NEC MultiSync® Large-Screen LCD Series

32” (31.5” VIS), 40”, 46” and 57” LCD displays
ideal for digital signage applications

Also serving markets such as...

Restaurants  Medical  Financial  Theaters  Tradeshows  Broadcasting

Airports/flight and baggage information

Digital merchandising

www.necdisplay.com
Providing visual display solutions to a wide variety of users for many years, NEC LCD monitors have consistently set the standard for flat-panel technology and continue to offer new ways to enhance visual experiences. Our visual solutions provide users with a diverse range of options to help them see their digital world more clearly and support them in achieving their goals.

Building on this tradition of quality and innovation, NEC’s 32” (31.5” VIS) LCD3210, 40” (40” VIS) LCD4020, 46” (46” VIS) LCD4620 and 57” (57” VIS) LCD5710 feature the next generation of LCD technologies and create new options for those in the information display market. The exclusive Digital Signage Technology Suite (DSTS), which was developed based on feedback from our customers, further sets these displays apart with more than 20 advanced features that take screen performance to uncharted levels.

These models include all of the benefits users have come to value in NEC’s smaller-sized LCD monitors, and now they can be enjoyed in a variety of information display applications, including airports, retail merchandising, conference rooms, financial exchanges, broadcasting environments and tradeshow exhibits.

All models are available in both standard and IT versions to best meet your display requirements. The value-driven IT version features only PC inputs, while the standard version includes audio and video inputs for a broader set of AV applications.

Sized to please. With their spacious screens, MultiSync Large-Screen LCDs are ideal for applications that require precise readability and clarity from a distance, such as airports and financial institutions. The LCD5710 touts the largest screen size LCD that NEC has offered to date. The LCD3210, which fills the gap between flat panels designed for the desktop and those intended for larger venues, offers digital signage markets a lower-priced option for a variety of visual display needs. The ultra-thin bezels of the LCD4020 and LCD4620, with widths as thin as one-fifth of the industry norm for 40° and 46° displays, provide ideal solutions for tiled video walls.

Superior screen performance. MultiSync Large-Screen LCDs take advantage of the many display technologies that have made LCD monitors so popular over the years, and deliver them through expansive screens featuring a wide aspect ratio. Their 1366 x 768 (WXGA) resolution (1920 x 1080 on the LCD5710), which provides a true 16:9 aspect ratio, optimizes on-screen text, images and video with remarkable precision and clarity, allowing onlookers to clearly view presentations, charts, advertisements, pricing and other public display information. Further, applications can be viewed simultaneously, utilizing the displays’ picture-in-picture capability when using the defined combination of video inputs (see User’s Manual).

In applications where spectators are situated at various angles in front of the screen or where they are passing by the display, the monitors provide an undistorted view of the screen. Using XtraView wide-angle viewing technology, the displays deliver flexible horizontal and vertical viewing angles (up to 176°; 88° up, down, left and right) with less glare, reflection and distortion.

With brightness adjustable to 500 cd/m², these displays stand out in a crowd, allowing onlookers to view text and graphics with ease and comfort. Exceptional contrast ratios help the displays deliver amazingly vivid colors, while automatic black level adjustment regulates grayscale images for optimal picture quality. A 12-bit gamma lookup table (LUT) (available on the MultiSync LCD4020 and LCD4620) allows the display of 16.7 million colors out of a palette of 68.5 billion, while providing for more finely detailed, high-definition rendering of color images and crisper display of even the most delicate shadings and color differences. Further, Rapid Response technology allows for virtually undistorted viewing of high-speed, full-motion video without ghosting or image trailing.

Avoid image persistence. With some screen technologies, leaving the display on for a long period of time would permanently burn the image into the screen. As can be noted with phosphor-based public displays, the image would remain permanently "engraved" into the display, rendering it useless. It is important to understand that LCD technology may experience phenomena known as image persistence, which occurs when a residual or "ghost" image of a previously displayed image remains visible on the screen. Unlike CRT or other phosphor-based monitors, LCD monitors’ image persistence is not permanent; however, constant images being displayed for a long period of time should be avoided. To alleviate image persistence and promote a longer lifecycle, NEC Display Solutions developed an exclusive panel design with thermal barrier layers and employs many advanced technologies for its Mul-
tiSync Large-Screen LCDs. Some of these technologies include a screen saver function, a power-save function that puts the display in power management mode when a sync or input signal is lost, a side color function that adjusts black bars in 4:3 mode, a real-time clock for content scheduling and sleep/wake management and an image mover function.

**Take control of your monitor.** To make remote control and diagnostics easier, MultiSync Large-Screen LCDs provide three different methods to manipulate the display—an RS-232 connector, an advanced remote diagnostics and remote control capabilities of the Display Data Channel/Command Interface (DDC/CI), and a handheld IR remote control. By utilizing the inherent power of the PC (a typical source for the display), DDC/CI allows control commands to be sent directly to the monitor through a standard PC system or remotely over an existing network (LAN) by a system administrator. A wide range of DDC/CI-based graphics cards allow for easy control through a Windows 2000/XP/Vista interface.

Another control capability is daisy-chaining, which links monitors to one another to display the same content and deliver the same audio—all from a single source. This helps avoid the hassle and extra costs of using splitters or connecting monitors to multiple sources.

With an eye toward the future, NEC engineers designed the LCD4020 and LCD4620 with a built-in expansion slot, making them ready to welcome components that are not yet available. Instead of having to replace their display down the road, users will be able to upgrade its technology for innovations such as small form factor PCs. Users currently have the option of connecting a digital tuner to these two displays, expanding their capabilities as high-definition televisions for your favorite broadcasts.

**Achieve consistent, long-distance signals.** NEC Display Solutions’ exclusive CableComp technology (featured on the LCD4020, LCD4620 and LCD5710) enables users to realize the advantages of long monitor cable lengths without the difficulties and costs normally associated with this type of configuration. In environments such as trading floors, call centers and public signage venues, longer cables enable systems to be centrally located in control rooms far away from displays (up to 326 feet/100 meters), allowing upgrades, service and repairs to be accomplished without interrupting the work or display environment.

CableComp technology solves signal and blurred image dilemmas by using a digitized signal delay circuit to automatically compensate for each red, green and blue cable’s length and video signal delay, ensuring sharp image reproduction. CableComp also boosts the VGA video signal to prevent blurred images without the need for costly repeaters. A new feature of this technology is its ability to equalize the video signal to eliminate color halos on long cable runs.

**Get connected.** MultiSync Large-Screen LCDs feature a number of input connections for maximum compatibility (Fig. 1). Both versions include a DVI-D connector for digital video signal adapters and a traditional 15-pin mini D-sub connector that is configured for IBM® VGA-compatible adapters. This wide compatibility makes it possible to upgrade adapters or software without having to purchase a new monitor. By accepting analog signal inputs, the monitors can display more than 16 million colors, depending on the graphics card and software being used. The standard version display also features BNC VGA, composite video, component video, and an S-Video connector, allowing you to run numerous peripheral devices, including DVD players, media PCs and high-definition video players. The LCD4020 and LCD4620 take your connectivity even further with an HDMI input for high-definition set-top boxes, DVD players and video games. HDCP support provides copy protection for high-definition content via this input.
User-friendly, efficient design. As ease of installation is a main concern for the information display market, these displays were designed with light weight in mind, making them simple to transport and install wherever necessary. In addition, NEC is on the forefront of mounting technology as the displays’ cabinets were designed to meet currently proposed VESA mounting standards for larger-sized public displays, which will be required of all manufacturers in the future. Their ability to be mounted in either portrait or landscape orientation further adds to your flexibility. With a uniformly thin frame, the displays’ designs are ideal for multi-screen construction for virtually seamless video walls.

Simplified control of screen settings. For quick and easy setups, a multitude of presets, including automatic image adjust and automatic input detect, make MultiSync Large-Screen LCDs ready to go right out of the box. Their factory reset feature even allows you to return to the display’s original settings if desired.

Intelligent power management ensures a smart investment. Utilizing energy-efficient technologies in their design, these displays reduce power consumption and significantly lower your total cost of ownership (TCO). The high-efficiency backlight reduces not only the power consumption but also the heat generation at the front of the screen, while the real-time clock’s sleep/wake management scheduler improves energy savings and extends display life. In addition, the MultiSync LCD4020 and LCD4620 have been designed with two thermally controlled fans. Based on default temperature set points (or user-defined settings), sensors continuously monitor the interior temperature of the display. When the set temperature level is reached, the fans cool the display to the desired level. In cases in which the fans are unable to cool down the display, the backlights are dimmed or, as a last resort, the display is automatically shut down.

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**Figure 1**

**LCD4020/LCD4620**

**LCD5710**

**LCD3210**

1. **AC IN connector** Connects with the supplied power cord.
2. **RGB 1 IN (DVI-D)** To input digital RGB signals from a computer*  * This connector does not support analog input.
3. **RGB 2 IN (mini D-Sub 15 pin)** To input analog RGB signals from a personal computer or other RGB equipment.
4. **RGB 3 DVD/HD [R, G, B, H, V] (BNC)** To input the analog RGB signals or signals from other RGB equipment. A Sync-on-Green signal can be connected to the G connector.
5. **RGB OUT connector (mini D-Sub 15 pin)** To output the signal from the RGB 2 or 3 IN connector.
6. **DVD/HD CONNECTOR (BNC)** Connecting equipment such as a DVD player, HDTV device or laser disc player.
7. **AUDIO IN 1,2,3** Input audio signal from external equipment such as a computer, VCR or DVD player.
8. **AUDIO OUT** Output the audio signal from the selected AUDIO IN source.

Denotes an AV unit function. All AV functions are enabled when the AV unit is installed.

9. **VIDEO INPUT/OUTPUT CONNECTOR**
   - **VIDEO IN connector (BNC and RCA):** Input a composite video signal. BNC and RCA are not available at the same time. (Use only one input).
   - **VIDEO OUT connector (BNC):** Output the composite video signal from the VIDEO IN source.
   - **S-VIDEO IN connector (DIN 4 pin):** Input the S-video (Y/C separate signal).
   - **S-VIDEO OUT connector:** Output the S-video (Y/C separate signal).
10. **EXTERNAL CONTROL (mini D-Sub 9 pin) RS-232C** Input signal from control equipment such as a computer. 
   - **In connector:** Input signal from control equipment such as a computer or the output from a different MultiSync LCD3210/ LCD4020/LCD4620. 
   - **LCD4610/LCD4010 only - Out connector:** To connect multiple MultiSync LCD4020/LCD4620.
11. **EXTERNAL SPEAKER TERMINAL** Outputs the audio signal from the selected audio source.
12. **HDMI CONNECTOR** To input digital HDMI signals.
13. **EXPANSION SLOT** To connect ATSC/NTSC/QAM tuner or other third-party components.
SERIES FEATURES AND BENEFITS

High brightness level and contrast ratio, measured according to VESA FPDM, enhance the visual experience

XtraView® technology allows for up 176° wide-angle viewing

User-friendly, efficient design features VESA-standard mounting and an overall lightweight construction for easy transport and installation

Automatic black level adjustment regulates grayscale images for optimal picture quality

Reduced reflection and glare in high light environments provide you with a more comfortable view of the screen

Built-in expansion slot allows for seamless integration of future third-party components (LCD4020 and LCD4620)

Optional detachable speakers deliver an enhanced multimedia experience with amazing sound quality (Onkyo® for LCD3210, NEC for LCD4020/LCD4620 and Innovox Audio for LCD5710)

Rapid Response™ technology delivers virtually uninterrupted, undistorted viewing of high-speed, full-motion video

Digital Signage Technology Suite Feature and Benefits

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<tr>
<th>Improved screen performance</th>
<th>Lower total cost of ownership</th>
<th>Enhanced display management</th>
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<tr>
<td>• 1366 x 768 ultra-high resolution (1920 x 1080 for LCD5710) for true 16:9 aspect ratio</td>
<td>• Exclusive panel design, featuring thermal protection and a power-efficient backlight system, leads to less image persistence and a longer display life</td>
<td>• Improved CableComp™ technology equalizes the video signal to eliminate color halos on long cable runs (LCD4020, LCD4620 and LCD5710)</td>
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<td>• High-definition capable display supports 480i, 480p, 720p and 1080i (1080p for LCD4020, LCD4620 and LCD5710)</td>
<td>• Power save function puts the display in power management mode when a sync or input signal is lost</td>
<td>• Video detect automatically finds the first or last signal used for easy setup</td>
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<td>• New backlight system leads to better brightness uniformity</td>
<td>• Screen saver function reduces the risk of image persistence for extended display life</td>
<td>• Picture-in picture (PIP) places a smaller video frame within the full-screen video frame</td>
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<td>• Zoom mode enables you to customize the screen size in three directions</td>
<td>• Gamma adjustment reduces the effect of high contrast images on long-term image quality</td>
<td>• Picture-on-picture (POP) places a smaller video frame next to the full-screen video frame (LCD4020, LCD4620 and LCD5710)</td>
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<td>• TileMatrix™ allows you to build video walls (up to 25 displays in a 5x5 matrix [4x4 for LCD3210] equalling almost 20 ft. diagonal)</td>
<td>• Side color function adjusts black bars in 4:3 mode to reduce the risk of image persistence with extended use</td>
<td>• Side-by-side view places two video frames of equal size next to each other (LCD4020, LCD4620 and LCD5710)</td>
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<td>• TileComp™ works in tandem with TileMatrix to compensate for the bezel width and create a more seamless video wall</td>
<td>• Real-time clock allows for content scheduling and monitor sleep/wake management, improving energy savings and extending display life</td>
<td>• Gamma selection lets you adjust the screen to your preferred settings (2.2, 2.4, S-Curve or native)</td>
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<td>• Image flip allows you to properly display content originally prepared for alternative display technologies such as rear projection (LCD4020, LCD4620 and LCD5710)</td>
<td>• Internal temperature sensors control self-protective circuits to minimize heat damage (user-defined set points available with the LCD4020 and LCD4620)</td>
<td>• Black level expansion improves image quality in shaded and darker images</td>
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<td>• Film mode delivers a smoother image for DVD movies</td>
<td>• Self-diagnostic capabilities help detect possible failure points via queries through DDC/CI and RS-232C</td>
<td>• DDC/CI enables communication between the PC and monitor for display management, diagnostics and the remote control</td>
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<td>• Color temperature adjustable from 600K to 10,000K</td>
<td>• Brightness control reduces energy consumption and heat generation while extending display life</td>
<td>• Power-on delay allows for multiple displays on a single electrical circuit</td>
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<td>• 6-axis color control engine allows for precise and simplified color, color temperature and saturation adjustment (LCD4020, LCD4620 and LCD5710)</td>
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<td>• Daisy chain capability enabled through RS-232C allows for individually addressable display control (LCD4020, LCD4620 and LCD5710)</td>
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<tr>
<td>Model</td>
<td>Display</td>
<td>Viewable Screen Image</td>
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<tr>
<td>LCD3210-BK</td>
<td>LCD2310-BK (LCD2310-BK-IT)</td>
<td>31.5&quot; x 74.4</td>
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<tr>
<td>LCD4020-BK-AY</td>
<td>LCD4020-BK (LCD4020-BK-IT)</td>
<td>40&quot; x 91.4</td>
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<tr>
<td>LCD4620-BK-AY</td>
<td>LCD4620-BK (LCD4620-BK-IT)</td>
<td>46&quot; x 116.8</td>
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<tr>
<td>LCD5710-BK</td>
<td>LCD5710-BK (LCD5710-BK-IT)</td>
<td>57&quot; x 143.5</td>
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