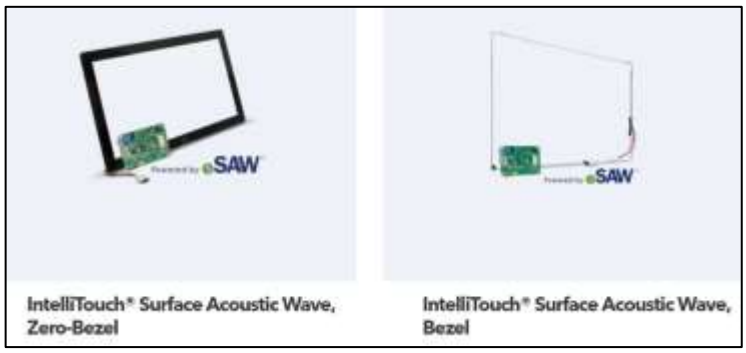
Executive Summary

This Technical Bulletin provides descriptions of Elo's various touchscreen technologies.

Touchscreens

1. Touchscreen Sensors
    a. **IntelliTouch/SecureTouch** – Surface Acoustic Wave technology (SAW), consists of a glass overlay with transmitting and receiving piezoelectric transducers for the X and Y axes. The controller sends a five-megahertz electrical signal to the transmitting transducer, which converts the signal into ultrasonic waves within the surface of the glass. These waves are directed across the touchscreen by an array of reflectors. Reflectors on the opposite side gather and direct the waves to the receiving transducer, which recovers them into an electrical signal. The process is repeated for each axis. When you touch the screen, you absorb a portion of the waves traveling across it. The received signals for X and Y are compared to the stored digital maps, the change is recognized, and a coordinate is calculated.
        i. For a full description of IntelliTouch technology see the Product Specification on the Elo website: https://docs.elotouch.com/components/touchscreen-components/PS600249_IT_Family_Spec.pdf
        ii. IntelliTouch is sold in three configurations; Zero-Bezel, Bezel, and SecureTouch.



IntelliTouch® Surface Acoustic Wave, Zero-Bezel

IntelliTouch® Surface Acoustic Wave, Bezel

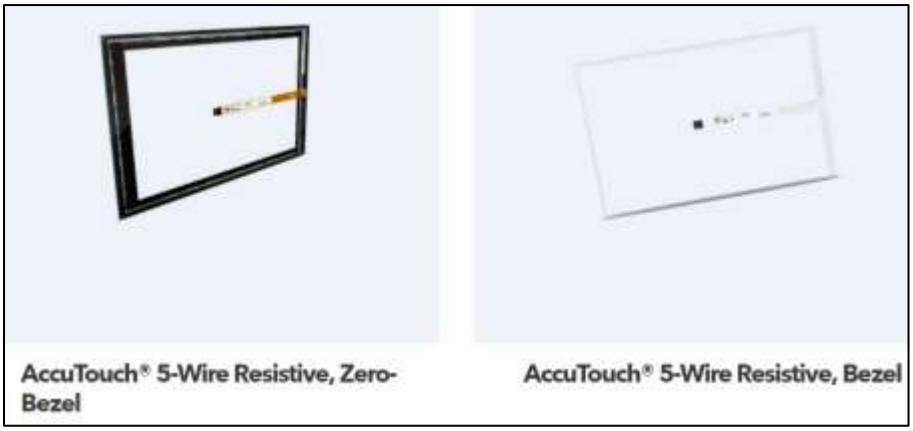

SecureTouch

        iii. **Benefits:** Completely flat touchscreen offers sleek, refined appearance • No bezel required for easy integration into touchmonitors, touch computers or other devices • Fast accurate, and stable touch performance • Tested to more than 50 million touches in one location without failure.
        iv. **Applications:** Desktop touchmonitors and all-in-one touchcomputers. • Public environments such as hotel lobbies, office buildings, auto dealerships, bank branches, gaming casinos, healthcare waiting rooms, retail stores and train stations • Point-of-information kiosks • Vending and ticket sales • Gaming, lottery, and amusement • Interactive Digital Signage • Banking and financial transactions • Industrial control rooms

b. **AccuTouch (5-Wire Resistive)** - AccuTouch five-wire resistive touchscreens consist of a glass panel with a resistive coating plus a coversheet with a conductive coating. The two transparent glass layers are separated by tiny insulating dots. When the screen is touched, the coversheet flexes to make electrical contact with the coating on the glass. The controller alternatively drives the X and Y axes on the glass layer with a +5V current and reads the resulting voltage from the cover sheet, which is the analog representation of the position touched.

   i. For a full description of AccuTouch technology, see the Product Specification on the Elo Website: https://docs.elotouch.com/components/touchscreen-components/5-wire-resistive-accutouch/PS600248_AT_Family_SpecB.pdf

   ii. AccuTouch is sold in two configuration options; Zero-Bezel, and with Bezel.



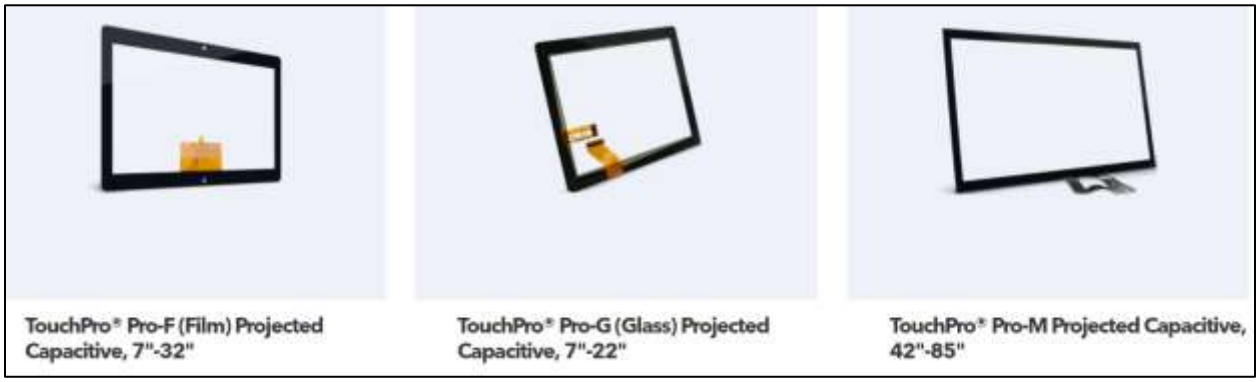
   iii. **Benefits:** Zero-bezel configuration for seamless design to eliminate the traditional bezel that can collect dust and dirt • 4H pencil hardness resists scratching • Flat cable attachments for seamless integration and customization capabilities • No lamination of additional décor foil is required which helps to reduce costs and supply chain complexity • Stable, drift-free operation • Broad input flexibility • Contamination resistance • Accuracy in high-use applications • Can be sealed to support NEMA 4/4x/12 and IP65 standards upon integration

   iv. **Applications:** Point-of-sale (POS) terminals • Voting machines • Industrial automation • Medical equipment • Office automation • Retail automation • Pharmacy automation

c. **PCAP (Projected Capacitive- TouchPro)** – PCAP technology

i. For more information and the differences between Elo's three different PCAP sensors, see the Whitepaper on the Elo website: https://docs.elotouch.com/collateral/Elo%20PCAP%20White%20Paper.pdf

ii. PCAP technology is sold in three different configurations; Pro-F(Film), Pro-G(Glass) for 7"-22", Pro-M(Glass) for 42"-85".



TouchPro® Pro-F (Film) Projected Capacitive, 7"-32"

TouchPro® Pro-G (Glass) Projected Capacitive, 7"-22"

TouchPro® Pro-M Projected Capacitive, 42"-85"

iii. **Benefits:** HID-Compliant (no drivers needed) • 10-point multi-touch standard • Large format options • Fast and sensitive touch response • Excellent optical clarity • Long-term stability over temperature • Optional surface treatments such as anti-glare

iv. **Applications:** Interactive digital signage • Gaming & lottery terminals • Industrial automation • Medical equipment • Point-of-Information & transportation kiosks • Education/white boards • POS solutions • Self-service/service automation

d. **Infrared technology (IR)** – Infrared technology uses a small frame around the display with LEDs and photoreceptors on opposite sides, hidden behind an IR-transparent bezel. The controller suquentially pulses the LEDs to create a grid of IR light beams. A touch obstructs one or more of the beams which identifies the X and Y coordiantes.

Infrared (IR)

i. **Benefits:** HID-Compliant (no drivers needed) • Low profile, high resolution • No parallax • Highest clarity • High durability, vandal resistance, and safety • Sealable from contaminants • Operates in extreme environments

ii. **Applications:** Food processing • Industrial automation • Medical equipment • In-vehicle and transportation • Point-of-sale (POS) terminals