# Pioneer
## sound.vision.soul

**Designed and built for professional applications, with industry-leading picture quality.**

50-inch WXGA Professional Plasma Display
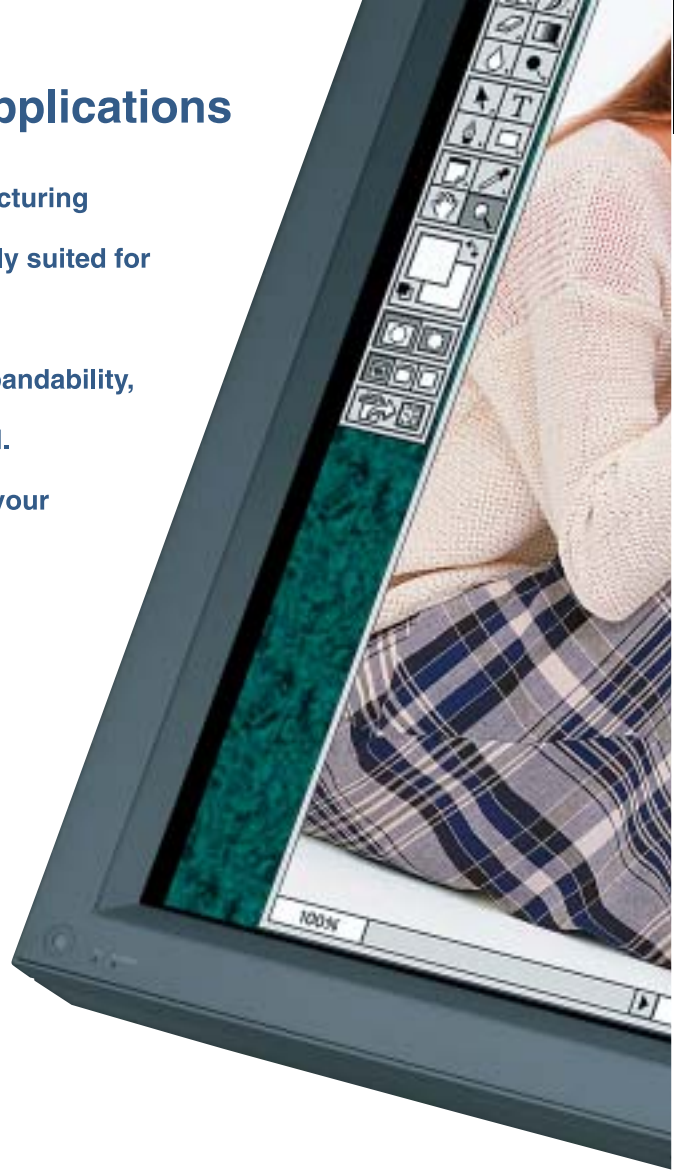
# PDP-504CMX

PURE vision

WXGA **50** inch
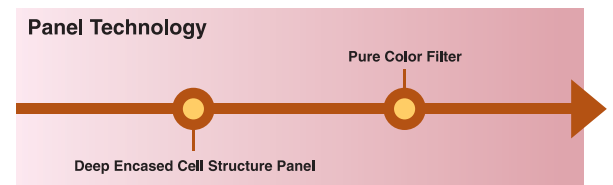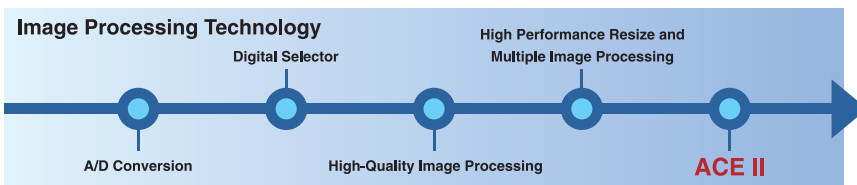
# Setting the Standard for Professional Applications

**Pioneer has drawn on its long experience in designing and manufacturing plasma displays to create this fourth generation model that is ideally suited for a wide range of professional and public display applications.**

**In addition to unrivaled image accuracy and clarity, it offers the expandability, reliability and functionality that these types of applications demand.**

**No matter where and how you use it, the PDP-504CMX will exceed your expectations for performance and versatility.**

# PURE DRIVE
## Plasma Ultimate Reference Exclusive Drive

**Image Processing Technology**

- A/D Conversion
- Digital Selector
- High-Quality Image Processing
- High Performance Resize and Multiple Image Processing
- **ACE II**

**Panel Technology**

- Deep Encased Cell Structure Panel
- Pure Color Filter

## Pure Drive Technology Delivers Stunningly Beautiful Images

Pioneer's Pure Drive technology encompasses the entire range of image generation and processing that gives the PDP-504CMX its astoundingly clear, smooth and natural picture. Unlike other PDP systems, Pure Drive maintains all signals in the digital domain, which eliminates loss, reduces distortion, and provides a far greater degree of control. An important step in this process is ACE II (Advanced Continuous Emission II), which processes the basic color elements enabling the reproduction of an astonishing 1.07 billion colors and eliminates false contouring within the PDP. Other displays can't match Pioneer's smoothness and subtlety of color or Pioneer's superb contrast even in dark scenes.
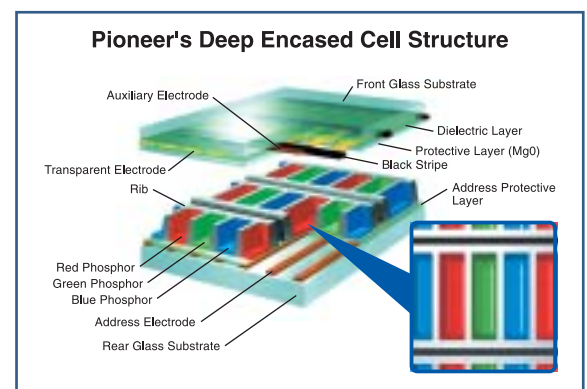
## Deep Encased Cell Structure

The cells of a plasma display panel, where light is generated, are a key part of its reproduction ability. Pioneer's Deep Encased Cell Structure is superior to other types. This proven technology has been further upgraded in the PDP-504CMX by using a new fluorescent body material (green), delivering ultra-high contrast and brightness of 1,000 cd/m$^2$.

### More Gray Shades in the Low Brightness Range

**Conventional PDP**

Brightness level

Input level

**Pioneer PDP-504CMX**

Brightness level

Input level

Further enhanced reproduction in the low brightness range

### ACE II virtually eliminates false contouring

Conventional PDP

**ACE II**

### Pioneer's Deep Encased Cell Structure

- Auxiliary Electrode
- Front Glass Substrate
- Dielectric Layer
- Protective Layer (MgO)
- Black Stripe
- Transparent Electrode
- Rib
- Address Protective Layer
- Red Phosphor
- Green Phosphor
- Blue Phosphor
- Address Electrode
- Rear Glass Substrate

**PURE** vision

50-inch WXGA Professional Plasma Display
# PDP-504CMX

# Easy Operation with Numerous Convenient Functions
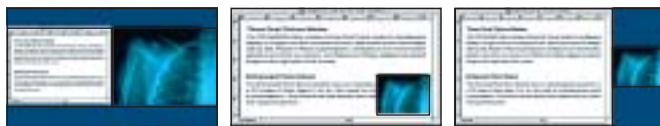
## Compatibility with a Wide Range of PC Signals

With a native resolution of 1,280 x 768, this high precision panel can accurately display personal computer signals ranging from 640 x 400 and 640 x 480 (VGA) to 1,024 x 768 (XGA) and 1,280 x 768 (WXGA). It is also compatible with display resolutions of 1,280 x 1,024 (SXGA) and 1,600 x 1,200 (UXGA).

## Intelligent Auto Setup

The Intelligent Auto Setup feature improves both performance and convenience, allowing image adjustment via the remote control. This display incorporates a new function, Auto Adjust, which detects the PC signal and automatically adjusts the position of the image, making it unnecessary to have to push the Auto Setup button.

## Three Dual Picture Modes

The PDP-504CMX offers a choice of three Dual Picture modes for simultaneous display of images from two connected sources. Split screen shows two images side by side, Picture-In-Picture superimposes a small picture over the full-screen picture in any of the four corners, and Picture-Out-Picture displays the second image on the right side of the screen.



**Side by Side**  **Picture-In-Picture**  **Picture-Out-Picture**

## Enhanced Point Zoom

The Enhanced Point Zoom function lets you instantly expand any portion of a PC image in three steps (1.5x, 2x, 3x), great for emphasizing key points in presentations. The Zoom Area sub-display area makes it easy to confirm the expanded portion.

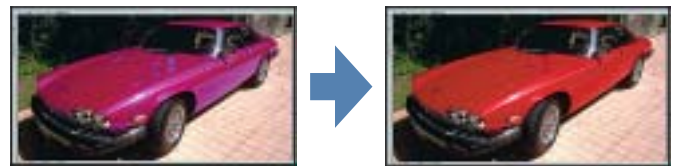Zoom Area sub-display



1x              3x

## 2 x 2 Image Expansion

This mode allows a 2 x 2 data wall using four units without the need for an expansion device. Two display modes are available,* one that enlarge all picture elements so the entire picture is visible, and one that enlarges the whole image so lines between units are not visible.

* With the use of a Pioneer authorized card.



## Color Detail Adjustment

Color adjustment can be performed for any specific color without affecting the other colors. For example, you can change the purplish red of a sports car to crimson without changing other colors in the image.



## Large GUI Display

Having a GUI display is a definite advantage, making operation considerably easier, but if it is too small to see when the unit is mounted, it usefulness is limited. The PDP-504CMX provides an extra-large display, which is visible even when the unit is mounted in a high location.



## Function Lock

A number of functions can be locked, making the display system more secure. Lock modes are on/off, main unit buttons, remote control, main unit buttons plus remote control, and memory lock, which selects input and volume default settings when the unit is turned on.
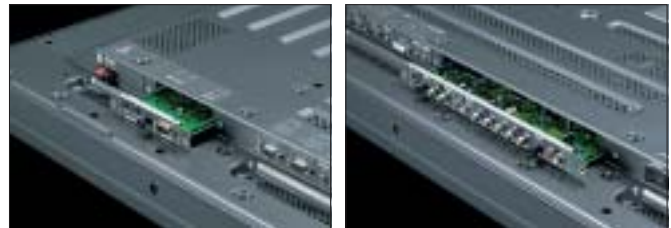
PURE
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# Expandability to Meet a Wide Variety of Present and Future Needs — ES* Card Slot Interface

**EXPANSION SOLUTIONS**

The PDP-504CMX is designed to be ready for any type of application with the integration of two ES Card Slot interfaces, one for communication and one for enhanced data. The PDP-504CMX comes supplied with a communication card that includes RS-232C and combination I/O interfaces. This card can be removed. The second slot can be used to enable video capabilities through the input of a wider range of analog or digital signals, and additional control. As a result, one PDP-504CMX can be used for multiple tasks, including various applications that other PDPs can't handle. You can use it any way you need to, and it is also ready for additional tasks you may develop in the future. Pioneer's "Expansion Solutions" are one more reason why the PDP-504CMX should be your first choice for a professional plasma display. * Expansion Solutions

# Outstanding Reliability and Durability

### Extremely Low Power Consumption

This PDP-504CMX consumes only 360W of power while producing bright images. This is extremely low for a 50-inch WXGA-class plasma display. Standby power is a mere 0.8W.

### Four Energy Save Modes

In addition to the normal operating mode, the PDP-504CMX provides a choice of four energy save modes that further reduce power consumption. These modes are Power Save, Intermediate, Linear Brightness, which decreases the peak intensity of high-brightness images, and Auto Brightness Control, which uses a sensor to automatically adjust the brightness depending upon room lighting.

### Three Image Burn-In Prevention Modes

The PDP-504CMX employs powerful tools to prevent burn-in. These include RGB separate full mask, side mask brightness adjustment, Orbiter mode for one-pixel-at-a-time movement of displayed images at fixed intervals, and an Inverse mode that displays images as negative. Full mask and Inverse can be controlled by the on/off timer via the Screen Management function.

### Smart Cooling System

Internal fans are activated only when needed, keeping fan noise to a minimum and conserving power.

### Peak Pattern Detection System

This system also helps to prevent burn-in by monitoring the prolonged display of still images and the concentration of brightness in any segment of the panel. * Even so, displaying the same images for long periods should be avoided.

### Display of Error Information

In order to minimize downtime, the PDP-504CMX provides comprehensive error information on the screen. Many different errors, their causes, and part serial numbers can be displayed and identified by symbols. In addition, various errors are indicated by the two front LEDs, so even if the display malfunctions, the cause can be quickly identified and corrected.

### RS-232C Get Command

The PDP-504CMX can transmit various information to a PC via the RS-232C link using the Get command, including power on/off, input number, signal detection and complete error data. This ensures that remote monitoring is worry-free.

### WHQL Compatibility

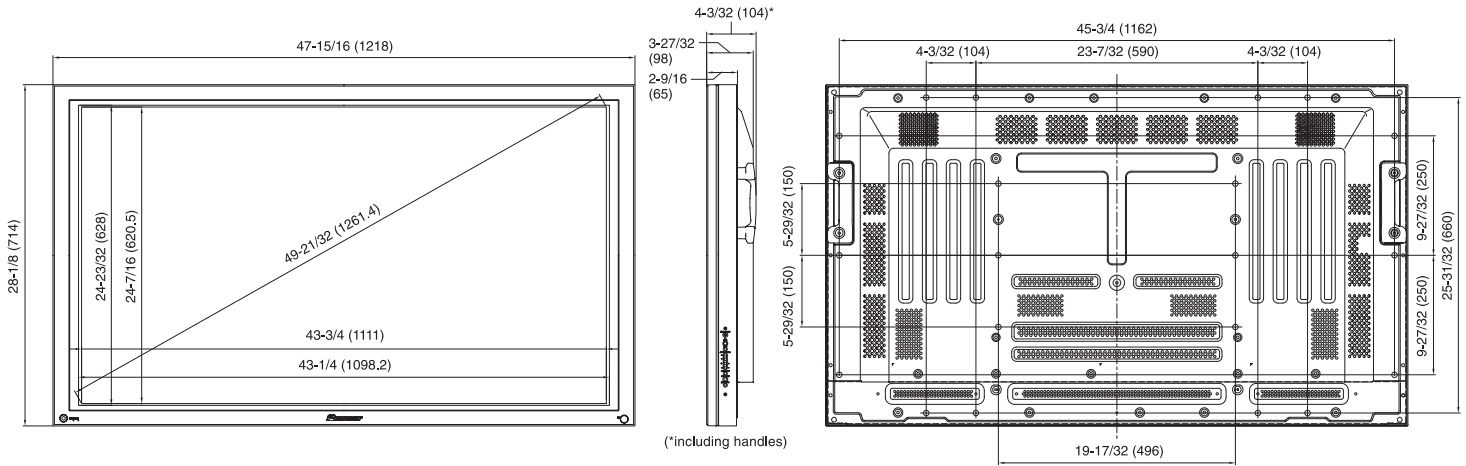Pioneer's plasma displays are the industry's first to receive the Windows Hardware Qualification Labs (WHQL) certification of compliance. The PDP-504CMX continues this tradition by providing Plug & Play drivers to support Microsoft® Windows® and other operating systems. This is a display you can use with confidence. * Compatible with Microsoft Plug & Play (VESA DDC 1/2B)

Designed for Microsoft® Windows® XP

## ■ Dimensions

Unit : inch (mm)



(*including handles)

## ■ Terminal Configuration



## ■ Specifications

| | |
|---|---|
| Effective Screen Size (W x H) | 43-1/4" x 24-7/16" (1098.2 x 620.5 mm) (50in. Diag.) |
| Aspect Ratio | 16:9 |
| Number of Pixels | 1280(Hor.) x 768(Ver.) |
| Pixel Pitch | 0.858(Hor./RGB trio) x 0.808(Ver.)mm |
| Color Resolution | 1024 grey scale, 10.7billion colors |
| Brightness | 1000cd/m² (white peak) |
| Dimensions  (W x H x D*) | 47-15/16" x 28-1/8" x 3-27/32" (1218 x 714 x 98 mm) |
| Weight | 90 lbs. 6 oz (41.0 kg) |
| Power Consumption | 360W (0.8W at stand by) |
| Power Requirements | AC 100-120V±10%, 50/60Hz |
| Operating Temperature | 32°F-104°F (0°C-40°C) |
| Operating Humidity | 20%-80% |
| Safety Regulations | UL 1950, FCC 15B class B, C-UL |

*Not including handles

## ■ Input/Output Terminals

| | | Connector | Signal | Level/Impedance |
|---|---|---|---|---|
| INPUT 1 | IN | Mini D-sub 15-pin | Analog RGB Signal (G on Sync compatible) | RGB : 0.7Vp-p/75Ω |
| | | | | G on Sync : 1Vp-p/75Ω |
| | | | | HD/CS,VD : TTL level/2.2kΩ |
| | | | Compatible with Microsoft Plug & Play (VESA DDC 1/2B) | |
| | OUT | Mini D-sub 15-pin | Analog RGB Signal (G on Sync compatible) | 75Ω |
| INPUT 2 | IN | DVI-D 24 Pin | Digital RGB Signal (DVI Standard)* | |
| | | | Compatible with Microsoft Plug & Play (VESA DDC 2B) | |

*Not compatible with Copy Protection (HDCP)

## ■ Audio Input/Output Terminals

| | | Connector | Level/Impedance |
|---|---|---|---|
| AUDIO INPUT(INPUT1) | IN | Stereo mini | L/R: 500mVrms/more than 10kΩ |
| AUDIO INPUT(INPUT2) | IN | Stereo mini | L/R: 500mVrms/more than 10kΩ |
| AUDIO OUTPUT | OUT | Stereo mini | L/R: 500mVrms/less than 5kΩ (FIX) |
| | | | L/R: 0-500mVrms/less than 5kΩ (VARIABLE) |
| SPEAKER | OUT | | L/R: 8-16Ω/7W +7W(8Ω) |

## ■ Control Terminals

| RS-232C | Connector | D-sub 9Pin |
|---|---|---|
| (for control of computer) | Baud Rate | 1200, 2400, 4800, 9600, 19200, 38400 bps |
| Combination IN/OUT | Connector | Mini DIN 6 Pin (x2) |

## ■ Computer Input Signal

| Resolution (dot x line) | Vertical Frequency | Horizontal Frequency | Digital RGB | Usage |
|---|---|---|---|---|
| 640x400 | 56.4Hz | 24.8kHz | | NEC PC-9800 |
| 720x400 | 70.1Hz | 31.5kHz | | NEC PC-9800 |
| | 85.1Hz | 37.9kHz | | |
| 640x480 | 60Hz | 31.5kHz | YES | |
| | 66.7Hz | 35.0kHz | | Apple Macintosh 13" |
| | 72.8Hz | 37.9kHz | | |
| | 75Hz | 37.5kHz | | |
| | 85Hz | 43.3kHz | | |
| 848x480 | 60Hz | 31.0kHz | YES | |
| 800x600 | 56Hz | 35.2kHz | YES | |
| | 60Hz | 37.9kHz | YES | |
| | 72Hz | 48.1kHz | | |
| | 75Hz | 46.9kHz | | |
| | 85Hz | 53.7kHz | | |
| 832x624 | 74.6Hz | 49.7kHz | | Apple Macintosh 16" |
| 1024x768 | 60Hz | 48.4kHz | YES | |
| | 70Hz | 56.5kHz | | |
| | 75Hz | 60.0kHz | | ( ) Indicates Apple Macintosh 19" |
| | (74.9Hz) | (60.2kHz) | | |
| | 85Hz | 68.7kHz | | |
| 1280x768 | 56Hz | 45.1kHz | YES | |
| | 60Hz | 47.8kHz | YES | |
| | 70Hz | 56.1kHz | | |
| 1152x864* | 60Hz | 53.7kHz | YES | |
| | 72Hz | 64.9kHz | | |
| | 75Hz | 67.5kHz | | |
| 1152x870* | 75.1Hz | 68.7kHz | | Apple Macintosh 21" |
| 1152x900* | 66Hz | 61.8kHz | | Sun Microsystems LO |
| | 76Hz | 71.7kHz | | Sun Microsystems HI |
| 1280x960* | 60Hz | 60.0kHz | YES | |
| 1280x1024* | 60Hz | 64.0kHz | YES | |
| | 75Hz | 80.0kHz | | |
| | 85Hz | 91.2kHz | | |
| 1400x1050* | 60Hz | 65.3kHz | YES | |
| | 75Hz | 82.3kHz | | |
| | 85Hz | 93.9kHz | | |
| 1600x1200* | 60Hz | 75.0kHz | | |
| | 65Hz | 81.3kHz | | |
| | 70Hz | 87.5kHz | | |
| | 75Hz | 93.8kHz | | |
| | 85Hz | 106.3kHz | | |

*Compressed or partial display

## ■ Accessories

Power Code x 1, Remote Control Unit x 1, Remote Control Unit Holder x 1, AA(R6) batteries x 2, Cleaning cloth(for screen) x 1, Speed clamps x 2, Bead bands x 2, Display stands x 2, Washers x 2, Hex hole bolts(M8x40) x 2, Operating Instructions x 1, Warranty x 1

### ● Notice

· This equipment is sold on the condition that it will be installed by a competent professional engineer with sufficient training and skill to carry out proper installation. Be sure to entrust the installation and setup of this machine only to a competent professional or retail service engineer.
· Pioneer cannot accept liability in case where the equipment is damaged due to inappropriate installation location, improper assembly, installation, set-up, operation or renovation, or by natural disasters.

*Macintosh is a registered trademark of Apple Computer, INC. *PC-9800 is a registered trademark of NEC Corporation. *NEC is a registered trademark of NEC Corporation. *Microsoft is a registered trademark of Microsoft Corporation. *VESA is a registered trademark of Video Electronics Standards Association. *Sun Microsystems is a registered trademark of Sun Microsystems, Inc. *Design and specifications are subject to change without notice.

## ■ Options

### BNC Connector Interface Card
# PDA-5003

Enables the ability to display High Definition video through RGB/component, S-Video and composite input terminals.



**■ VIDEO INPUT/OUTPUT**  3.58NTSC, 4.43NTSC, PAL, SECAM, PAL-N, PAL-M

| | | Connector | Signal | Level/Impedance |
|---|---|---|---|---|
| INPUT3 | IN | Mini DIN 4Pin (S terminal) | Y/C Separate Video Signal | Y: 1Vp-p/75Ω C: 0.286Vp-p/75Ω (NTSC) 0.3Vp-p/75Ω (PAL) |
| INPUT4 | IN | BNC | Composite Video Signal | 1Vp-p/75Ω |
| | OUT | BNC | Composite Video Signal | 75Ω |
| INPUT5 | IN | BNCx5 | Analog RGB Signal (Compatible with G on Sync) | RGB: 0.7Vp-p/75Ω G on Sync: 1Vp-p/75Ω HD/CS,VD: TTL level/75Ω or 2.2kΩ switchable |
| | | | Component Video Signal | Y: 1Vp-p/75Ω Pb/Cb, Pr/Cr: 0.525Vp-p/75Ω (75% saturation) |

**■ AUDIO INPUT/OUTPUT**

| | Connector | Level/Impedance |
|---|---|---|
| AUDIO INPUT(INPUT3/4) | RCA pin x 2 | L/R: 500mVrms/more than 10kΩ |
| AUDIO INPUT(INPUT5) | RCA pin x 2 | L/R: 500mVrms/more than 10kΩ |

### RCA Connector Interface Card
# PDA-5004

Enables the ability to display High Definition video through component, S-Video and composite input terminals.



**■ VIDEO INPUT/OUTPUT**  3.58NTSC, 4.43NTSC, PAL, SECAM, PAL-N, PAL-M

| | | Connector | Signal | Level/Impedance |
|---|---|---|---|---|
| INPUT3 | IN | Mini DIN 4Pin (S terminal) | Y/C Separate Video Signal | Y: 1Vp-p/75Ω C: 0.286Vp-p/75Ω (NTSC) 0.3Vp-p/75Ω (PAL) |
| INPUT4 | IN | RCA | Composite Video Signal | 1Vp-p/75Ω |
| | OUT | RCA | Composite Video Signal | 75Ω |
| INPUT5 | IN | RCAx3 | Component Video Signal | Y: 1Vp-p/75Ω Pb/Cb, Pr/Cr: 0.525Vp-p/75Ω (75% saturation) |

**■ AUDIO INPUT/OUTPUT**

| | Connector | Level/Impedance |
|---|---|---|
| AUDIO INPUT(INPUT3) | RCA pin x 2 | L/R: 500mVrms/more than 10kΩ |
| AUDIO INPUT(INPUT4) | RCA pin x 2 | L/R: 500mVrms/more than 10kΩ |
| AUDIO INPUT(INPUT5) | RCA pin x 2 | L/R: 500mVrms/more than 10kΩ |

### Optional Side-Mount Speakers
# PDP-S05-LR



**Maximum intput**  12W/8 ohms
**Dimensions (WxHxD)**  2-29/32"x 28-1/8"x 3-31/32"(74 x 714 x 101 mm)
**Weight**  3 lbs. 15 oz (1.8 kg.) (one unit)

### Plasma Touch Screen Device
# PDK-50HW2A

Easy installation and no calibration or overlay is required on the screen surface, so brightness is not affected. In addition to finger-touch operation, a special pen allows more precise interface than a mouse.



**Dimensions (WxHxD)**  49-17/32"x 29-27/32"x 4-7/16"(1,258 x 758 x 113 mm)
**Weight** (Excluding accessories)  13 lbs.  (5.9 kg.)



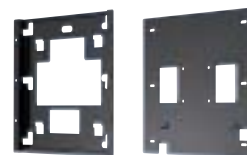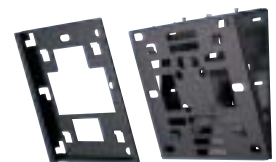| PSA-1 | PSA-2 | PCA-1 | PCA-2 | PDWB -5003 | PWM -503 |
|---|---|---|---|---|---|
| ADJUSTABLE HEIGHT SUSPENSION ADAPTER | ADJUSTABLE HEIGHT SUSPENSION ADAPTER | 1-1/2" NTP (SINGLE) CEILING ADAPTER | 2" NTP (DUAL) CEILING ADAPTER | FLAT WALL MOUNTING BRACKET for 50" PLASMA | TILTING WALL MOUNTING BRACKET for 50" PLASMA |

*These items have been manufactured by Premier Mounts. If you need further information please call 1-800-368-9700 or access to http://www.premiermounts.com/.

# Unlimited Applications

Pioneer PDPs are ideal for a wide variety of applications, such as public information displays, visual displays at trade shows, industrial control and monitoring, trading room displays, electronic advertising and business presentations.

# The world leader in PDP quality and innovation.

Pioneer's reputation as the world's leading manufacturer of plasma display panels was solidified in 1997 with the release of the world's first 50-inch WXGA model, and is further confirmed by our fourth generation display, the PDP-504CMX. We lead the industry not only in terms of performance and functions, but also in the development of fundamental PDP technology. We proudly offer the highest quality of development, design and manufacture of all of our PDPs. We ensure strict adherence to the highest quality standards, allowing Pioneer Corporation to achieve ISO 14001 certification.

**Pioneer Corporation and Pioneer Display Products Corporation where PDP products are developed have both achieved ISO 14001 certification.**

*For more details, contact one of the addresses below. *All product names and company names are registered trademarks of their respective owners.

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· PIONEER CORPORATION  URL : http://www.pioneer.co.jp/
· PIONEER ELECTRONICS (USA) INC.  URL : http://www.pioneerelectronics.com/

## Pioneer

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