Matrox Graphics Architecture



User Guide

10484-301-0360 1997.05.09

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Using this document

Document conventions

This manual assumes you're familiar with basic functions like click, right-click and double-click and that you're familiar with Windows 95. In addition, we use the following conventions:

- Bold for text that appears on-screen and for subheads.
- *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] twice to restart your computer.
- Arrows ("→") to separate ordered directions.

For example:

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

is the same as:

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

Online documentation

- Online documentation is in the MGA PowerDesk folder.
- A readme file is also in the MGA PowerDesk folder.
- For context-sensitive Help where available, click the "?" icon on the title bar, 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.

Overview

Use the MGA PowerDesk driver instead of the MGA driver provided by Windows 95, which does not support MGA PowerDesk and is not as optimized.

MGA PowerDesk for Windows 95 includes:

- Fast MGA display driver for Matrox Mystique and Millennium with;
 - DirectDraw/DirectVideo/Direct3D support for direct access to Matrox hardware.
 - Plug-and-Play (DDC-2b) monitor and Windows 95 monitor selection support.
- Settings property sheet to change your display settings. Use this sheet to access MGA PowerDesk features such as;
 - Desktop mode buttons for a proportional, horizontal or vertical virtual desktop.
 - Display schemes to easily switch to a pre-defined display setting.
 - Performance property sheet to change performance settings.
 - Utilities property sheet to configure MGA PowerDesk options.
- Monitor property sheet to inform the MGA display driver of your monitor's capabilities. You can use this sheet instead of the Windows 95 method of monitor selection.
- Color property sheet to change your display's color balance.
- Hot Key property sheet to define keyboard shortcuts for;
 - CenterWINDOW to center your view area on the active window.
 - MaxVIEW to resize the active program window to the size of your current display area.
 - PanEND to move your display area to the right or bottom of your virtual desktop.
 - PanHOME to move your display area to the left or top of your virtual desktop.

- PanLOCK to disable or enable panning.
- PixelTOUCH to magnify part of your desktop area.
- Information property sheet for information on your display hardware and software.
- MGA Desktop Navigator program to quickly move the view area of your desktop and for quick access to the PixelTOUCH zoom, PanLOCK and CenterWINDOW features.
- MGA QuickDesk menu to quickly switch to a saved display scheme, to save and restore the position of your desktop icons, to open the Display Properties dialog box, or to start MGA Desktop Navigator. To see this menu, click the monitor icon on the Windows 95 taskbar
- MGA Diagnostic program to identify some possible display-related problems.

Note: Access MGA display property sheets through the Windows 95 **Display Properties** dialog box. To open this dialog box, right-click the Windows desktop background, then click the **Properties** menu item. Depending on your version of Windows 95, the name of this dialog box may be different.

Settings property sheet

Use this property sheet to change your display settings. With this sheet you can:

- 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 work area beyond the limits of your display.
- Save settings as display schemes.
- Access more property sheets where you can control MGA display driver performance settings and MGA PowerDesk options.

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

Desktop preview



The desktop preview reflects your selected desktop and display area. Your *desktop area* is your entire Windows 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.)

Note: When you apply changes to your display settings, you may be prompted to confirm that your monitor supports the new settings. When settings are applied, your screen may flicker for a few seconds while the settings are being changed. If your screen image becomes garbled or unusable, simply wait, and your original settings will be restored.

Desktop mode buttons

Click one of these buttons to set the type of desktop you want. 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.

Desktop area

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"

See also "Maximum resolution tables", page 30.

Display area

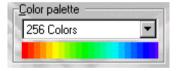
Move this slider to increase or decrease your *display area*. Your display area is your on-screen work area and it's always equal to or smaller than your desktop area.



WARNING: If no monitor, or an incorrect monitor, is selected in the software, you may be able to select a display area resolution that is too high for your monitor. If a display area resolution that is too high for your monitor is applied, your screen image may become garbled or unusable while in that resolution. For information on how to apply the proper monitor settings, see "Monitor property sheet", page 14.

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 (16-bit)**, **True Color (24-bit)** or **True Color (32-bit)**. Depending on your version of Windows 95, you may have to restart your computer for a change in your color palette to take effect.

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

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

Font size

Click this box to select your system font size. You can select **Small Fonts** or **Large Fonts**. You have to restart your computer 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 later return to a standard system font size (100% or 125%), the custom font size you created is removed from the list.

Display scheme

Click this 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 menu", page 29).

Current refresh rate

The MGA **Settings** property sheet shows your display's current vertical refresh rate. Your *vertical refresh rate* is the number of times your graphics card refreshes the entire screen in one second, expressed in hertz (cycles per second). A higher vertical refresh rate results in less noticeable flicker in your display.

Note: Your current refresh rate depends on your currently *applied* display area, color palette, zoom factor (see "PixelTOUCH", page 25), and software monitor settings. For more information on monitor settings, see "Monitor property sheet", page 14.

3D acceleration

You'll see a rotating cube on the MGA **Settings** property sheet when your display settings are set up to support Millennium 3D acceleration (Millennium only − *not* Millennium II). For more information, see context-sensitive Help for the **Use Millennium 3D acceleration library** check box (**Settings** tab → **PowerDesk** button → **Performance** tab).

MGA PowerDesk settings

Click the **PowerDesk** button on the MGA **Settings** property sheet to access the following property sheets:

Performance property sheet

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

Utilities property sheet

Use this property sheet to change settings for MGA PowerDesk options. For more information, see context-sensitive Help.

Monitor property sheet

Use this property sheet to inform the MGA display driver of your monitor's capabilities. This section shows you how to:

- Use the Windows 95 monitor selection method.
- Use the MGA monitor selection method.
- Test an MGA monitor selection.
- Modify an MGA monitor selection.

WARNING: If no monitor, or an incorrect monitor, is selected in the software, you may be able to select a display area resolution that is too high for your monitor. If a display area resolution that is too high for your monitor is applied, your display becomes garbled or unusable while in that resolution.

Also, if incorrect software monitor settings are applied, *some* monitors can be permanently damaged. For more information, see your monitor manual.

If you have a Plug-and-Play monitor:

Check if the **Windows 95 Monitor** option button is selected and that **Plug and Play Monitor (VESA**



DDC) appears immediately under it. If so, the MGA display driver *automatically* uses the correct settings for your monitor. If not, use Windows 95 monitor selection to use your monitor's default settings (see "Windows 95 monitor selection").

If you don't have a Plug-and-Play monitor:

Check the monitor type listed under the Windows 95 Monitor option button. If it's incorrect



or if it shows **Unknown Monitor**, use Windows 95 or MGA monitor selection (see "Windows 95 monitor selection" or "MGA monitor selection").

Note: When you change your monitor settings, you may be prompted to confirm that your monitor supports the new settings. When settings are applied, your screen may flicker for a few seconds while the settings are being changed. If your display becomes garbled or unusable, simply wait, and your original settings will be restored.

Windows 95 monitor selection

- 1 Right-click the Windows desktop background, then click the **Properties** menu item → **Monitor** tab → **Windows 95 Monitor** option button.
- 2 Click the Settings tab.
- **3** This step is different depending on your version of Windows 95:
 - If you see the Change Display Type button; click the Change Display Type button
 → Change (Monitor Type) button → Show all devices option button.
 - If you see the Advanced Properties button; click the Advanced Properties button
 → Monitor tab → Change button → Show all devices option button.
- 4 Click the manufacturer of your monitor in the Manufacturers list box.
 - If you have a Plug-and-Play monitor, or the manufacturer of your monitor does not appear in the list box, click "(Standard monitor types)".
- 5 Click the model of your monitor in the Models list box.
 - If you have a Plug-and-Play monitor, click "Plug and Play Monitor (VESA DDC)".
 - If the manufacturer of your monitor doesn't appear in the manufacturers list box, click a Super VGA monitor with a resolution that matches your monitor's maximum capabilities. For more information, see your monitor manual.
- 6 Click OK → Close → OK to apply and close.

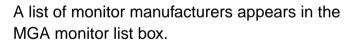
About Windows 95 monitor selection

For monitors that are not Plug-and-Play, Windows 95 doesn't provide detailed timings to the display driver, only refresh rate ranges. The MGA display driver uses the best match within a standard set of VESA refresh rates ranging from 60 to 85 Hz. With these settings, your monitor may be usable, but your display may not have a proper position or size.

With the Windows 95 monitor selection method, you can't see monitor setting details, and you can't test or adjust monitor settings. Use the MGA monitor selection method to see, test or adjust monitor settings. With the MGA monitor selection method, you may get better-tuned settings.

MGA monitor selection

1 Right-click the Windows desktop background, then click the Properties menu item → Monitor tab → MGA Monitor option button.





- 2 Click the plus sign next to the manufacturer of your monitor.
 - This expands the list of models Matrox supports for this manufacturer. If the manufacturer of your monitor does not appear in the monitor list, use "(Standard monitor types)".
- 3 Click the model name you want to try.
 - You should be able to find the manufacturer and model of your monitor, or a monitor that is similar to yours. To find out the model of your monitor, check your monitor manual or see if it's written somewhere on your monitor.
- 4 Click **OK** to apply your selection and close the dialog box.

Your monitor setup is complete, and you can stop at this point. To test monitor settings before applying them, or to see detailed monitor settings, see "Monitor testing".

Monitor testing

With the Monitor property sheet, you can test an MGA monitor selection.

Note: You may have to change your color palette to 256 colors to be able to test all monitor modes. For more information, see "Color palette", page 11.

To test a monitor profile:

- Select a monitor profile from the MGA monitor list box. For instructions on how to select a monitor profile, see "MGA monitor selection", steps 1-3.
- Click the **Properties** button.
 - When you click this button, the MGA monitor list box turns into a list of resolutions supported by the selected monitor profile.



Resolutions with plus or minus signs next to them have different settings for different color palettes or zoom factors (for information on MGA zoom, see "PixelTOUCH", page 25).

Select the resolution, color palette or zoom factor mode you want to test.

If there are any plus signs associated with the mode you want to test, click them to expand the list, then click one of the expanded branches. When you select a mode that can be tested (one that can't be expanded), some of the settings associated with it appear next to the list box.

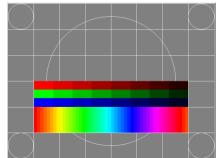


4 Click the Test button

Your monitor may flicker for a moment, then a test screen appears.

The test screen includes:

- A border to check size and position.
- Several circles to check aspect ratio.
- Red, green and blue rectangles to check an RGB signal connection.
- A color rainbow to check the color palette.
- A test control dialog box to adjust the settings for the current mode (see "Monitor adjustment", page 19).



Note: If the screen image is garbled or unusable, your monitor does not support the settings for the current display mode.

Press [Esc] to return to the **Monitor** property sheet, then click the **Back** button to return to the monitor list and select another monitor profile.



If you want to adjust the screen image, use the adjustment controls on your monitor *before* using the MGA monitor test controls – this is usually easier. For information on your monitor's hardware controls, see your monitor manual.

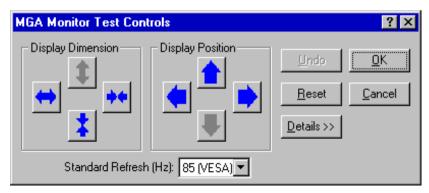
If you're satisfied with the test screen, press [Esc] and repeat steps 3 and 4 to test another mode for the selected monitor profile. If you're not sure whether the selected monitor profile works with your monitor, we recommend that you test *all* its associated modes before applying it.

If you're not satisfied with the test screen, select a different monitor profile (see "MGA monitor selection", page 16), then test again.

When you're done testing, press [Esc], then click \mathbf{OK} to close the test screen, apply the selected monitor profile and close the dialog box.

Monitor adjustment

(for advanced users)



Use MGA monitor test controls if your monitor doesn't have hardware controls to adjust your display size or position, or you want to adjust a monitor profile. Your screen image may flicker during some adjustments. Adjustments you make here affect only the selected monitor profile mode. The following describes the various parts of the MGA Monitor Test Controls dialog box:

Display Dimension

Click these buttons to horizontally or vertically expand or shrink the display.

Display Position

Click these buttons to adjust the position of the display.

Standard Refresh

Click this box to select from a list of standard VESA settings. VESA settings are based on the vertical refresh rate. If you want to try higher refresh rates, we recommend you select from this box. When you select a new standard refresh, it immediately takes effect on the test screen.

Command buttons

Undo – Click this button to undo the last change you made. Click it repeatedly to undo changes one step at a time, up until how the settings were just before you opened the test screen. Pressing [Ctrl]+[Z] is the same as clicking this button

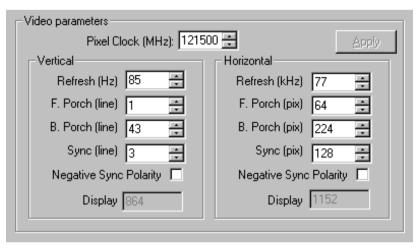
Reset – Click this button to restore the settings to what they were just before you opened the test screen.

OK – Click this button to save settings, close the test screen and return to the **Monitor** property sheet. Pressing [Enter] is the same as clicking this button.

Cancel – Click this button to restore settings to what they were just before you opened the test screen, close the test screen and return to the **Monitor** property sheet. Pressing [Esc] is the same as clicking this button.

Details – Click this button to show or hide detailed monitor settings (see "Video parameters").

Video parameters



Click the **Details** button to see **Video parameters** group box. Use the controls in this box to adjust monitor settings in detail. When you change one of these settings,

MGA PowerDesk may adjust other settings to respect hardware and software restrictions. Changes in this group box do not take effect until you click the **Apply** button

Custom monitor profiles

(for advanced users)

To save and apply adjustments you make with the test screen:

- 1 Make your adjustments in the MGA test controls dialog box, then click **OK** to save the current monitor mode settings. Repeat this for each mode of the selected monitor profile you want to adjust.
- 2 Click Save on the Monitor property sheet.
- 3 Type the name you want to use for your customized monitor profile (or you can leave the default name), then click **Save**.
 - All monitor profiles you save are added to the MGA monitor list under a "manufacturer" called "(User-Defined)".
- 4 Click the Back button to return to the MGA monitor list.
- 5 In the MGA monitor list box, select the name of the monitor profile you just created, then click **Apply**.

To create or merge color palette or zoom factor mode settings, right-click a monitor mode in the MGA list box, then select from the pop-up menu.

Color property sheet

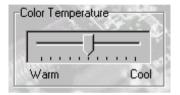
Use this property sheet to:

- Fine-tune your display's color balance.
- Compensate for the lighting where your computer is.
- Match the display colors of other monitors.

This sheet works with all monitors since it affects color brightness and contrast controls only. This section describes the various parts of this sheet.

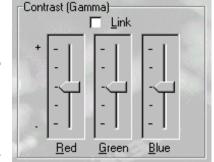
Color temperature

Move this slider to adjust the color temperature of your monitor. A "warm" setting causes your display's neutral gray color to have a yellow-red tint. A "cool" setting causes your display's neutral gray color to have a blue tint.



Contrast

Move these sliders to change the contrast of the three primary colors of your monitor (red, green and blue). The contrast of a color is related to its *gamma*. Gamma, in this case, is a measure of the relationship between the brightness of a color on the screen and the amount of voltage the computer is sending to the monitor to generate that color.

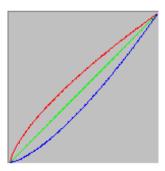


Enable the Link check box, to keep the Red, Green or

Blue sliders at the same level. When this check box is enabled, and you move a Contrast slider, you're changing the overall contrast of your display.

Click the **Reset** button to return the contrast and color temperature of your display to their default settings.

RGB curves display



This panel shows the tonal reproduction curve of the red, green, and blue colors of your display. This panel reflects any change you make with the **Color Temperature** and **Contrast** sliders.

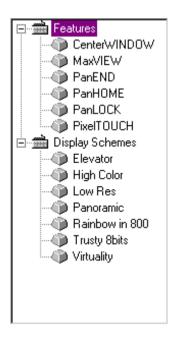
Advanced program

You can upgrade the **Color** property sheet with Sonnetech's **Colorific**, a more advanced color calibration program which integrates printer output calibration and Kodak's Precision[™] color management system.

Hot Keys property sheet

Use this property sheet to define hot keys (keyboard shortcuts) for features and display schemes. To select a feature or scheme in the list box, expand an item by clicking the plus sign next it, then click the name of a feature or scheme. When you select a feature or display scheme, a description of it appears on the property sheet. You can define new display schemes through the MGA **Settings** property sheet (see "Display scheme", page 12).

Once you select an item, the hot key input box will appear. Click this box and then press a key or key combination to define a hot key for the selected feature or display scheme. If you press a key or key combination that can't be used as a hot key, this box shows **None**. If this box shows **None**, the selected feature or scheme has no associated hot key.



Hot key features

CenterWINDOW – Use the CenterWINDOW hot key to center the visible part of your desktop area (*view area*) on the active window. This feature is useful when parts of your desktop area are outside your view area, as with a virtual desktop or the MGA zoom feature. If a window is larger than your view area, CenterWINDOW lines up the upper-left corner of your view area with the upper-left corner of the active window.

MaxVIEW – Use the MaxVIEW hot key to resize the active program window to the size of your display area. This feature has no effect when you're using the MGA zoom feature.

PanLOCK – Use the PanLOCK hot key to disable or enable panning when parts of your desktop area are outside your view area (as with a virtual desktop or the

MGA zoom feature). When panning is enabled, you can move your mouse cursor to the edge of your view area to pan in that direction.

PanEND – Use the PanEND hot key to move your display area to the bottom of a vertical virtual desktop or to the right of a horizontal virtual desktop. This feature is for horizontal and vertical virtual desktops only.

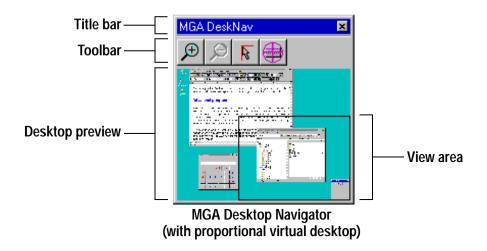
PanHOME – Use the PanHOME hot key to move your display area to the top of a vertical virtual desktop or to the left of a horizontal virtual desktop. This feature is for horizontal and vertical virtual desktops only.

PixeITOUCH – Use the PixeITOUCH hot key to zoom in on your current mouse cursor position. Use it repeatedly to cycle through the different *zoom factors* (×1, ×2, ×4, ×1, and so on). The ×4 zoom factor is unavailable at display area resolutions 800 × 600 and lower.

Information property sheet

Use this property sheet to get specific information about your display hardware and software, including version numbers. For information on each entry on this sheet, see context-sensitive Help.

MGA Desktop Navigator program



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

Use DeskNav's desktop preview to "navigate" when you're using MGA zoom feature or a virtual desktop. The desktop preview shows you an image of your current desktop, including what's off-screen. You can move your view 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

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 PixeITOUCH hot key (see "PixeITOUCH", page 25).

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.

PanLOCK – Click this button to disable or enable panning when parts of your desktop area are outside your view area (as with a virtual desktop or the MGA zoom feature). When panning is enabled, you can move your mouse cursor to the edge of your view area to pan in that direction. Clicking this button is the same as using the PanLOCK hot key (see "PanLOCK", page 24).

CenterWINDOW – Click this button to see a menu of currently active windows, then click a menu item to center the visible part of your desktop area (*view area*) on that window. This is useful if you're using a virtual desktop or the MGA zoom feature and the window you want to see is not in your view area. If a window is larger than your view area, CenterWINDOW lines up the upper-left corner of your view area with the upper-left corner of the active window. Clicking this button is similar to using the CenterWINDOW hot key (see "CenterWINDOW", page 24).

Options

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 95 **Display Properties** dialog box.

MGA QuickDesk menu

Use the QuickDesk menu to:

- Quickly switch between your saved display schemes.
- Save and restore the position of your desktop icons.
- Open the Display Properties dialog box,
- Start the MGA Desktop Navigator program.

When you install MGA PowerDesk, you have the option of putting the QuickDesk program in your **Startup** folder so Windows 95 starts it every time you start your computer. You can also click **Start** → **Programs** → **MGA PowerDesk** → **MGA QuickDesk** to start QuickDesk.

When the QuickDesk program 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 menu. The top part of this menu lists all your saved display schemes (see "Display scheme", page 12). Click a scheme name to change to its display settings.

The QuickDesk menu has the **Desktop Icons** \rightarrow **Save** and **Desktop Icons** \rightarrow **Restore** menu items. Click these menu items to save and restore the position of your desktop icons for your current desktop and display area resolution.

The bottom three items of the QuickDesk menu let you bring up the Windows 95 **Display Properties** dialog box, start DeskNav (see "MGA Desktop Navigator program", page 26), and close QuickDesk, respectively.

Maximum resolution tables

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 "Settings property sheet", page 8.

2 MB graphics card

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

4 MB graphics card

Desktop mode	256 Colors (8-bit)	High Color (16-bit)	True Color (24-bit)	True Color (32-bit)
No virtual desktop	1800 × 1440	1600 × 1200	1280 × 1024	1152 × 864
Proportional virtual desktop	2048 × 1536	1600 × 1200	1280 × 1024	1152 × 864
Horizontal virtual desktop	2048 × 1440	2048 × 864	1600 × 600	1600 × 600
Vertical virtual desktop	1800 × 2048	1152 × 1728	800 × 1200	800 × 1200

8 / 12 / 16 MB graphics card

Desktop mode	256 Colors (8-bit)	High Color (16-bit)	True Color (24-bit)	True Color (32-bit)
No virtual desktop	1800 × 1440	1800 × 1440	1600 × 1200	1280 × 1024
Proportional virtual desktop	2048 × 1536	2048 × 1536	1600 × 1200	1600 × 1200
Horizontal virtual desktop	2048 × 1440	2048 × 1440	1600 × 600	2048 × 864
Vertical virtual desktop	1800 × 2048	1800 × 2048	1152 × 1768	1152 × 1728

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