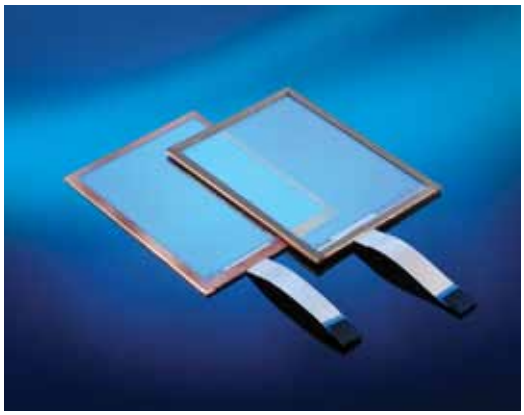
EMI Shielded Touchscreens

WIN-SHIELD™ Touchscreens

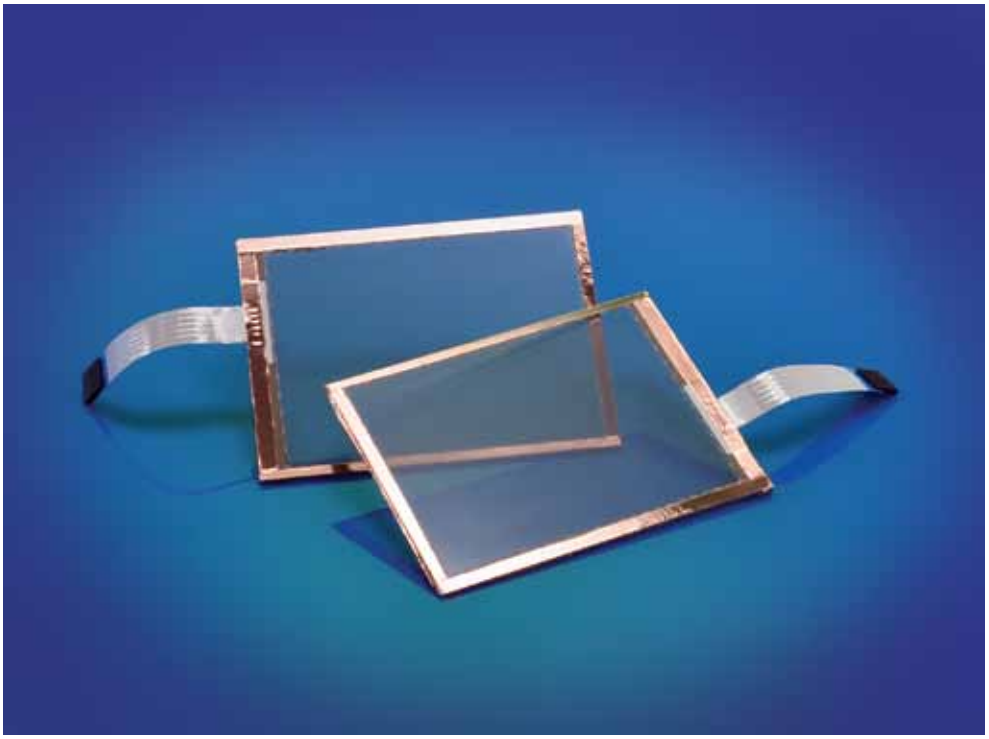


Customer Value Proposition:

Parker Chomerics EMI Shielded Touchscreens combine today's state of the art touchscreen technologies with our industry leading EMI shielding expertise. Touchscreens are in a wide range of military and industrial products. They are being specified in more ruggedized applications such as military, homeland security, first response and medical where EMI shielding is required. A touchscreen fully integrated with an EMI shield simplifies the compliance with these tough EMI requirements.

Parker leverages its materials science and lamination skills to integrate EMI shielding materials with the most specified types of touchscreens, including resistive and projected capacitive. Various shielding materials are available, such as: ITO conductive coatings, blackened plated stainless steel mesh and blackened copper mesh. These highly transparent conductive films and specially designed fine wire meshes can be selected for the best optical and EMI shielding performance. EMI shielding is fully integrated into the touchscreen assembly with no air gaps or voids using optical grade PSA.

Parker has stock EMI shielded resistive and projected capacitive touchscreens. Parker can integrate a customer-supplied touchscreens or procure a specified touchscreen. We assist with the design of an appropriate EMI shield based on the application requirements. The EMI shield will be optically bonded to the rear of the touchscreen and the required buss bar termination will be applied. CHO-FOIL® Copper tape can be used to wrap the buss bar to the front side of the touchscreen to provide a ground plane. In addition, our shielded touchscreens can be provided with a wide variety of conductive gaskets for assembly into bezels and frames



Product Features:

- EMI shield thickness as thin as 0.007" (0.177 mm)
- Custom sizes to match touchscreen size
- Shielding materials laminated with polycarbonate
- 4 and 8 ohms/sq conductive films for EMI shielding
- Wire mesh: 50, 80, 100 OPI (openings per inch) plated stainless steel mesh
- Rear surface of EMI available with anti-reflective surface to increase light transmission
- Optical grade full coverage PSA for gap free bond
- Standalone EMI shield with optical grade PSA available for customer assembly to touchscreen
- EMI shielded resistive touchscreens
- EMI shielded projected capacitive touchscreens

Typical Applications:

- Military electronics
- Hand-held mobile devices
- Rugged LCDs
- Tempest environments
- Devices used in critical patient care environments
- Shielded cabinets and racks
- Digital signage and kiosks
- Instrument panels

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VICPAS HMI Parts Center

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Product Information

Standard Stock EMI Shielded Touchscreens

Parker Chomerics has standard stock size touchscreens that are used as easy drop-in designs for EMI shielded touchscreen applications. Standard stock parts as well as customized sizes are available. Resistive (4-, 5-, and 8- wire) and projected capacitive touchscreens are offered as stock items. Customized projected capacitive cover glass is available in plastic or glass with custom graphics and sizes. Typical thickness is 1.1 mm with other thicknesses available. Connectors are either AMPC or ZIF connectors.

Controller boards are provided as standalone controllers, chip on flex or controller chip to be integrated into custom board. These can be furnished with all necessary cables to connect to RS-232, USB or I^2C interfaces. Customizable firmware is offered for projected capacitive touchscreens. Operating systems supported include Windows® CE 5.0-7.0, Windows XP, Windows Vista/7, Windows 8, Windows XP Embedded, Unbuntu® 10-12, Fedora 16-17, OpenSUSE® 12.1, RHEL 6.0-6.2 and Linux®.

Parker can also integrate consigned touchscreens with shielding or procure specified touchscreens with specific vendors for supply chain services.

Standard Stock Sizes EMI Shielded Resistive Touchscreen

Touchscreen Type	Diagonal Size (in)
4-Wire Resistive	3.85
	4.30
	5.88
	6.40
	7.00
	8.00
	8.40
	8.90
	10.40
	12.11
	13.30
	15.00
8-Wire Resistive	10.44
	12.11
	14.96
	17.00
	18.97
5-Wire Resistive	6.48
	7.00
	8.46
	10.44
	12.26
	15.13
	17.00
	19.00
	21.58
	22.00

Standard Stock Sizes EMI Shielded Projected Capacitive Touchscreen*

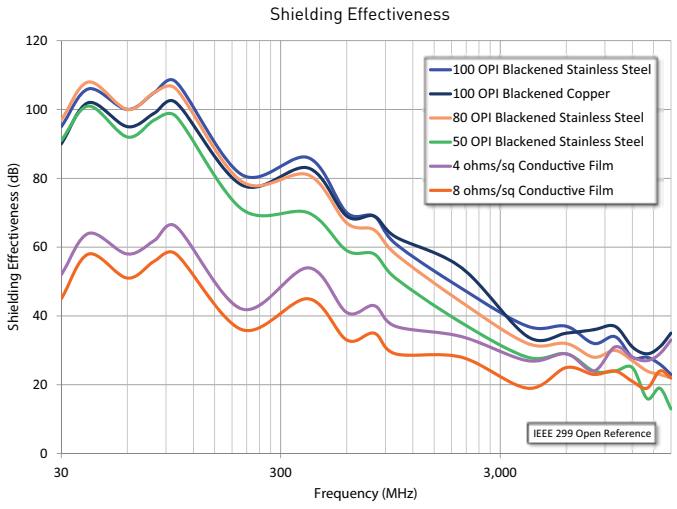
Touchscreen Type	Diagonal Size (in)	Aspect Ratio
Projected Capacitive	3.50	Normal
Projected Capacitive	4.30	Normal
Projected Capacitive	5.70	Normal
Projected Capacitive	6.40	Normal
Projected Capacitive	7.00	Normal
Projected Capacitive	8.40	Normal
Projected Capacitive	10.40	Normal
Projected Capacitive	12.10	Normal
Projected Capacitive	15.00	Normal
Projected Capacitive	12.10	Wide
Projected Capacitive	15.60	Wide

*Other sizes stock and custom available

Material Properties:

EMI Shielding Properties

EMI shielding options consist of blackened mesh and conductive coatings. Selection is based on the follow criteria: For high EMI shielding requirements 100 or 80 OPI mesh is the desirable choice for superior shielding. If higher light transmission is desired, conductive coatings are a suitable solution. Both mesh and conductive coating options provide excellent clarity and maintain sharp image fidelity. Typical sheet resistances are 4 and 8 ohms/sq. 4 ohms/sq has higher EMI shielding than 8 ohms/sq (see shielding curve). Other sheet resistances (ohms/sq) are available upon request.



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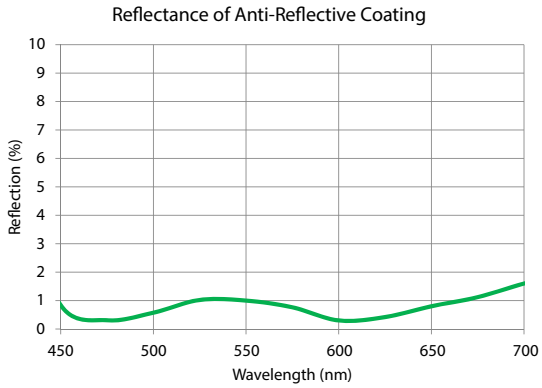
Buss Bar Design
Buss bars will be either specified as on the backside (CHO-BOND® 577 Silver Epoxy Buss Bar) or wrapped around to the front side using CHO-FOIL copper tape.

Standard Tolerance
- ± 0.010" (0.25 mm) Machined
- ± 0.015" (0.38 mm) Die cut
- ± 10% Thickness
- ± 0.020" (0.50 mm) Buss Bars/Graphics

Custom tolerances available upon request

Optical Properties:

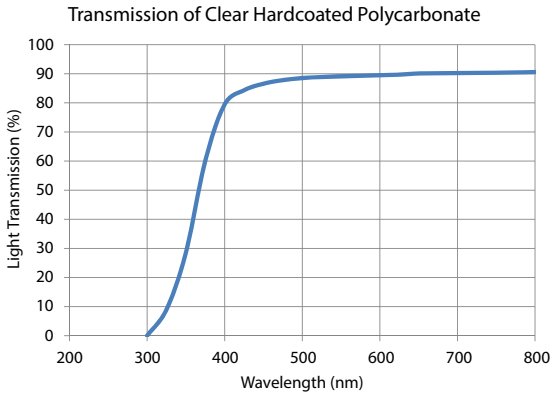
Anti-reflective Coatings
Anti-reflective coatings (AR) are used in high performance applications where high light transmission and low reflection is desired. AR coatings are used to increase the contrast of a display by reducing ambient light reflections. Transmission of the overall window will increase 3-4% when an AR coating is used. Maintaining high optical transparency and maximum clarity in demanding applications makes this a suitable option for a wide variety of applications requiring additional light transmission.



Coating Design
Optimized for visible light (400-700 nm)

Average Reflection < 0.7%

Clear Hardcoating Coating
Clear hardcoating is an ideal choice when a clear scratch resistant window is desired. It is a cost effective means of preserving the resolution of a display. Clear hardcoat reduces abrasion defects from assembly or during use.

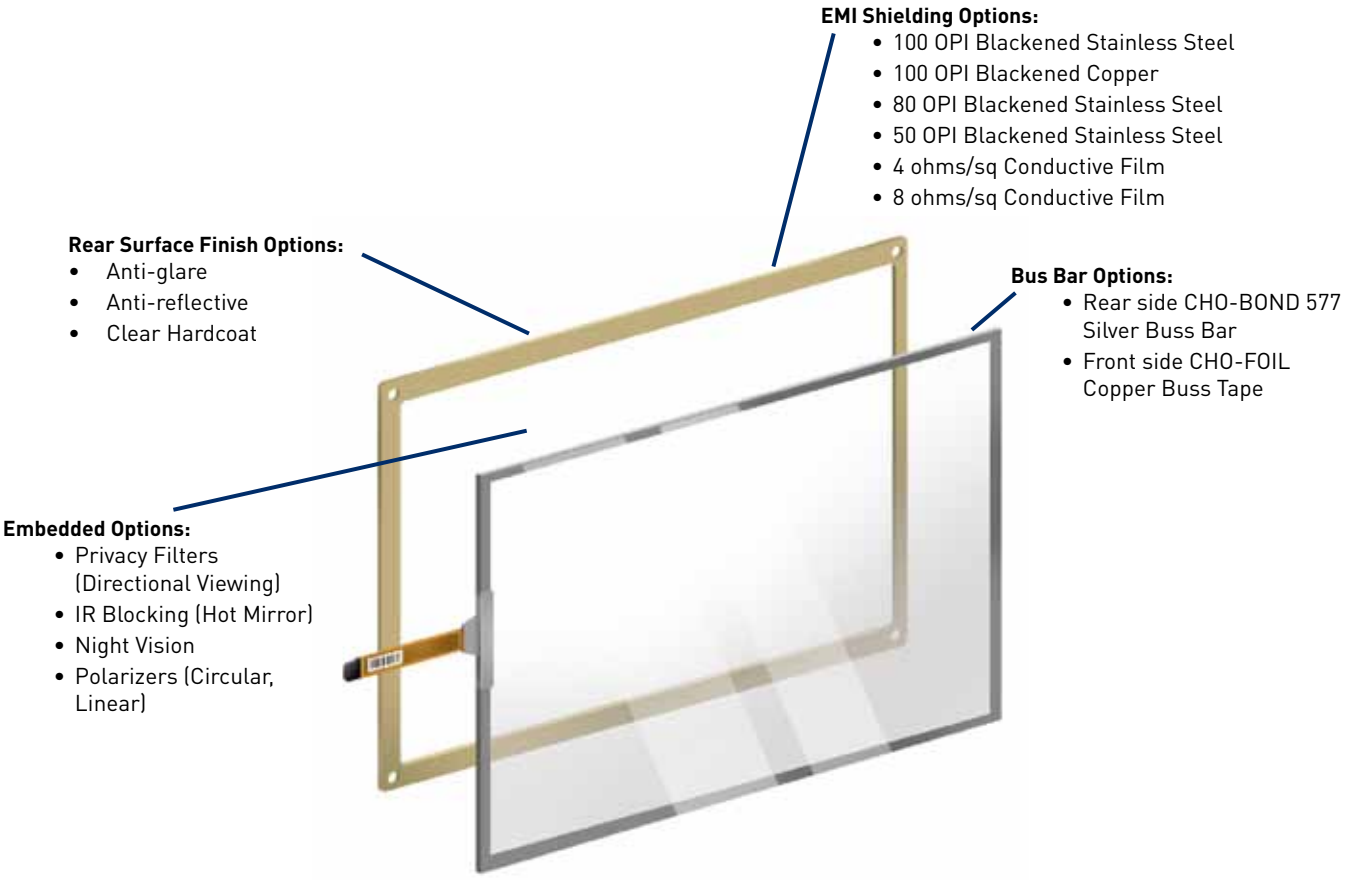


Design Options:

Product Information:

Design Guide (Please choose from the following options):

1. Rear Surface Options:
    - Clear Hardcoat
    - Anti-reflective
    - Anti-glare
2. Embedded Options:
    - Privacy Filters (Directional Viewing)
    - IR Blocking (Hot Mirror)
    - Night Vision
    - Polarizers (Circular, Linear)
    - None
3. EMI Shielding Options:
    - 100 OPI Blackened Stainless Steel
    - 100 OPI Blackened Copper
    - 80 OPI Blackened Stainless Steel
    - 50 OPI Blackened Stainless Steel
    - 4 ohms/sq Conductive Film
    - 8 ohms/sq Conductive Film
4. Buss Bar Options:
    - Rear side CHO-BOND 577 Silver Buss Bar
    - Front side CHO-FOIL Copper Buss Tape



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