## NEC ELECTRONICS NEWS RELEASE

## **NEC LCD Technologies Announces New 10.4-inch LCD Module** With Superior Viewing Performance

DUESSELDORF (Germany), SANTA CLARA (USA) and TOKYO (Japan), April 7, 2008— NEC LCD Technologies, together with its sales and marketing channels in the Americas and Europe, NEC Electronics America and NEC Electronics (Europe) GmbH, today introduced a new 10.4-inch (26 centimeters diagonal) amorphous-silicon thin-film-transistor (TFT) liquid crystal display (LCD) module, part number NL6448BC33-74, with video graphics array (VGA) resolution for industrial equipment, including factory automation controllers and measuring devices. The new module incorporates NEC LCD Technologies' proprietary super-advanced, super-fine technology (SA-SFT) to achieve superior viewing angles without compromising

The main characteristics of the module are as follows.

#### 1. High level of visibility

brightness or color gamut.

An ultra-wide viewing angle of 176 degrees (both horizontally and vertically), high luminance of 400 candelas per square meter (cd/m²) and high contrast ratio of 700:1 are realized through NEC LCD Technologies' own unique SA-SFT technology, which boasts high transmissivity and wide viewing angle properties. In addition, SA-SFT technology also reduces the color shift problem that occurs due to a change in viewing angle. These features enable information to be viewed from any angle easily and accurately, thus allowing usage of the display in portrait and landscape orientation.

#### 2. Wide operating-temperature range

A wide operating temperature range, from -20 to +70 degrees Celsius, guarantees operation even in the most extreme conditions.

#### 3. High level of compatibility

The new product is compatible with NEC LCD Technologies' 10.4-inch standard products in relation to outer dimensions, position of mounting holes, and screen center. In addition, the new module maintains signal compatibility with conventional products supporting a VGA-type digital interface. Thus, it can be replaced easily without the need to change any of the peripheral appliances.

Displays built into various industrial equipment, including factory automation controllers and measuring instruments, require excellent viewing performance in order to display diverse information on screen quickly and accurately. "Industrial applications continue to demand

higher levels of performance from LCD displays. Our latest products introduced here represent another example of NEC LCD Technologies' long standing commitment to innovation in display technology." said Hidetoshi Usui, department manager in charge of product planning and marketing, NEC LCD Technologies, Ltd. "It is our expectation that these innovations will allow our customers to meet and exceed the ever increasing display performance demands of the markets they serve"

In addition to the new 10.4-inch LCD module, NEC LCD Technologies also offers three other modules with improved visibility.

- 1) 12.1-inch (31 cm diagonal) color TFT LCD module, part number NL8060BC31-41C, with super video graphics array (SVGA) resolution and featuring NEC LCD Technologies' proprietary super-transmissive natural light TFT (ST-NLT) technology that achieves display of vivid colors in environments with high ambient light
- 2) 10.4-inch (26 cm diagonal) color TFT LCD module, part number NL8060BC26-30D, with super video graphics array (SVGA) resolution and wide viewing angle, high contrast ratio and fast response time
- 3) 8.4-inch (21 cm diagonal) color TFT LCD module, part number NL8060BC21-06, with SVGA resolution and high luminance without and improved power consumption All of the new models except for NL8060BC21-06 will be displayed at "Display 2008", April 16-18 at Tokyo Big Sight, Japan, and SID 2008, May 20-22 at Los Angeles Convention Center, USA.

Please see the attachments for the main specifications of the four new LED LCD modules.

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#### About NEC Electronics (Europe) GmbH

NEC Electronics (Europe) GmbH, headquartered in Duesseldorf, Germany, is a leading developer and supplier of semiconductor products in Europe. Committed to meeting customers' cost, performance and time-to-market requirements, the company offers solutions ranging from standard products to system-on-a-chip (SoC) solutions, as well as customized products for next-generation designs. Our customers also benefit from state-of-the-art manufacturing from the global production network of our parent company, NEC Electronics Corporation. Additionally, NEC Electronics (Europe) GmbH is the exclusive European sales and marketing channel of LCD modules from NEC LCD Technologies Ltd. For more information, visit <a href="http://www.eu.necel.com">http://www.eu.necel.com</a>.

#### About NEC LCD Technologies, Ltd.

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. (www.am.necel.com) and NEC Electronics Europe (www.eu.necel.com) 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 <a href="http://www.nec-lcd.com/en/index.html">http://www.nec-lcd.com/en/index.html</a>.

#### **About NEC Electronics America**

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 platform solutions for a wide range of customer applications. NEC Electronics America offers a local manufacturing facility in Roseville, California, and the global manufacturing capabilities of its parent company. NEC Electronics America is also the Americas marketing and sales channel, specializing in industrial applications, for active-matrix LCDs 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 <a href="http://www.am.necel.com">http://www.am.necel.com</a>.

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## < ATTACHMENT 1>

## Main Specifications of the New 10.4-Inch LCD Module

Part number:	NL6448BC33-74
Resolution:	640(H) x 480(V) pixels
Display area:	211.2(H) x 158.4(V) mm
	Diagonal screen size of 10.4-inches (26cm)
Drive system:	Amorphous silicon TFT active matrix
Display color:	262K colors
Pixel arrangement:	RGB vertical stripe
Pixel pitch:	0.33(H) x 0.33(V) mm
Luminance:	(400) cd/m <sup>2</sup> (typ.)
Contrast ratio:	(700) : 1 (typ.)
Viewing angle:	Vertical: Up 88 degrees, down 88 degrees
	Horizontal : Left 88 degrees, right 88 degrees
	(contrast ratio at over 10:1)
Response time:	(30) ms (typ.) (TON + TOFF: from 10% to 90%)
Interface:	CM OS (RGB 6 bits each)
Power supply voltage:	3.3 V / 5.0 V
Power consumption:	TBD
Operating temperature:	-20 degrees C to + 70 degrees C
Storage temperature:	-30 degrees C to + 80 degrees C
Polarizer surface:	Clear
Module size:	243.0 (typ.) x 185.1 (typ.) x 11.0 (max.) mm
Weight:	475 g (typ.)
Backlight:	One side, two 2 CCFLs
Recommended inverter:	104PW201

#### Note:

Please note that the press release and other information in this file may be out of date on observation. Please refer to other parts of NEC LCD Technologies' website for more current information.

## < ATTACHMENT 2>

## Main Specifications of the New 12.1-Inch LCD Module

Part number:	NL8060BC31-41C
Resolution:	800(H) x 600(V) pixels
Display area:	246.0 (H) x 184.5 (V) mm
	Diagonal screen size of 12.1-inches (31cm)
Drive system:	Amorphous silicon TFT active matrix
Display color:	16.77M colors / 262K colors
Pixel arrangement:	RGB vertical stripe
Pixel pitch:	0.3075 (H) x 0.3075 (V) mm
Luminance:	550 cd/m <sup>2</sup> (typ.)
Contrast ratio:	600 : 1 (typ.)
Viewing angle:	Vertical: Up 80 degrees, down 60 degrees
	Horizontal : Left 80 degrees, right 80 degrees
	(contrast ratio at over 10:1)
Response time:	25ms (typ.) (TON + TOFF: from 10% to 90%)
Interface:	LVDS (RGB 8 bits each / 6 bits each)
Power supply voltage:	3.3 V
Power consumption:	6.8 W (typ.) (Power dissipation of the inverter is not
	included.)
Operating temperature:	-20 degrees C to + 70 degrees C
Storage temperature:	-30 degrees C to + 80 degrees C
Polarizer surface:	Clear + Antireflection
Module size:	280.0 (typ.) x 210.0 (typ.) x 11.5 (max.) mm
Weight:	670 g (typ.)
Backlight:	One side, two CCFLs
Recommended inverter:	121PW181

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## < ATTACHMENT 3>

## Main Specifications of the New 10.4-Inch LCD Module

Part number:	NL8060BC26-30D
Resolution:	800(H) x 600(V) pixels
Display area:	211.2(H) x 158.4(V) mm
	Diagonal screen size of 10.4-inches (26cm)
Drive system:	Amorphous silicon TFT active matrix
Display color:	16.77M colors / 262K colors
Pixel arrangement:	RGB vertical stripe
Pixel pitch:	0.264(H) x 0.264(V) mm
Luminance:	400 cd/m <sup>2</sup> (typ.)
Contrast ratio:	1000 : 1 (typ.)
Viewing angle:	Vertical: Up 80 degrees, down 80 degrees
	Horizontal : Left 80 degrees, right 80 degrees
	(contrast ratio at over 10:1)
Response time:	18 ms (typ.) (TON + TOFF: from 10% to 90%)
Interface:	LVDS (RGB 8 bits each / 6 bits each)
Power supply voltage:	3.3 V
Power consumption:	6.6 W (typ.) (Power dissipation of the inverter is not
	included.)
Operating temperature:	-20 degrees C to + 70 degrees C
Storage temperature:	-30 degrees C to + 80 degrees C
Polarizer surface:	Antiglare
Module size:	243.0 (typ.) x 185.1 (typ.) x 11.0 (max.) mm
Weight:	475 g (typ.)
Backlight:	One side, two CCFLs
Recommended inverter:	104PW201

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## < ATTACHMENT 4>

## Main Specifications of the New 8.4-Inch LCD Module

Part number:	NL8060BC21-06
Resolution:	800(H) x 600(V) pixels
Display area:	170.4(H) x 127.8(V) mm
	Diagonal screen size of 8.4-inches (21cm)
Drive system:	Amorphous silicon TFT active matrix
Display color:	16.77M colors / 262K colors
Pixel arrangement:	RGB vertical stripe
Pixel pitch:	0.213(H) x 0.213(V) mm
Luminance:	650 cd/m <sup>2</sup> (typ.)
Contrast ratio:	600 : 1 (typ.)
Viewing angle:	Vertical: Up 80 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:	LVDS (RGB 8 bits each / 6 bits each)
Power supply voltage:	3.3 V
Power consumption:	5.5 W (typ.) (Power dissipation of the inverter is not
	included.)
Operating temperature:	-20 degrees C to + 70 degrees C
Storage temperature:	-30 degrees C to + 80 degrees C
Polarizer surface:	Clear
Module size:	200.0 (typ.) x 152.0 (typ.) x 11.0 (max.) mm
Weight:	330 g (typ.)
Backlight:	One side, two CCFLs
Recommended inverter:	84PW031 / 84PW041

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