NEC MultiSync® Information Display Series

32" (31.5" VIS), 40", 46", 52", 57" and 65" LCD displays ideal for digital signage applications

Also serving markets such as...

Restaurants  Medical  Financial  Theaters  Tradeshows  Broadcasting

Airports/flight and baggage information

Corporate

Digital merchandising
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”–65” MultiSync Information Display Series models 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 nearly 30 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 (except the LCD6520L/P) 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 Information Display LCDs are ideal for applications that require precise readability and clarity from a distance, such as airports and financial institutions. The LCD6520L/P 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, LCD4620 and LCD5220, 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 Information Display 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 LCD5220, LCD5710 and LCD6520L/P [1080 x 1920 in portrait]), 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 Xtra-View wide-angle viewing technology, the displays deliver flexible horizontal and vertical viewing angles (up to 178°; 89° up, down, left and right) with less glare, reflection and distortion.

With brightness adjustable to 700 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 10-bit gamma lookup table (LUT) (available on the MultiSync LCD4020, LCD4620, LCD5220 and LCD6520L/P) 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 MultiSync Information Display 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.

The screen performance of the MultiSync Information Display Series brings ideas to life, capturing the attention and imagination of viewers and ensuring that messages reach audiences with maximum clarity and impact.

Take control of your monitor. To make remote control and diagnostics easier, MultiSync Information Display 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, LCD4620, LCD5220 and LCD6520L/P with a built-in expansion slot, making them ready to welcome new and not-yet-available components. Instead of having to replace their display down the road, users will be able to upgrade its technology for these innovations. The expansion slot board also can be removed and replaced without having to uninstall the display, saving significant downtime and costs. Users currently have the option of connecting a digital tuner, single-board computer or HD-SDI card to these three displays, expanding their capabilities as high-definition televisions, digital signage solution or a broadcast-grade video monitor.

**Achieve consistent, long-distance signals.** NEC Display Solutions’ exclusive CableComp technology (featured on the LCD4020, LCD4620, LCD5220, LCD5710 and LCD6520L/P) 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; 98 feet/30 meters with digital DVI cables), 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 digital/analog 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 Information Display 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 and media PCs. The LCD4020, LCD4620, LCD5220 and LCD6520L/P 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 as well as the DVI 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 input detect, make MultiSync Information Display 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, LCD4620, LCD5220 and LCD6520L/P 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.

**Figure 1**

MultiSync Information Display Series LCDs feature a number of input connectors for maximum compatibility. This makes it possible to upgrade adapters or software without having to purchase a new display.

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.
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).
10. **EXTERNAL CONTROL**
    - **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 Information Display Series unit.
    - **Out connector:** To connect multiple MultiSync Information Display Series units (not available on the LCD3210 or LCD5710).
11. **EXTERNAL SPEAKER TERMINAL** Outputs the audio signal from the selected audio source.
12. **HDMI CONNECTOR** To input digital HDMI signals (LCD4020, LCD4620, LCD5220, and LCD6520L/P only).
13. **EXPANSION SLOT** To connect ATSC/NTSC/QAM tuner or other third-party components (LCD4020, LCD4620, LCD5220, and LCD6520L/P only).
**SERIES FEATURES AND BENEFITS**

Sealed panel design provides protection from environmental elements such as grease, dust and steam (LCD4020, LCD4620, LCD5220)

Ultra-thin-bezel design helps to create near-seamless video walls using NEC’s tiling technologies (LCD4020, LCD4620, LCD5220)

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

XtraView™ technology allows for up 178° wide-angle viewing

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

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 ambient 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, LCD4620, LCD5220 and LCD6520L/P)

Optional accessories, which expand the display’s capabilities and application flexibility, include:

**Expansion slot components:**
- Digital tuner expands the display’s capabilities for high-definition television (LCD4020-2-AV, LCD4620-2-AV, LCD5220-AV and LCD6520L)
- Internal HD-SDI card (SB-L007KK) achieves broadcast-grade video without using additional space or power (all -IT and -AV models except LCD3210 and LCD5710)
- Single board computer (MPD-SBC-8/16) provides a seamless internal PC solution (all -IT and -AV models except LCD3210 and LCD5710)

Detachable speakers deliver an enhanced multimedia experience with amazing sound quality (Onkyo® for LCD3210, NEC for LCD4020-2-AV/LCD4620-2-AV/LCD5220-AV and Innovox Audio for LCD5710)

**Stand** provides opportunities for new applications and viewing options (LCD4020, LCD4620, LCD5220 and LCD5710)

**Tilt wall mount kit (WMK3260-L)** puts your display on center stage for optimal viewing (all models except LCD6520L/P)

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**Digital Signage Technology Suite Feature and Benefits**

**Improved screen performance**
- 1366 x 768 ultra-high resolution (1920 x 1080 for LCD5220, LCD5710 and LCD6520L/P) for true 16:9 aspect ratio
- High-definition capable display supports 480i, 480p, 720p and 1080i (1080p for LCD4020, LCD4620, LCD5220, LCD5710 and LCD6520L/P)
- New backlight system leads to better brightness uniformity
- Zoom mode enables you to customize the screen size in three directions
- TileMatrix™ allows you to build video walls (up to 25 displays in a 5x5 matrix [4x4 for LCD3210] equalling almost 20 ft. diagonal)
- TileComp™ works in tandem with TileMatrix to compensate for the bezel width and create a more seamless video wall
- Image flip allows you to properly display content originally prepared for alternative display technologies such as rear projection (LCD4020, LCD4620, LCD5220, LCD5710 and LCD6520L/P)
- Film mode delivers a smoother image for DVD movies by bypassing frame buffer
- Color temperature adjustable from 2600K to 10,000K, allowing for perfect matching to input/output devices

**Lower total cost of ownership**
- Exclusive panel design, featuring thermal protection and a power-efficient backlight system, leads to less image persistence and a longer display life
- Power save function puts the display in power management mode when a sync or input signal is lost
- Advanced screen saver function reduces the risk of image persistence for extended display life
- Gamma adjustment reduces the effect of high contrast images on long-term image quality
- Side color function adjusts black bars in 4:3 mode to reduce the risk of image persistence with extended use
- Real-time clock allows for content scheduling and monitor sleep/wake management, improving energy savings and extending display life
- Internal temperature sensors control self-destructive circuits to minimize heat damage (user-defined set points available with the LCD4020, LCD4620, LCD5220 and LCD6520L/P)
- Self-diagnostic capabilities help detect possible failure points via queries remotely through DDC/CI and RS-232C
- Brightness control reduces energy consumption and heat generation while extending display life

**Enhanced display management**
- Improved CableComp™ technology equalizes the video signal to eliminate color halos on long cable runs (LCD4020, LCD4620, LCD5220, LCD5710 and LCD6520L/P)
- Video detect automatically finds the first or last signal used for easy setup
- Picture-in-picture (PIP) places a smaller video frame within the full-screen video frame
- Picture-on-picture (POP) places a smaller video frame next to the full-screen video frame (LCD4020, LCD4620, LCD5220, LCD5710 and LCD6520L/P)
- Side-by-side view places two video frames of equal size next to each other (LCD4020, LCD4620, LCD5220, LCD5710 and LCD6520L/P)
- Gamma selection lets you adjust the screen to your preferred settings (2.2, 2.4, S-Curve or native)
- Black level expansion improves image quality in shaded and darker images
- DDC/CI enables communication between the PC and monitor for display management, diagnostics and the remote control
- Power-on delay allows for multiple displays on a single electrical circuit
- 6-axis color control engine allows for precise and simplified color, color temperature and saturation adjustment (LCD4020, LCD4620, LCD5220, LCD5710 and LCD6520L/P)
- Daisy chain capability enabled through RS-232C allows for individually addressable display control (LCD4020, LCD4620, LCD5220, LCD5710 and LCD6520L/P)
<table>
<thead>
<tr>
<th>Model</th>
<th>LCD3210-BR (LCD3210-BR/IT)</th>
<th>LCD4620-2-AW (LCD4620-2-AW/IT)</th>
<th>LCD4620-3-AW (LCD4620-3-AW/IT)</th>
<th>LCD5220-4-AW (LCD5220-4-AW/IT)</th>
<th>LCD5720-4-AW (LCD5720-4-AW/IT)</th>
<th>LCD6520LE-BK (LCD6520LE-BK/AV)</th>
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<tr>
<td>Display</td>
<td>31.5&quot;</td>
<td>46&quot;</td>
<td>52&quot;</td>
<td>57&quot;</td>
<td>65&quot;</td>
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<td>Viewable Image Size</td>
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<td>46&quot;</td>
<td>52&quot;</td>
<td>57&quot;</td>
<td>65&quot;</td>
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<td>0.291</td>
<td>0.271</td>
<td>0.261</td>
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<td>Brightness <em>(Typical)</em></td>
<td>2500 cd/m²</td>
<td>2500 cd/m²</td>
<td>3500 cd/m²</td>
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<tr>
<td>Viewing Angle <em>(Horizontal/Vertical)</em></td>
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<tr>
<td>Response Time <em>(Typical)</em></td>
<td>16 ms</td>
<td>13 ms</td>
<td>12 ms</td>
<td>10 ms</td>
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<td>Input</td>
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<td>USB (USB 2.0), USB 3.0</td>
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<td><strong>Optional Accessories</strong></td>
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<tr>
<td>Storage Altitude</td>
<td>12,000m / 39,370 ft.</td>
<td>10,560m / 34,600 ft.</td>
<td>9,190m / 30,120 ft.</td>
<td>8,050m / 26,400 ft.</td>
<td>7,500m / 24,600 ft.</td>
<td>6,400m / 21,000 ft.</td>
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<td>Storage Humidity</td>
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<tr>
<td>Active Screen Area <em>(W x H)</em></td>
<td>38.6 x 23.2&quot;</td>
<td>59.7 x 33.6&quot;</td>
<td>61.8 x 36.3&quot;</td>
<td>64.5 x 37.2&quot;</td>
<td>42.8 x 24.7&quot;</td>
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<td>16:10</td>
<td>16:9</td>
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