

Standard Integrated Touchscreen LCDs CHO-TOUCH™ Displays



Customer Value Proposition:

CHO-TOUCH LCD Displays have been designed to reduce time to market and simplify the customer design experience by integrating touchscreens, optical bonding and high performance LCDs into a complete assembly that is ready to go out of the box. This reduces the need to procure individual components and simplifies the supply chain by buying a single part number from a single supplier. Design cycles for the display assembly can be cut by as much as 90%.

Parker Chomerics has designed these touchscreen LCDs for harsh environments such as military, medical, avionics, and general industrial. These assemblies are proven to work in applications with aggressive applications where sunlight readability, vibration resistance, scratch resistance, and mechanical strength are needed.

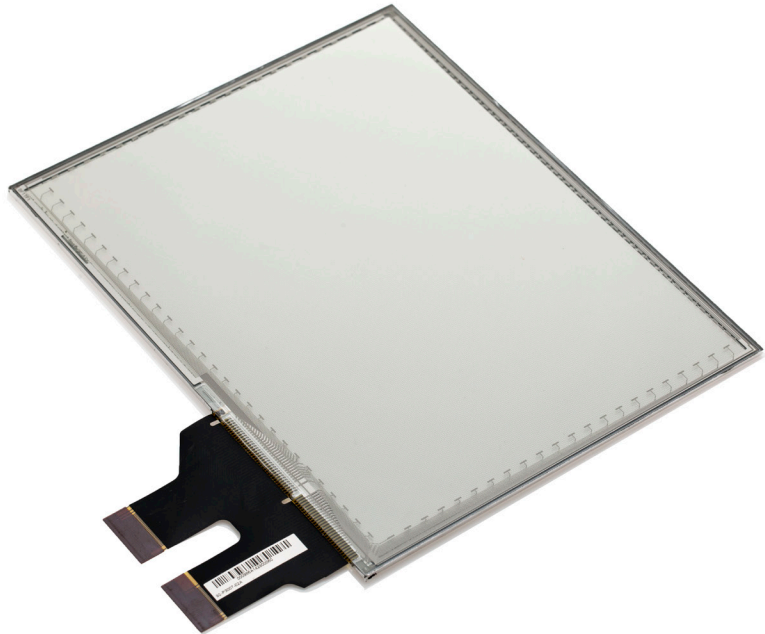
Touchscreen options include projected capacitive and resistive. Parker can customize PCAP to include custom graphics on front cover glass to enhance the brand of the final product. Chemically strengthened glass can be used in high impact environments with glass thicknesses up to 6 mm for PCAP applications.

Projected capacitive supports multi-touch controls for pinch and zoom and multi-input configurations. Glove touch with latex, nitrile, leather, and other types are supported with correct configuration of the controller. Water rejection is also possible with the latest controller chips that can still function with water on the surface. Resistive options allow for any type of touch to be registered especially heavy gloves in extreme cold environments.

Super high bright LCDs are used for sunlight readable applications or when maximum visibility is desired.

Contact Information:

Parker Hannifin Corporation
Chomerics Division
77 Dragon Court
Woburn, MA 01801
phone 781 935 4850
fax 781 933 4318
chomailbox@parker.com
www.parker.com/chomerics



Product Features:

- Standard sizes from 4.3 to 12.1"
- Projected Capacitive multi-touch
- PCAP water rejection
- PCAP glove touch
- Rugged cover glass for harsh environments
- Customized screen printed logos
- Resistive touch options
- Optical bonding for sunlight readability
- Super high bright LCD for maximum viewing
- Industrial display for long life cycles
- Turnkey assembly for fast design cycle

Typical Applications:

- Industrial controls
- Medical devices
- Handheld mobile devices
- Vehicle mounted displays
- Marine applications
- Automotive displays
- Machine Controls
- Kiosks and Terminals

Product Information

Our standard integrated displays have high performance components that bring value to the design and production process. Integration of key components reduces complexity and technical risk.

Touchscreens:

- Water rejection and multi-touch
- Customizable cover glass design
- Integrated touchscreen controllers
- Chip-on-flex controller options
- Programmable chipsets for touchscreen tuning

LCDs:

- Long lifetime LEDs 70k hours
- Built-in LED drivers
- Super high brightness for sunlight readable applications
- Ready to install form factor
- Shock and vibration resistant
- Wide dimming range

Optical Bonding:

- High performance automated process
- Shock and vibration resistant
- Resists yellowing and has high clarity
- Thin bond line

Projected Capacitive Controller Specifications

Touch Screen	For Projected Capacitive Type
Interface	USB, UART, I ² C
USB	USB Full-speed, 12Mbps
UART	38400 baud rate / 8bit data / non parity / one stop bit / non-PnP
I ² C	Slave, supports 400 kHz specifications
ADC resolution	10bits
Max Touch Line	35 Driving lines, 23 Sensing line
Sampling rate	>160sps (Single)
Operation Voltage Vcc	+5V, ±5%
Power Consumption	Working Mode: 33.2 mA / 5V DC Idle Mode: 23.2 mA / 5V DC Sleep Mode: 1.0mA / 5V DC
Storage Temperature	-40°C - 70°C
Operating Temperature	-30°C - 70°C
Projected Capacitive Driver Software	Windows 2000 / XP / XPE / 2003 / 2008/ Vista / 7 / 8 / 10 WinCE 4.2 / 5.0 / 6.0 Linux / Androi

Resistive Controller Specifications

Touch Screen	For 4, 8-wire or 5-wire analog resistive type
Communications	USB Full-speed, 12Mbps
Touch Screen Controller	PenMount 6000 controller IC
Resolution	2048x2048
Size	60x26 mm, two 3Ø screw holes
Cursor accuracy	< 1% (Active Area Diagonal of Touch Screen with PenMount Advanced Calibration Utility Support)
Resistance Range	50~1.3K ohm
Diagnostic	LED on board
Operating Voltage	+5V DC
Electro Static Discharge (ESD)	Air Discharge 15KV , Contact Discharge 8KV
Storage Temperature	-45°C - 85°C
Operating Temperature	-20°C - 70°C
Power Consumption	Standby Mode : 13.4 mA ; Active Mode : 21.5 mA (VCC=+5V, Top sheet Panel Resistance: 365 ohm; Bottom Sheet Panel Resistance: 660 ohm) Note: Actual current will be different by touch panel's resistance
Resistive Controller Driver Software	Windows 2000 / XP / XPE / 2003 / 2008/ Vista / 7 / 8 / 10 WinCE 4.2 / 5.0 / 6.0 Linux (Kernel 2.6 and X-Window mode) QNX 6.4.1/ 6.5 (Inbox support)

Ordering Information

Part Number:
40-76- SSS - XXX A TT - LL RRRR - B

Example:

40-76-NAX -104NPC-HBDXGA-OB

10.4" PCAP High Bright XGA
 Optically Bonded LCD without
 shielding

SSS	XXX	A	TT	LL	RRRR	B
NAX = No Shielding	043 = 4.3"	N = Normal	PC = PCAP	HB = High Bright	DVGA = VGA	O = Optical Bond
MMX = Micromesh	050 = 5.0"	W = Widescreen	4W = 4 Wire	SB = Standard Brightness	SVGA	A = Air Gap
080 = 80 OPI Mesh	057 = 5.7"		5W = 5 Wire		DXGA = XGA	
	065 = 6.5"		8W = 8 Wire		WVGA	
	070 = 7.0"				WXGA	
	084 = 8.4"				QVGA	
	101 = 10.1"					
	104 = 10.4"					
	121 = 12.1"					

4.3" W CHO-TOUCH LCD Displays

Resolution: WQVGA (400x240)	Brightness: 800 nits
Interface: CMOS	LCD Contrast Ratio: 350:1
Viewing Angle (H/H/V/V): 70/70/65/60	Operating Temperature: -20°C to 70°C
Built in LED Driver: No	

Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-080-043WPC-HBQVGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-043WPC-HBQVGA-O	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-043WPC-HBQVGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-043WPC-HBQVGA-O	Micromesh	PCAP	Optical Bond
40-76-NAX-043WPC-HBQVGA-A	None	PCAP	Perimeter Bond
40-76-NAX-043WPC-HBQVGA-O	None	PCAP	Optical Bond

*Other configurations and customizations available upon request.

5.7" CHO-TOUCH LCD Displays

Resolution: VGA (640x480)	Brightness: 800 nits
Interface: CMOS	LCD Contrast Ratio: 500:1
Viewing Angle (H/H/V/V): 80/80/80/80	Operating Temperature: -20°C to 70°C
Built in LED Driver: No	

Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-080-057N4W-HBDVGA-A	80 OPI Mesh	4-wire Resistive	Perimeter Bond
40-76-080-057N4W-HBDVGA-O	80 OPI Mesh	4-wire Resistive	Optical Bond
40-76-080-057NPC-HBDVGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-057NPC-HBDVGA-O	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-057N4W-HBDVGA-A	Micromesh	4-wire Resistive	Perimeter Bond
40-76-MMX-057N4W-HBDVGA-O	Micromesh	4-wire Resistive	Optical Bond
40-76-MMX-057NPC-HBDVGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-057NPC-HBDVGA-O	Micromesh	PCAP	Optical Bond
40-76-NAX-057N4W-HBDVGA-A	None	4-wire Resistive	Perimeter Bond
40-76-NAX-057N4W-HBDVGA-O	None	4-wire Resistive	Optical Bond
40-76-NAX-057NPC-HBDVGA-A	None	PCAP	Perimeter Bond
40-76-NAX-057NPC-HBDVGA-O	None	PCAP	Optical Bond

*Other configurations and customizations available upon request.

6.5" CHO-TOUCH LCD Displays

Resolution: VGA (640x480) Brightness: 750 nits
 Interface: LVDS LCD Contrast Ratio: 300:1
 Viewing Angle (H/H/V/V): 55/55/60/30 Operating Temperature: -30°C to 70°C
 Built in LED Driver: Yes

Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-080-065N4W-SBDVGA-A	80 OPI Mesh	4-wire Resistive	Perimeter Bond
40-76-080-065N4W-SBDVGA-O	80 OPI Mesh	4-wire Resistive	Optical Bond
40-76-080-065NPC-SBDVGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-065NPC-SBDVGA-O	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-065N4W-SBDVGA-A	Micromesh	4-wire Resistive	Perimeter Bond
40-76-MMX-065N4W-SBDVGA-O	Micromesh	4-wire Resistive	Optical Bond
40-76-MMX-065NPC-SBDVGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-065NPC-SBDVGA-O	Micromesh	PCAP	Optical Bond
40-76-NAX-065N4W-SBDVGA-A	None	4-wire Resistive	Perimeter Bond
40-76-NAX-065N4W-SBDVGA-O	None	4-wire Resistive	Optical Bond
40-76-NAX-065NPC-SBDVGA-A	None	PCAP	Perimeter Bond
40-76-NAX-065NPC-SBDVGA-O	None	PCAP	Optical Bond

*Other configurations and customizations available upon request.

7.0" W CHO-TOUCH LCD Displays

Resolution: WVGA (640x480) Brightness: 1000 nits
 Interface: LVDS LCD Contrast Ratio: 750:1
 Viewing Angle (H/H/V/V): 85/85/85/85 Operating Temperature: -20°C to 70°C
 Built in LED Driver: Yes

Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-080-070W5W-HBWVGA-A	80 OPI Mesh	5-wire Resistive	Perimeter Bond
40-76-080-070W5W-HBWVGA-O	80 OPI Mesh	5-wire Resistive	Optical Bond
40-76-080-070WPC-HBWVGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-070WPC-HBWVGA-O	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-070W5W-HBWVGA-A	Micromesh	5-wire Resistive	Perimeter Bond
40-76-MMX-070W5W-HBWVGA-O	Micromesh	5-wire Resistive	Optical Bond
40-76-MMX-070WPC-HBWVGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-070WPC-HBWVGA-O	Micromesh	PCAP	Optical Bond
40-76-NAX-070W5W-HBWVGA-A	None	5-wire Resistive	Perimeter Bond
40-76-NAX-070W5W-HBWVGA-O	None	5-wire Resistive	Optical Bond
40-76-NAX-070WPC-HBWVGA-A	None	PCAP	Perimeter Bond
40-76-NAX-070WPC-HBWVGA-O	None	PCAP	Optical Bond

*Other configurations and customizations available upon request.

8.4" CHO-TOUCH LCD Displays

Resolution: SVGA (800x600) Brightness: 1200 nits
 Interface: LVDS LCD Contrast Ratio: 750:1
 Viewing Angle (H/H/V/V): 85/85/85/85 Operating Temperature: -30°C to 70°C
 Built in LED Driver: Yes

Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-080-084N4W-HBSVGA-A	80 OPI Mesh	4-wire Resistive	Perimeter Bond
40-76-080-084N4W-HBSVGA-O	80 OPI Mesh	4-wire Resistive	Optical Bond
40-76-080-084NPC-HBSVGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-084NPC-HBSVGA-O	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-084N4W-HBSVGA-A	Micromesh	4-wire Resistive	Perimeter Bond
40-76-MMX-084N4W-HBSVGA-O	Micromesh	4-wire Resistive	Optical Bond
40-76-MMX-084NPC-HBSVGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-084NPC-HBSVGA-O	Micromesh	PCAP	Optical Bond
40-76-NAX-084N4W-HBSVGA-A	None	4-wire Resistive	Perimeter Bond
40-76-NAX-084N4W-HBSVGA-O	None	4-wire Resistive	Optical Bond
40-76-NAX-084NPC-HBSVGA-A	None	PCAP	Perimeter Bond
40-76-NAX-084NPC-HBSVGA-O	None	PCAP	Optical Bond

*Other configurations and customizations available upon request.

10.1" W CHO-TOUCH LCD Displays

Resolution: WXGA (1280x800) Brightness: 500 nits
 Interface: LVDS LCD Contrast Ratio: 800:1
 Viewing Angle (H/H/V/V): 80/80/80/80 Operating Temperature: -20°C to 70°C
 Built in LED Driver: Yes

Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-080-101W5W-SBWXGA-A	80 OPI Mesh	5-wire Resistive	Perimeter Bond
40-76-080-101W5W-SBWXGA-O	80 OPI Mesh	5-wire Resistive	Optical Bond
40-76-080-101WPC-SBWXGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-101WPC-SBWXGA-O	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-101W5W-SBWXGA-A	Micromesh	5-wire Resistive	Perimeter Bond
40-76-MMX-101W5W-SBWXGA-O	Micromesh	5-wire Resistive	Optical Bond
40-76-MMX-101WPC-SBWXGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-101WPC-SBWXGA-O	Micromesh	PCAP	Optical Bond
40-76-NAX-101W5W-SBWXGA-A	None	5-wire Resistive	Perimeter Bond
40-76-NAX-101W5W-SBWXGA-O	None	5-wire Resistive	Optical Bond
40-76-NAX-101WPC-SBWXGA-A	None	PCAP	Perimeter Bond
40-76-NAX-101WPC-SBWXGA-O	None	PCAP	Optical Bond

*Other configurations and customizations available upon request.

10.4" CHO-TOUCH LCD Displays

Resolution: XGA (1024x768) Interface: LVDS Viewing Angle (H/H/V/V): 85/85/85/85 Built in LED Driver: Yes		Brightness: 1300 nits LCD Contrast Ratio: 700:1 Operating Temperature: -30°C to 70°C	
Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-080-104N5W-HBDXGA-A	80 OPI Mesh	5-wire Resistive	Perimeter Bond
40-76-080-104N5W-HBDXGA-O	80 OPI Mesh	5-wire Resistive	Optical Bond
40-76-080-104NPC-HBDXGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-104NPC-HBDXGA-O	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-104N5W-HBDXGA-A	Micromesh	5-wire Resistive	Perimeter Bond
40-76-MMX-104N5W-HBDXGA-O	Micromesh	5-wire Resistive	Optical Bond
40-76-MMX-104NPC-HBDXGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-104NPC-HBDXGA-O	Micromesh	PCAP	Optical Bond
40-76-NAX-104N5W-HBDXGA-A	None	5-wire Resistive	Perimeter Bond
40-76-NAX-104N5W-HBDXGA-O	None	5-wire Resistive	Optical Bond
40-76-NAX-104NPC-HBDXGA-A	None	PCAP	Perimeter Bond
40-76-NAX-104NPC-HBDXGA-O	None	PCAP	Optical Bond

*Other configurations and customizations available upon request.

12.1" CHO-TOUCH LCD Displays

Resolution: XGA (1024x768) Interface: LVDS Viewing Angle (H/H/V/V): 85/85/85/85 Built in LED Driver: Yes		Brightness: 1200 nits LCD Contrast Ratio: 750:1 Operating Temperature: -30°C to 70°C	
Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-NAX-121N5W-HBDXGA-A	None	5-wire Resistive	Perimeter Bond
40-76-NAX-121N5W-HBDXGA-O	None	5-wire Resistive	Optical Bond
40-76-NAX-121NPC-HBDXGA-A	None	PCAP	Perimeter Bond
40-76-NAX-121NPC-HBDXGA-O	None	PCAP	Optical Bond
40-76-080-121N5W-HBDXGA-A	80 OPI Mesh	5-wire Resistive	Perimeter Bond
40-76-080-121N5W-HBDXGA-O	80 OPI Mesh	5-wire Resistive	Optical Bond
40-76-080-121NPC-HBDXGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-121NPC-HBDXGA-O	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-121N5W-HBDXGA-A	Micromesh	5-wire Resistive	Perimeter Bond
40-76-MMX-121N5W-HBDXGA-O	Micromesh	5-wire Resistive	Optical Bond
40-76-MMX-121NPC-HBDXGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-121NPC-HBDXGA-O	Micromesh	PCAP	Optical Bond

*Other configurations and customizations available upon request.

12.1" W CHO-TOUCH LCD Displays

Resolution: WXGA (1280x800) Brightness: 500 nits
Interface: LVDS LCD Contrast Ratio: 750:1
Viewing Angle (H/H/V/V): 85/85/85/85 Operating Temperature: -20°C to 70°C
Built in LED Driver: Yes

Part Number	EMI Shielding	Touchscreen Type	Touchscreen Attachment
40-76-080-121WPC-SBWXGA-A	80 OPI Mesh	PCAP	Perimeter Bond
40-76-080-121WPC-SBWXGA-0	80 OPI Mesh	PCAP	Optical Bond
40-76-MMX-121WPC-SBWXGA-A	Micromesh	PCAP	Perimeter Bond
40-76-MMX-121WPC-SBWXGA-0	Micromesh	PCAP	Optical Bond
40-76-NAX-121WPC-SBWXGA-A	None	PCAP	Perimeter Bond
40-76-NAX-121WPC-SBWXGA-0	None	PCAP	Optical Bond

*Other configurations and customizations available upon request.

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