

# MicroTouch™ ToughTouch II



## Capacitive Touch System

### Product Highlights

- Laminated construction provides high impact resistance for vandal-prone locations
- Excellent light transmission supports dynamic interactive applications
- IP66 / NEMA 4 sealability protects from liquids and other contaminants affecting touch screen operation or damaging LCD display
- UL-60950-1 compliant
- Available “viewer privacy” feature with 3M Vikuiti Light Control Film for ATMs and many public applications

### High Performance in Extreme Environments

Designed to withstand heavy abuse in unattended, vandal-prone applications, MicroTouch™ ToughTouch II capacitive touch systems are an ideal solution for extreme environments that require a toughened, shatter-resistant, liquid-resistant touch solution. Whether you’re designing ticketing kiosks or gaming machines, providing ATM solutions or require a toughened product for challenging industrial environments, ToughTouch II touch systems can meet or exceed your design requirements

ToughTouch II is constructed by optically laminating 4 mm glass to the back of a MicroTouch™ ClearTek™ II touch screen – the “de facto” standard for capacitive touch screens. By combining ClearTek II’s industry-leading features for reliability and robustness with laminated impact-resistant characteristics, ToughTouch II offers excellent touch performance when and where ever you need it.

### The Clear Difference

MicroTouch™ ToughTouch II – along with its best-in-class MicroTouch™ EX II touch electronics – sets the standard in “strengthened capacitive” touch system offerings. Along with its worldwide support and service organization, 3M provides expert technical support wherever any of our products are designed-in, integrated, or delivered. It is this complete solution approach that ensures remarkable compatibility and exceptional service, backed by 3M.

# MicroTouch™ ToughTouch II Capacitive Touch System

## Performance

<b>Input Method</b>	Finger input
<b>Accuracy*</b>	Reported touch coordinates are within 1.0% of true position (based on viewing area dimensions) when linearized and used with a MicroTouch™ EX II Series touch controller
<b>Touch System Resolution</b>	Touch screen resolution defaults to settings in the electronics and software, generally 1024 x 1024, but capable of 16K x 16K when used with EX II.
<b>Linearization</b>	Factory-linearized values are stored in the attached controller, represented in a 2D barcode or in the touch screen NOVRAM, when present.
<b>Impact Resistance</b>	Passes the UL-60950-1

## Optics

<b>Light Transmission**</b>	86.5 % (±1.5%) light transmission (tested on the BYK Gardner Haze Gard Plus)
<b>Surface Finish</b>	ClearTek™ II hard coat with optimal anti-glare properties. Scratch resistant top coat provides smooth, easy glide, easy to clean touch surface

## Mechanical

<b>Minimum Contact Requirement</b>	5.4 ms for finger input with an EX II Series controller
<b>Glass Thickness</b>	7.57mm (±0.58mm) With 3M Vikuiti™ Light Control Film (privacy): 8.23mm (±0.58mm)
<b>Display Size Supported</b>	Standard products ranging from 12.1" to 19" diagonal (Light Control Film: 12.1" to 17" diagonal). Custom products available ranging from 6.5" to 32".
<b>Surface Scratch Hardness</b>	A Mohs pick with a hardness rating of 7 or higher is required to induce a scratch which will cause a functional failure. Exceeds severe abrasion test per MIL-STD-675C
<b>Sealing rating</b>	Can be sealed to meet the IP 66 or NEMA 4 standard for resistance to infiltration of fluids into the enclosure.
<b>Gasketing</b>	Complete water-resistant seal obtainable with a polyethylene gasket. Please consult the ToughTouch II Integration Guide for further details.
<b>Mounting</b>	Please consult ToughTouch II Integration Guide for specific mounting instructions.
<b>Cleaning</b>	Water, isopropyl alcohol, or similar non-abrasive cleaners.

## Reliability

<b>Surface Obstructions</b>	The touch screen continues to operate with surface contaminants such as, dirt, dust and grease.
<b>Chemical Resistance</b>	ClearTek™ II is highly resistant to corrosives, in accordance with ASTM-D-1308-07 (1993) and ASTM - F- 1598-95.
<b>Liquid Resistance</b>	Liquids on screen do not impede touch screen performance.
<b>Operating Temperature*</b>	-15° C to 70° C for the touch screen.
<b>Storage Temperature</b>	Always store the touch screen in its original shipping container between -50° C and 85° C (up to 90% RH from 0° C to + 35° C). Never store the touch screen in an environment where condensation may form.
<b>Humidity</b>	Up to 90% RH from 0° C to +35° C, non-condensing.
<b>RoHS Compliance</b>	ToughTouch II is compliant with the European Union 2002/95/EC Directive on Restriction of Hazardous Substances (RoHS).
<b>Warranty</b>	5 years

\* Achievement of the listed specifications has been demonstrated in monitor integrations where the touch screen is mounted to monitor frame such that the spacing between the touch screen and monitor screen does not vary due to compression on expansion from touch forces or temperature changes.

\*\* Test uses BYK Gardner Haze Gard Plus.

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RoHS Directive compliant: In accordance with European Directive 2002/95/EC, "RoHS Directive compliant" means that the product or part does not contain any of the following substances in excess of the following maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's knowledge and belief based on information provided by third party suppliers to 3M. (9/06)

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