

NEC LCD Technologies Announces New 2.7-inch LCD Module Boasting an Exceptionally High Pixel Density

TOKYO, SANTA CLARA, Calif., U.S.A., April 21, 2008 – NEC LCD Technologies, together with its sales and marketing channel in the Americas, NEC Electronics America Inc., today announced that it will begin shipping samples of its new low-temperature polysilicon (LTPS) thin-film-transistor (TFT) liquid crystal display (LCD) module, part number NL9654HL06-01J, at the end of July 2008. The new LCD module boasts an exceptionally high pixel density of 413 pixels per inch in a small-size direct view LCD.

The new module supports quarter high-definition (QHD) resolution of 960 × 540 pixels, which is compatible with full high-definition (HD) resolution, has a compact size of 2.7 inches (6.8 centimeters diagonal), and achieves both a wide color gamut of 70 percent (NTSC ratio) and high luminance of 300 candelas per square meter (cd/m²). When incorporated in the viewfinder of a video camcorder for professional broadcast use, the new module enables highly accurate adjustment of focus. In addition, the module can be used to check colors through the viewfinder, without the need for external monitors.

The main characteristics of the module include:

1. High pixel density

NEC LCD Technologies has integrated peripheral circuits, including a gate driver, onto the TFT-LCD module's glass substrate, thereby reducing peripheral wiring and the number of connections to external circuits. The LCD module has a high pixel density of 413 pixels per inch.

2. High-definition image reproduction

Even at its compact size of 2.7 inches, the new module supports QHD resolution of 960 × 540, which is compatible with full HD resolution of 1920 × 1080 pixels. As a result, the module achieves resolution high enough to be used in a viewfinder of a full HD video camcorder for highly accurate adjustment of focus.

3. Wide color gamut

The module's wide color gamut of 70 percent (NTSC ratio) is almost equivalent to the color space specified by the European Broadcasting Union (EBU) standard, the de-facto standard in broadcast fields, and enables colors to be checked through a viewfinder equipped with the module.

In addition to the new 2.7-inch LCD module, NEC LCD Technologies also introduced three new modules:

- 1) 4.3-inch (8.9 cm diagonal) color TFT LCD module, part number NL4827HC19-05A, with wide quarter video graphics array (WQVGA) resolution and high luminance of 600 cd/m²
- 2) 3.5-inch (8.9 cm diagonal) color TFT LCD module, part number NL4864HL11-02A, with video graphics array (VGA) resolution and high luminance and high transmissivity realized through the combination of NEC LCD Technologies' unique value-integrated TFT (VIT) technology and super-transmissive natural-light (ST-NLT) technology

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3) 2.7-inch (6.8 cm diagonal) color TFT LCD module, part number NL2432HC17-07B, with quarter video graphics array (QVGA) resolution and high luminance of 500 cd/m²

All of the new LCD modules will be displayed at Display 2008, April 16-18 at Tokyo Big Sight, Japan, and at Society of Information Display (SID 2008, May 20-22 at Los Angeles Convention Center, USA.

About NEC LCD Technologies

NEC LCD Technologies, Ltd. is one of the world's leading providers of high-quality, innovative, active-matrix liquid crystal display (AM-LCDs) modules for the industrial and high-end monitor markets. The company focuses its development on four core technology areas: ultra-wide viewing angle SFT technology with high luminance, wide color gamut and fast response; NLT technology for high visibility in any kind of ambient light environment; VIT technology to add extra value to LCD modules; and adaptive design technology, which together meet a variety of specialized needs for the flat panel display markets. NEC LCD Technologies' worldwide support includes sales and marketing affiliates [NEC Electronics America, Inc.](#) and [NEC Electronics Europe](#) that offer specialized display solutions to their respective markets. NEC LCD Technologies employs approximately 1,200 people worldwide and offers one of the broadest product portfolios for the medical, factory automation, test and measurement, entertainment, kiosk, POS and ATM markets. Additional information can be found at <http://www.nec-lcd.com/en/index.html>

About NEC Electronics America, Inc.


NEC Electronics America, Inc., headquartered in Santa Clara, California, is a wholly owned subsidiary of NEC Electronics Corporation (TSE: 6723), a leading provider of semiconductor products encompassing advanced technology solutions for the broadband and communications markets; system solutions for the mobile, PC, automotive and digital consumer markets; and multi-market solutions for a wide range of consumer applications. NEC Electronics America offers local manufacturing in Roseville, California, and the global manufacturing capabilities of its parent company. In the Americas, NEC Electronics America markets and sells industrial-type active-matrix LCD modules from NEC LCD Technologies, Ltd., a global leader in innovative display technologies. More information about the products offered by NEC Electronics America can be found at <http://www.am.necel.com>.

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Main Specifications of the New 2.7-Inch LCD Module


Part number	NL9654HL06-01J
Resolution	960(H) × 540(V) pixels
Display area	59.04(H) × 33.21(V) mm Diagonal screen size of 2.7 inches (6.8 cm)
Drive system	Low-temperature polysilicon TFT active-matrix
Display color	16.77M colors
Pixel arrangement	RGB vertical stripe

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Pixel pitch	0.0615(H) × 0.0615(V) mm
Luminance	300 cd/m ² (typ.) *at IL = TBD mA
Contrast ratio	400 : 1 (typ.)
Viewing angle	Vertical: Up 60 degrees, down 60 degrees Horizontal: Left 80 degrees, right 80 degrees (contrast ratio at over 10:1)
Response time	25 ms (typ.) (TON + TOFF: from 10% to 90%)
Interface	CMOS (RGB 8 bits each)
Power supply voltage	VCC: (3.0) V, VDD: (6.5) V
Power consumption	LCD panel + driver: (240) mW (typ.)
Backlight	TBD
Operating temperature	-20 degrees C to + 70 degrees C
Storage temperature	-30 degrees C to + 80 degrees C
Surface condition	Clear
Module size	69.0 (typ.) × 49.6 (typ.) × 3.6 (max.) (Values do not include protruding parts.)
Weight	28g (typ.)
Touch panel	None
Controller	Installed

Note:

The press release and other information in this file may be out of date on observation.
For more information, refer to other parts of NEC LCD Technologies' website for more current information at www.nec-lcd.com/en/.

Main Specifications of the New 4.3-Inch LCD Module

Part number	NL4827HC19-05A
Resolution	480(H) × 272(V) pixels
Display area	95.04(H) × 53.856 (V) mm Diagonal screen size of 4.3 inches (11 cm)
Drive system	Amorphous-silicon TFT active-matrix
Display color	16.77M colors
Pixel arrangement	RGB vertical stripe
Pixel pitch	0.198(H) × 0.198(V) mm
Luminance	600 cd/m ² (typ.) *at IL = 20 mA
Contrast ratio:	500 : 1 (typ.)
Viewing angle	Vertical: Up 60 degrees, down 40 degrees Horizontal: Left 60 degrees, right 60 degrees (contrast ratio at over 10:1)
Response time	33 ms (typ.) (TON + TOFF: from 10% to 90%)
Interface	CMOS (RGB 8 bits each)
Power supply voltage	VCC: 3.0V, VDD: 5.0V
Power consumption	LCD panel + driver: 87 mW (typ.)
Backlight	512 mW (typ.) *at IL = 20 mA
Operating temperature	-20 degrees C to + 70 degrees C
Storage temperature:	-30 degrees C to + 80 degrees C
Surface condition	Clear
Module size	105.5 (typ.) × 67.2 (typ.) × 4.1 (max.) mm

	(Values do not include protruding parts.)
Weight	58g (typ.)
Touch panel	None
Controller	Installed

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Main Specifications of the New 3.5-Inch LCD Module

Part number	NL4864HL11-02A
Resolution	480(H) × 640(V) pixels
Display area	53.28(H) × 71.04(V) mm Diagonal screen size of 3.5 inches (8.9 cm)
Drive system	Low-temperature polysilicon TFT active -matrix
Display color	262K colors
Pixel arrangement	RGB vertical stripe
Pixel pitch	0.111(H) × 0.111(V) mm
Reflectivity	7 %
Luminance	220 cd/m ² (typ.) *at IL = 20 mA (transmissive mode)
Contrast ratio	180 : 1 (typ.) (transmissive mode)
Viewing angle	Vertical : Up 30 degrees, down 35 degrees Horizontal : Left 30 degrees, right 30 degrees (contrast ratio at over 5:1)
Response time	30 ms (typ.) (TON + TOFF: from 10% to 90%)
Interface	CMOS (RGB 6 bits each)
Power supply voltage	VCC: 3.0 V
Power consumption	LCD panel + driver: 120 mW (typ.)
Backlight:	12 mW (typ.) *at IL = 20 mA
Operating temperature	-20 degrees C to + 70 degrees C
Storage temperature	-30 degrees C to + 80 degrees C
Surface condition	Clear
Module size	63.5 (typ.) × 85.0 (typ.) × (3.2) (max.) mm (Values do not include protruding parts.)
Weight	25g (typ.)
Touch panel	None
Controller	Installed

Note:

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Main Specifications of the New 2.7-Inch LCD Module

Part number	NL2432HC17-07B
Resolution	240(H) × 320(V) pixels
Display area	41.04(H) × 54.72(V) mm

	Diagonal screen size of 2.7 inches (6.8 cm)
Drive system	Amorphous-silicon TFT active-matrix
Display color	262K colors
Pixel arrangement	RGB vertical stripe
Pixel pitch	0.171(H) × 0.171(V) mm
Luminance	500 cd/m ² (typ.) *at IL = 18 mA
Contrast ratio	400 : 1 (typ.)
Viewing angle	Vertical : Up 60 degrees, down 30 degrees Horizontal : Left 50 degrees, right 50 degrees (contrast ratio at over 5:1)
Response time	23 ms (typ.) (TON + TOFF: from 10% to 90%)
Interface	CMOS (RGB 6 bits each)
Power supply voltage	VCC : 3.0 V
Power consumption	LCD panel + driver: 36 mW (typ.)
Backlight	288 mW (typ.) *at IL = 18 mA
Operating temperature	-20 degrees C to + 70 degrees C
Storage temperature	-30 degrees C to + 80 degrees C
Surface condition	Clear
Module size	50.54 (typ.) × 68.62 (typ.) × (3.75) (max.) mm (Values do not include protruding parts.)
Weight	25g (typ.)
Touch panel	Equipment
Controller	Installed

Note:

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