MicroTouch™

Capacitive Touch Screens

3M Innovation

MICROTOUCH

Capacitive Touch Screens

DURABLE • ACCURATE • RESPONSIVE

3M Touch Systems is a premier supplier of high-endurance, fast, accurate, and responsive capacitive touch screens. With superior materials, integrated electronics, and high-quality manufacturing processes, 3M Touch Systems delivers durability, accuracy, and responsiveness.

Benefits and Differentiators

Durable – Our capacitive touch screens withstand on-screen contaminants — such as grease, dirt, water, running liquid, and harsh chemicals — and can also be NEMA sealed.

Endurance – A ClearTek touch screen has been tested in a laboratory environment to withstand over 225 million mechanical touches without noticeable degradation to the surface.*

Accurate – Accuracy is of the utmost importance — no matter what the application may be. Finger-on-glass operation ensures less chance of false touches from jewelry, clothing, or other contaminants.

Responsive – Our superior touch screens are tough, yet sensitive to the touch, responding to the lightest of touches.

* Mechanical touches tested in a single x/y location using a finger-like stylus of 45 durometer, “A” shore hardness, 0.5" diameter with a load of 0.46 pounds, +/- .01 pounds of force.

Brilliant solutions with the human touch.

When you're ready to deploy sophisticated touch applications, you can't afford design compromises. With MicroTouch™ capacitive touch screens manufactured by 3M Touch Systems, you have it all — durability, clarity, speed, accuracy, and a broad range of options to meet almost any touch requirement.

Now, across numerous industries, your applications shine with consistently excellent quality, performance, and simplicity — for you and your users.

INNOVATION YOU CAN TOUCH

Public Access and Entertainment – With remarkable touch screen endurance and the ability to take public-use punishment, MicroTouch capacitive touch screens are the de facto standard in these applications. That means fewer worries over spilled drinks, dirty fingers, scratches from jewelry, vibration, or static. What's more, only human touches register — ensuring less chance of false touches from jewelry, clothing, or liquids.

Point-of-Sale and Hospitality – Service staffs depend on MicroTouch capacitive touch screens for fast and reliable operation using light, quick touches. Their ability to withstand just about any on-screen contaminants — condiments, soda, grease, and more — makes capacitive touch screens a food service favorite.

Kiosks – Offering durability, reliability, and clarity — in all types of lighting — MicroTouch capacitive touch screens are ideal for unattended kiosk applications in high-traffic environments.

Finance – Whether it's an ATM machine, a stock-trader's desktop, or a self-service kiosk, banks and brokerages value the simplicity and reliability that MicroTouch capacitive touch screens provide.

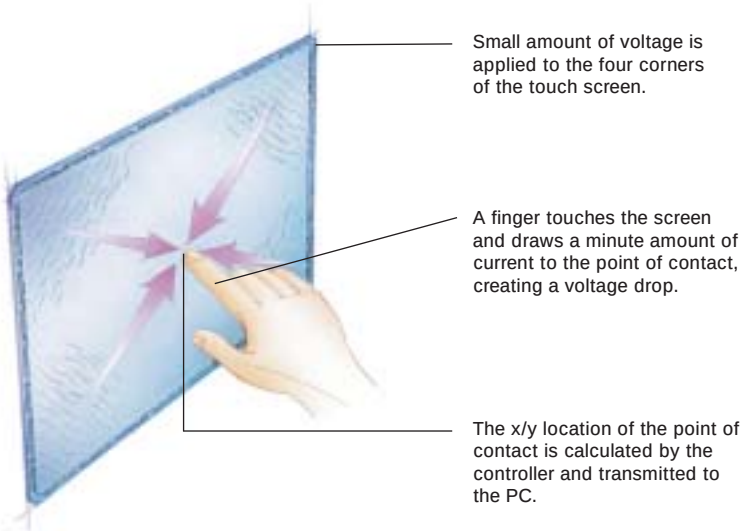
Industrial – With the high-impact resistance and touch responsiveness of Near Field Imaging,™ industrial applications' tough requirements are fulfilled.

ClearTek™ Capacitive Solutions

ClearTek is 3M Touch Systems' flagship capacitive touch solution, offering exceptional durability, reliability, and clarity. With a transparent protective overcoat that minimizes reflection and maximizes light transmission, ClearTek capacitive touch screens provide dramatic scratch resistance and physical robustness. ClearTek shrugs off on-screen contaminants such as, chemicals, grease, dirt, and water without interrupting operation.

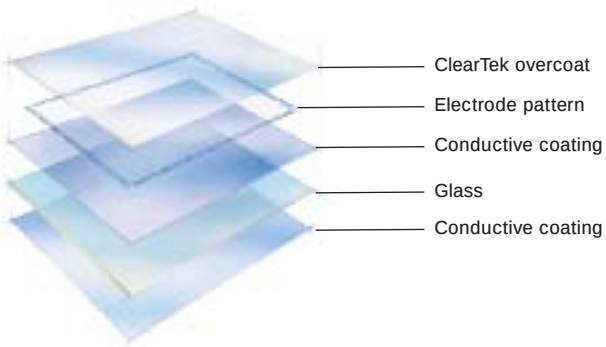
But that ruggedness doesn't mean you sacrifice accuracy or speed; ClearTek easily recognizes fast, light touches. ClearTek is the preferred choice in many applications because it can keep up with fast-paced use without a hitch.

Capacitive – How it works



If you need a capacitive touch screen for a flat CRT or LCD panel, 3M Touch Systems offers ClearTek Profile touch screens. These screens incorporate the same exceptional durability, reliability, and clarity of ClearTek, while incorporating advanced design and production techniques for a sleek and easy-to-integrate touch screen with a narrow border and wide viewing area.

Capacitive – Layer construction



ClearTek's Exceptional Design

At the core, every ClearTek touch screen is an all-glass touch screen with a transparent, conductive coating fused to its surface. Along the edges, a narrow, precisely printed electrode pattern uniformly distributes a low-voltage field over the conductive layer.

ClearTek Options for Greater Design Flexibility

ToughTouch – For industrial, unattended, or high-threat environments — such as ATMs, vending machines, and vandal-resistant kiosks — ToughTouch's durability is an ideal solution. A layer of tempered glass is laminated to a ClearTek capacitive touch screen to provide dramatic impact resistance.

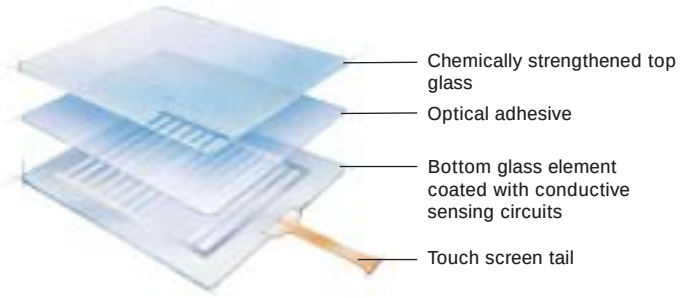
TouchPen – This capacitive digitizing stylus adds tethered-pen input for signature capture (with intelligent palm rejection), annotation, and touch input for gloved hands. It's an ideal option for dense menus, handwriting recognition, videoconferencing, and more.

PrivacyTouch – Sometimes your users need privacy — especially at public kiosks. With PrivacyTouch, a 3M light control film allows for controlled viewing, so that only the person(s) directly in front of the screen is able to view its contents; observers standing to the side have their line of sight blocked. PrivacyTouch is ideal for confidential viewing of CRTs, ATMs, and anywhere else privacy is desired.

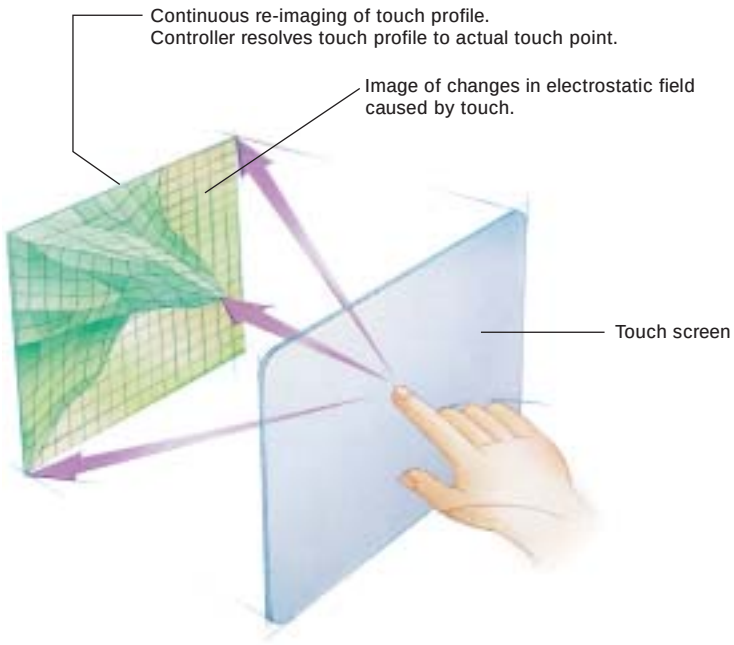
State-of-the-Art Electronics Platform

ClearTek solutions leverage the new, feature-rich EX II electronics platform — a unique, single-chip touch solution with embedded USB support. The EX II chip is a flexible, innovative ASIC chip that increases design versatility while ensuring support for future touch technologies. Take advantage of the EX II chip's enhanced electronic platform with wider temperature ranges, improved ESD/EMI resistance, 16k x 16k touch resolution, and the ability to field-upgrade your firmware with new touch features.

Near Field Imaging – Layer construction



Near Field Imaging – How it works



Near Field Imaging (NFI)

Projected Capacitive Technology

This patented solution uses sophisticated sensing circuits that detect a conductive object — a finger or conductive stylus — through a layer of glass, gloves, moisture, gels, paints, or other barriers. Sophisticated data acquisition and image processing ensure that NFI is accurate enough to control your applications consistently and precisely, yet sensitive enough to detect gloved-finger touches through moisture or other contaminants.

The touch screen's all-glass construction provides superior optical performance and continues to operate despite most scratching, pitting, and other surface damage from abrasives, chemicals, or vandals. The result — an exceptionally rugged, sensitive, and accurate touch screen for the most demanding applications.

Near Field Imaging touch screens consist of two laminated glass sheets with a patterned coating of transparent metal oxide between them. An AC signal is applied to the patterned conductive coating, creating an electrostatic field on the surface of the screen. When a finger — gloved or ungloved — or other conductive stylus comes in contact with the touch screen surface, the electrostatic field is disturbed and a touch is registered.

NOTICE: Given the variety of factors that can affect the use and performance of a 3M Touch Systems product, including that solid state equipment has operation characteristics different from electromechanical equipment, some of which factors are uniquely within User's knowledge and control, it is essential that User evaluate the 3M Touch Systems product to determine whether it is suitable for User's particular purpose and suitable for User's method of application. 3M Touch Systems' statements, engineering/technical information, and recommendations are provided for User's convenience, but their accuracy or completeness is not warranted. 3M Touch Systems' products are not specifically designed for use in medical devices as defined by United States federal law. 3M Touch Systems products should not be used in such applications without 3M Touch Systems' express written consent. User should contact its sales representative if User's opportunity involves a medical device application.

IMPORTANT NOTICE TO PURCHASER: Specifications are subject to change without notice. 3M Touch Systems' Products are warranted to meet their published specifications from the date of shipment and for the period stated in the specification. **3M Touch Systems makes no additional warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose.** User is responsible for determining whether the 3M Touch Systems products are fit for User's particular purpose and suitable for its method of production, including intellectual property liability for User's application. If a Product is proven not to have met 3M Touch Systems' warranty, then 3M Touch Systems' sole obligation and User's and Purchaser's **exclusive remedy** will be, at 3M Touch Systems' option, to repair or replace that Product quantity or to refund its purchase price. 3M Touch Systems has no obligation under 3M Touch Systems' warranty for any Product that has been modified or damaged through misuse, accident, neglect, or subsequent manufacturing operations or assemblies by anyone other than 3M Touch Systems. **3M Touch Systems shall not be liable in any action against it in any way related to the Products for any loss or damages, whether non-specified direct, indirect, special, incidental or consequential (including downtime, loss of profits or goodwill), regardless of the legal theory asserted. (11/01)**

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