 bit per channel 400 MAz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 / HDMI compliant and HDCP ready)
- Windows Logo Program compliant
- 128-bit memory interface supporting 128MB or 256MB DDR/ DDR3 memory configurations
- Native x16 lane **PCI Express**

OTHERS

- Operating Systems Support Windows® XP / 2000
- Power supply of 350 (and up) watt is highly recommended for system stability.
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

RX700XT-VT2D256E/VT2D128E
RX700PRO-VT2D256E/VT2D128E
RX700-VT2D256E/VT2D128E

Layout



- | | |
|--|--|
| ① ATI Radeon X700XT GPU/
ATI Radeon X700PRO GPU/
ATI Radeon X700XT GPU | ④ Fan Connector |
| ② 256MB DDR/DDR3 RAM or
128MB DDR/DDR3 RAM | ⑤ DVI-I Connector |
| ③ PCI Express Interface | ⑥ TV_Out / Video_In
Connector (S&C) |
| | ⑦ DVI-I Connector |



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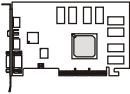
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Package Contents

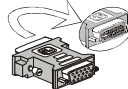
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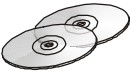
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VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs

TV-Out / Video_In
1-to-4 Connecting
Cable



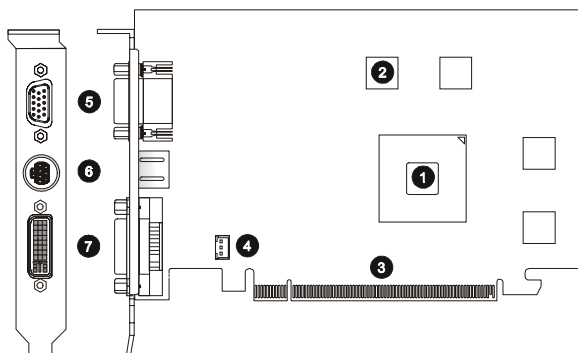
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RX700XT-VTD256E/VTD128E
RX700PRO-VTD256E/VTD128E
RX700-VTD256E/VTD128E

Layout



- | | |
|--|--|
| ① ATI Radeon X700XT GPU/
ATI Radeon X700PRO GPU/
ATI Radeon X700 GPU | ④ Fan Connector |
| ② 256MB DDR/DDR3 RAM or
128MB DDR/DDR3 RAM | ⑤ D-Sub Port (DB 15-Pin) |
| ③ PCI Express Interface | ⑥ TV_Out / Video_In
Connector (S&C) |
| | ⑦ DVI-I Connector |



MSI reminds you...

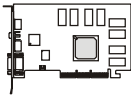
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Package Contents

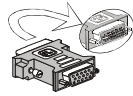
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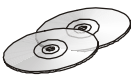
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VGA Card



DVI-I / VGA Adapter



Software Pack CDs

TV-Out / Video_In
1-to-4 Connecting Cable



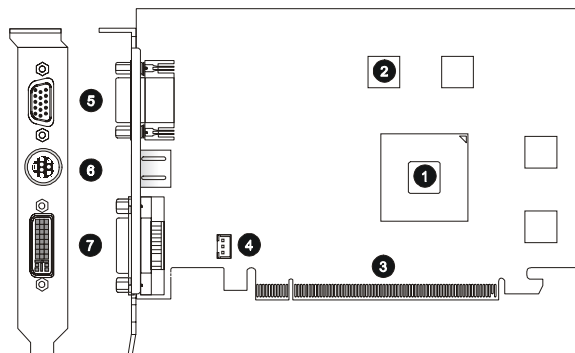
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RX700XT-TD256E/TD128E
RX700PRO-TD256E/TD128E
RX700-TD256E/TD128E

Layout



- | | |
|--|--------------------------------|
| ❶ ATI Radeon X700XT GPU/
ATI Radeon X700PRO GPU/
ATI Radeon X700 GPU | ❸ PCI Express Interface |
| ❷ 256MB DDR/DDR3 RAM or
128MB DDR/DDR3 RAM | ❹ Power Connector |
| | ❺ D-Sub Port (DB 15-Pin) |
| | ❻ TV_Out Connector (S) |
| | ❼ DVI-I Connector |



MSI reminds you...

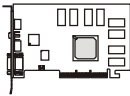
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Package Contents

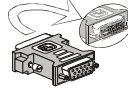
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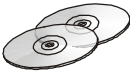
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VGA Card



DVI-I / VGA Adapter



Software Pack CDs

S-S Cable



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RX600 Series**Features & Specifications****SMARTSHADER™ 2.0**

- SMARTSHADER™ defines the level of realism in latest 2D/3D games and applications
- Complete hardware-accelerated Microsoft® DirectX® 9.0 programmable vertex and pixel shader support
- Full hardware support for OpenGL® 2.0

SMOOTHVISION™ 2.1

- SMOOTHVISION™ improves image quality by smoothing jagged edges, improving blurriness and refining background details during on-screen motion and at lower resolutions
- 2x/4x/6x Anti-Aliasing (AA) modes
 - Sparse multi-sample algorithm with gamma correction, programmable sample patterns and centroid sampling
 - Loss-less Color Compression (up to 6:1) at all resolutions
- 2x/4x/8x/16x Anisotropic Filtering (AF) modes
 - Up to 128-tap texture filtering
 - Adaptive algorithm with bilinear (performance) and trilinear (quality) options.

HYPERZ™ III

- HYPER Z™ ensures optimal hardware performance by discarding irrelevant object data that is not visible to end-user on their display.
- Leverages key features from ATI's third generation HYPER Z™ III technology that conserves video memory bandwidth for improved performance in demanding 2D/3D games and applications
- Lossless Z-Buffer Compression (up to 48:1)
- Fast Z-Buffer Clear
- Z Cache optimized for real-time shadow rendering

VIDEOSHADER™

- Seamless integration of pixel shaders with video in real time
- FULLSTREAM™ video de-blocking technology for Real, DivX, and WMV9 formats
- VIDEOSOAP™ noise removal filtering for captured video
- MPEG 1/2/4 decode and encode acceleration
- DXVA Support
- Hardware Motion Compensation, iDCT, DCT and color space conversion
- Adaptive Per-Pixel De-Interlacing and Frame Rate Conversion (temporal filtering)

Features & Specifications

ADDITIONALFEATURES

- Dual integrated display controllers
- Dual integrated 10 bit per channel 400 MAz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 / HDMI compliant and HDCP ready)
- Windows Logo Program compliant
- 128-bit memory interface supporting 128MB or 256MB DDR1 memory configurations
- Native x16 lane **PCI Express**

PERFORMANCES (for RX600 XT) (For Reference Only)

- Memory Interface: 256-bit / 4Channel
- Peak Memory Bandwidth: 11.84GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- Peak Pixel Fill Rate: 2.00 GB/s
- Dual RAMDACs: 400MHz

PERFORMANCES (for RX600 PRO) (For Reference Only)

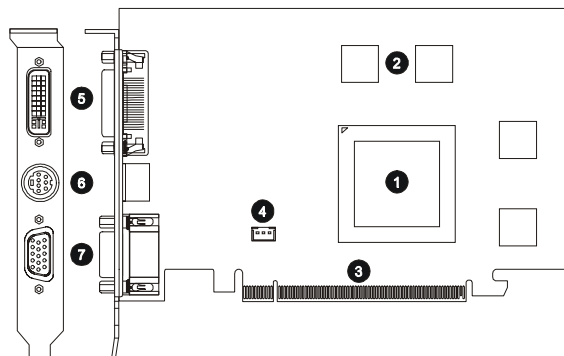
- Memory Interface: 256-bit / 4Channel
- Peak Memory Bandwidth: 9.6GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- Peak Pixel Fill Rate: 1.80 GB/s
- Dual RAMDACs: 400MHz

OTHERS

- Operating Systems Support Windows® XP / 2000
- Power supply of 350 (and up) watt is highly recommended for system stability.
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

RX600XT-VTD128E

Layout



- | | |
|-------------------------|-------------------------------------|
| ❶ ATI Radeon X600XT GPU | ❺ DVI-I Connector |
| ❷ 128MB DDR/DDR3 RAM | ❻ TV_Out / Video_In Connector (S&C) |
| ❸ PCI Express Interface | ❼ D-Sub Port (DB 15-Pin) |
| ❹ Power Connector | |



MSI reminds you...

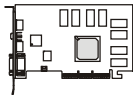
Note that the VGA card shown above may vary from the actual card. For further information, please visit MSI website at <http://www.msi.com.tw>

Package Contents

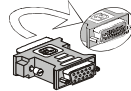
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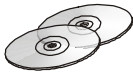
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VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs

TV-Out / Video_In
1-to-4 Connecting
Cable



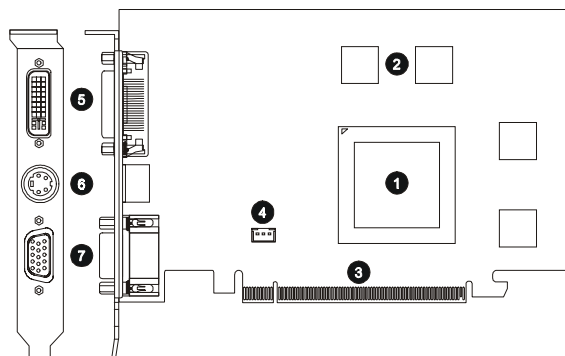
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6. TROUBLESHOOTING	6-1

RX600XT-TD128E

Layout



- | | |
|--------------------------------|--------------------------|
| ❶ ATI Radeon X600XT GPU | ❺ DVI-I Connector |
| ❷ 128MB DDR/DDR3 RAM | ❻ TV_Out Connector (S) |
| ❸ PCI Express Interface | ❼ D-Sub Port (DB 15-Pin) |
| ❹ Power Connector | |



MSI reminds you...

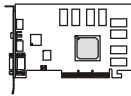
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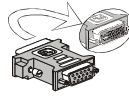
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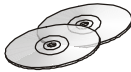
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VGA Card



DVI-I / VGA Adapter



Software Pack CDs

S-S Cable



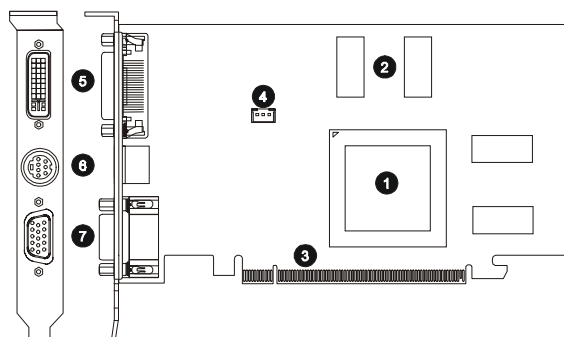
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RX600PRO-VTD128E RX600XT-VTD128E

Layout



- | | |
|--|--------------------------|
| ❶ ATI Radeon X600PRO GPU/
ATI Radeon X600XT GPU | ❺ DVI-I Connector |
| ❷ 128MB DDR/DDR3 RAM | ❻ TV_Out Connector (S) |
| ❸ PCI Express Interface | ❼ D-Sub Port (DB 15-Pin) |
| ❹ Power Connector | |



MSI reminds you...

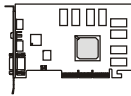
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Package Contents

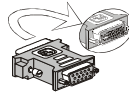
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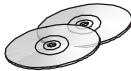
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VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs

S-S Cable



User's Manual



TV-Out / Video_In
1-to-4 Connecting
Cable

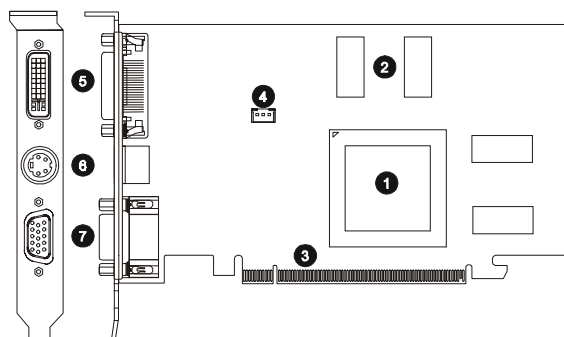
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RX600PRO-TD128E

RX600XT-TD128E

Layout



- | | |
|--|--------------------------|
| ❶ ATI Radeon X600PRO GPU/
ATI Radeon X600XT GPU | ❺ DVI-I Connector |
| ❷ 128MB DDR/DDR3 RAM | ❻ TV_Out Connector (S) |
| ❸ PCI Express Interface | ❼ D-Sub Port (DB 15-Pin) |
| ❹ Power Connector | |



MSI reminds you...

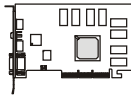
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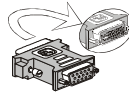
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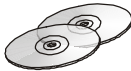
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VGA Card



DVI-I / VGA Adapter



Software Pack CDs

S-S Cable



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RX300 Series**Features & Specifications****SMARTSHADER™ 2.0**

- SMARTSHADER™ defines the level of realism in latest 2D/3D games and applications
- Complete hardware-accelerated Microsoft® DirectX® 9.0 programmable vertex and pixel shader support
- Full hardware support for OpenGL® 2.0

SMOOTHVISION™ 2.1

- SMARTSHADER™ improves image quality by smoothing jagged edges, improving blurriness and refining background details during on-screen motion and at lower resolutions
- 2x/4x/6x Anti-Aliasing (AA) modes
 - Sparse multi-sample algorithm with gamma correction, programmable sample patterns and centroid sampling
 - Loss-less Color Compression (up to 6:1) at all resolutions
- 2x/4x/8x/16x Anisotropic Filtering (AF) modes
 - Up to 128-tap texture filtering
 - Adaptive algorithm with bilinear (performance) and trilinear (quality) options.

HYPERZ™ III

- HYPER Z™ ensures optimal hardware performance by discarding irrelevant object data that is not visible to end-user on their display.
- Leverages key features from ATI's third generation HYPER Z™ III technology that conserves video memory bandwidth for improved performance in demanding 2D/3D games and applications
- Lossless Z-Buffer Compression (up to 48:1)
- Fast Z-Buffer Clear
- Z Cache optimized for real-time shadow rendering

VIDEOSHADER™

- Seamless integration of pixel shaders with video in real time
- FULLSTREAM™ video de-blocking technology for Real, DivX, and WMV9 formats
- VIDEOSOAP™ noise removal filtering for captured video
- MPEG 1/2/4 decode and encode acceleration
- DXVA Support
- Hardware Motion Compensation, iDCT, DCT and color space conversion
- Adaptive Per-Pixel De-Interlacing and Frame Rate Conversion (temporal filtering)

Features & Specifications

ADDITIONALFEATURES

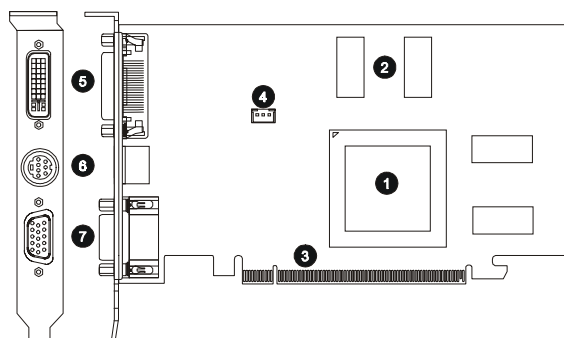
- Dual integrated display controllers
- Dual integrated 10 bit per channel 400 MAz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 / HDMI compliant and HDCP ready)
- Windows Logo Program compliant
- 128-bit memory interface supporting 128MB or 256MB DDR1 memory configurations
- Native x16 lane **PCI Express**

OTHERS

- Operating Systems Support Windows® XP / 2000
- Power supply of 350 (and up) watt is highly recommended for system stability.
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

RX300-VTD128E

Layout



- | | |
|-------------------------|--------------------------|
| ❶ ATI Radeon X300 GPU | ❺ DVI-I Connector |
| ❷ 128MB DDR RAM | ❻ TV_Out Connector (S) |
| ❸ PCI Express Interface | ❼ D-Sub Port (DB 15-Pin) |
| ❹ Power Connector | |



MSI reminds you...

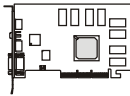
Note that the VGA card shown above may vary from the actual card. For further information, please visit MSI website at <http://www.msi.com.tw>

Package Contents

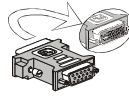
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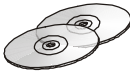
(All accessories are subject to change without notice.)



VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs



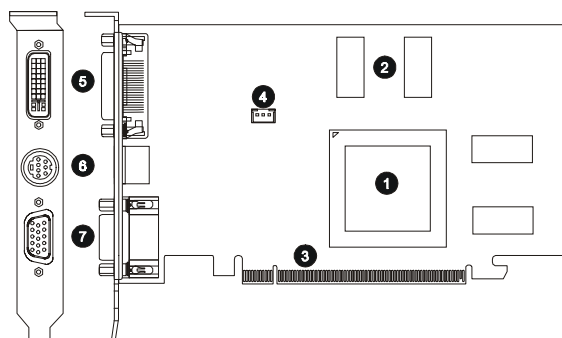
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RX300-TD128E

Layout



- | | |
|-------------------------|--------------------------|
| ❶ ATI Radeon X300 GPU | ❺ DVI-I Connector |
| ❷ 128MB DDR RAM | ❻ TV_Out Connector (S) |
| ❸ PCI Express Interface | ❼ D-Sub Port (DB 15-Pin) |
| ❹ Power Connector | |



MSI reminds you...

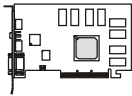
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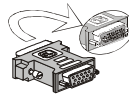
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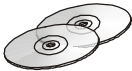
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VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs



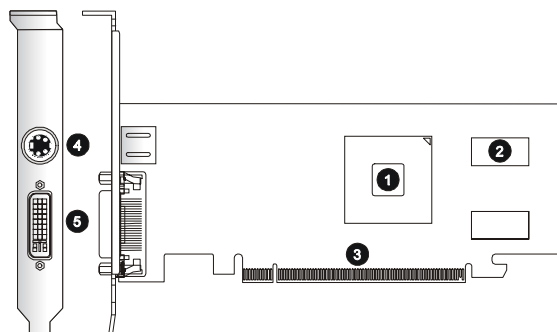
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RX300SE-TD128E RX300-TD128E

Layout



- ❶ ATI Radeon X300SE GPU/
ATI Radeon X300 GPU
128MB DDR RAM

- ❸ **PCI Express Interface**
- ❹ TV_Out Connector (S)
- ❺ DVI-I Connector

❷



MSI reminds you...

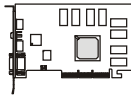
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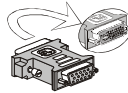
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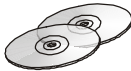
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VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs



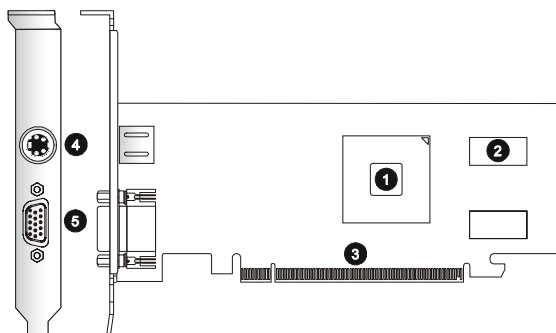
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RX300SE-T128E RX300-T128E

Layout



❶ ATI Radeon X300SE GPU/
ATI Radeon X300 GPU

❷ 128MB DDR RAM

❸ **PCI Express Interface**

❹ TV_Out Connector (S)

❺ D-Sub Port (DB 15-Pin)



MSI reminds you...

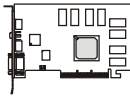
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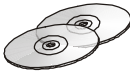
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VGA Card



Software
Pack CDs



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RX9800 Series

Features & Specifications

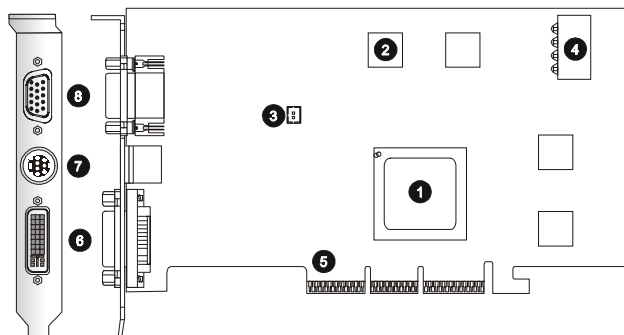
- SMARTSHADER™ 2.1's flexible architecture removes many of the stumbling blocks that developers previously encountered, giving them the chance to fully explore and express their creativity.
- SMARTSHADER™ 2.1 offers complete DirectX® 9.0 support, enabling cinematic quality lighting effects.
- SMOOTHVISION™ 2.1 delivers the sharpest, clearest textures
- THRUVIEW™ creates live, translucent TV, video and DVD windows for easy desktop access.
- New EAZYLOOK™ full-sized programming grid offers theme controls and single click navigation.
- MultiView™ enables dual TV tuner capabilities including Picture-in-Picture and independent channel surfing. (Additional ATI TV WONDER™ is required for this to work.)
- HYPERZ™ III+
The intelligent memory design of the RADEON 9800 SERIES increases effective memory bandwidth, resulting in better performance.
- SMOOTHVISION™ 2.1 improves upon ATI's leading sampling and adaptive texture filtering technologies, by adding support for anti-aliasing and anisotropic filtering at higher resolutions.
- VIDEOShader™ integrates pixel shaders with the RADEON 9800 SERIES display architecture, allowing the pixel shaders to interact with and enhance video output.
- FULLSTREAM™ video deblocking and improved adaptive de-interlacing are examples of applying shaders to outgoing video.
- The RADEON 9800 SERIES supports multiple display configurations including CRT, DVI, and TV-Out connectors.
- The RADEON 9800 SERIES offers HDTV and DVD playback, MPEG-2 decoding, alpha-blending, and other integrated functions for a complete, high performance video playback solution.
- Radio frequency wireless remote adds the flexibility of a hand held, 30 foot user interface.
- Add effects, transitions and sound to videos with Pinnacle Studio™ software.
- Save projects to VideoCD and DVD formats or output to digital ready television.
- VideoSoap™ provides filtering techniques that improve sharpness and smooth blurry motion for high quality personal video.
- Capture pictures and video at up to 30 frames per second.
- **Comprehensive AGP 8X/4X/2X support**
- One display (VGA or DVI) simultaneously connected with a TV or VCR

Features & Specifications

- YPrPb output adapter (available in North America only)
- System Requirements
 - RADEON™ 9800 Series of products requires connection to your PC's internal power supply for operation. Consult your system builder or OEM to ensure your system has an adequate power supply. Otherwise, a 300-Watt power supply or greater will be recommended to ensure normal system operation where a number of other internal devices are installed.
 - Intel® Pentium® 4/III/II/Celeron™, AMD® K6/Athlon® or compatible with AGP 8X/4X/2X slot
 - Interactive Program guide requires Internet connection for listing updates
 - Remote control receiver requires available USB port
 - Operating Systems Support Windows® XP / 2000
 - Power supply of 350 (and up) watt is highly recommended for system stability.
- 0.15-micron process technology for higher levels of integration and higher operating clock speeds.
- Memory Interface: 256-bit / 4Channel
- Peak Memory Bandwidth: 21.8GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- Bandwidth compression ratio: 8.8:1
- Peak Pixel Fill Rate: 3.04 GB/s
- Redering Pipeline: 8
- Textures applied per pass: supports up to 16 textures per pass
- Geometry Pipeline: 4
- Peak vertex throughput Mvertices/sec: 380
- Dual RAMDACs: 400MHz
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

RX9800PRO-TD128SP RX9800-TD128SP

Layout



- | | |
|--|--------------------------|
| ❶ ATI Radeon 9800PRO GPU/
ATI Radeon 9800 GPU | ❹ AGP Interface |
| ❷ 128MB DDR/DDR3 RAM | ❺ Power Connector |
| ❸ Fan Connector | ❻ D-Sub Port (DB 15-Pin) |
| | ❼ TV_Out Connector (S) |
| | ❽ DVI-I Connector |



MSI reminds you...

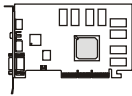
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Package Contents

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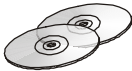
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VGA Card



9-SC TV-Out
Connecting Cable



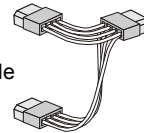
Software
Pack CDs

S-S Cable



User's Manual

Power Cable



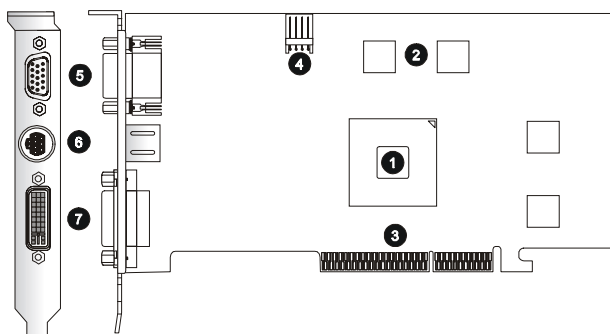
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RX9800PRO-TD128

RX9800-TD128

Layout



- | | |
|--|--------------------------|
| ❶ ATI Radeon 9800PRO GPU/
ATI Radeon 9800 GPU | ❷ Power Connector |
| ❸ 128MB DDR/DDR3 RAM | ❹ D-Sub Port (DB 15-Pin) |
| ❺ AGP Interface | ❻ TV_Out Connector (S) |
| | ❼ DVI-I Connector |



MSI reminds you...

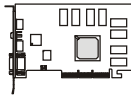
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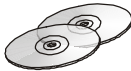
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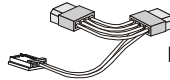
VGA Card



9-SC TV-Out
Connecting Cable



Software
Pack CDs



Power Cable



User's Manual



S-S Cable

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RX9600 Series

Features & Specifications

- Quad-Pipe architecture delivers real-time cinematic rendering and animation
- 128-bit full floating point precision enables billions of color variations to render the same lighting and effects as Hollywood studios
- Full AGP 8X support doubles available bandwidth for the most engaging gameplay in its class
- Enjoy better performance and 3D imagery in multimedia, games and applications with Microsoft® DirectX® 9 optimized architecture
- DirectPlay of the Microsoft® DirectX® 9 brings improved multiplayer access to groups connecting over LANs and the Internet
- Supported by CATALYST™, the industry's most stable 3D acceleration software
- Also supporting the latest OpenGL® functionality and feature sets
- Optimized to run the most demanding 2D and 3D next-generation games and applications without putting extra strain on the CPU
- FULLSTREAM™ removes blocky artifacts from streaming Internet video to deliver smoother looking, higher quality online content
- VIDEO IMMERSION™ integrates features to provide unprecedented support for digital and high definition video
- Enjoy long-term compatibility with the hottest Microsoft® DirectX® 9 gaming releases and backwards-compatibility with your favorite titles
- RADEON™ 9600 Visual Processing Unit (VPU)
- System Requirements: Intel® Pentium® 4/III/II/Celeron™, AMD® K6/Duron™/Athlon®/Athlon XP® or compatible with AGP 4X (1.5V), 8X (0.8v) or Universal AGP 3.0 bus configuration (4X/8X)
- Display Support
 - VGA connector for analog CRT
 - S-video connector for TV / VCR
 - DVI-I connector for digital flat panel
 - Independent resolutions and refresh rates for any two connected displays
- 4 parallel rendering pipelines and 2 parallel geometry engines
- AGP 8X support
- SMOOTHVISION™ 2.1 technology delivers the sharpest, clearest textures without sacrificing frame rates
- HYPER Z™ III+
- SMARTSHADER™ 2.0 technology supports Microsoft® DirectX® 9 feature sets, enabling more complex and cinematic-quality lighting effects
- Support TRUFORM™ 2.0 and VIDEOSHADER™
- MPEG-2 decoding with motion compensation, iDCT and color space

Features & Specifications

- Dual integrated display controllers
- Dual integrated 10-bit per channel 400 MHz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 compliant)
- Integrated TV Output support up to 1024x768 resolution
- Optimized for Pentium® 4 SSE2 and AMD Athlon™ 3DNow!
- 0.13-micron process technology for higher levels of integration and higher operating clock speeds.
- Memory Interface: 64-bit / 1Channel

PERFORMANCES (for RX9600 Series)

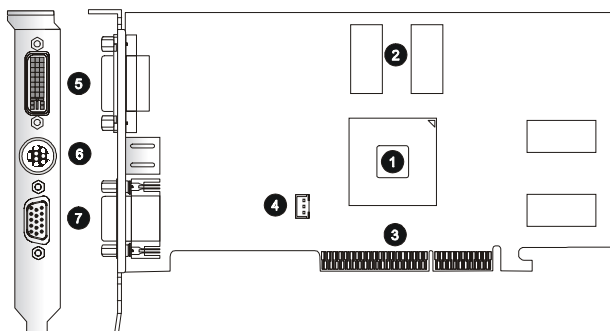
- Peak Memory Bandwidth: 6.4GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- Bandwidth compression ratio: 8.8:1
- Peak Pixel Fill Rate: 1.3 GB/s
- Redering Pipeline: 4
- Geometry Pipeline: 2
- Peak vertex throughput Mvertices/sec: 162.5
- Engine Clock Speed / Memory Clock Speed: 325MHz / 200MHz DDR

PERFORMANCES (for RX9600 XT Series)

- Peak Memory Bandwidth: 0.4GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- Bandwidth compression ratio: 8.8:1
- Peak Pixel Fill Rate: 2+ GB/s
- Redering Pipeline: 4
- Geometry Pipeline: 2
- Peak vertex throughput Mvertices/sec: 250+
- Operating Systems Support Windows® XP / 2000
- Power supply of 350 (and up) watt is highly recommended for system stability
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

RX9600XT-TD128

Layout



- | | |
|--------------------------|--------------------------|
| ① ATI Radeon 9600 XT GPU | ⑤ DVI-I Connector |
| ② 128MB DDR/DDR3 RAM | ⑥ TV_Out Connector (S) |
| ③ AGP Interface | ⑦ D-Sub Port (DB 15-Pin) |
| ④ Fan Connector | |



MSI reminds you...

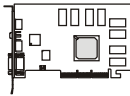
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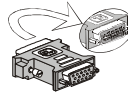
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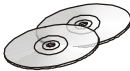
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VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs



S-S Cable



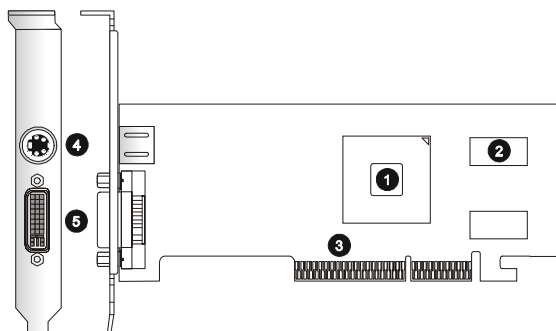
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RX9600SE-TD128

Layout



- ① ATI Radeon 9600 SE GPU
- ② 128MB DDR/DDR3 RAM
- ③ AGP Interface
- ④ TV_Out Connector (S)
- ⑤ DVI-I Connector



MSI reminds you...

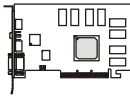
Note that the VGA card shown above may vary from the actual card. For further information, please visit MSI website at <http://www.msi.com.tw>

Package Contents

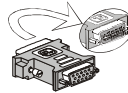
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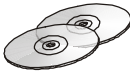
(All accessories are subject to change without notice.)



VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs



S-S Cable



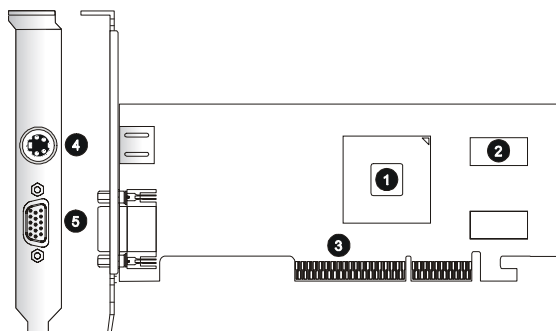
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RX9600SE-T128

Layout



- | | |
|--------------------------|--------------------------|
| ❶ ATI Radeon 9600 SE GPU | ❷ TV_Out Connector (S) |
| ❸ 128MB DDR/DDR3 RAM | ❹ D-Sub Port (DB 15-Pin) |
| ❺ AGP Interface | |



MSI reminds you...

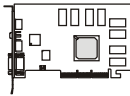
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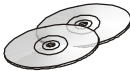
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VGA Card



S-S Cable



Software
Pack CDs



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RX9550 Series**Features & Specifications**

- Quad-Pipe architecture delivers real-time cinematic rendering and animation
- SMARTSHADER™ 2.0 technology supports Microsoft® DirectX® 9 feature sets, enabling more complex and cinematic-quality lighting effects
- SMOOTHVISION™ 2.1 technology delivers the sharpest, clearest textures without sacrificing frame rates
- 128-bit full floating point precision enables billions of color variations to render the same lighting and effects as Hollywood studios
- Full AGP 8X support doubles available bandwidth for the most engaging gameplay in its class
- Enjoy better performance and 3D imagery in multimedia, games and applications with Microsoft® DirectX® 9 optimized architecture
- DirectPlay of the Microsoft® DirectX® 9 brings improved multiplayer access to groups connecting over LANs and the Internet
- Supported by CATALYST™, the industry's most stable 3D acceleration software
- Also supporting the latest OpenGL® functionality and feature sets
- Optimized to run the most demanding 2D and 3D next-generation games and applications without putting extra strain on the CPU
- FULLSTREAM™ removes blocky artifacts from streaming Internet video to deliver smoother looking, higher quality online content
- VIDEO IMMERSION™ integrates features to provide unprecedented support for digital and high definition video
- RADEON™ 9550 Visual Processing Unit (VPU)
- Enjoy long-term compatibility with the hottest Microsoft® DirectX® 9 gaming releases and backwards-compatibility with your favorite titles
- System Requirements: Intel® Pentium® 4/III/II/Celeron™, AMD® K6/Duron™/Athlon®/Athlon XP® or compatible with AGP 4X (1.5V), 8X (0.8v) or Universal AGP 3.0 bus configuration (4X/8X).
- Display Support
 - VGA connector for analog CRT
 - S-video connector for TV / VCR
 - DVI-I connector for digital flat panel
 - Independent resolutions and refresh rates for any two connected displays
- 4 parallel rendering pipelines and 2 parallel geometry engines
- AGP 8X support
- Support TRUFORM™ 2.0 and VIDEOSHADER™
- MPEG-2 decoding with motion compensation, iDCT and color space conversion

Features & Specifications

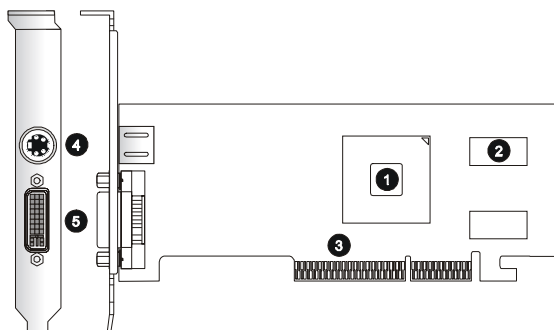
- SMARTSHADER™ 2.0
 - Programmable pixel and vertex shaders
 - 16 textures per pass
 - Pixel shaders up to 160 instructions with 128-bit floating point precision
 - Vertex shaders up to 1024 instructions with flow control
 - Multiple render target support
 - Shadow volume rendering acceleration
 - High precision 10-bit per channel frame buffer support
 - Supports DirectX® 9.0 and the latest version of OpenGL®
- Dual integrated display controllers
- Dual integrated 10-bit per channel 400 MHz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 compliant)
- Integrated TV Output support up to 1024x768 resolution
- Optimized for Pentium® 4 SSE2 and AMD Athlon™ 3DNow!
- PC 2002 compliant abs
- 0.13-micron process technology for higher levels of integration and higher operating clock speeds.

PERFORMANCE (For Reference Only)

- Memory Interface: 64-bit / 1Channel
- Peak Memory Bandwidth: 6.4GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- Bandwidth compression ratio: 8.8:1
- Peak Pixel Fill Rate: 1.0 GB/s
- Redering Pipeline: 4
- Textures applied per pass: supports up to 16 textures per pass
- Geometry Pipeline: 2
- Peak vertex throughput Mvertices/sec: 125
- Dual RAMDACs: 400MHz
- Operating Systems Support Windows® XP / 2000
- Power supply of 350 (and up) watt is highly recommended for system stability
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

RX9550SE-TD128

Layout



- | | |
|--------------------------|------------------------|
| ❶ ATI Radeon 9550 SE GPU | ❷ TV_Out Connector (S) |
| ❸ 128MB DDR RAM | ❹ DVI-I Connector |
| ❺ AGP Interface | |



MSI reminds you...

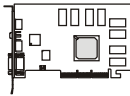
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Package Contents

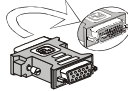
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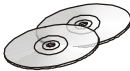
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VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs



User's Manual



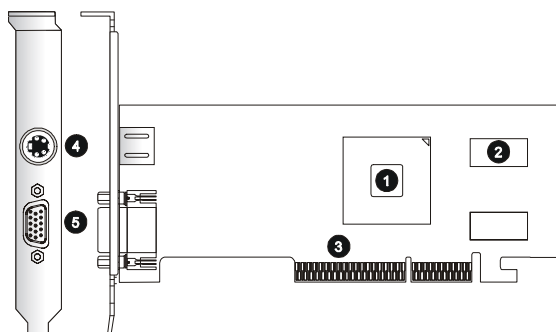
S-S Cable

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RX9550SE-T128

Layout



- | | |
|--------------------------|--------------------------|
| ❶ ATI Radeon 9550 SE GPU | ❷ TV_Out Connector (S) |
| ❸ 128MB DDR RAM | ❹ D-Sub Port (DB 15-Pin) |
| ❺ AGP Interface | |



MSI reminds you...

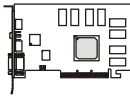
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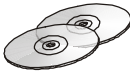
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VGA Card



S-S Cable



Software
Pack CDs



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RX9250 / RX9200 Series

Features & Specifications

- Drive one VGA monitor and your TV or VCR simultaneously
- Includes a simple, forward facing input block with s-video, composite video inputs and stereo audio input
- THRUVIEW™ creates live, translucent TV, video and DVD windows for easy desktop access
- New EAZYLOOK™ (requires Remote Wonder) provides easy to read on-screen information for TV and DVDs.
- The “all-in-one” video and audio software suite is ready for recording, streaming, and editing; the included MULTIMEDIA CENTER™ software lets you:
 - create your own music videos
 - create slide shows
 - add European teletext or North American closed captioning
 - edit your home movies with Hollywood quality transitions
 - convert analog to digital videos
 - save your projects with one touch DVD or VideoCD burning software with faster than real time performance
 - capture still images from TV or DVD at resolutions up to 720x480 and video at up to 30 frames per second
- Full support for DirectX® 8.1 ensures fast action gaming with seamless transitions
- Full support for the AGP 8X standard doubles available bandwidth for a more engaging gaming experience
- SMARTSHARDERTM enables cinematic quality
- SMOOTHVISION™ delivers sharp, clear textures
- The ALL-IN-WONDER® family is powered by the industry's most stable ATI CATALYST™ driver suite for reliable user confidence
- System Requirements
 - Intel® Pentium® 4/III/II/Celeron™, AMD® K6/Athlon® or compatible with AGP 8X /4X /2X slot
 - 128MB of system memory
 - Installation software requires CD-ROM drive
 - DVD playback requires DVD drive
 - Interactive Program guide requires Internet connection for listing updates
 - 1GHZ minimum processor speed for MPEG-2 video capture
- Support one VGA monitor simultaneously connected with a TV or VCR
- 0.15-micron process technology for higher levels of integration and higher operating clock speeds.

Features & Specifications**PERFORMANCES (for RX9250 Series) (For Reference Only)**

- Memory Interface: 128-bit
- Memory Bandwidth: 6.4GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- Fill Rate: 0.96 billion texels/sec.
- Vertices: 60 million/sec.
- Engine Clock: 240MHz
- Memory Clock: 200MHz
- Dual RAMDACs: 350MHz

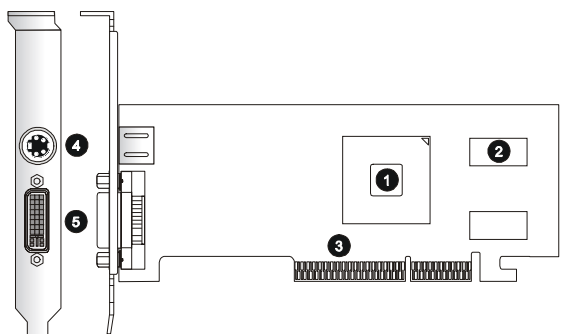
PERFORMANCES (for RX9200 Series) (For Reference Only)

- Memory Interface: 64-bit / 1Channel
- Peak Memory Bandwidth: 2.66GB/sec. (This value is for reference only, depending on the type/size of memory implemented)
- Bandwidth compression ratio: 2:1
- Peak Pixel Fill Rate: 0.68 GB/s
- Redering Pipeline: 4
- Textures applied per pass: supports up to 6 textures per pass
- Geometry Pipeline: 1
- Peak vertex throughput Mvertices/sec: 50

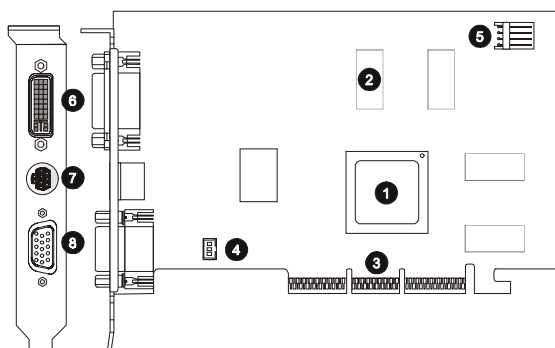
- Operating Systems Support Windows® XP / 2000
- Power supply of 350 (and up) watt is highly recommended for system stability
- 2D Display Modes: Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors
 - 640 x 480 200Hz
 - 800 x 600 200Hz
 - 1024 x 768 200Hz
 - 1152 x 864 200Hz
 - 1280 x 1024 160Hz
 - 1600 x 1200 120Hz
 - 1920 x 1080 120Hz
 - 1920 x 1200 100Hz
 - 1920 x 1440 90Hz
 - 2048 x 1536 85Hz

RX9250-TD128

Layout



- | | |
|-----------------------|------------------------|
| ① ATI Radeon 9250 GPU | ④ TV_Out Connector (S) |
| ② 128MB DDR RAM | ⑤ DVI-I Connector |
| ③ AGP Interface | |



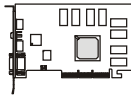
- | | |
|-----------------------|---|
| ① ATI Radeon 9250 GPU | ⑥ DVI-I Connector |
| ② 128MB DDR RAM | ⑦ TV_Out Connector (S)
HDTV integrated |
| ③ AGP Interface | ⑧ D-Sub Port (DB 15-Pin) |
| ④ Fan Connector | |
| ⑤ Power Connector | |

Package Contents

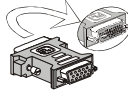
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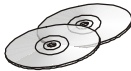
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VGA Card



DVI-I / VGA
Adapter



Software
Pack CDs



User's Manual



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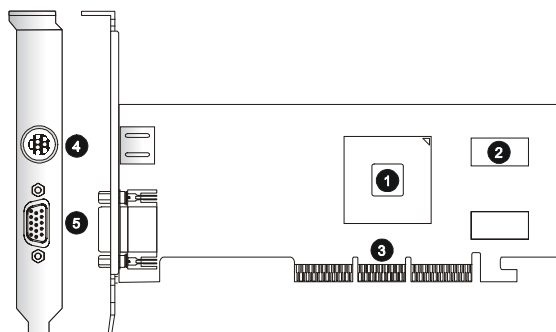


MSI reminds you...

Note that the VGA cards shown in the previous page may vary from the actual card. For further information, please visit MSI website at <http://www.msi.com.tw>

RX9250-T128

Layout



- | | |
|-----------------------|--------------------------|
| ① ATI Radeon 9250 GPU | ④ TV_Out Connector (S) |
| ② 128MB/64MB DDR RAM | ⑤ D-Sub Port (DB 15-Pin) |
| ③ AGP Interface | |



MSI reminds you...

TV Out functions only work through S-video connection.

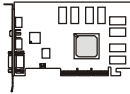
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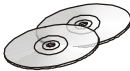
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VGA Card



S-S Cable



Software
Pack CDs



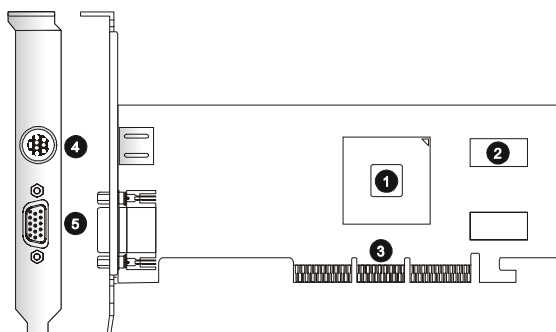
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6. TROUBLESHOOTING	6-1

RX9200SE-T128-T64

Layout



- ❶ ATI Radeon 9200 SE GPU
- ❷ 128MB/64MB DDR RAM
- ❸ AGP Interface
- ❹ TV_Out Connector (S)
- ❺ D-Sub Port (DB 15-Pin)



MSI reminds you...

TV Out functions only work through S-video connection.

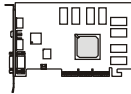
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Package Contents

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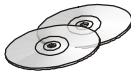
(All accessories are subject to change without notice.)



VGA Card



S-S Cable



Software
Pack CDs



User's Manual

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NOTE



3

HARDWARE INSTALLATION

This chapter tells you how to install your VGA card into your computer correctly and the function of each connector on the VGA card. Note that your VGA card may not cover all functions mentioned in this chapter. Check on Chapter 2, INTRODUCTION, for the specification of the VGA card you purchased if you have any problem in finding the proper function description for your card.

3.1 Card Installation

To install the VGA card to your computer, please follow the steps below:

3.1.1 Installation on new system

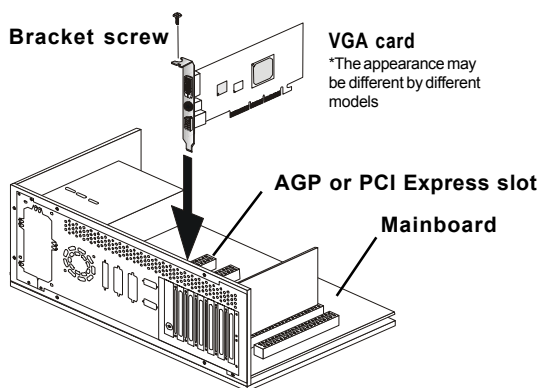
1. Remove the computer case.
2. Locate the AGP slot or PCI Express slot on your mainboard.



MSI reminds you...

Inserting your VGA card into a wrong type of slot will damage your card (refer to your mainboard manual for more information).

3. Put the card directly over the AGP slot or PCI Express slot and press one end of the card into the slot first. Slightly but firmly press the other end until it is fully seated in the slot.
4. Secure the card with a bracket screw.
5. Install all other cards and devices and connect all the cables, and then replace the case.
6. Connect the monitor. Now, you are ready to install the software on your computer.



3.1.2 Installation on system with existing VGA card

To replace the existing VGA card to your computer, please follow the steps below:

1. Turn off the computer and unplug all the cables and power cords.
2. Remove the computer case.
3. Remove the existing VGA card. Locate the AGP slot or PCI Express slot on your mainboard.



MSI reminds you...

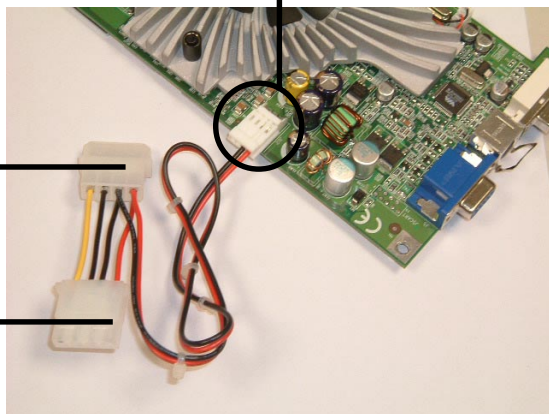
Inserting your VGA card into a wrong type of slot will damage your card (refer to your mainboard manual for more information).

5. Put the card directly over the AGP slot or PCI Express slot and press one end of the card into the slot first. Slightly but firmly press the other end until it is fully seated in the slot.
6. Secure the card with a bracket screw.
7. Replace the case.
8. Connect the monitor (see previous section).
9. Restart the computer. Now, you are ready to install the driver for the VGA card.

3.1.3 Connecting the Power Cord

If your VGA card comes with a power connector, it is necessary to have the offered power cord attached to both the power connector of the VGA card and the power supply connector of the computer in order to have power supplied to the VGA card.

Attach one end of the power cord to the power connector located on the VGA card.



Attach the other ends of the power cord to the power supply connector of the computer.

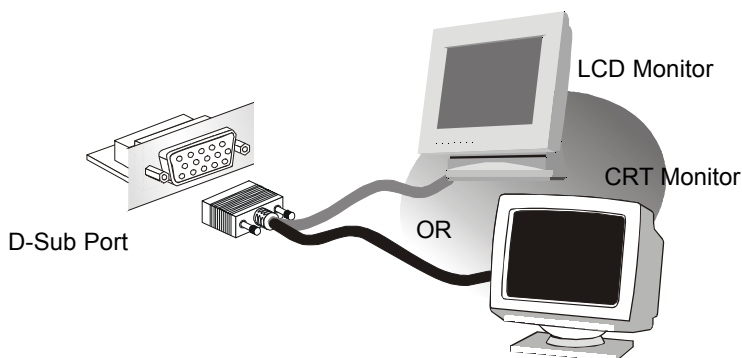


MSI reminds you...

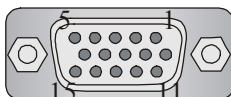
The VGA card which is displayed above may appear different from the card you purchased.

3.2 D-Sub Port (DB 15-Pin)

The VGA card provides a standard D-Sub Port, which allows you to connect a CRT or LCD monitor. Simply plug your monitor cable into the D-Sub Port on your VGA card, and make sure that the other end of the cable is properly connected to your monitor (refer to your monitor manual



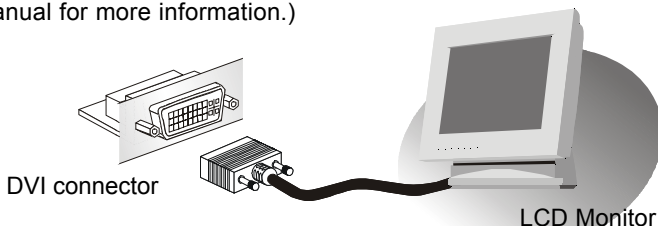
D-Sub Port Pin Definition



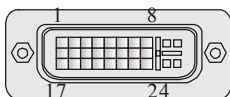
D-Sub Port (DB15-S)	
Pin	Signal Description
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	5V
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

3.3 Digital Panel Connector (DVI-I)

The VGA card provides a DVI (Digital Visual Interface) connector which allows you to connect an LCD monitor. The DVI connector provides a high-speed digital interconnection between the computer and its display device. To connect a LCD monitor, simply plug your monitor cable into the DVI connector on the VGA card, and make sure that the other end of the cable is properly connected to your monitor. (refer to your monitor manual for more information.)



DVI-I Connector Pin Definition



DVI-I Connector			
Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S.* Data2-	13	T.M.D.S. Data3+
2	T.M.D.S. Data2+	14	+5V
3	T.M.D.S. Data2/4 Shield	15	GND (for +5V)
4	T.M.D.S. Data4-	16	Hot Plug Detect
5	T.M.D.S. Data4+	17	T.M.D.S. Data0-
6	DDC Clock	18	T.M.D.S. Data0+
7	DDC Data	19	T.M.D.S. Data0/5 Shield
8	N/C	20	T.M.D.S. Data5-
9	T.M.D.S. Data1-	21	T.M.D.S. Data5+
10	T.M.D.S. Data1+	22	T.M.D.S. Clock Shield
11	T.M.D.S. Data1/3 Shield	23	T.M.D.S. Clock+
12	T.M.D.S. Data3-	24	T.M.D.S. Clock-
C 1	Analog Red	C 4	Analog Horizontal Sync
C 2	Analog Green	C 5	Analog Ground (analog R, G & B return)
C 3	Analog Blue		

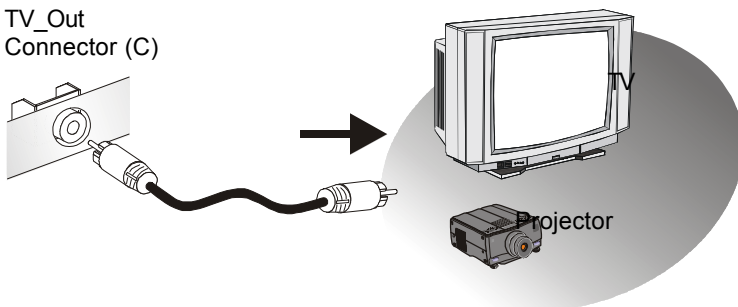
*T.M.D.S. Technology

The graphics data sent to the digital monitor use Transition Minimized Differential Signaling (T.M.D.S.) technology. TMDS uses an encoding algorithm to 8-bits of data into a 10-bit transition minimixed, DC balanced character, which are transition-minimized to reduce EMI with copper cables and DC-balanced for transmission over fiber optic cables. The TMDS algorithm also provides robust clock recovery for greater skew tolerance with longer cables or low cost short cables.

3.4 TV_Out Connector (C)

The VGA card provides a TV_Out connector for video-out function which allows you to output the image to a TV or video device. Simply plug one end of the RCA cable into the TV_Out connector on the VGA card, and the other end to the video input connector on your TV or video device. Most TVs and video devices support such kind of input connector. For the correct connection, please refer to the TVs and video devices' manuals

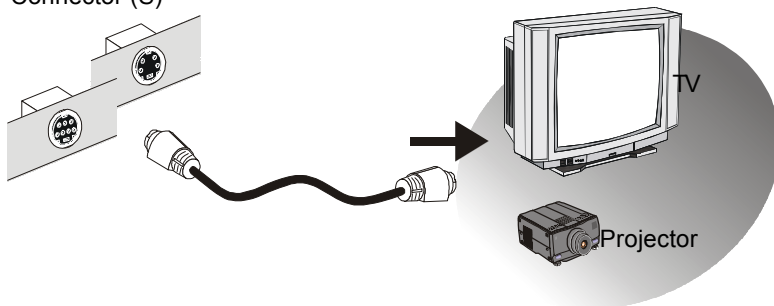
TV_Out
Connector (C)



3.5 TV_Out Connector (S)

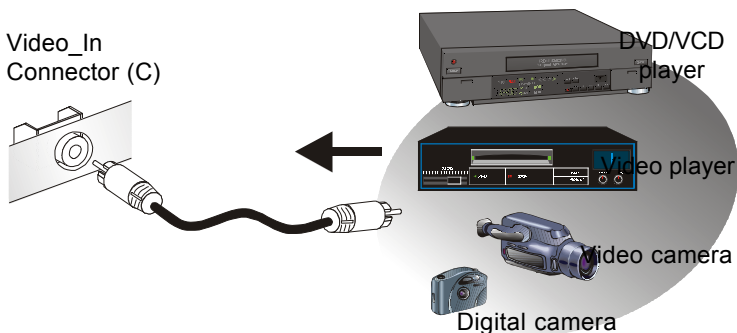
The VGA card provides a TV_Out connector (4-pin or 7-pin) for video-out function which allows you to output the image to a TV or video device. Simply plug one end of the S_Video cable into the TV_Out connector on the VGA card, and the other end to the video input connector on your TV or video device. Some TVs and video devices may support such kind of input connector. For the correct connection, please refer to the TVs and video devices' manuals for more information.

TV_Out
Connector (S)



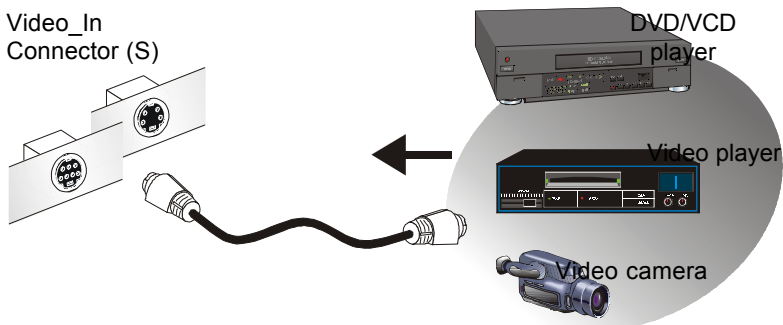
3.6 Video_In Connector (C)

The VGA card provides a Video_In connector for video-in function which allows you to input the image from video devices. Simply plug one end of the RCA cable into the Video_In connector on the VGA card, and the other end to the video output connector on your video devices. Most video devices support such kind of output connector. For the correct connection, please refer to the video devices' manuals for more



3.7 Video_In Connector (S)

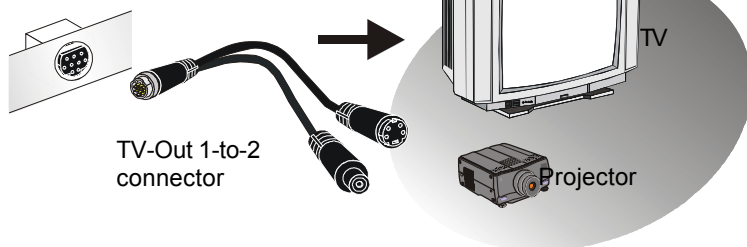
The VGA card provides a Video_In connector (4-pin or 7-pin) for video-in function which allows you to input the image from video devices. Simply plug one end of the S_Video cable into the Video_In connector on the VGA card, and the other end to the video output connector on your video devices. Some video devices may support such kind of output connector. For the correct connection, please refer to the video devices'



3.8 TV_Out Connector (S & C)

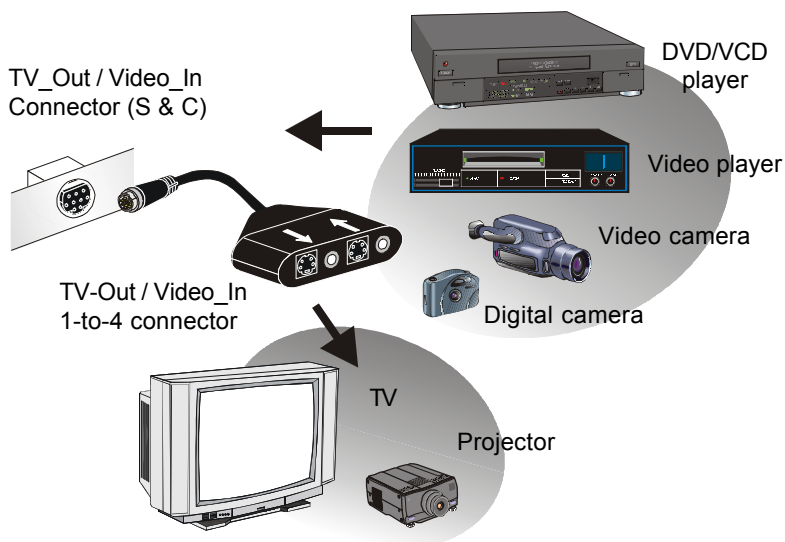
The VGA card provides a 9-pin TV_Out connector (S & C) for video-out function which allows you to output the image to a TV or video device. This type of connector can be used for either RCA cable or S_Video cable if the attached TV-Out 1-to-2 connector is plugged in. Simply plug one end of the RCA cable or S_Video cable into the proper connector provided by the TV-Out 1-to-2 connector, and the other end to the video input connector on your TV or video device. Most TVs and video devices support such kind of input connector. For the correct connection, please refer to the TV's and video devices' manuals for more information.

TV_Out
Connector (S & C)

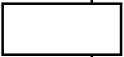


3.9 TV_Out / Video_In Connector (S & C)

The VGA card provides a 9-pin TV_Out / Video_In connector (S & C) for video-out / video-in function which allows you to output / input the image to / from a TV or video device. This type of connector can be used for either RCA cable or S_Video cable if the attached TV-Out / Video_In 1-to-4 connector is plugged in. Simply plug one end of the RCA cable or S_Video cable into the proper connector provided by the TV-Out / Video_In 1-to-4 connector, and the other end to the video input / output connector on your TV or video device. Most TVs and video devices support such kind of input / output connector. For the correct connection, please refer to the TV's and video devices' manuals for more information.



Note



NOTE



4

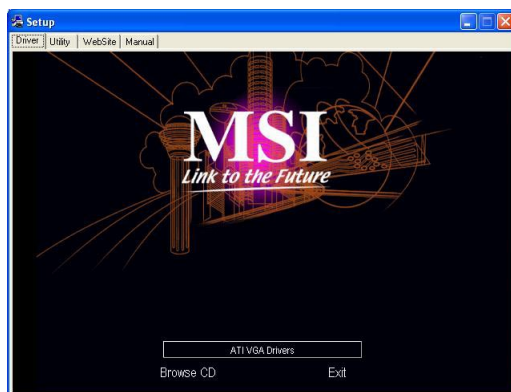
SOFTWARE INSTALLATION

This chapter describes how to install MSI VGA card software for Windows XP or 2000, including the driver.

4.1 Installing the VGA Card Driver

To install the driver for the VGA card to your computer running Windows® 2000/XP, please follow the steps below:

1. Turn on the computer.
2. Insert the CD into the CD-ROM drive. The Autorun program will start the Setup program, and show the setup screen as follows:



3. Click **ATI VGA Drivers**. Follow the on-screen instructions to complete the installation.
4. After finishing the installation, restart the computer as instructed.



MSI reminds you...

- ✦ *If, on your computer, the “Autorun” program does not run automatically, please **1) enable the CD-ROM drive’s auto-detect function from Control Panel**; or **2) find and run the setup.exe manually from the CD-ROM**.*
- ✦ *The figures in this section are based on the tested platform and for reference only; the actual displays and information (such as settings, driver’s version, etc.) on your system may be different.*

4.2 Browsing the Web

Since our products are under continual improvement, there may be a later version of the driver and BIOS for your purchase. We encourage you to visit our website at <http://www.msi.com.tw> to get the latest news. In addition, we post lots of useful websites on the World Wide Web for you. Simply click to select the linkage and browse the website as you usually do.

1. Insert the CD into the CD-ROM drive, and start the Setup program.
2. Choose the WebSite tab on the setup screen.
3. Click the corresponding button to launch your browser and



MSI reminds you...

To surf these websites, you have to make connection to the Internet first.

4.3 More Information

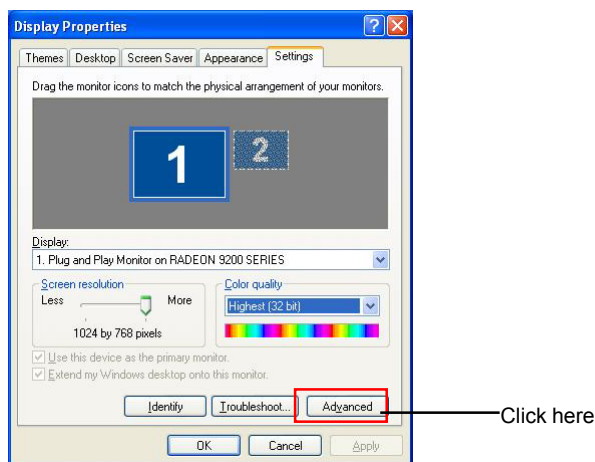
To browse through the contents on the CD, simply click **Browse CD** under each tab. You can use the **Manual** tab to learn more about your MSI products.

1. Insert the CD into the CD-ROM drive and start the Setup program.
2. Click About CD to learn more about the CD-ROM.
3. Choose the Manual tab on the setup screen.
4. Click the corresponding button to get more information.

4.4 Display Adjustment

After you have completed the driver installation, the Setup program adds many specific options to the Windows-based **Display Properties**. You can configure the specific display properties of the VGA card to obtain optimized performance.

To open the **Display Properties** window, select [**Start / Settings / Control Panel / Display**]. Also, you may simply right-click the blank Windows® desktop area and choose **Properties** in the pop-up menu. Once the **Display Properties** window appears on the screen, select **Settings** tag and then click **Advanced** button on the **Setting** tag.



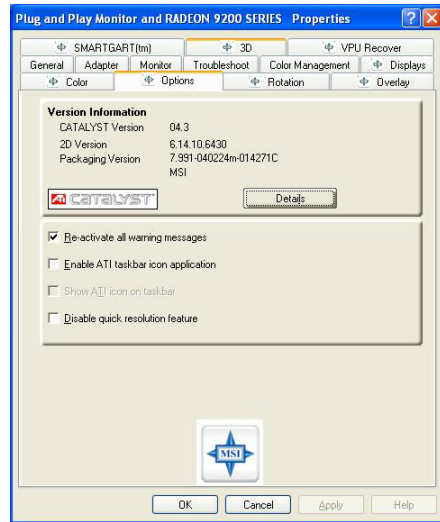
MSI reminds you...

*The figures in this section are for reference only. The actual information on the **Display Properties** window may vary in different operating systems.*

In this section, we list the most important information on how to configure these specific options of the VGA card.

Options

- **Version Information** tells the Catalyst version number, 2D version number and the packaging (driver) information.
- Click **Details** button to acquire the detailed hardware and driver information of the card.
- **Re-activate all warning messages** allows you to reactivate any disabled graphics warning messages.
- **Enable ATI taskbar application** enables or disables the ATI taskbar icon. Note that this feature must be enabled for ATI hotkey support.
- **Show ATI icon on taskbar** adds or removes the ATI icon from the taskbar.
- **Disable quick resolution feature** is accessible by left-clicking the ATI icon in the taskbar.

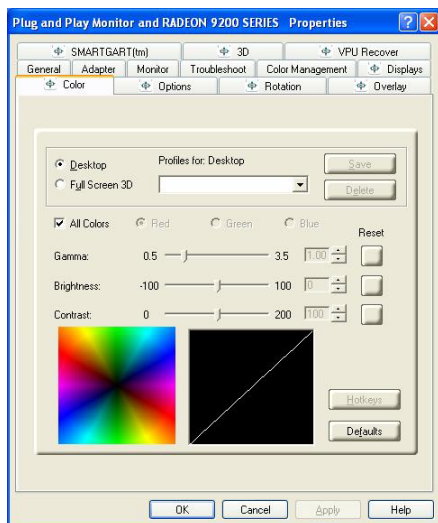


Color

This tag allows you to adjust the proper values of **Gamma**,

Brightness, and **Contrast**.

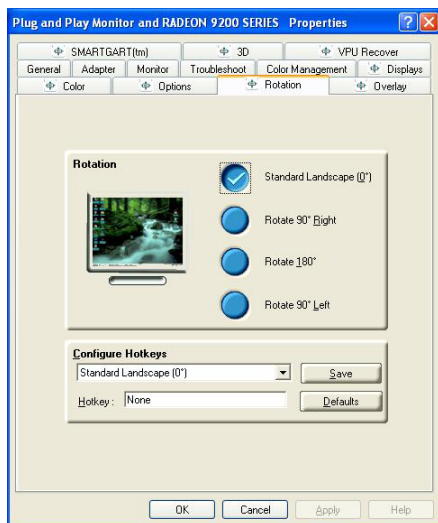
- Select **Desktop** or **Full Screen 3D** first to decide that which mode the new adjustment will take effect.
- **Gamma / Brightness / Contrast** sliders allow you to increase or decrease the value as you desired.
- Click **Default** button to reset the setting to the default values.



Rotation

This tag allows you to adjust the proper angle of the screen. Options include:

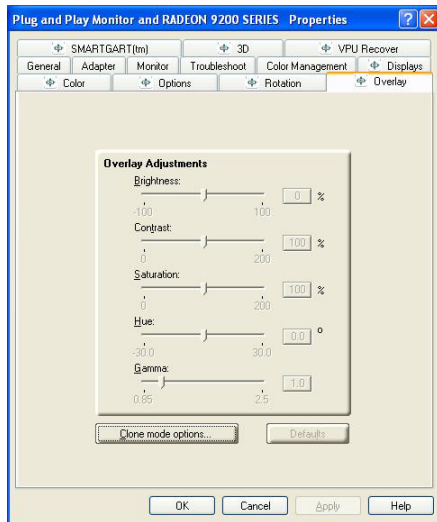
- **Standard Landscape [0°]**
- **Rotate 90° Right**
- **Rotate 180°**
- **Rotate 90° Left**



Overlay

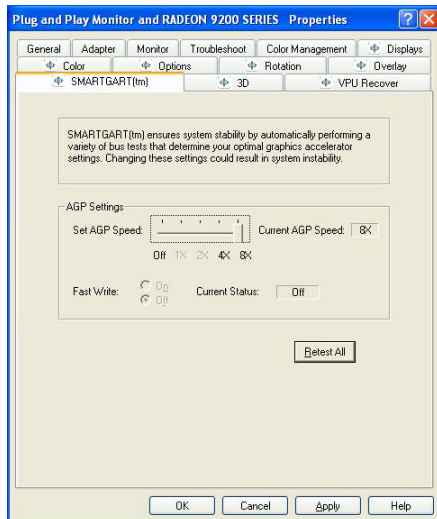
This tag allows you to adjust the proper values of **Gamma**, **Brightness**, **Contrast**, **Hue**, and **Saturation**.

- **Brightness** allows you to adjust the brightness of the video image.
- **Contrast** allows you to adjust the contrast of the video image.
- **Saturation** allows you to adjust the vividness of the color. Slider to the left removes all color and produces a black and white picture.
- **Hue** allows you to adjust the pureness or tint of the red, green and blue components of the color.
- **Gamma** allows you to adjust the overall intensity of the video image.
- Click **Default** button to reset the Overlay settings to the default values.



SMARTGART(tm)

This tag ensures the system stability by automatically performing a variety of bus tests that determine your optimal graphics accelerator settings. Changing these settings might result in system instability.

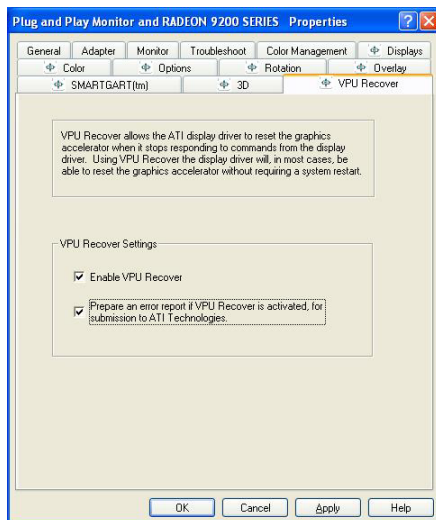


VPU Recover

VPU Recover allows the ATI display driver to reset the graphics accelerator when it stops responding to commands from the display driver. Using VPU Recover the display driver will, in most cases, be able to reset the graphics accelerator without requiring a system restart.

Options include:

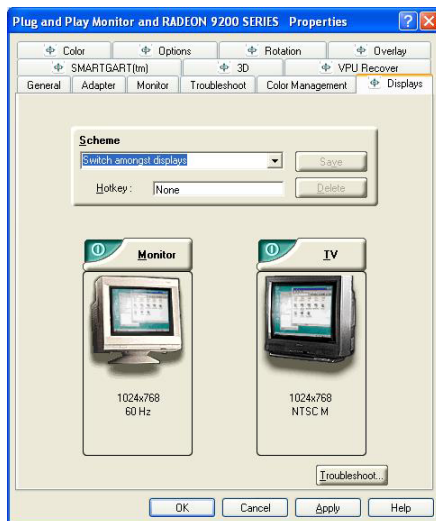
- **Enable VPU Recover**
- **Prepare an error report if VPU Recover is activated, for submission to ATI Technologies.**



Display

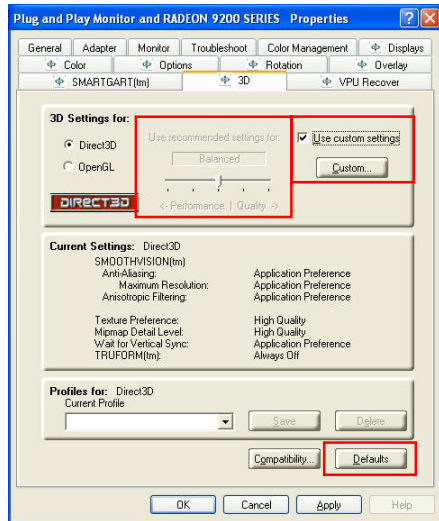
If your VGA card is equipped with a TV-Out connector, you can use a second output device, such as a TV or a computer monitor, as part of your desktop extending your desktop to the second device or copying your desktop onto the second device. To connect the VGA card to a TV, follow the steps below:

1. Turn off the computer and the television.
2. Ensure the VGA card is installed properly.
3. Attach one end of the TV-Out connecting cable to the VGA card, and the other end to the television.
4. Turn on the television and the computer.



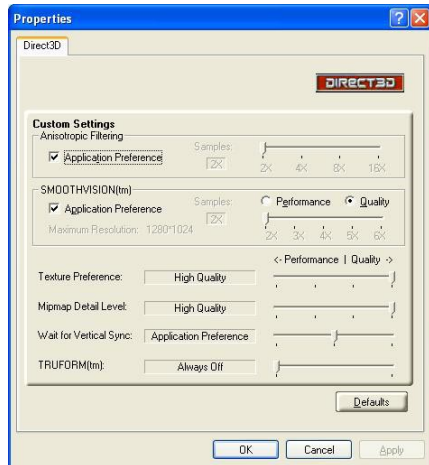
3D --Direct3D--

- Click **Default** button to reset the Direct 3D settings to the default values.
- Setting Slider:** Moving the slider to the left will maximize application performance, while moving the slider to the right will provide excellent 3D image quality. Moving this slider from one position to the next changes the individual Custom Settings sliders found below.
- Use custom settings:** Selecting this checkbox to disable the Setting Slider, and click Custom button to enter the sub tag to adjust further custom settings for Direct 3D.



Custom Settings

- Anisotropic Filtering**
 - Anisotropic Filtering** uses a texture filtering technique that blends multiple texture samples together. Selecting **Application Preference** will result in high quality textures, with a negligible reduction in the application's performance
 - By moving **Anisotropic Filtering** slider to the right, as the number of samples taken increases, the quality of the final image increase significantly. 16X provides extremely detailed, crisp-looking images as a result of the largest number of texture samples possible.



- **SMOOTHVISION(tm)**

- **SMOOTHVISION** Improves image quality by removing jagged edges from 3D images, resulting in smoother, more natural-looking objects. Selecting **Application Preference** will result in high quality images, with negligible reduction in the application's performance.
- **SMOOTHVISION slider** can be applied using different sample patterns and sample points such as 2X, 3X, 4X, 5X or 6X. Moving this slider to the right increases sampling to provide the most realistic 3D image.

- **Texture Preference**

This slider decides whether your application should use high quality or high performance textures. Moving the slider to the right delivers the highest quality experience. Moving the slider to the left emphasizes a high performance solution while still providing good visuals.

- **Mipmap Detail Level**

This slider allows you to choose the texture quality of the mipmaps the application will use. Mipmaps are a collection of different sized textures of the same image. As the user moves closer to a 3D object the image quality should increase, requiring a higher quality texture of the same image. The base mipmap is the highest quality texture, and all subsequent mipmaps are smaller sized textures of the same image. Moving the slider to the right selects a higher quality base mipmap, delivering the highest quality application experience. Moving the slider to the left selects a lower quality mipmap, delivering the highest application performance.

- **Wait for Vertical Sync**

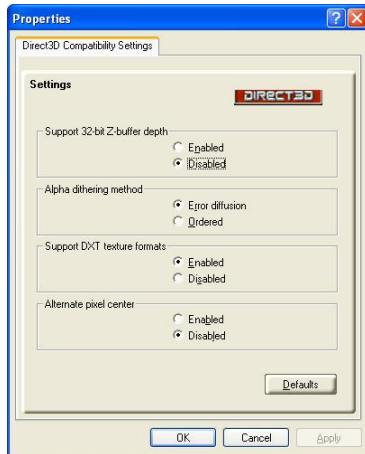
This will lower the frame rate of full screen games but reduce the image tearing that can occur with the higher frame rate. Selecting **Application Preference** allows the application to decide whether or not it should display its frames at the refresh rate of the monitor. Selecting **Always Off** allows the application to run at its highest possible frame rate, regardless of the monitor refresh rate which is typically less than the frame rate at which the application will run.

Compatibility Settings

To adjust the Direct 3D Compatibility settings, please click on **Compatibility** button on the 3D main tag.

- **Support W-buffer** allows you to enable or disable W-buffer support. It is recommended that W-buffer support should be disabled for games that do not support this feature.
- **Support 32-bit Z-buffer depth** allows you to set the 32-bit Z-buffer rate.
- **Alpha dithering method** when alpha blending will remove certain

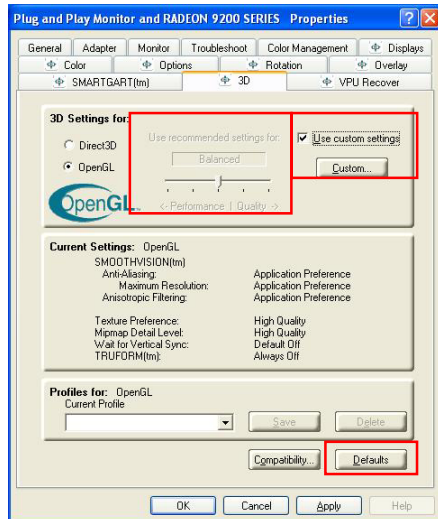
- **Support DTX texture formats** allows applications to use this kind of texture format. There are a few applications that can only support a limited number of texture formats. By selecting **Disabled**, the driver will not support DTX texture formats, thus reducing the number of texture formats supported.
- **Alternate pixel center** This may eliminate problems with some Direct 3D games which display vertical and horizontal lines around textures, or text that appears incorrect. However, this setting should only be used if you are experiencing the symptoms mentioned, as it may cause problems with other games.



3D --OpenGL--

Select OpenGL to make adjustment for the OpenGL settings.

- Click **Default** button to reset the OpenGL settings to the default values.
- **Setting Slider:** Moving the slider to the left will maximize application performance, while moving the slider to the right will provide excellent 3D image quality. Moving this slider from one position to the next changes the individual Custom Settings sliders found below.
- **Use custom settings:** Selecting this checkbox to



disable the Setting Slider, and click Custom button to enter the sub tag to adjust further custom settings for OpenGL.

Custom Settings

■ Anisotropic Filtering

- **Anisotropic Filtering** uses a texture filtering technique that blends multiple texture samples together. Selecting **Application Preference** will result in high quality textures, with a negligible reduction in the application's performance
- By moving **Anisotropic Filtering** slider to the right, as the number of samples taken increases, the quality of the final image increase

significantly. 16X provides extremely detailed, crisp-looking images as a result of the largest number of texture samples possible.

■ SMOOTHVISION(tm)

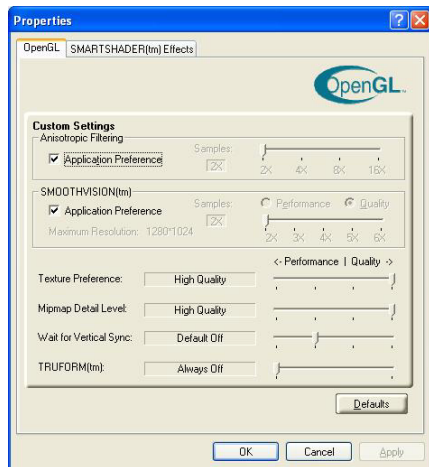
- **SMOOTHVISION** Improves image quality by removing jagged edges from 3D images, resulting in smoother, more natural looking objects. Selecting **Application Preference** will result in high quality images, with negligible reduction in the application's performance.
- **SMOOTHVISION** slider can be applied using different sample patterns and sample points such as 2X, 3X, 4X, 5X or 6X. Moving this slider to the right increases sampling to provide the most realistic 3D image.

■ Texture Preference

This slider decides whether your application should use high quality or high performance textures. Moving the slider to the right delivers the highest quality experience. Moving the slider to the left emphasizes a high performance solution while still providing good visuals.

■ Mipmap Detail Level

This slider allows you to choose the texture quality of the mipmaps the application will use. Mipmaps are a collection of different sized textures of the same image. As the user moves closer to a 3D object the image quality should increase, requiring a higher quality texture of the same image. The base mipmap is the highest quality texture, and all subsequent mipmaps are smaller sized textures of the same image. Moving the slider to the right selects a higher quality base



mipmap, delivering the highest quality application experience. Moving the slider to the left selects a lower quality mipmap, delivering the highest application performance.

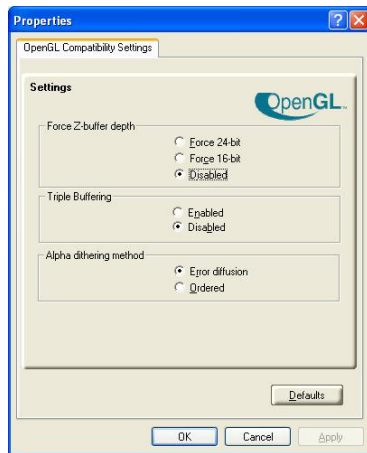
- **Wait for Vertical Sync**

This will lower the frame rate of full screen games but reduce the image tearing that can occur with the higher frame rate. Selecting Application Preference allows the application to decide whether or not it should display its frames at the refresh rate of the monitor. Selecting Always Off allows the application to run at its highest possible frame rate, regardless of the monitor refresh rate which is

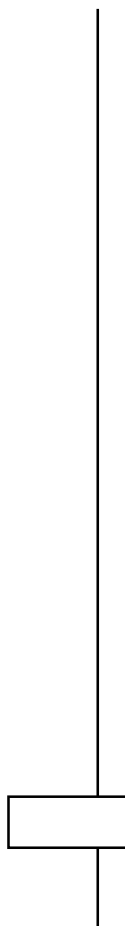
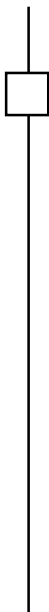
Compatibility Settings

To adjust the OpenGL Compatibility settings, please click on **Compatibility** button on the 3D main tag.

- **Force Z-buffer depth** allows you to explicitly set the Z-Buffer depth. Most applications will work best when **Disable** is selected.
- **Alpha dithering method** when alpha blending will remove certain onscreen artifacts that are sometimes produced when both dithering and alpha blending are enabled.
- **Support KTX buffer region extension** Enabling this feature allows rapid updates of those portions of your screen that have changed. Note that most applications will not be affected by activating this feature.



NOTE



5

MSI LIVE UPDATE 3

MSI LIVE UPDATE 3 is a useful utility for you to enhance the performance of your MSI mainboards and VGA cards. With its auto-search & scheduling function, the Live Update 3 saves you the efforts & time of surfing through websites, trying to find the desired BIOS or drivers. With MSI Live Update 3, on-line upgrading of BIOS & drivers can be a piece of cake!

Moreover, MSI Live Update 3 supports multilingual interface. It will detect the language of your operation system while installing this program. Users will find out that once MSI Live Update 3 is successfully installed, the language of its interface will be the same as your OS (if the system language is supported by Live Update 3).

5.1 Installing the MSI Live Update 3 with MSI Live Monitor



MSI reminds you...

Before installing the MSI Live Update 3 with MSI Live Monitor, it is recommended to uninstall other version of MSI Live Update to avoid problems occurred to your system.

To use this feature, you have to install the program first. You can download the program from: **1)** the software pack CDs in the package; or **3)** the MSI Web site.

Installing from CDs



1. Insert the CD into the CD-ROM drive, and start the Setup program.
2. Click the **Utility** tab on the setup screen.
3. Click **MSI Live Update 3**. Follow the on-screen instructions to complete the installation.

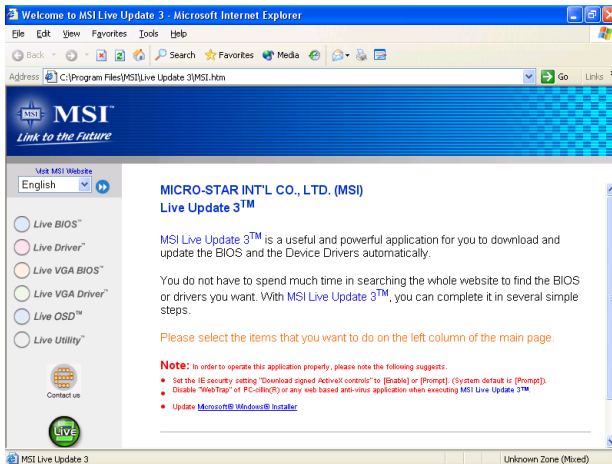
Installing from the MSI Web site

1. Link to the MSI website at <http://www.msi.com.tw>.
2. Select **/Download/VGA/** on the upper of MSI's homepage. Click **/VGA/Utility/** on the left pane of the web page.
3. Click **MSI Live Update** to have the programs of MSI Live Update & MSI Live Monitor downloaded.
4. Double-click the downloaded **LiveUpdate.exe** utility and follow the on-screen instructions to complete the installation.

5.2 Using the MSI Live Update 3

After the installation is completed, you can launch the MSI Live Update 3 by

- 1) double-clicking the **MSI Live Update 3** icon  on the desktop; or 2) clicking the **Start** button , and select **Programs / MSI / Live Update 3/MSI Live Update 3**. The setup screen should appear as shown below, which contains six main selections on the left pane of the page:

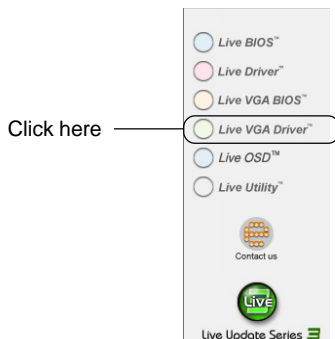


MSI reminds you...

The Live BIOS and Live Driver options are designed for MSI mainboards, and the Live VGA BIOS and Live VGA Driver options are made for your MSI VGA cards.

5.3 Live VGA Driver Update

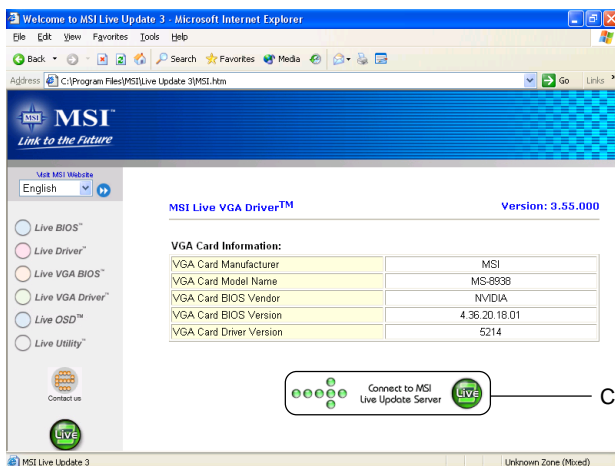
1. To update your VGA driver, click **Live VGA Driver** on the left pane of the main page.



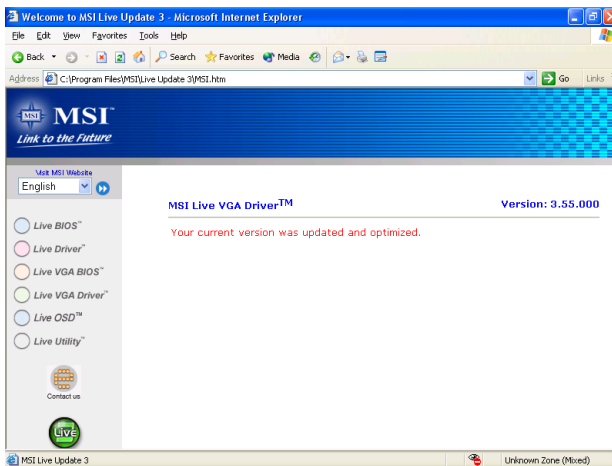
MSI reminds you...

The model name and driver/BIOS version appear in the following instructions are for reference only; the actual result should depend on the card you installed.

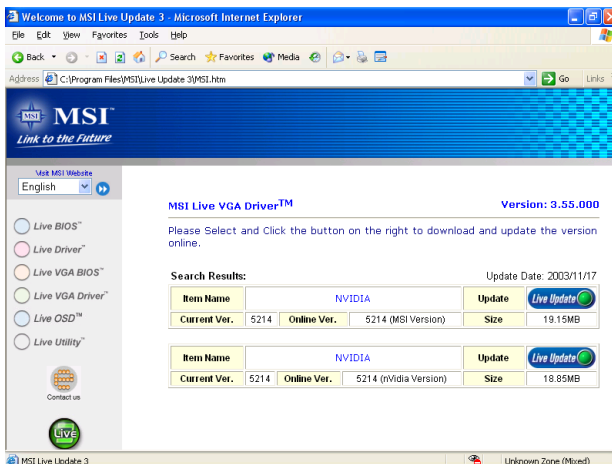
2. This utility will start checking your platform & VGA card and show the checking result as below.



- Click the graphic button at the bottom to connect to the MSI Live Update Server. It will automatically connect to the Internet and search for drivers of more updated versions in the database.
- It may take several minutes to detect the required drivers. Please wait until the detection is completed.
- The followings are examples of the searching results.

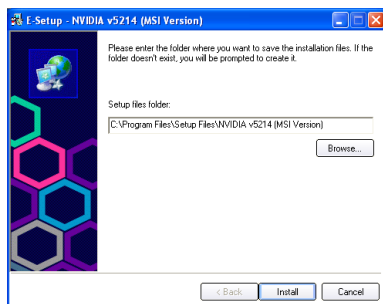


Your VGA driver is of the most updated version. No newer version could be found in the database.

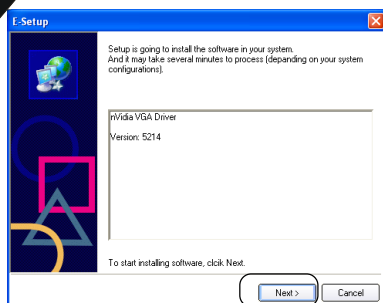
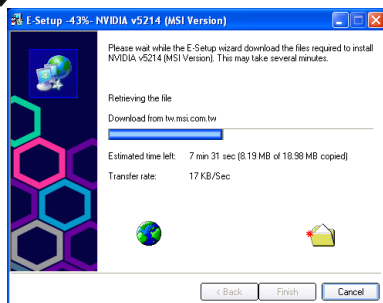


More updated drivers were found.

6. Click the **Live Update** button on the right side of the table to download and update the driver. All actions will proceed automatically.
7. Follow the on-screen instructions to complete the updating



Select a folder to save the driver file



Click **Next** to start installing the VGA Driver

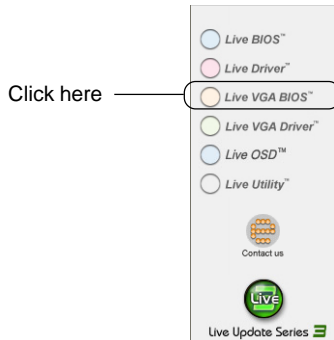
5.4 Live VGA BIOS Update



MSI reminds you...

- * Note that to use this feature, make sure your operation system is either Windows 2000 or XP.
- * Reflashing BIOS may take at least 3 minutes. Please do not shut down your computer, or the VGA card may damage.

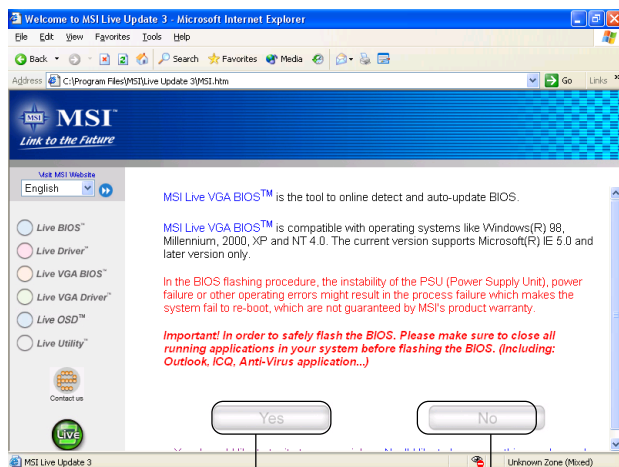
1. To update your VGA BIOS, click **Live VGA BIOS** on the left pane of the main page.



2. If your VGA card does not support the Live VGA BIOS™ function, you will receive a warning message on the screen.



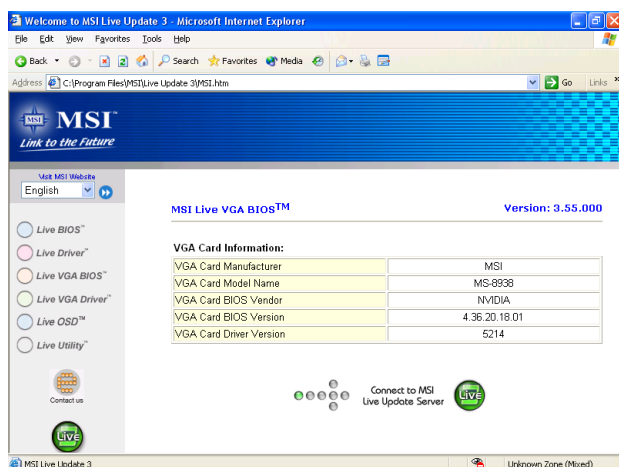
3. If your VGA card supports the Live VGA BIOS™ function, please pay attention to the message shown on the screen telling you that in what circumstance flashing BIOS may fail to reboot.
4. Click **Yes** if you would like to try it at your own risk or **No** to return to the main page with everything unchanged.



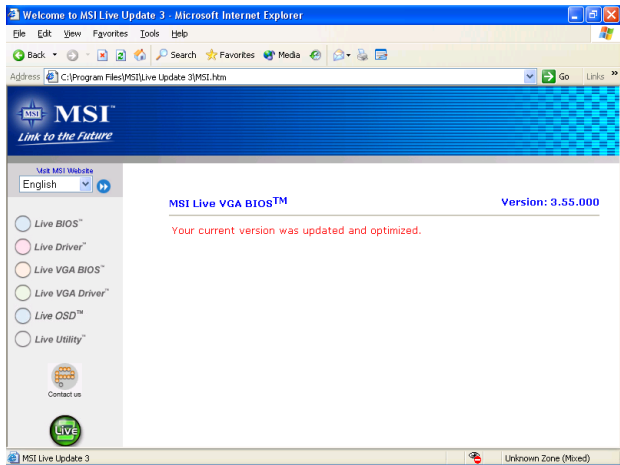
Select **Yes** to continue

Select **No** to keep everything unchanged

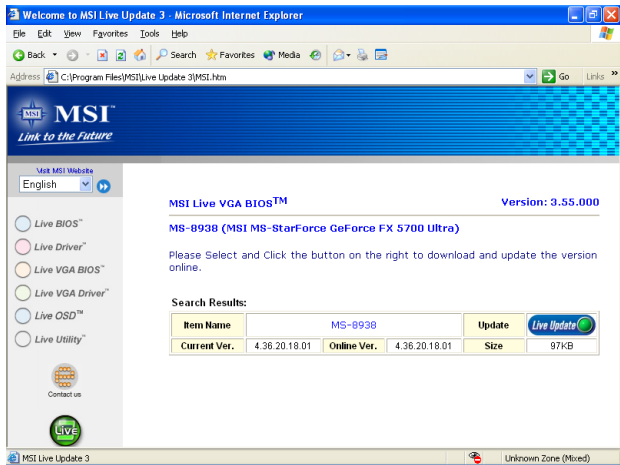
- If you click **Yes** to continue, it will check the information and BIOS version of your VGA card, and list them in a table:



- 6. Click the graphic button at the bottom to connect to the MSI Live Update Server.
- 7. The MSI Live VGA BIOS will automatically connect to the Internet and search for BIOS of more updated versions in the database of MSI. The followings are examples of the searching results.



Your VGA BIOS is of the most updated version. No newer version could be found in the database.



More updated BIOS was found.

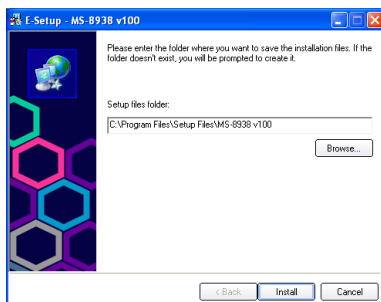
8. If it has found one (or several) supported BIOS for your VGA card, click the **Live Update** button on the right side of the table to have the new BIOS downloaded and updated automatically.



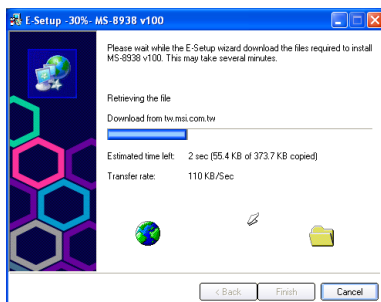
MSI reminds you...

*Your monitor may go **BLANK** while the software EEPROM is being erased. Please wait for a while before proceeding to the next step.*

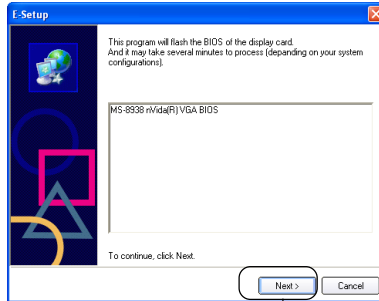
9. Follow the on-screen instructions to complete the updating procedures.



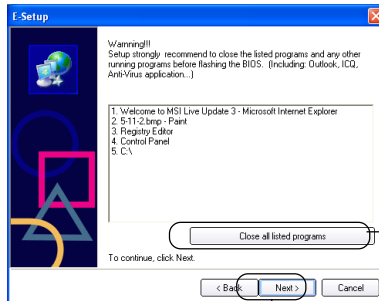
Select a folder to save the BIOS file.



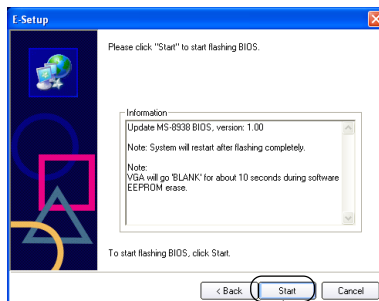
Downloading



Click **Next** to continue.



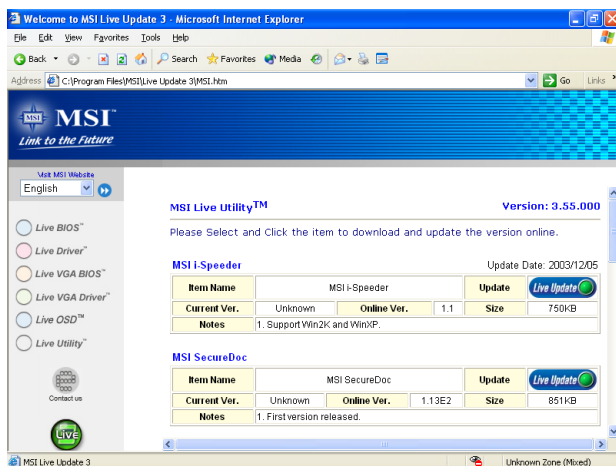
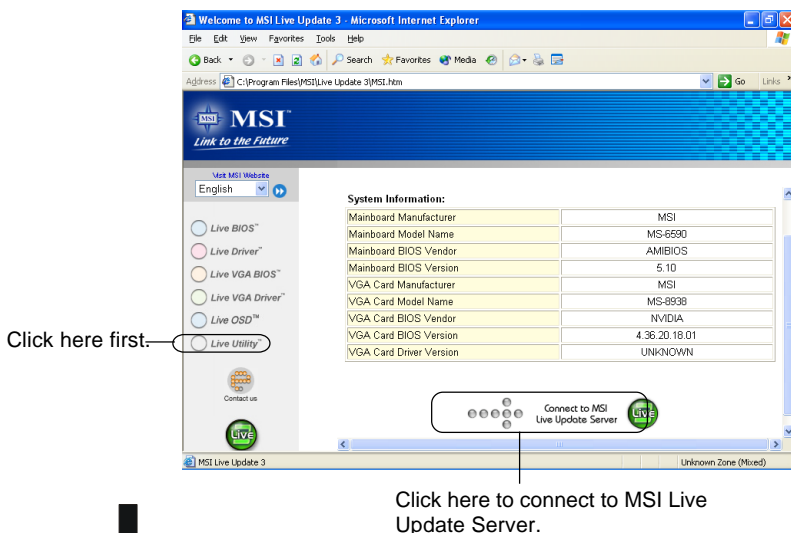
It is recommended that you close all programs (by clicking **Close all listed programs**, and then clicking **Next** to continue) before updating new VGA BIOS.



Click **Start** to start flashing VGA BIOS.

5.5 Live Utility


Live Utility™ is a tool that helps users to get the correct system information, and generates a list containing various compatible links of MSI's software in accordance with the system information being detected.

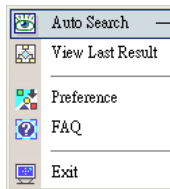


5.6 How to Use the MSI Live Monitor

MSI Live Update 3 comes with a useful utility, MSI Live Monitor, to help users detect their system information, and search for the up-to-date drivers or BIOS online. To use MSI Live Monitor, follow the instructions shown below.

Auto Search

1. Right-click the MSI Live Monitor icon  on the Windows system tray in the lower-right corner of the screen.
2. Select **Auto Search** from the shortcut menu. Select the desired searching items from the Auto Search list, and then click **Next**.



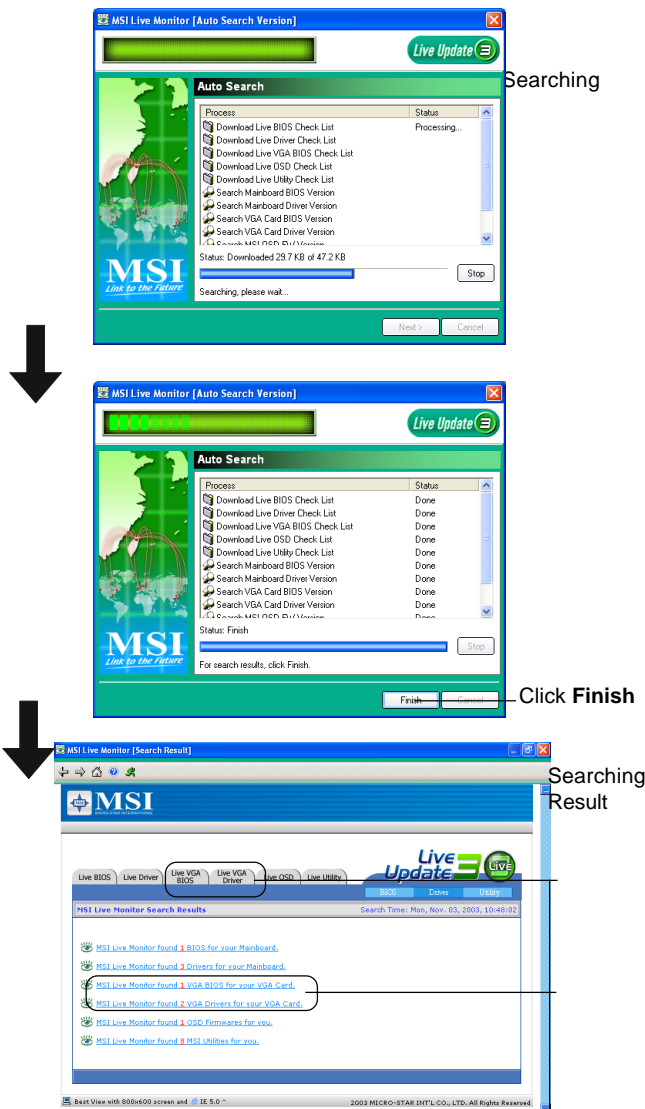
Select **Auto Search**



Auto Search list

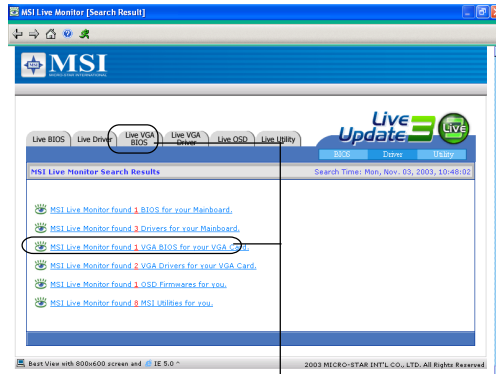
Click **Next**

- The utility will at first detect your system information in order to search for corresponding downloads from the MSI on-line

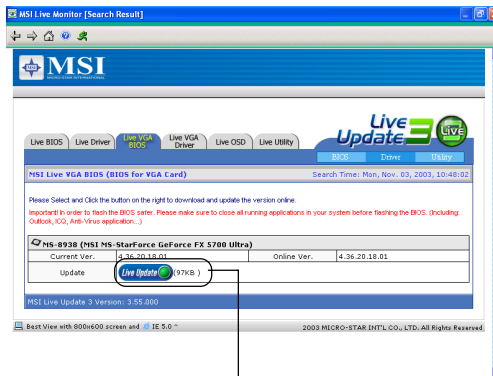


Click the **Live VGA BIOS / Live VGA Driver** Tag or click the **listed items** on the page to browse the Up-to-date VGA BIOS/ Drivers found by MSI Live Monitor.

4. Click the item that you would like to download.



Click either item to select what you wish to download




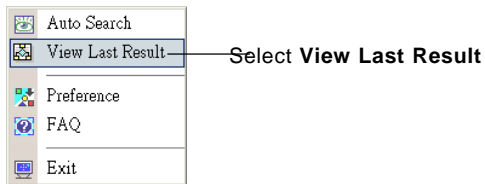
Click here to download the selected item.

5. Follow the on-screen instructions, and the InstallShield Wizard will guide you through the downloading and installation of the selected new VGA BIOS/Drivers.

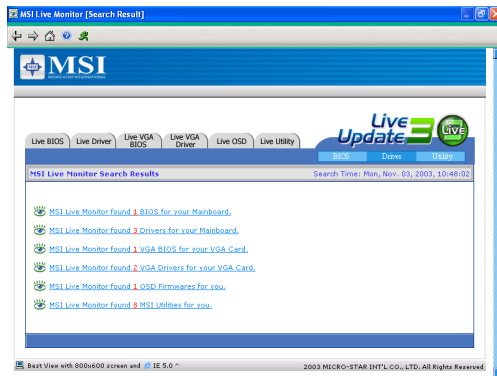
View Last Result

MSI Live Monitor provides a shortcut for users to recall the last search result more efficiently.

1. Right-click the MSI Live Monitor icon  on the Windows system tray in the lower-right corner of the screen.
2. Select **View Last Result** from the shortcut menu.




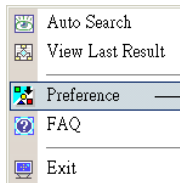
3. The last Searching Result will be recalled at once.



Preference

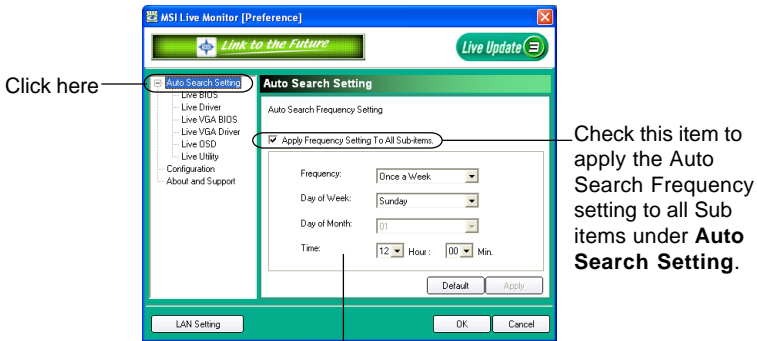
MSI Live Monitor provides a scheduling function of automatically searching for the latest BIOS/Drivers on-line in a set period or condition.

1. Right-click the MSI Live Monitor icon  on the Windows system tray in the lower-right corner of the screen.
2. Select **Preference** from the MSI Live Monitor menu.



Select **Preference**

3. Click **Auto Search Setting** on the left pane of the window.

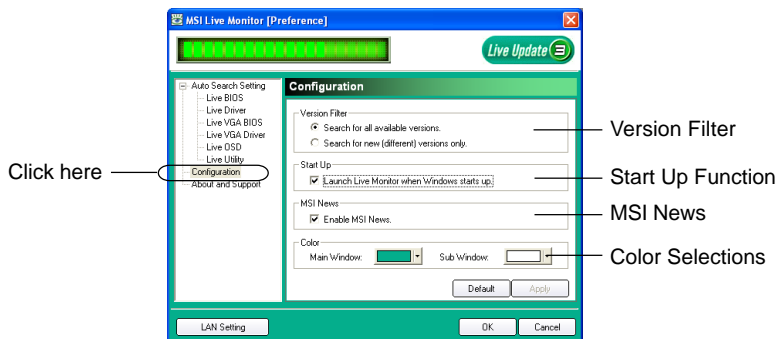


Click here

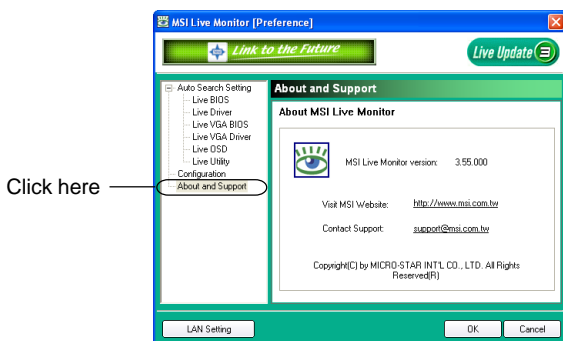
Check this item to apply the Auto Search Frequency setting to all Sub items under **Auto Search Setting**.

Set your Auto Search Frequency here.

4. To modify the configuration of MSI Live Monitor, click **Configuration** on the left pane of the window.




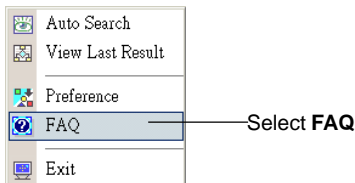
5. To contact MSI for further technical support or to get the information about the MSI Live Monitor utility, click **About and Support** on the left pane of the window.



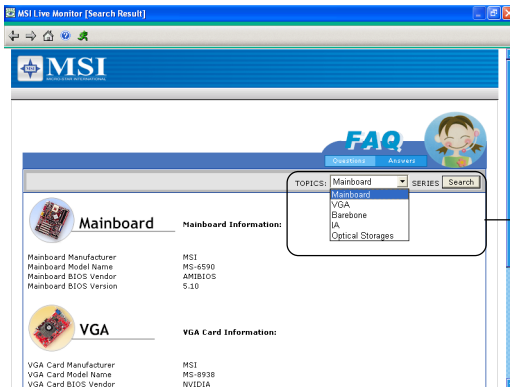
FAQ

MSI Live Monitor provides a database containing various possible questions about MSI's products.

1. Right-click the MSI Live Monitor icon  on the Windows system tray in the lower-right corner of the screen.
2. Select **FAQ** from the shortcut menu.



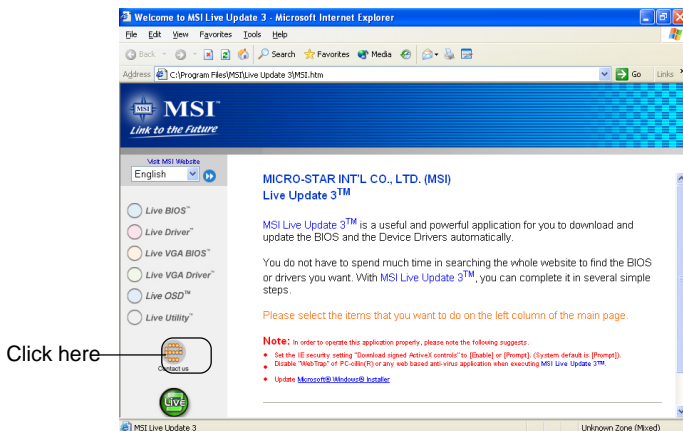
3. To find the answers to your questions in MSI FAQ database, try selecting a particular category relevant to your questions.



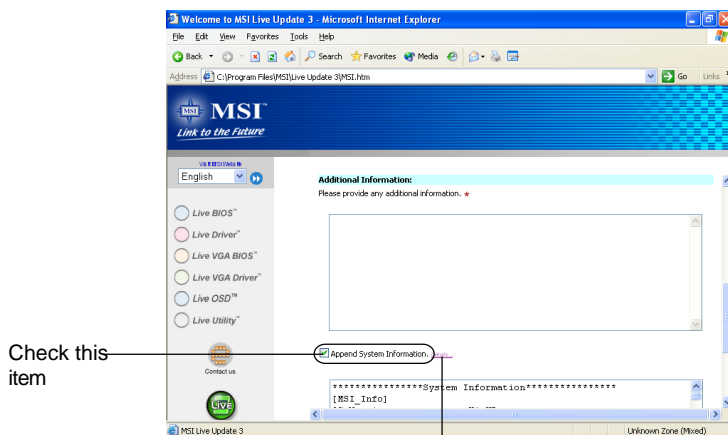
Select the specific category relevant to your questions here.

5.7 Contact Us

Users will be able to contact MSI for further information or help by clicking **Contact us** on the left pane of the window.

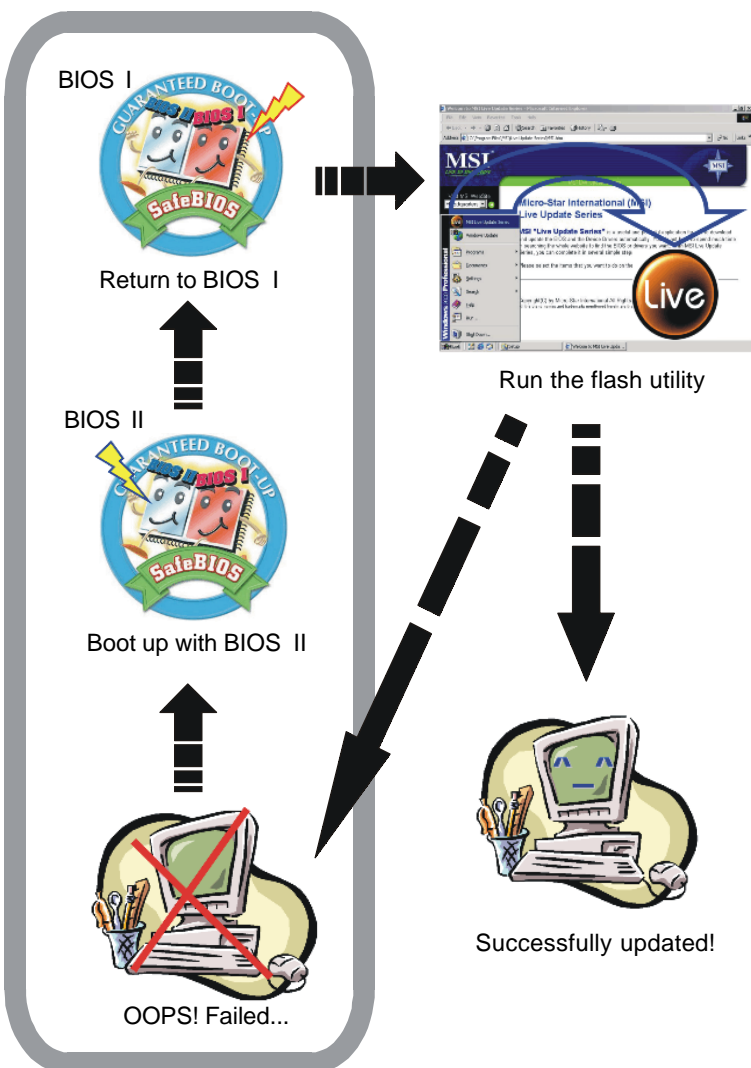


If you need any technical support, it is strongly recommended that you describe the problem of any kind specifically in your mail to MSI, and attach your system information which will be detected and generated by MSI Live Update 3 if **Append System Information** is checked.



5.8 Twin-BIOS™ (Optional)

The diagram below describes the procedures in brief:





NEW

Our products are under continual improvement, and there may be a later version of the BIOS to solve the existing problems on displays or the installation. When you use the flash utility* to update the BIOS on the card, it is inevitable that your devices may encounter some unexpected risks, such as power interruption, during the updating process. If, unfortunately, the updating procedure is failed and the VGA card cannot work anymore --- this powerful technology can solve your problems!

If you fail to update the BIOS, and have to use this function to save your VGA card, please follow the steps below:

1. Turn off the power and remove the computer case.
2. Locate the jumper on the VGA card, and set it up to enter the BIOS II mode (safe mode).
3. Do not replace the case first and turn on the power.

4. With the BIOS II, you would be able to start the system normally. After entering the operating system (OS), set up the jumper to enter the BIOS I mode (work mode). Now you can restore the original BIOS or you can try to update the BIOS using the flash

**MSI reminds you...**

Warning: *It is very dangerous to perform the procedure under such condition. To ensure your safety and prevent electric shocks and damages, please Do NOT touch any component in the computer.*

5. If the updating procedure still failed**, you may try again by repeating Step 1 to 4. If the updating procedure is successful, that means the BIOS data is written onto the chip successfully.
6. Replace the case and restart the computer.

**MSI reminds you...**

* To update the BIOS, you must use the special flash utility (*MSI Live Update Series*) provided by MSI only, which can fully support the Twin-BIOS™ technology. If the third party's utility is used in the updating procedure, it will erase the data in BIOS II.

** If you always encounter problems while updating the BIOS and driver, check if the mainboard's chipset driver was properly installed. Please install the chipset driver from your mainboard vendor first and try again.

NOTE



6

TROUBLESHOOTING

TROUBLE SHOOTING, provides you with the general methods to solve problems that might happen to your system or VGA card.

6.1 General Help


Q: *Where can I find more information about my VGA card?*



Please visit our Web site at <http://www.msi.com.tw>

Q: *How do I know the driver version of my VGA card? How do I update it?*



To know the driver version of your VGA card, simply click the **Start** button , and then point to **Settings**. Point to the folder that contains **Control Panel**, and then click **Control Panel**. In **Control Panel**, double-click **Display** to open the **Display Properties** window for more information. (Please refer to **Chapter 3 Software Installation** for details.)



If you need to update your VGA card's driver, please download the latest version for your VGA card from our Web site. Usually, the driver file is an executable (.exe) file. Simply double-click the file and follow the on-screen instructions to complete the

6.2 Install InterVideo WinDVR

Q: *My monitor displays nothing after the system boots up.*



Your VGA card may not be installed correctly. Please check the installation procedure described in *Chapter 2 Hardware Installation*.




Make sure that your monitor are connected to the VGA card properly, and the power is turned on.

Q: *The image is of poor quality; the screen image is off-centered, and the image's shape becomes deformed.*



Your VGA card's driver may not be installed correctly. Please re-install the driver and restart the computer (see *instructions in Chapter 3 Software Installation*).




The **Display Properties** in your system may not be set up properly. Click the Start button  , and then point to **Settings**. Point to the folder that contains **Control Panel**, and then click **Control Panel**. In **Control Panel**, double-click **Display** to set the optimized values.




Try to adjust your monitor's control settings (such as Brightness, Contrast and so on). Please refer to your monitor manual for more information.


Q: *How do I change the resolution settings on my computer?*





Click the Start button  , and then point to **Settings**. Point to the folder that contains **Control Panel**, and then click **Control Panel**. In **Control Panel**, double-click **Display** to open the **Display Properties** window. Under the **Settings** tab, move the slider to a proper resolution value, and then click to select a different color setting on the drop-down menu (16-bit high color is recommended for most applications). When these changes are done, click **OK** to apply the new settings. The screen will go black for a while and then come back with the new size. You will be asked to confirm the changes, click **Yes** in the new **Display Properties** dialog box.


Q: *How do I know if my VGA card is running under AGP 4x mode? If not, how can I use AGP 4x mode?*


 First of all, make sure that your mainboard supports AGP 4x mode. Refer to your mainboard documentation for relative information.


 Secondly, check the BIOS setting for the AGP mode (*if any, please see your mainboard documentation*).

 Finally, install the proper driver for your VGA card. If the driver is installed correctly, click the Start button  , and then point to **Settings**. Point to the folder that contains **Control Panel**. In **Control Panel**, double-click **Display** to set the values. For example, when you installed the dedicated driver for your MSI VGA card, which is on the software CDs in your VGA card package, you will see the **MSI Information** tab in the **Display Properties** window. Click **4x** under **AGP Information** to enable this function (*see instructions in Chapter 3 Software Installation*).

Q: *My monitor display becomes abnormal after the system running for minutes (blank screen, color blocks, flicking or overlapping screen image).*

 Check the memory clock and core clock under **Display Properties**. If the values are set too high (exceeding the recommended spec.), please try the default values.

 Keep your monitor away from magnetic objects, such as speakers without antimagnetic design or mobile phones. The magnet and electromagnetic wave will influence and damage your monitor.

 If the problem happens continuously, please contact your local dealer for further service.

Q: *The DVD playback is of poor quality (skipping frames, color blocks and so on). Why?*



Change the refresh rate, color and resolution settings to proper values.



Enable the DMA mode for your DVD drive. However, not all DVD drives support this function. Please see your DVD drive's documentation for more information.

Q: *I have problems playing some DVDs with my system. Why?*



First of all, make sure that the DVD is inserted into your DVD drive properly.



Secondly, the DVD has region code limitations in its specification. For example, you have to play the DVDs coded Region 3 in Taiwan. Please contact your vendor for DVDs compatible with the region code of your DVD drive.

Q: *My VGA card has a video output connector connected to the TV, but I still saw nothing on TV. Why?*

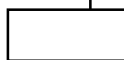


This function is disabled by default. Please enable it by clicking **Clone** in the **TwinView** tab under **Display Properties**.

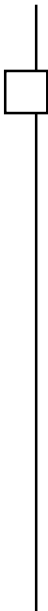


Check the connection between the video device and your computer carefully.

NOTE



Note



NOTE

