

NEC MultiSync® P221W with SpectraView_{II}™

Color calibration solution (22" widescreen professional LCD display)
ideal for color-critical applications

Unparalleled display performance for color-critical applications. Featuring an ultra-wide color gamut, the 22" NEC MultiSync P221W delivers an entirely new perspective to your desktop and allows you to view photographs and graphics in optimum color. This display includes the SpectraView_{II} Color Calibration Solution, which combines award-winning NEC LCD monitor technology with a color measurement sensor and sophisticated software. The result is a highly accurate, reliable, repeatable and feature-rich display calibration and profiling solution.

Color and brightness uniformity were paramount in the design of this high-performance display, making it ideal for graphic arts, desktop publishing, photography and other color-critical environments. In addition, with its wide-format design (16:10 aspect ratio), which provides roughly the same work area as two smaller-sized displays, you can simultaneously view/work in multiple application windows.

- Best-in-class active matrix LCD technology with wide viewing angle and wide color gamut provides optimum performance for displaying color images
- Wide color gamut achieves 95.6% coverage of AdobeRGB (93.3% color gamut size vs. NTSC [1953])
- Internal 10-bit programmable lookup tables (LUTs) allow the display of 16.7 million colors out of a palette of 1.05 billion for lossless color and smooth images and hardware calibration
- AmbiBright™ ambient light sensor automatically adjusts the display's brightness based on lighting conditions
- XtraView+™ technology provides for the widest viewing angles available (up to 178°) with minimal off-angle color shift
- Four-way ergonomic stand boasts pivot, swivel, tilt and height-adjustment up to 150mm to maximize your viewing comfort



SpectraView_{II}™

SpectraView_{II} Color Calibration Solution Features and Benefits

Quick and easy measurements. The SpectraView_{II} system, available for Mac OS and Windows, uses an ultra-sensitive, custom-calibrated NEC/X-rite iOne Display 2 colorimeter to take color measurements of the display screen during calibration. The software analyzes these measurements and sends color adjustment commands directly to the display monitor. This means that color adjustments are made in the monitor rather than in the video graphics adapter, resulting in full use of the number of colors available on the graphics adapter and a much brighter image with the maximum possible color gamut. With SpectraView_{II}, the video graphics adapter is not used at all to make any gamma or tone response curve corrections to the display, so the full color resolution and fidelity of the system is maintained.

10-bit Internal Look Up Tables (LUTs) - Each LCD monitor supported by SpectraView_{II} features three internal 10-bit LUTs. These tables allow precise adjustments to be made to the display's tone response curve with minimal reduction to the number of displayable colors. Since the tone response curve correction is stored within the display and not on the host system's video graphics card LUT, the display can be calibrated on one machine and then used on another and still maintain calibration as long as a digital video signal is used.

Display Data Channel Command Interface (DDC/CI) - SpectraView_{II} communicates with the monitor using DDC/CI, which is a two-way communications link between the video graphics adapter and display monitor using the standard video signal cable. No extra cables are necessary. All adjustments to the monitor settings are done automatically using this communications link.

Multiple calibration sets - Different monitor calibrations can be instantly loaded, allowing quick and easy switching between different calibration settings without the need to re-calibrate the display. Each time a calibration set is loaded, the necessary monitor settings and ICC/ColorSync profiles are automatically updated.

Calibrated display information - At the end of each monitor calibration, an information window is displayed, which shows the results of the calibration and includes a wealth of information about the display such as the measured color gamut, grayscale color tracking, Delta-E and luminance values. Additional information about the display monitor such as the model name, serial number and the total number of hours that it has been in use are also displayed.



Calibration status validation - SpectraView_{II} will query each calibrated monitor to see if any controls have changed since the last calibration. If anything has changed, the previous calibrated state can be restored automatically.

Application flexibility - SpectraView_{II} provides many features and options that make it flexible enough to be used in a large variety of applications, including full DICOM support for medical imaging. The display luminance can be adjusted to either a specific user-defined value or set to the maximum the display can achieve. In addition, custom target response curves can be created in addition to presets such as L* and SMPTE.

Network support (Windows only) - SpectraView_{II} integrates with the NEC NaViSet™ Administrator network software (available separately from your NEC representative) to provide remote network access and monitoring of display monitors. NaViSet™ Administrator is able to read, display and log the current calibration settings and status of displays on an existing network (LAN). This feature is particularly useful for large installations where central monitoring and asset management is needed.

Monitor locking - Once calibrated, the On Screen Display (OSD®) controls for the display monitors can be locked to prevent accidental or unauthorized adjustment, which may invalidate the calibrated state of the monitor.

Monitor profiling - After calibration, the display is automatically profiled and highly accurate ICC/ColorSync color profiles are generated and automatically registered with the color management system. These profiles use the Bradford Chromaticity Adaptation matrix.

Colorimeter function - The software features a colorimeter function, which allows direct measurements to be taken by the color sensor and the results displayed in a variety of different formats.

Model	MultiSync P221W-BK-SV
Display	<p>Viewable Size Image 22"</p> <p>Pixel Pitch 0.282mm</p> <p>Pixels Per Inch 89 @ native resolution</p> <p>Brightness (typical) 300 cd/m²</p> <p>Contrast Ratio (typical) 1000:1</p> <p>Viewing Angle (typical) 178° Vert., 178° Hor. (89U/89D/89L/89R) @ CR > 10</p> <p>Response Time (typical) Rapid Response™ (8ms Gray-to-Gray; 16ms Black-to-Black)</p> <p>Panel Bit Depth 10-bit internal LUTs, displays 16.7 million colors out of 1.05 billion color palette</p> <p>Color Gamut* Coverage AdobeRGB** - 95.6%</p>
Synchronization Range	<p>Horizontal 31.5 - 93.8/119.2 KHz (Analog/Digital)</p> <p>Vertical 51 - 85 Hz</p>
Input Signal	<p>Video Analog RGB 0.7 Vp-p/75 Ohms</p> <p>Sync Separate sync: TTL Level (Positive/Negative)</p> <p>Composite sync: TTL Level (Positive/Negative)</p> <p>Composite sync on green: (0.3Vp-p negative 0.7Vp-p positive)</p>
Inputs	DVI-D & VGA 15-pin D-sub
Resolutions Supported (Analog/Digital)	<p>720 x 400 @ 70-85 Hz</p> <p>640 x 480 @ 60-85 Hz</p> <p>800 x 600 @ 56-85 Hz</p> <p>832 x 624 @ 75 Hz</p> <p>1024 x 768 @ 60-85 Hz</p> <p>1152 x 864 @ 70-85 Hz</p> <p>1152 x 870 @ 75 Hz</p> <p>1280 x 960 @ 60 Hz</p> <p>1280 x 1024 @ 60-75 Hz</p> <p>1360 x 768 @ 60 Hz</p> <p>1440 x 900 @ 60-75 Hz</p> <p>1400 x 1050 @ 60-75 Hz</p> <p>1680 x 1050 @ 60 Hz</p>
Native Resolution	1680 x 1050 @ 60Hz
Additional Features	AmbiBright™ - ambient light sensor, ultra-thin frame (bezel), No Touch Auto Adjust™, NaViSet™ software, tilt, VESA Mount, sRGB, tilt, swivel, height-adjustable stand (150mm), pivot, quick-release stand, vacation switch, 10-bit LUTs, black level adjustment, overdrive, ECO Mode™, CableComp™
Touch-Capable	Designed for integration
Voltage Rating	AC 100-120V / AC 220-240V
Power Consumption (typical)	<p>On 62W</p> <p>Power Savings Mode 2W</p>
Dimensions (WxHxD)	<p>Net (with stand) 19.9 x 16.1-22 x 9.7 in. / 506.4 x 410-560 x 247.3mm</p> <p>Net (without stand) 19.9 x 12.9 x 3.7 in. / 506.4 x 328.7 x 94mm</p>
Net Weight	<p>(with stand) 18.5 lbs. / 8.4 kg</p> <p>(without stand) 12.6 lbs. / 5.7 kg</p>
VESA Hole Configuration Specifications	100 x 100mm
Environmental Conditions	<p>Operating Temperature 5-35° C / 41-95° F</p> <p>Operating Humidity 30-80%</p> <p>Operating Altitude 3048m / 10,000 ft.</p> <p>Storage Temperature -10-60° C / 14-140° F</p> <p>Storage Humidity 10-85%</p> <p>Storage Altitude 12,192m / 40,000 ft.</p>
Safety Standards	UL / C-UL, CE, Gost/PCT, PSB, CCC, NOM, TUV GS, FCC Class B/Canadian DOC, C-tick, MPR II / MPR III, VCCI (class 2), TUV-Ergonomie, TCO 03, , Energy Star 4.0 Tier 2, GEEA
Limited Warranty	3 years parts and labor, including backlight
Technical Support	M - F (7am - 7pm CST)

SpectraView™ Software Requirements

Apple Mac OS X 10.2.8 or higher/Microsoft Windows 2000, XP, XP x64, Server 2003 or Vista 32 bit.
At least one available USB port for Gretag/Macbeth color sensor.
Visit www.necdisplay.com for the latest requirements.

* Color gamut size and coverage calculated as 2-D gamut area in CIE 1931 xy colorspace. Size is the total relative display gamut area and includes any colors outside the reference gamut. Coverage is the relative display gamut area contained inside the reference gamut. NTSC values provided for comparison purposes - modern broadcast video uses SMPTE-C, ITU-R BT, 709-5/sRGB or EBU primaries.

** AdobeRGB is a standard defined by Adobe Systems Incorporated.



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