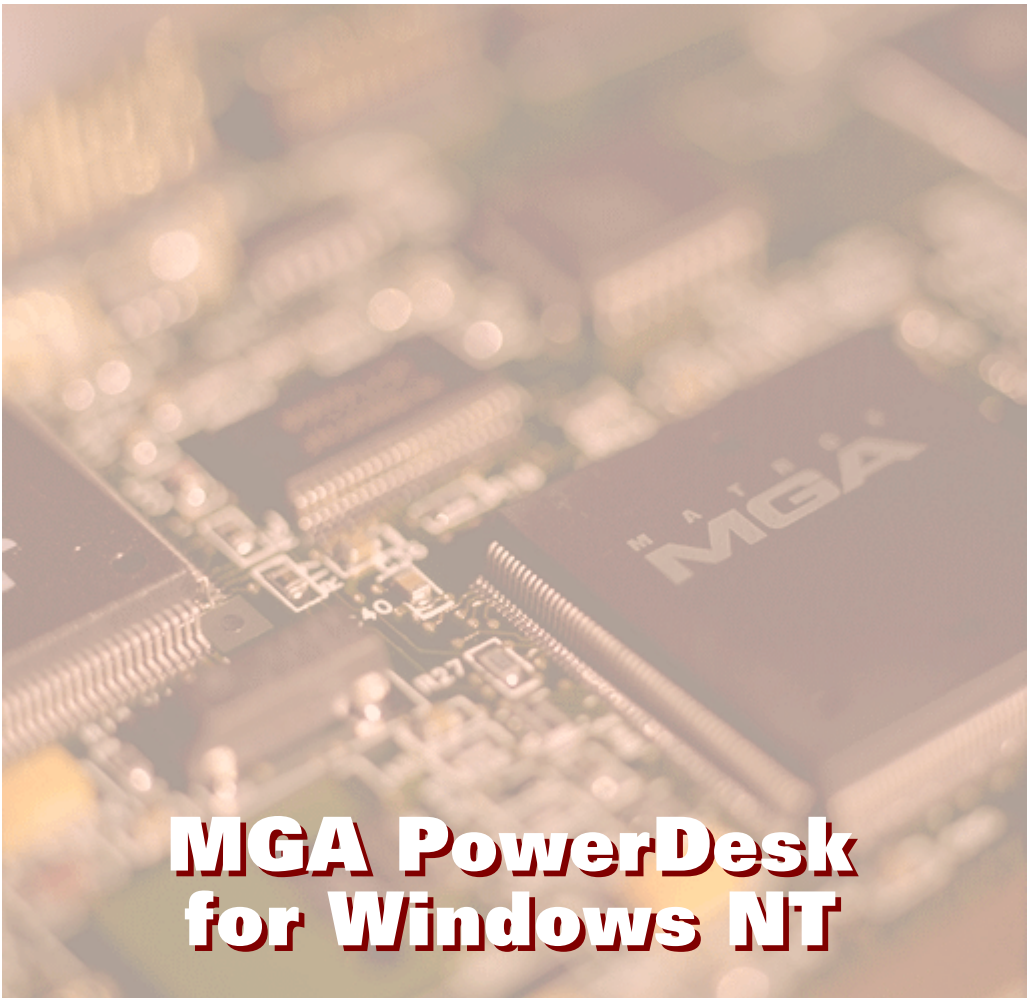


# Matrox Graphics Architecture



## **MGA PowerDesk for Windows NT**

### **User Guide**

10522-301-0110

1997.05.29

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# Using this document

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## Document conventions

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This manual assumes you're familiar with basic functions like click, right-click and double-click, and that you're familiar with Windows NT. In addition, we use the following conventions:

- **Bold** for text that appears on-screen and for subheadings.
- *Italics* for file and path names, publication titles, and new terms.
- ***Bold Italic*** for emphasis.
- **Green** for cross-references.  
(When viewing online, click green text to jump to the page being referenced.)
- Keyboard keys in square brackets, with a plus sign separating keys that you press simultaneously. For example: press [Ctrl]+[Alt]+[Del] to restart your computer.
- Directed arrows (“→”) to separate ordered directions.

For example:

Click the **Start** button → **Programs** folder → **MGA NT PowerDesk** folder;

is the same as:

- 1 Click the **Start** button.
- 2 Click the **Programs** folder.
- 3 Click the **MGA NT PowerDesk** folder.

## Online documentation

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- You can access MGA PowerDesk for Windows NT online documentation through the **MGA NT PowerDesk** folder.
- A *readme* file is also in the **MGA NT PowerDesk** folder.
- For context-sensitive Help where available, press [F1] or click the “?” icon in the title bar and then click the item you want help on. Right-click a help topic for a pop-up menu that lets you print or copy it.

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# Overview

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Use the driver we supply with our MGA PowerDesk for Windows NT instead of the one that comes with Windows NT, which does not support MGA PowerDesk and is not as optimized.

## MGA PowerDesk for Windows NT includes:

- **Fast display drivers** for Matrox Mystique and Matrox Millennium
- **Plug-and-Play (DDC-2b)** monitor support
- **MGA Monitor** property sheet to change your monitor settings. The setup program adds this sheet to the Windows NT **Display Properties** dialog box. You can optimize your monitor settings through interactive testing and adjustment.
- **MGA Settings** property sheet to change your display settings. The MGA setup program adds this sheet to the Windows NT **Display Properties** dialog box. This sheet provides access to MGA PowerDesk features such as:
  - **Desktop mode** buttons to configure a desktop area of varied shapes (proportional, horizontal, vertical) that goes beyond the limits of the display.
  - **Display schemes** to easily switch between your pre-defined display settings.
  - **Information** property sheet to display hardware and software version numbers and capabilities.
  - **Performance** property sheet to configure advanced driver performance settings.
  - **MGA PowerDesk** property sheet with settings for:
    - PixelTOUCH to zoom in and pan on your view area.
    - CenterWINDOW to center opened windows in your view area.
    - MaxVIEW to maximize windows in your view area instead of your desktop area.
    - CenterPOPUP to have new windows pop up in the center of your current view area.

- **MGA Desktop Navigator** (DeskNav) program to quickly change the view area of your desktop and give you quick access to the PixelTOUCH zoom and CenterWINDOW features. Access DeskNav through the **Start** menu → **Programs** → **MGA NT PowerDesk** folder.
- **MGA QuickDesk** program to quickly switch between your saved display schemes, open the **Display Properties** dialog box or launch **MGA Desktop Navigator**. This program appears as a monitor icon on the Windows NT taskbar.



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# MGA Monitor property sheet

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Use the **MGA Monitor** property sheet in the Windows NT **Display Properties** dialog box to select and configure your monitor through software. To access MGA display property sheets, right-click the Windows NT desktop background and then click on the **Properties** menu item.

If you have a Plug-and-Play monitor, a **Plug-and-Play (DDC)** option button is selected when you first install MGA PowerDesk. In this case, your monitor *automatically* determines its correct settings.

If you don't have a Plug-and-Play monitor, a **Default monitor (60 Hz)** option button is selected when you first install MGA PowerDesk. This means the MGA display driver uses a 60 Hz vertical refresh rate for display resolutions. (The refresh rate is the number of times the monitor redraws the entire screen in one second. A higher refresh rate produces less noticeable flicker in your display.) The **Default monitor (60 Hz)** setting lets you select all the resolutions the MGA driver supports, even those your monitor may not be capable of. If you select a display area resolution too high for your monitor, your screen image will lose sync.

If you have the **Default monitor (60 Hz)** setting, you should use MGA monitor selection to inform the MGA display driver of your monitor's true capabilities. You can also use MGA monitor selection if you have a Plug-and-Play monitor but don't want to use its default settings.

**WARNING:** Selecting the wrong monitor in the software can damage *some* monitors. For more information, see your monitor manual.

## MGA monitor selection

---

1 Right-click on the Windows NT desktop background.

2 Click the **Properties** menu item → **MGA Monitor** tab  
→ **MGA monitor** option button.

A list of monitor manufacturers appears in the MGA monitor list window. This list is a tree structure you can expand.



3 Click the plus sign next to the manufacturer of your monitor.

This expands the list of models we support for this manufacturer. If the manufacturer of your monitor does not appear in the monitor list, use “**(Standard monitor types)**”.

4 Click the model name you want to try.

A list of resolutions and their associated refresh rates appears to the right.

You should be able to find the manufacturer and model of your monitor, or at least a monitor that is similar to yours. With some monitors, you might need to check the back of your monitor for the exact model.

5 Click **OK** to apply the new settings.

After applying new settings, MGA PowerDesk software prompts you to confirm that your monitor supports the new settings. If the new settings don't work, wait 15 seconds and MGA PowerDesk will restore your previous settings.

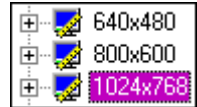
***Your driver configuration is complete, and you can stop at this point.***

# Monitor details and testing

The **MGA Monitor** property sheet allows you to test all the your monitor's resolutions before applying new settings.

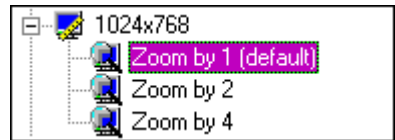
1 To get to the details and testing facility of the **MGA Monitor** sheet, click a monitor in the list box, and then click the **Properties** button. A list of resolutions supported by the monitor will appear.

- Some resolutions have a plus sign to the left. This indicates the monitor description uses multiple video timings for different pixel depths or zoom factors




- If a resolution uses the same refresh rate for all pixel depths and zooms, there is no plus sign to the left, and you'll see (to the right) the vertical refresh rate, horizontal refresh rate and pixel clock associated with this resolution when you highlight that resolution.

- Click the plus sign to reveal levels, until the refresh rate information gets displayed. The MGA driver most often uses different timings for various *pixel depths* (color palettes) at high resolutions (1280 × 1024 and up) to account for video bandwidth limitations. It uses different timings for various *zoom factors* when the precise horizontal timings for the monitor preset do not work well during a hardware zoom. (Without these different timings, your display would shift to the left or right when zooming.)



2 After you select a resolution, a test pattern is also available to confirm, and possibly adjust the timings further. When you click the **Test** button, your monitor will flicker for a second, and then a test screen will appear in the resolution you specified. The test screen features:

- A border for size and position adjustment.
- Several circles for aspect ratio adjustment.

- Red, green, and blue rectangles to verify proper connection of the color and sync lines to your monitor.
  - A color rainbow to help you assess changes in resolution versus changes in the number of colors of a display.
  - A test pattern control dialog box to adjust the size and position of the display, and to edit video timings.
- 3 If your monitor does not sync at all, it's because the refresh rate is too high for its capabilities. Press the [Esc] key to return to the  **Back button** previous dialog box. Then click the **Back** button to return to the monitor list and select another monitor.
  - 4 If your monitor syncs but is not well adjusted, *first* try to use the adjustment controls of your monitor before starting to use the MGA Monitor Test controls. On some monitors, you may need to follow a specific procedure to save your adjustments for future use.
  - 5 If you are satisfied with the testing and wish to confirm your choice without any modifications, click **OK** to get out of the test pattern, then click the **OK** button at the bottom of the **Display Properties** sheet. Otherwise, either select a new monitor type or proceed with the software monitor adjustments.

## Monitor adjustment

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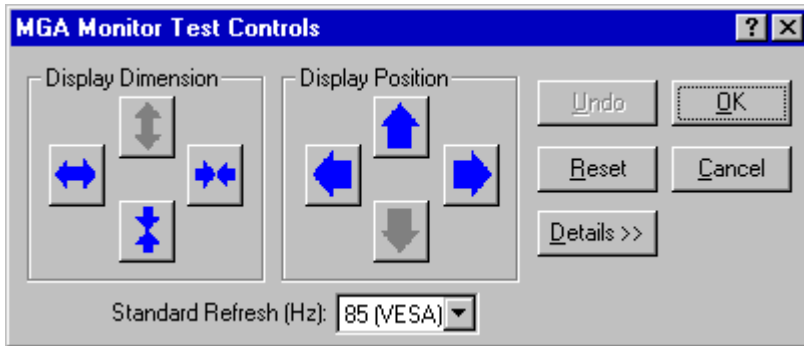
(for advanced users)

**WARNING:** Setting timing parameters beyond a monitor's capacity could damage *some* monitors. Therefore, this section is reserved for advanced users only.

If your monitor doesn't have hardware controls to adjust the your display size and position, you can use the **MGA Monitor Test Controls** dialog box (**MGA Monitor** tab → **Properties** button → **Test** button). It's normal for your monitor to flicker during some

adjustments. If at any time you receive undesirable screen output, press the [Esc] key to return to the **MGA Monitor** property sheet and restore your settings.

The controls are grouped into four sections: One to modify the size of the display, one to modify the position of the display, one to select standard video timings, and the command buttons (**Undo**, **Reset**, **Details**, **Cancel** and **OK**).



**Display Dimension** – Use these controls to expand or shrink the display horizontally or vertically.

**Display Position** – Use these controls to adjust the position of the display on your screen.

**Standard Refresh** – Use this drop-down list box to select a known standard refresh rate for the current resolution. The VESA standard timing “sets” are used in this case. This selection is recommended for those who wish to try a higher refresh rate that uses standard timings. The MGA display driver uses the new timings immediately. Press [Ctrl]+[Z] to undo this action if your monitor loses its sync (although a short blanking period is normal).

## Command buttons

**Undo** – Will undo any of the **Display Dimension**, **Display Position** or **Standard Refresh** changes, one step at a time. Multiple undo is supported.

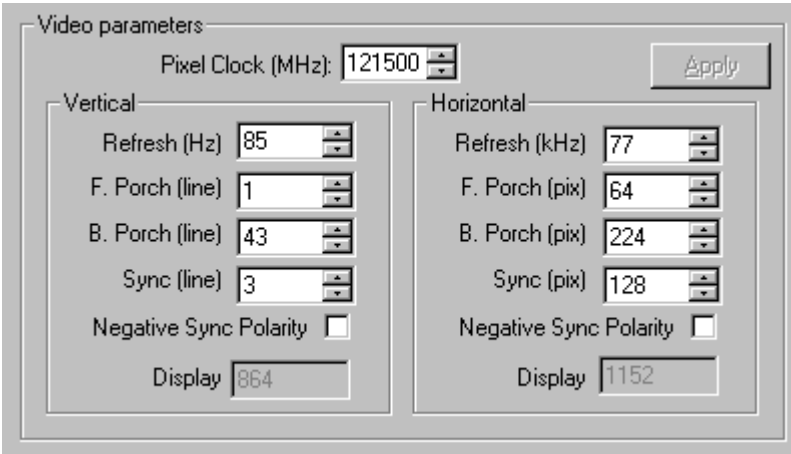
**Reset** – Returns all the video parameters to the original settings when you first entered the test screen. This also clears the undo buffer of previous actions.

**OK** – Saves the currently selected settings and exits the test screen.

**Cancel** – Discards all changes made and reverts back to the video parameters in use before you clicked the **Test** button. This is the same as pressing the [Esc] key.

**Details** – Opens the **Video parameters** panel that displays video timing details.

## Video parameters panel



The screenshot shows a dialog box titled "Video parameters". At the top, there is a "Pixel Clock (MHz)" field with the value "121500" and an "Apply" button. Below this, the panel is divided into two sections: "Vertical" and "Horizontal".

Parameter	Value
Refresh (Hz)	85
F. Porch (line)	1
B. Porch (line)	43
Sync (line)	3
Negative Sync Polarity	<input type="checkbox"/>
Display	864

Parameter	Value
Refresh (kHz)	77
F. Porch (pix)	64
B. Porch (pix)	224
Sync (pix)	128
Negative Sync Polarity	<input type="checkbox"/>
Display	1152

When you click the **Details** button, a **Video parameters** panel is added to the **MGA Monitor Test Controls** dialog box. This panel displays the video timings for the current mode, and dynamically shows changes in parameter values when you use the **Display Dimension**, **Display Position** and **Standard Refresh** controls.

To modify parameters, you can use the arrow buttons in each box, or type in the values you want for a particular parameter. MGA PowerDesk will check your numbers and may adjust other values so that the parameters respect certain hardware and software constraints. The changes will not be tested until you click the **Apply** button.

# Monitor creation

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## (for advanced users)

As soon as you modify a mode, you can save the changes. Just click **OK** to exit the monitor adjustment mode, and then click **Save** in the **Properties** dialog box. All the monitors you create or modify go into a monitor “manufacturer” called **User-Defined**. The new timings apply immediately after exiting the **MGA Monitor** property sheet.

It’s possible to re-edit your monitor timings, but we recommend you test all resolutions **before** using a monitor.

To create (or cancel) special zoom or pixel depth timings for a specific resolution, right-click the desired resolution. You’ll then see a menu allowing you to either merge or split modes.

It’s not possible to create a monitor description “from scratch”. You must select a monitor with similar capabilities, and then modify it. If your monitor is not in our list, use a VESA monitor (**Standard monitor types**). Most popular monitors support 75 Hz at least up to 1024 × 768. Some monitors support 1280 × 1024 only at 60 Hz, while others can perform at 75 Hz.

### If you want your monitor’s maximum refresh:

- 1 Select one of the VESA monitors, then in the monitor test screen, try selecting higher timings in the **Standard Refresh** pick list.
- 2 Click **Details** to fine-tune the vertical refresh rate in the **Video parameters** panel. Click the **Apply** button after each change.
- 3 Press [Ctrl]+[Z] to return to the previous setting if the refresh rate exceeds your monitor’s capabilities and your screen goes blank.

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# MGA Settings property sheet

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Use the **MGA Settings** property sheet in the Windows NT **Display Properties** dialog box to change your display settings. To access MGA display property sheets, right-click the Windows NT desktop background and then click on the **Properties** menu item. This sheet lets you:

- Control your display area, color palette, and system font size.
- Set up your desktop area to be larger than your display area. This extends the Windows NT working area beyond the limits of your display.
- Save settings as display schemes.
- Access more property sheets where you can set up shortcut keys, control driver performance settings, and see technical information about your Matrox hardware and software.

This section describes the various parts of the **MGA Settings** property sheet.

**Note:** The first time you click the **MGA Settings** tab, MGA PowerDesk removes the Microsoft **Settings** tab. This is to prevent the simultaneous use of Matrox and Microsoft display controls. To access the Microsoft **Settings** tab, close the **Display Properties** dialog box, open it again, then click the Microsoft **Settings** tab *first*.



# Desktop preview

---



The desktop preview reflects your currently selected desktop and display area. Your *desktop area* is your entire Windows NT work space while your *display area* is your on-screen work space. You have a *virtual desktop* when your desktop area is larger than your display area.

Desktop or display area *resolution* is measured in horizontal by vertical pixels. (A *pixel* is the smallest element that can be drawn on your display.)

## Desktop mode buttons

---

These buttons determine the type of desktop area you have. Pause your mouse cursor over a desktop mode button to see a pop-up tooltip identifying it. The desktop mode buttons are:



**No Virtual Desktop** – Click this button for your desktop area to be the same size as your display area. The **Desktop area** slider is unavailable when this button is pressed.



**Proportional Virtual Desktop** – Click this button to have a desktop area proportionally larger than your display area. To adjust a proportional virtual desktop, move the **Desktop area** and **Display area** sliders.



**Horizontal Virtual Desktop** – Click this button to have a desktop width approximately twice your display width. To adjust a horizontal virtual desktop, move the **Display area** slider.



**Vertical Virtual Desktop** – Click this button to have a desktop height approximately twice your display height. To adjust a vertical virtual desktop, move the **Display area** slider.

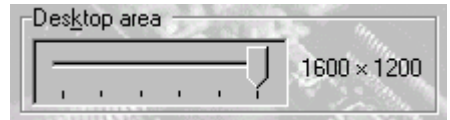


**Multi-Display Desktop** – Click this button to enter multi-display mode. In multi-display mode, move the **Desktop area** slider to cycle through all your possible desktop configurations. This button is unavailable if you don't have more than one Matrox graphics card of the same model (Millennium or Millennium II only) installed in your computer. For more information, see [“Multi-display desktop”, page 28](#).

## Desktop area

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Move this slider to increase or decrease your desktop area. Your *desktop area* is your whole Windows work space. This includes everything you see on-screen (display area) and includes off-screen area when you're using a virtual desktop. Your desktop area is always equal to or larger than your display area.



This slider is unavailable when the **No Virtual Desktop**, **Horizontal Virtual Desktop** or **Vertical Virtual Desktop** mode button is selected. For more information, see [“Desktop mode buttons”](#).

In multi-display mode (see [“Multi-display desktop”, page 28](#)), use this slider to cycle through all your possible desktop area configurations.

See also [“Maximum resolution tables”, page 30](#).

## Display area

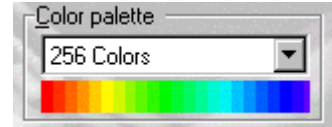
Move this slider to increase or decrease your display area. Your display area is your on-screen work area. Your display area is always equal to or smaller than your desktop area. In multi-display mode (see “Multi-display desktop”, page 28), this slider is unavailable.



**WARNING:** If the **Default monitor (60 Hz)** option button is selected on the **MGA Monitor** property sheet, you can select all the resolutions the MGA driver supports, even those your monitor may not be capable of. If you select a display area resolution too high for your monitor, your screen image will lose sync. For more information, see “MGA Monitor property sheet”, page 9.

## Color palette

Click this list box to select your *color palette*. The color palette is the number of simultaneous colors the MGA display driver can show. This number is based on the *pixel depth* – the number of bits used to store the color information for each pixel. You can select **256 Colors**, **High Color (15-bit)**, **High Color (16-bit)**, **True Color (24-bit)** or **True Color (32-bit)**.



In general, the smaller your currently selected color palette is, the larger your maximum display area resolution is (see “Maximum resolution tables”, page 30).

Matrox 3D acceleration only works with 15-, 16- and 32-bit color palettes. For more information, see “Matrox 3D acceleration”, page 21.

**Note:** 24- and 32-bit color palettes both have 16 million simultaneous colors, but the 32-bit color palette lets you use Matrox 3D acceleration and can offer better performance when playing AVI or MPEG video files.

## Font size

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This box lets you select your system font size. You can select **Small Fonts** or **Large Fonts**. You have to restart Windows for a change in your system font size to take effect. (This box is unavailable if your currently selected display area resolution is 640 × 480 because Windows only supports small fonts at this resolution.)

Click the **Custom** button to open the **Custom Font Size** dialog box. Here, you can select a custom system font size from a drop-down list box of pre-defined scaling percentages, or by clicking and dragging on the ruler. A sample font under the ruler shows a preview of the size you're selecting. The new font size you create is listed in the **Font size** box. If you return to a standard system font size (100% or 125%), the custom font size you created is removed from the list.

**Note:** The first time you apply large fonts, you may have to install system fonts from your Windows NT installation CD-ROM. MGA PowerDesk software will prompt you if this is necessary.

## Display scheme

---

Click this list box to select from a list of pre-defined display schemes. A *display scheme* is a saved profile with a specific desktop area, display area, color palette and font size setting. Click the **Save As** button to save your currently selected display settings under a new scheme name. These display schemes also appear in the MGA QuickDesk menu (see “MGA QuickDesk”, page 27).

## Matrox 3D acceleration

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You'll see a rotating cube on the **MGA Settings** property sheet when your display settings are setup to support Matrox 3D acceleration. Matrox 3D acceleration is available if all of the following conditions are met:



- 1 The **Use 3D double-buffering** or **Use 3D Z-buffering** check boxes are enabled. On the **MGA Settings** sheet, click **Advanced** button → **Performance** tab to access these check boxes. For more information, see context-sensitive Help.
- 2 You're using a 15-,16- or 32-bit color palette (see [“Color palette”, page 19](#)).
- 3 There's enough graphics memory available. Generally, higher resolutions use up more memory (see [“Resolutions supporting 3D acceleration”, page 31](#)).

## Advanced settings

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Click the **Advanced** button on the **MGA Settings** property sheet to open the **MGA Advanced Settings** dialog box. This dialog box contains the following property sheets:

### Information property sheet

Consult this property sheet for technical information about your Matrox hardware and software. For more information, see context-sensitive Help.

### Performance property sheet

Use this property sheet to change performance settings for the MGA display driver. For more information, see context-sensitive Help.

### MGA PowerDesk property sheet

**PixelTOUCH hot key** – Use the PixelTOUCH feature to zoom in on your current mouse cursor position. You can define a *hot key* (keyboard shortcut) for this feature by clicking in the box and pressing a key or key combination. Once

your hot key is applied, you can press it repeatedly to cycle through the different zoom factors (x1, x2, x4, x1, and so on). The x4 zoom factor is unavailable at display area resolutions 800 x 600 and lower.

When you zoom in on your desktop area, parts of it are outside your view area. Move your mouse cursor to the edge of your view area to pan in that direction. If you're using a multi-display desktop (see [“Multi-display desktop”, page 28](#)), one display at a time is magnified – the one the mouse cursor is in.

**CenterWINDOW hot key** – Use the CenterWINDOW feature to center the currently active program window inside the visible part of your display area (view area). This is useful if you're using a virtual desktop or the PixelTOUCH zoom feature and the currently active program window is not in your view area. You can define a *hot key* (keyboard shortcut) for this feature by clicking in the box and pressing a key or key combination. The CenterWINDOW feature does not center windows larger than the current view area.

If you're using a multi-display desktop (see [“Multi-display desktop”, page 28](#)), the window is centered inside its current view area, and if the hot key is used again, the window is centered in the next display area.

**Prompt before changing display settings** – When this check box is enabled, MGA PowerDesk prompts you for confirmation when you change your display settings. This feature is useful if you choose display settings your monitor doesn't support and you lose the monitor picture as a result. If you don't respond to the on-screen prompt within 15 seconds, your display will return to its previous settings. Clear this check box if you don't want to be prompted.

**CenterPOPUP** – When this check box is enabled, the CenterPOPUP feature is active. The CenterPOPUP feature centers windows inside the visible part of your display area (view area) when you first open them. If the window is bigger than the view area, it's placed in the upper-left corner of the view area. If the window is a dialog box which belongs to a program, the dialog box is centered inside the parent window.

If you're using a multi-display desktop (see [“Multi-display desktop”, page 28](#)), you can define which display your windows are centered in.

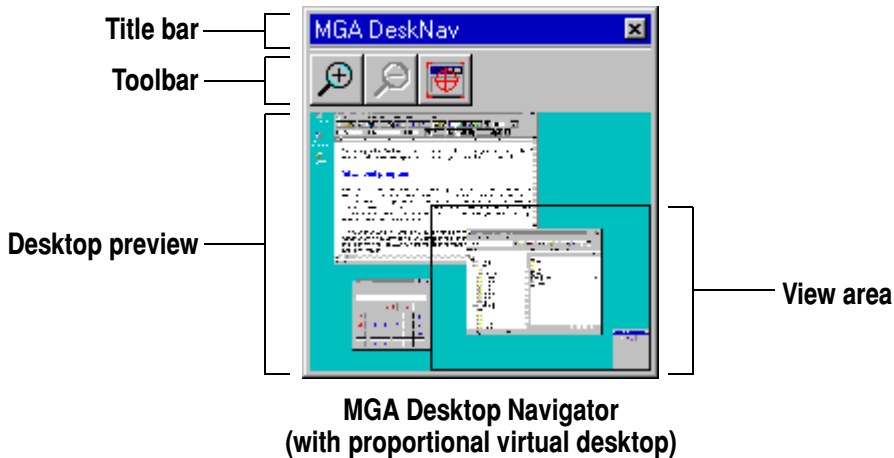
**MaxVIEW** – When this check box is enabled, program windows maximize inside the visible part of your display area (view area). The MaxVIEW feature takes effect when you maximize a window (for example, by clicking a window's maximize icon on its title bar).

If you're using a multi-display desktop (see [“Multi-display desktop”, page 28](#)), and a program window overlaps two or more display areas, the window maximizes over the whole desktop area. Otherwise the window maximizes in the display area it's currently in.

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# MGA Desktop Navigator

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**DN** Use this program to quickly move the viewing area of your desktop and to access the PixelTOUCH zoom and CenterWINDOW features. Click **Start** button → **Programs** folder → **MGA NT PowerDesk** folder → **MGA Desktop Navigator** to run DeskNav.

Use DeskNav's desktop preview to "navigate" when you're using PixelTOUCH zoom feature or a virtual desktop. The desktop preview shows you an image of your desktop, including what's not in your display area. You can move the display area simply by clicking or dragging on the desktop preview. A rectangle in the desktop preview shows you where your current view area is relative to your desktop area.

## Feature buttons

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Pause your mouse cursor over a toolbar button to see a pop-up tooltip identifying the button.



**Zoom-in** – Click this button to magnify part of your desktop area. Click this button again to magnify it even more. There are two zoom factors



available, x2 and x4. The x4 zoom factor is unavailable at display area resolutions 800 × 600 and smaller. This button is unavailable if you're currently at the maximum zoom factor. When you magnify part of your desktop area, other parts of it are outside your view area. Clicking this button is similar to using the PixelTOUCH hot key (see [“MGA PowerDesk property sheet”, page 21](#)).



**Zoom-out** – Click this button to zoom out from your view area. Click again to zoom out more. This button is unavailable if you're not currently zoomed in on part of your desktop.



**CenterWINDOW** – Click this button to see a menu of currently active programs, and then click a menu item to center that program window inside the visible part of your display area (view area). This is useful if you're using a virtual desktop or the PixelTOUCH zoom feature and the currently active program window is not in your view area. The CenterWINDOW feature does not center windows larger than the current view area. Clicking this button is similar to using the CenterWINDOW hot key (see [“Advanced settings”, page 21](#)).

## Options

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Right-click the DeskNav title bar to access these menu items:

**Update Screen** – Click this to update the image of your desktop in the DeskNav's desktop preview. This menu item is unavailable if the DeskNav desktop preview is disabled (see below).

**Preferences** – Click this to open the DeskNav **Preferences** dialog box with these options.

- **Show desktop preview** – Click this option button to enable the DeskNav desktop preview (without the toolbar).
- **Show toolbar** – Click this option button to enable the DeskNav toolbar (without the desktop preview).

- ⊙ **Show both** – Click this option button to enable both the DeskNav desktop preview and toolbar.
- ☑ **Snap to corner** – Enable this check box to have the DeskNav window stay in a corner of your view area as you pan across your desktop. Click a corner box on the rectangle representing your view area to select which corner DeskNav snaps to.
- ☑ **Dynamic corner snap** – Enable this check box to have the DeskNav window “snap” to the closest corner when you reposition it. This check box is unavailable if the **Snap to corner** check box is cleared.

**Center Cursor on Panning** – Click this to center your mouse cursor on your view area after you move the view area rectangle of the desktop preview. Click this menu item to change its setting (a “✓” appears next to it when it’s enabled).

**Display Properties** – Click this to open the Windows NT **Display Properties** dialog box.

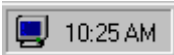
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# MGA QuickDesk

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Use this program to quickly switch between your saved display schemes. It also launches the MGA Desktop Navigator program or the **Display Properties** dialog box.

When you install MGA PowerDesk, you have the option to put it in your *Startup* folder so Windows NT will start QuickDesk every time you start your computer. You can also click **Start** → **Programs** → **MGA NT PowerDesk** → **MGA QuickDesk** to run QuickDesk at any time.



When QuickDesk is running, its icon appears in the taskbar next to the clock. Pause your mouse cursor over this icon to see a pop-up tooltip identifying what display scheme you're currently using.

Click the taskbar monitor icon to see the QuickDesk pop-up menu. The top part of this menu lists all your saved display schemes (see [“Display scheme”](#), page 20). Click a scheme name to change to its display settings.

The bottom three items of the QuickDesk menu let you bring up the Windows NT **Display Properties** dialog box, start MGA DeskNav (see [“MGA Desktop Navigator”](#), page 24), and close MGA QuickDesk, respectively.

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## Multi-display desktop

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MGA PowerDesk for Windows NT supports multi-display desktops. A multi-display desktop includes the display areas of more than one monitor. You can use a multi-display desktop only if you have more than one Matrox graphics card of the same model (Millennium or Millennium II only) installed in your computer.

### MGA Monitor property sheet

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If you're connecting a Plug-and-Play monitor to an additional Matrox graphics card, connect it **before** restarting your computer – otherwise the MGA display driver will not detect it.

The settings you choose on the **MGA Monitor** property sheet apply only to the monitor connected to the currently selected graphics card. Click the **Select Card** button to select a card to configure. This opens the **Graphics Card Selection** dialog box.

In the **Graphics Card Selection** dialog box, a preview shows you the way your displays are configured in your current desktop. The display of your currently selected graphics card is highlighted (boxed) in the preview. If your currently selected graphics card is not used in your current desktop (its display is not active), none of the monitors in the preview are highlighted.

Click in the list box to select which Matrox graphics card you want to configure. Click **OK** to confirm your selection and return to the **MGA Monitor** sheet.

## MGA Settings property sheet

---



Click the **Multi-Display Desktop** mode button to enter multi-display mode.

In multi-display mode, move the **Desktop area** slider to cycle through all your possible desktop configurations (the **Display area** slider is unavailable).

Changes you make to the **MGA Settings** property sheet affect all the displays on your system. Matrox 3D acceleration is unavailable in multi-display mode.

## MGA PowerDesk features

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For information on how a multi-display desktop affects advanced MGA PowerDesk features, see [“Advanced settings”](#), page 21.

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# Maximum resolution tables

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The following tables show the maximum desktop area resolutions based on the amount of memory on your graphics card, and the desktop mode and color palette you're using. For more information, see [“MGA Settings property sheet”](#), page 16.

## 2 MB graphics card

Desktop mode	256 Colors (8-bit)	High Color (15/16-bit)	True Color (24-bit)	True Color (32-bit)
No virtual desktop	1600 x 1200	1152 x 864	800 x 600	800 x 600
Proportional virtual desktop	1600 x 1200	1152 x 864	800 x 600	800 x 600
Horizontal virtual desktop	2048 x 864	1600 x 600	1280 x 480	—
Vertical virtual desktop	1152 x 1728	800 x 1200	640 x 960	—

## 4 MB graphics card

Desktop mode	256 Colors (8-bit)	High Color (15/16-bit)	True Color (24-bit)	True Color (32-bit)
No virtual desktop	1800 x 1440	1600 x 1200	1280 x 1024	1152 x 864
Proportional virtual desktop	1800 x 1440	1600 x 1200	1280 x 1024	1152 x 864
Horizontal virtual desktop	2048 x 1440	2048 x 864	1600 x 600	1600 x 600
Vertical virtual desktop	1800 x 2048	1152 x 1728	800 x 1200	800 x 1200

## 8 / 12 / 16 MB graphics card

Desktop mode	256 Colors (8-bit)	High Color (15/16-bit)	True Color (24-bit)	True Color (32-bit)
No virtual desktop	1800 x 1440	1800 x 1440	1600 x 1200	1280 x 1024
Proportional virtual desktop	1800 x 1440	1800 x 1440	1600 x 1200	1280 x 1024
Horizontal virtual desktop	2048 x 1440	2048 x 1440	1600 x 600	2048 x 864
Vertical virtual desktop	1800 x 2048	1800 x 2048	1152 x 1728	1152 x 1728

# Resolutions supporting 3D acceleration

The following tables list the display area resolutions and color palettes supporting Matrox 3D acceleration. For more information, see “Matrox 3D acceleration”, page 21.

Resolution	2 MB graphics card		4 MB graphics card	
	High Color (15/16-bit)	True Color (32-bit)	High Color (15/16-bit)	True Color (32-bit)
640 x 480	DBZ	Z	DBZ	DBZ
800 x 600	DB / Z	—	DBZ	DB / Z
1024 x 768	—	—	DB / Z	—
1152 x 864	—	—	DB / Z	—

Resolution	8 MB graphics card		12 / 16 MB graphics card	
	High Color (15/16-bit)	True Color (32-bit)	High Color (15/16-bit)	True Color (32-bit)
640 x 480	DBZ	DBZ	DBZ	DBZ
800 x 600	DBZ	DBZ	DBZ	DBZ
1024 x 768	DBZ	DBZ	DBZ	DBZ
1152 x 864	DBZ	DB / Z	DBZ	DBZ
1280 x 1024	DBZ	Z	DBZ	DB / Z (16 MB)
1600 x 1200	DB / Z	—	DB / Z	—
1800 x 1440	—	—	DB / Z (16 MB)	—

DBZ = double-buffering *and/or* z-buffering

DB / Z = double-buffering *or* z-buffering

Z = z-buffering

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