



Touch... The universal language™

NEC Touch Integrated product list



	NEC Model No.	LCD Size	Native Resolution	Contrast Ratio (Typical)	Response Time (Typical)	Brightness (Typical)	Power Consumption	Input Signal	Speakers	Warranty	Resistive	Capacitive	Surface Acoustic Wave	Dispersive Signal Technology	Infra-red	Optical	Protective Overlay* can not be combined with touch
Enterprise	ASLCD52V-BK	15"	1024 x 768	400:1	25ms	250 cd/m2	21W	Analog/Digital	N/A	3 years	Y	Y	Y				Y
	LCD175VXM+/BK	17"	1280 x 1024	600:1	5ms	270 cd/m2	30W	Analog/Digital	Integrated	3 years	Y	Y	Y				Y
	LCD195VX+/BK	19"	1280 x 1024	600:1	5ms	270 cd/m2	37W	Analog/Digital	N/A	3 years	Y	Y					Y
	LCD195NXM-BK	19"	1280 x 1024	1000:1	5ms	300 cd/m2	40W	Analog/Digital	Integrated	3 years	Y	Y					Y
	LCD195WXM-BK	19" wide	1440 x 900	1000:1	5ms	300 cd/m2	42W	Analog/Digital	Integrated	3 years	Y						Y
	LCD205WNXM-BK	20" wide	1680x1050	1000:1	5ms	300 cd/m2	45W	Analog/Digital	Integrated	3 years	Y						Y
	LCD225WXM-BK	22" wide	1680x1050	1000:1	5ms	300 cd/m2	45W	Analog/Digital	Integrated	3 years	Y						Y
Professional	LCD225WNXM-BK	22" wide	1680x1050	1000:1	5ms	300 cd/m2	60W	Analog/Digital	Integrated	3 years	Y						Y
	LCD1990SX-BK	19"	1280 x 1024	1500:1	25ms	250 cd/m2	39W	Analog/Digital	Optional	3 years	Y	Y					Y
	LCD2090UXi/-BK	20"	1600 x 1200	700:1	16ms	280 cd/m2	50W	Analog/Digital	Optional	4 years	Y	Y	Y				Y
	LCD2190UXi/-BK	21.3"	1600 x 1200	500:1	20ms	250 cd/m2	52W	Analog/Digital	Optional	4 years	Y	Y					Y
	LCD2190UXp/-BK	21.3"	1600 x 1200	1000:1	16ms	300 cd/m2	60W	Analog/Digital	Optional	3 years	Y	Y					Y
Large Format LCD Display	LCD2490WUXi-BK	24" wide	1920 x 1200	800:1	16ms	400 cd/m2	83W	Analog/Digital	Optional	4 years		Y					Y
	LCD3210-BK/ BK-IT	32"	1366 X 768	600:1	8ms G t G	500 cd/m2	150W	Analog/Digital	Optional	3 years		Y	Y	Y	Y	Y	Y
	LCD3215	32"	1366 X 768	800:1	9ms G t G	500 cd/m2	140W	Analog/Digital	Optional	3 years		Y	Y	Y	Y	Y	Y
	LCD4020-2-AV / IT	40"	1366 X 768	1200:1	8ms G t G	500 cd/m2	240W	Analog/Digital	Optional	3 years				Y	Y	Y	Y
	LCD4215	42"	1366 X 768	800:1	9ms G t G	500 cd/m2	210W	Analog/Digital	Optional	3 years				Y	Y	Y	Y
	LCD4620-2-AV / IT	46"	1366 X 768	1200:1	8ms G t G	500 cd/m2	240W	Analog/Digital	Optional	3 years				Y	Y	Y	Y
	LCD5710-BK / IT	57"	1920 x 1080	900:1	8ms G t G	450 cd/m2	350W	Analog/Digital	Optional	3 years					Y	Y	Y
	LCD6520L-BK-AV	65"	1920 x 1080	2001:1	6ms G t G	450 cd/m2	590W	Analog/Digital	Optional	3 years					Y	Y	Y
LCD6520P-BK-AV	65"	1920 x 1080	2001:1	6ms G t G	450 cd/m2	590W	Analog/Digital	Optional	3 years					Y	Y	Y	

TouchSystems designs, produces and delivers touch-enabled solutions for a wide variety of markets. We focus entirely on enhancing and creating solutions using a variety of touch technologies featuring NEC displays (desktop, chassis, and large format). Our business strives to help people and business realize the full potential of touch-enabled products in a wide variety of markets: retail point of sale, entertainment, hospitality, transactional and informational kiosks, industrial, medical, education and transportation.

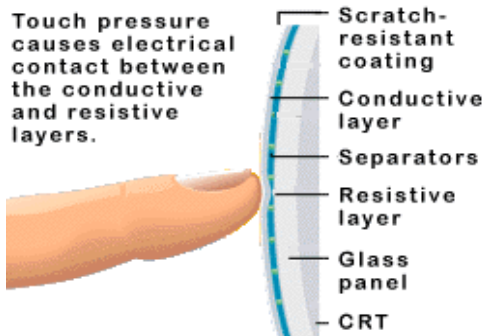


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MFG Part Number	M1590R-U	M51790R-U	M51720R-U	M51990R-U	M51920R-U	M51990R-UN	M51920R-UN	W51990R-UM	W51920R-UM
Display Size	15"	17"	17"	19"	19"	19"	19"	19" Wide	19" Wide
NEC Model	AS LCD52V-BK	LCD175VXM+/BK	LCD175VXM+/BK	LCD195VX	LCD195VX	LCD195NXM	LCD195NXM	LCD195WXM	LCD195WXM
Color	Black	Black	Black	Black	Black	Black	Black	Black	Black
Touchscreen integrated sensor & controller	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive
Controller Brand	eGalax	eGalax	ELO	eGalax	ELO	eGalax	ELO	eGalax	ELO
Connectivity interfaces	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D
PC Compatibility	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)
	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)
	MS DOS	MS DOS		MS DOS		MS DOS		MS DOS	
	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac OS X	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	iMac OS X	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac OS X	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac OS X
Brightness	250 cd/m2 (typical)	270 cd/m2 (typical)	270 cd/m2 (typical)	270 cd/m2 (typical)	270 cd/m2 (typical)	300 cd/m2 (typical)	300 cd/m2 (typical)	300 cd/m2 (typical)	300 cd/m2 (typical)
Contrast Ratio	400:1 (typical)	600:1 (typical)	600:1 (typical)	600:1 (typical)	600:1 (typical)	1000:1 (typical)	1000:1 (typical)	1000:1 (typical)	1000:1 (typical)
Speakers	N/A	Two integrated stereo speakers	Two integrated stereo speakers	N/A	N/A	Two integrated stereo speakers	Two integrated stereo speakers	Two integrated stereo speakers	Two integrated stereo speakers
Limited Warranty	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight
Optional									
Serial Interface	M1590R-S	M51790R-S	M51720R-S	M51990R-S	M51920R-S	M51990R-SN	M51920R-SN	W51990R-SM	W51920R-SM



5-Wire Resistive touch technology consists of a glass or acrylic panel that is coated with electrically conductive and resistive layers. The thin layers are separated by invisible separator dots. When operating, an electrical current moves through the screen. When pressure is applied to the screen the layers are pressed together, causing a change in the electrical current and a touch event to be registered

Resistive touch technology is a durable and accurate technology that is widely used in demanding workplace applications such as point-of-sale systems, industrial controls, and medical systems. It is pressure sensitive so it responds to any input device, including finger, gloved hand, or pen stylus.

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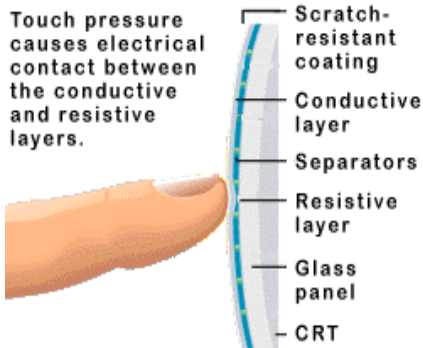


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MFG Part Number	P1990R-U	P1920R-U	P2090R-U	P2020R-U	P2190R-U	P2120R-U	W52290R-UM	W52220R-UM	W52290R-UMN	W52220R-UMN
Display Size	19"	19"	20"	20"	21.3	21.3	22" Wide	22" Wide	22" Wide	22" Wide
NEC Model	LCD1990-SX	LCD1990SX	LCD2090UXi	LCD2090UXi	LCD2190UXi	LCD2190UXi	LCD225WXM	LCD225WXM	LCD225WNXM	LCD225WNXM
Color	Black	Black	Black	Black	Black	Black	Black	Black	Black	Black
Touchscreen integrated sensor & controller	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive	Resistive
Controller Brand	eGalax	ELO	eGalax	ELO	eGalax	ELO	eGalax	ELO	eGalax	ELO
Connectivity interfaces	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D
PC Compatibility	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)
	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)
	MS DOS		MS DOS		MS DOS		MS DOS		MS DOS	
	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac OS X	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac OS X	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac OS X	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac OS X	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac OS X
	QNX		QNX		QNX		QNX		QNX	
Brightness	250 cd/m2 (typical)	250 cd/m2 (typical)	280 cd/m2 (typical)	280 cd/m2 (typical)	250 cd/m2 (typical)	250 cd/m2 (typical)	300 cd/m2 (typical)	300 cd/m2 (typical)	300 cd/m2 (typical)	300 cd/m2 (typical)
Contrast Ratio	1500:1 (typical)	1500:1 (typical)	700:1 (typical)	700:1 (typical)	500:1 (typical)	500:1 (typical)	1000:1 (typical)	1000:1 (typical)	1000:1 (typical)	1000:1 (typical)
Speakers	Optional	Optional	Optional	Optional	Optional	Optional	Two integrated stereo speakers	Two integrated stereo speakers	Two integrated stereo speakers	Two integrated stereo speakers
Limited Warranty	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight
Optional										
Serial Interface	P1990R-S	P1920R-S	P2090R-S	P2020R-S	P2190R-S	P2120R-S	W52290R-SM	W52220R-SM	W52290R-SMN	W52220R-SMN



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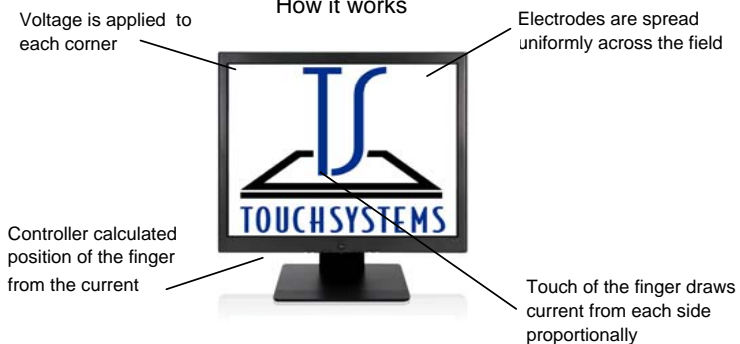
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MFG Part Number	M1590C-U	M51750C-U	M51990C-U	M51950C-U	M51990C-UN	M51950C-UN	P1990C-U	P1950C-U
Display Size	15"	17"	19"	19"	19"	19"	19"	19"
NEC Model	AS LCD52V-BK	LCD175VXM+BK	LCD195VX	LCD195VX	LCD195NXM	LCD195NXM	LCD1990-SX	LCD1990-SX
Color	Black	Black	Black	Black	Black	Black	Black	Black
Touchscreen integrated sensor & controller	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive
Controller Brand	eGalax	3M Microtouch	eGalax	3M Microtouch	eGalax	3M Microtouch	eGalax	3M Microtouch
Connectivity interfaces	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D
PC Compatibility	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4
	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)
	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS
	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac 10.2	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac 10.2	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac 10.2	Mac 9.0 / OS X (PowerPC, Intel CPU)	Mac 10.2
	QNX		QNX		QNX		QNX	
Brightness	250 cd/m2 (typical)	270 cd/m2 (typical)	270 cd/m2 (typical)	270 cd/m2 (typical)	300 cd/m2 (typical)	300 cd/m2 (typical)	250 cd/m2 (typical)	250 cd/m2 (typical)
Contrast Ratio	400:1 (typical)	600:1 (typical)	600:1 (typical)	600:1 (typical)	1000:1 (typical)	1000:1 (typical)	1500:1 (typical)	1500:1 (typical)
Speakers	N/A	Two integrated stereo speakers	N/A	N/A	Two integrated stereo speakers	Two integrated stereo speakers	Optional	Optional
Limited Warranty	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight
Optional								
Serial Interface	M1590C-S	M51750C-S	M51990C-S	M51950C-S	M51990C-SN	M51950C-SN	P1990C-S	P1950C-S

Capacitive Technology

How it works



A capacitive touch screen consists of a glass panel with a conductive (charge storing) material coating its surface. Circuits located at corners of the screen measure the current flow to calculate a touch event. The controller determines the changes in the electrical field to determine the X and Y coordinates of the touch event.

Capacitive type touch screens are very durable, and have a high clarity. They are used in a wide range of applications, from restaurant and POS use to industrial controls, entertainment /gaming and information kiosks.

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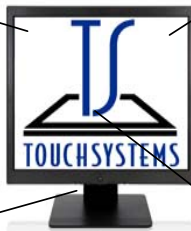
MFG Part Number	P2090C-U	P2050C-U	P2190C-U	P2150C-U	P2490C-U	P2450C-U	M3250C-U	P3250C-U	P3250C-U15
Display Size	20"	20"	21.3	21.3	24" Wide	24" Wide	32"	32"	32"
NEC Model	LCD2090UXi	LCD2090UXi	LCD2190UXi	LCD2190UXi	LCD2490WUXi	LCD2490WUXi	ASPV32-AVT	LCD3210-BK-IT	LCD3215
Color	Black	Black	Black	Black	Black	Black	Black	Black	Black
Touchscreen integrated sensor & controller	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive	Capacitive
Controller Brand	eGalax	3M Microtouch	eGalax	3M Microtouch	eGalax	3M Microtouch	3M Microtouch	3M Microtouch	3M Microtouch
Connectivity interfaces	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D, DVI-I	Touch USB, VGA 15pin (Analog), DVI-D, DVI-I	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video
PC Compatibility	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12.3.0 / .net (4.0, 5.0, 6.0)	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12.3.0 / .net (4.0, 5.0, 6.0)	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12.3.0 / .net (4.0, 5.0, 6.0)	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4	Windows Vista, 2000, XP, CE, .net 4.0/5.0, 95, 98, NT4
	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)
	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS	MS DOS
	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac 10.2	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac 10.2	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac 10.2	Mac 10.2	Mac 10.2	Mac 10.2
Brightness	280 cd/m2 (typical)	280 cd/m2 (typical)	250 cd/m2 (typical)	250 cd/m2 (typical)	400 cd/m2 (typical)	400 cd/m2 (typical)	300 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)
Contrast Ratio	700:1 (typical)	700:1 (typical)	500:1 (typical)	500:1 (typical)	800:1 (typical)	800:1 (typical)	1000:1 (typical)	600:1 (typical)	800:1 (typical)
Speakers	Optional	Optional	Optional	Optional	N/A	N/A	Two integrated stereo speakers	N/A	Optional
Limited Warranty	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight
Optional									
Serial Interface	P2090C-S	P2050C-S	P2190C-S	P2150C-S	P2490C-S	P2450C-S	M3250C-S	P3250C-S	P3250C-S15

Capacitive Technology

How it works

Voltage is applied to each corner

Electrodes are spread uniformly across the field



Controller calculated position of the finger from the current

Touch of the finger draws current from each side proportionally

A capacitive touch screen consists of a glass panel with a conductive (charge storing) material coating its surface. Circuits located at corners of the screen measure the current flow to calculate a touch event. The controller determines the changes in the electrical field to determine the X and Y coordinates of the touch event.

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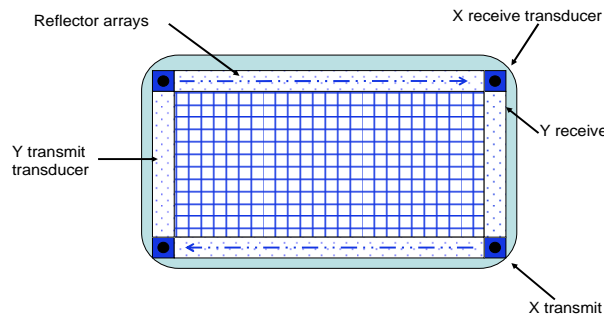


MFG Part Number	M1590S-U	M51790S-U	M51720S-U	P1920S-U	P2090S-U	P2020S-U	P3220S-U	P3220S-U15
Display Size	15"	17"	17"	19"	20"	20"	32"	32"
NEC Model	AS LCD52V-BK	LCD175VXM+BK	LCD175VXM+BK	LCD1990SX	LCD2090UXi	LCD2090UXi	LCD3210-BK-IT	LCD3215
Color	Black	Black	Black	Black	Black	Black	Black	Black
Touchscreen integrated sensor & controller	Surface Acoustic Wave (SAW)	Surface Acoustic Wave (SAW)	Surface Acoustic Wave (SAW)	Surface Acoustic Wave (SAW)	Surface Acoustic Wave (SAW)	Surface Acoustic Wave (SAW)	Surface Acoustic Wave (SAW)	Surface Acoustic Wave (SAW)
Controller Brand	eGalax	eGalax	ELO	ELO	eGalax	ELO	ELO	ELO
Connectivity interfaces	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D
PC Compatibility	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / 2000 / Server 2003 / 95 / 98 / ME / NT4 / CE 2.12,3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / Server 2003 / CE 2.12, 3.0 / .net (4.0, 5.0, 6.0)
	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)	Linux (<=Kernel 2.6)
	MS DOS	MS DOS			MS DOS			
	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac OS X	Mac OS X	Mac 9.0 / OS X (PowerPC, Intel CPU) QNX	Mac OS X	Mac OS X	Mac OS X
Brightness	250 cd/m2 (typical)	270 cd/m2 (typical)	270 cd/m2 (typical)	250 cd/m2 (typical)	280 cd/m2 (typical)	280 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)
Contrast Ratio	400:1 (typical)	600:1 (typical)	600:1 (typical)	1500:1 (typical)	700:1 (typical)	700:1 (typical)	600:1 (typical)	800:1 (typical)
Speakers	N/A	Two integrated stereo speakers	Two integrated stereo speakers	Optional	Optional	Optional	N/A	Optional
Limited Warranty	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	4 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight
Optional								
Serial Interface	M1590S-S	M51790S-S	M51720S-S	P1920S-S	P2090S-S	P2020S-S	P3220S-S	P3220S-S15

Surface Acoustic Wave touchscreen technology is a very durable screen that is widely used in applications such as computer based training, Medical or other high traffic indoor environments. The SAW screen is a good choice for applications where image clarity is important, but it may not perform well in extremely dirty or dusty environments. Responds to finger or soft rubber tipped stylus.

Surface Acoustic Wave Touch Technology

How it works



Surface Acoustic Wave technology is one of the most advanced touch screen types. It is based on sending acoustic waves across a clear glass panel with a series of transducers and reflectors. When a finger touches the screen, the waves

This technology is recommended for public information kiosks, computer based training, or other high traffic indoor environments.

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MFG Part Number	P3250D-U15	P3250D-UM15	P4050D-U20	P4050-UM20	P4250-U15	P4250D-UM15	P4650D-U20	P4650-UM20
Display Size	32"	32"	40"	40"	42"	42"	46"	46"
NEC Model	LCD3215-IT	LCD3215-AV	LCD4020-IT	LCD4020-AV	LCD4215-IT	LCD4215-AV	LCD4620-IT	LCD4620-AV
Color	Black	Black	Black	Black	Black	Black	Black	Black
Touchscreen integrated sensor & controller	Dispersive Signal Technology (DST)	Dispersive Signal Technology (DST)	Dispersive Signal Technology (DST)	Dispersive Signal Technology (DST)	Dispersive Signal Technology (DST)	Dispersive Signal Technology (DST)	Dispersive Signal Technology (DST)	Dispersive Signal Technology (DST)
Controller Brand	3M	3M	3M	3M	3M	3M	3M	3M
Connectivity interfaces	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video	Touch USB, DVI-D, Analog D Sub, BNC, Composite or S Video
PC Compatibility	Windows Vista / XP / 2000 / Server 2003 / CE / Xpe / WePOS	Windows Vista / XP / 2000 / Server 2003 / CE / Xpe / WePOS	Windows Vista / XP / 2000 / Server 2003 / CE / Xpe / WePOS	Windows Vista / XP / 2000 / Server 2003 / CE / Xpe / WePOS	Windows Vista / XP / 2000 / Server 2003 / CE / Xpe / WePOS	Windows Vista / XP / 2000 / Server 2003 / CE / Xpe / WePOS	Windows Vista / XP / 2000 / Server 2003 / CE / Xpe / WePOS	Windows Vista / XP / 2000 / Server 2003 / CE / Xpe / WePOS
	Linux Kernel 2.4 and 2.6	Linux Kernel 2.4 and 2.6	Linux Kernel 2.4 and 2.6	Linux Kernel 2.4 and 2.6	Linux Kernel 2.4 and 2.6	Linux Kernel 2.4 and 2.6	Linux Kernel 2.4 and 2.6	Linux Kernel 2.4 and 2.6
	Mac OS X (PowerPC, Intel CPU)	Mac OS X (PowerPC, Intel CPU)	Mac OS X (PowerPC, Intel CPU)	Mac OS X (PowerPC, Intel CPU)	Mac OS X (PowerPC, Intel CPU)	Mac OS X (PowerPC, Intel CPU)	Mac OS X (PowerPC, Intel CPU)	Mac OS X (PowerPC, Intel CPU)
Brightness	500 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)
Contrast Ratio	800:1 (typical)	800:1 (typical)	2000:1 (typical)	2000:1 (typical)	800:1 (typical)	800:1 (typical)	2000:1 (typical)	2000:1 (typical)
Speakers	N/A	Optional	N/A	Optional	N/A	Optional	N/A	Optional
Limited Warranty	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight
Optional								

Dispersive Signal Technology precisely calculates touch locations by analyzing the bending waves within the glass substrate that are created by the user's touch. This allows for fast, accurate, reliable touch performance that is unaffected by contaminants, scratches, or static objects on the screen, as well as enabling stylus support and multi-user capability. This fully integrated touch solution is perfect for interactive Digital Signage.

- Fast, accurate, repeatable touch
- Touch operates with static objects or other touches on the screen
- Touch unaffected by surface contaminants, such as liquids, dirt, dust an
- Excellent light transmission provides vibrant optical characteristics with anti-glare properties
- Operation unaffected by surface damage
- Input flexibility from finger or stylus, such as pencil, credit card, fingernail, or almost any pointing stylus

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NEC Touch Integrated product list



MFG Part Number	M32A00-U	P32A00-U	M40A00-U	P40A00-U	M42A00-U	M46A00-U	P46A00-U	P52A00-U	P57A00-U	P65A00-U
Display Size	32"	32"	40"	40"	42"	46"	46"	52"	57"	65"
NEC Model	LCD3210	LCD3215	ASPV40-AVT	LCD4020-2-AV	LCD4215	ASPV46-AVT	LCD4620-2-AV	LCD5220-AV	LCD5710-AV	LCD6510-AV
Color	Black	Black	Black	Black	Black	Black	Black	Black	Black	Black
Touchscreen	Optical Overlay	Optical Overlay	Optical Overlay	Optical Overlay	Optical Overlay	Optical Overlay	Optical Overlay	Optical Overlay	Optical Overlay	Optical Overlay
Controller Brand	HID Device	HID Device	HID Device	HID Device	HID Device	HID Device	HID Device	HID Device	HID Device	HID Device
Connectivity interfaces	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D	Touch USB, VGA 15pin (Analog), DVI-D
PC Compatibility	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)	Windows Vista / XP / CE 3.0 / .net (4.0, 5.0, 6.0)
	Linux (Kernel 2.6)	Linux (Kernel 2.6)	Linux (Kernel 2.6)	Linux (Kernel 2.6)	Linux (Kernel 2.6)	Linux (Kernel 2.6)	Linux (Kernel 2.6)	Linux (Kernel 2.6)	Linux (Kernel 2.6)	Linux (Kernel 2.6)
	Mac OS X	Mac OS X	Mac OS X	Mac OS X	Mac OS X	Mac OS X	Mac OS X	Mac OS X	Mac OS X	Mac OS X
Brightness	500 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)	700 cd/m2 (typical)	500 cd/m2 (typical)	500 cd/m2 (typical)	700 cd/m2 (typical)	700 cd/m2 (typical)	450 cd/m2 (typical)	450 cd/m2 (typical)
Contrast Ratio	600:1 (typical)	800:1 (typical)	5000:1 (typical)	2000:1 (typical)	800:1 (typical)	5000:1 (typical)	1800:1 (typical)	2000:1 (typical)	1800:1 (typical)	1800:1 (typical)
Speakers	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Limited Warranty	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight	3 Years Parts and Labor including Backlight
Optional										
Serial Interface	included	included	included	included	included	included	included	included	included	included

Optical Overlay technology is ideal for large format displays with a durable pure glass front, touch responds by the finger, gloved hand, pen and more. The combination of a large format LCD screen along with touch - brings digital signage alive and interactive: way finding, interactive advertising, command and control applications and more.

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		NEC Model No.	LCD Size	Native Resolution	Warranty	MFG SKU	Protective Overlay** can not be combined with touch
Enterprise	MultiSync 5 Series	LCD175VXM+/BK	17"	1280 x 1024	3 years	M517P	Y
		LCD195VX+/BK	19"	1280 x 1024	3 years	M519P	Y
		LCD195NXM-BK	19"	1280 x 1024	3 years	M519PN	Y
		LCD195WXM-BK	19" wide	1440 x 900	3 years	W519P	Y
		LCD205WNXM-BK	20" wide	1680x1050	3 years	W520P	Y
		LCD225WXM-BK	22" wide	1680x1050	3 years	W522P	Y
		LCD225WNXM-BK	22" wide	1680x1050	3 years	W522PN	Y
Professional/Medical/Color-Critical	MultiSync 90 Series	LCD1990SX-BK	19"	1280 x 1024	3 years	P19P	Y
		LCD2090UXi/-BK	20"	1600 x 1200	4 years	P20P	Y
		LCD2190UXi/-BK	21.3"	1600 x 1200	4 years	P20P-P	Y
		LCD2190UXp/-BK	21.3"	1600 x 1200	3 years	P21P	Y
		LCD2490WUXi-BK	24" wide	1920 x 1200	4 years	P24P	Y
Large format LCD display	AccuSync Series	ASPV32-AVT	32"	1366 X 768	1 year	M32P	Y
		ASPV40-AVT	40"	1366 X 768	1 year	M40P	Y
		ASPV46-AVT	46"	1366 X 768	1 year	M46P	Y
	MultiSync Series	LCD3210-BK/ BK-IT	32"	1366 X 768	3 years	P32P-10	Y
		LCD3215	32"	1366 X 768	3 years	P32P-15	Y
		LCD4020-2-AV / IT	40"	1366 X 768	3 years	P40P-20	Y
		LCD4215	42"	1366 X 768	3 years	P42P-15	Y
		LCD4620-2-AV / IT	46"	1366 X 768	3 years	P46P-20	Y
		LCD5710-BK / IT	57"	1920 x 1080	3 years	P57P-10	Y
		LCD6520L-BK-AV	65"	1920 x 1080	3 years	P65P-20	Y
		LCD6520P-BK-AV	65"	1920 x 1080	3 years	P65P-20	Y

TouchSystems designs, produces and delivers touch-enabled solutions for a wide variety of markets. We focus entirely on enhancing and creating solutions using a variety of touch technologies featuring NEC displays (desktop, chassis, and large format). Our business strives to help people and business realize the full potential of touch-enabled products in a wide variety of markets: retail point of sale, entertainment, hospitality, transactional and informational kiosks, industrial, medical, education and transportation.

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