

Size does matter



THE SAFEST CHOICE

TELEREX

P-CAP technologie tot 82"

Telerex Nederland, Wesley Witteveen

► Electronics

► Electromechanical

► Computer Solutions

► Motion Solutions

THE SAFEST CHOICE

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Hoofdstukken

- ▶ Inleiding, 8 Lakes -Telerex
- ▶ Markt / Eindgebruiker
- ▶ Technologieën
- ▶ P-CAP
- ▶ Zytronic
- ▶ Casestudie Project ILS
- ▶ Casestudie Project Sutronic, Koopgoot
- ▶ Casestudie Project Cityscape, Tommy Hilfiger
- ▶ Multi-touch

Inleiding

► Telerex - 40 jaar toeleverancier OEM

ISO 9001

AEO Certificate

ROHS/REACH

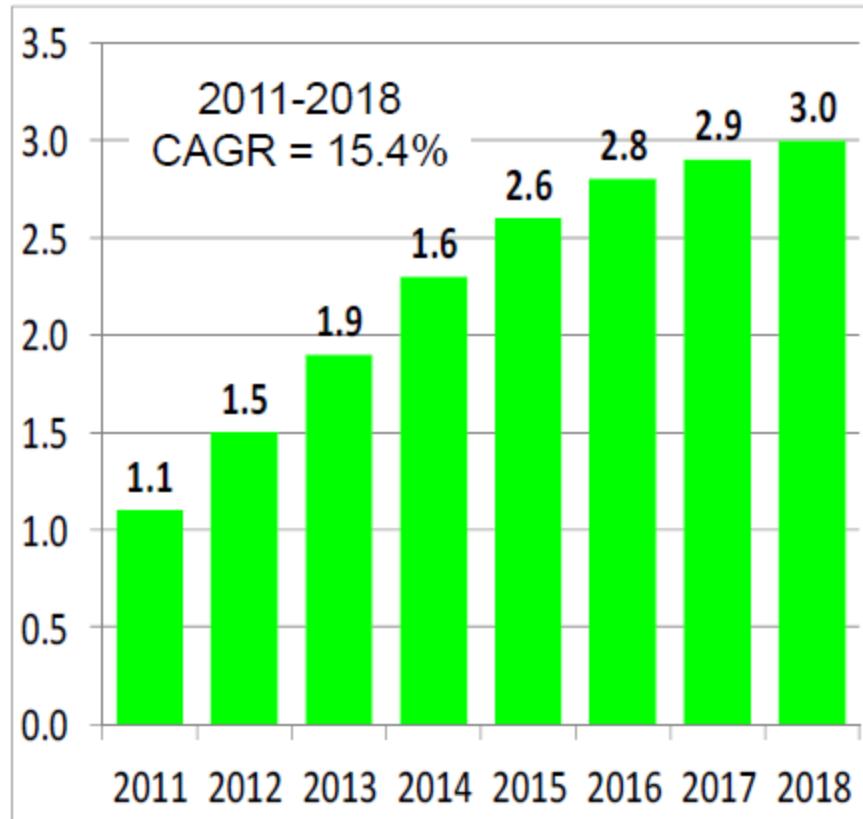


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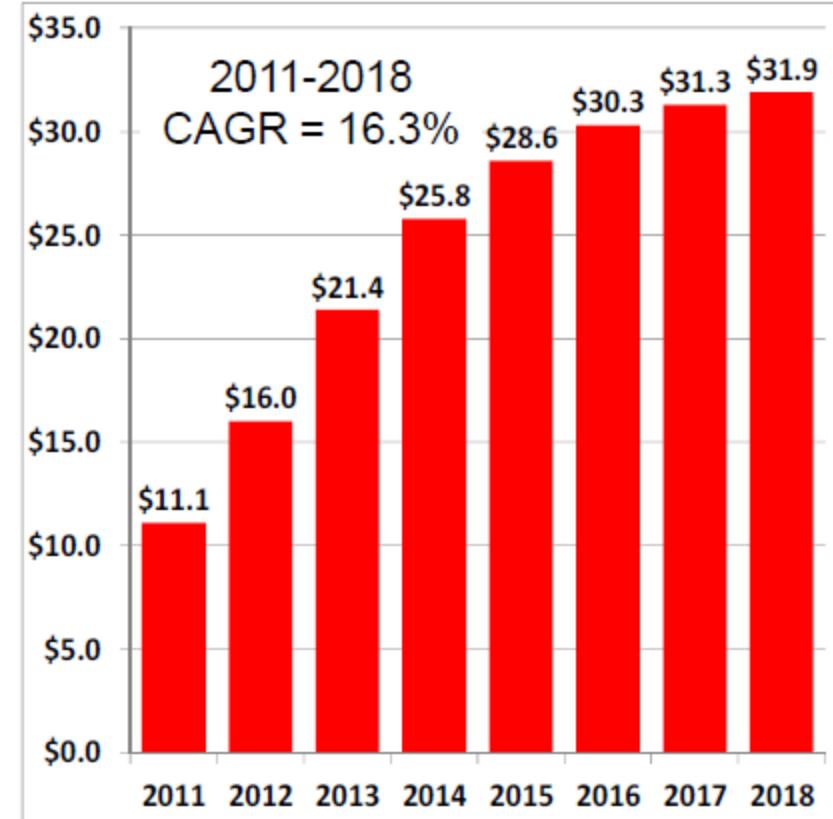
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Markt ontwikkeling touch

Units (Billions)



Revenue (\$Billions)



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Markt / Eindgebruiker

► Referentie – Tablets en Smartphones

IPAD - NeXus 7

Gebruikservaring / Software

1000k+



► OEM Markt

Technologie

Industriële omgeving

Bediening

Custom maatvoering

<100



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Technologieën

► Resitive

4 – 5 wire resistive

Analoog / Digitaal multi touch

► Acoustic

Surface acoustic wave

Acoustic pulse recognition

► Optical

IR or Waveguide IR

Multi-Touch IR

Camera based

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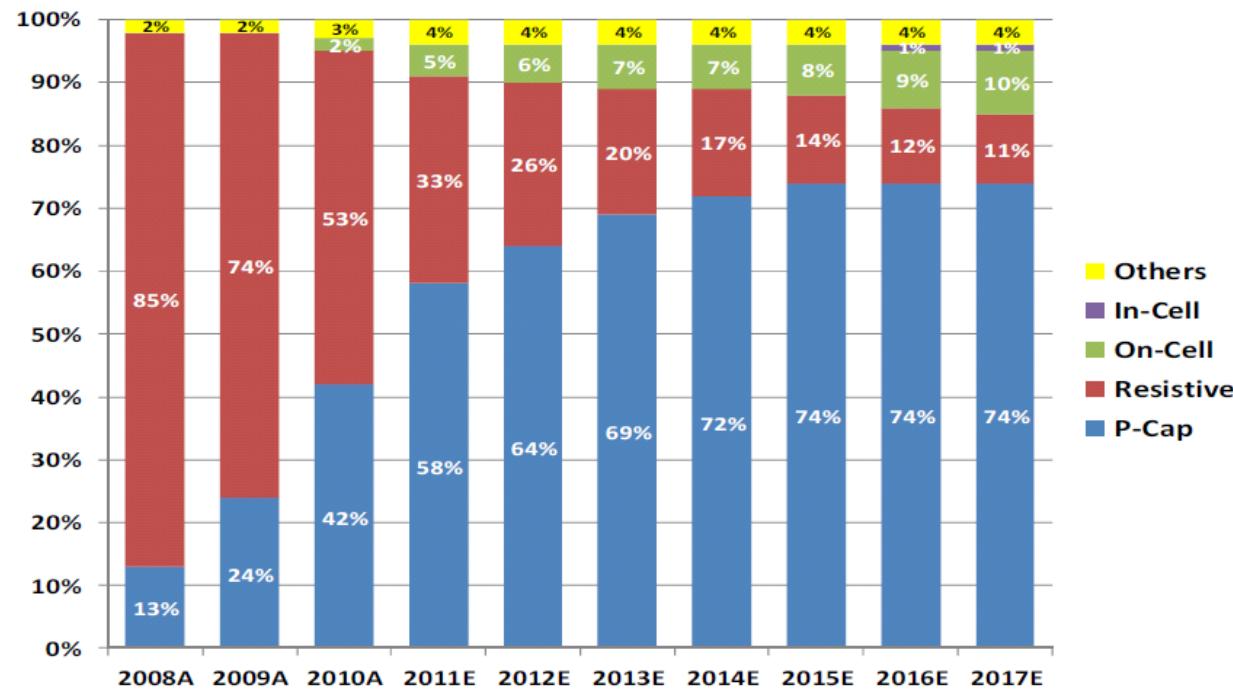
Technologieën

► Capacitive

P-CAP

Surface Capacitive

% of Units Shipped



Technologieën

Touch Technology	What's Being Measured
Projected capacitive, Embedded (capacitive)	Change in capacitance
Surface capacitive	Current
Resistive (all forms) & Embedded (voltage-sensing)	Voltage
Surface acoustic wave	Ultrasonic wave amplitude
Acoustic Pulse Recognition & Dispersive Signal Technology	Bending waves
Infrared & Camera-based (all forms), Planar scatter detection	Absence or reduction of light
Vision-based	Change in image
Embedded (light-sensing)	Presence of light
Force sensing	Force

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P-CAP

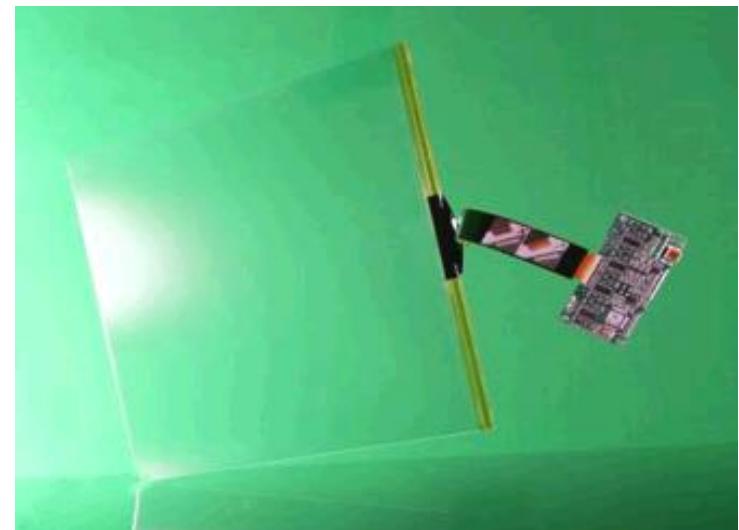
- ▶ Meerdere touch punten
- ▶ Extreem lichte touch bediening
- ▶ Perfecte optische eigenschappen
- ▶ Vlakke bezel
- ▶ Betrouwbaar
- ▶ (Klant specifiek?)

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Zytronic

- ▶ Pioneers in projected cap touch
- ▶ 30 jaar ervaring in verwerken van glas en poly
- ▶ Totale productie in eigen beheer
- ▶ Eigen R&D
- ▶ Continue product updates



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Zytronic

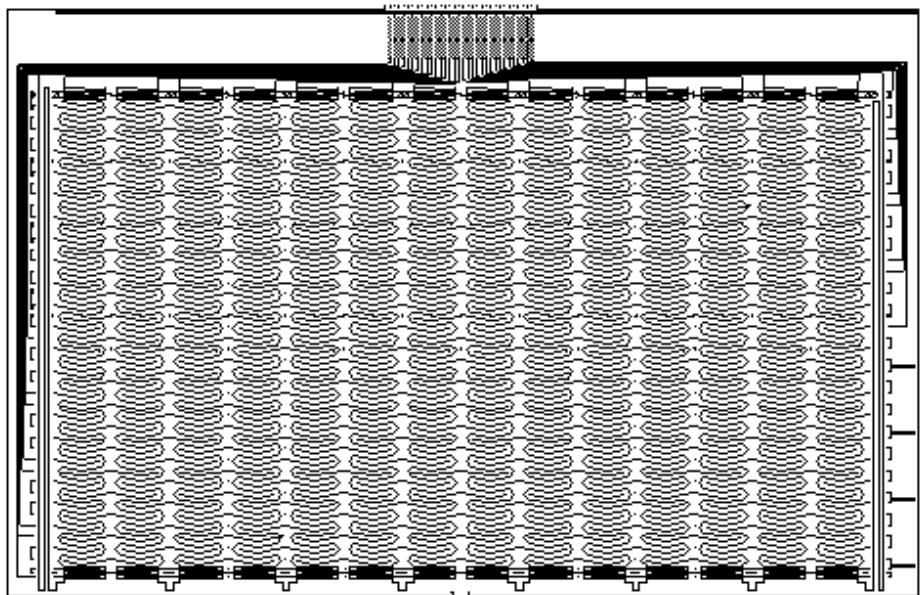
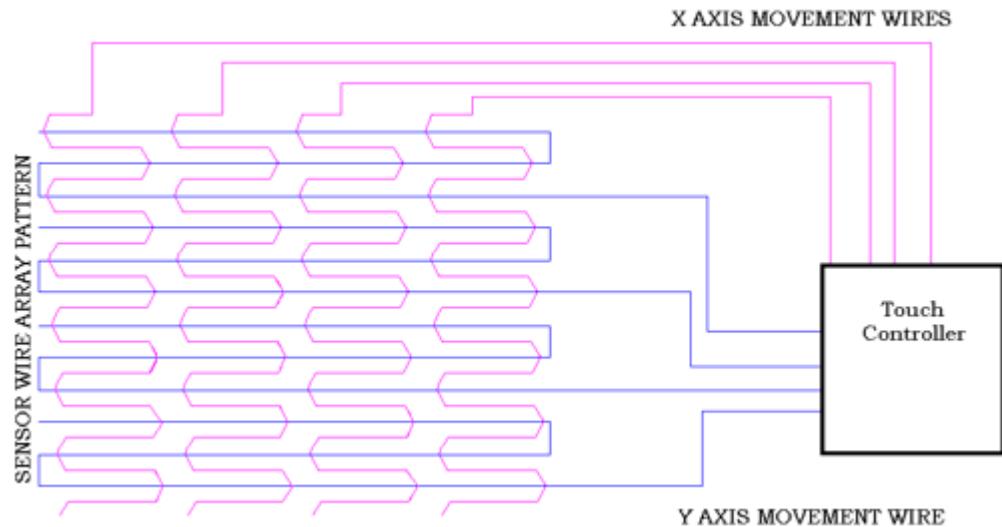
- ▶ 2000 – Eerste PCT
- ▶ 2001 – Launch Zytouch
- ▶ 2005 – Zybrid en Zypos
- ▶ 2006 – Zyfilm en Zyprofile
- ▶ 2010 – ZXY dual touch controller
- ▶ 2012 – MPCT large format
- ▶ 2013 – ZXY300 multi -touch

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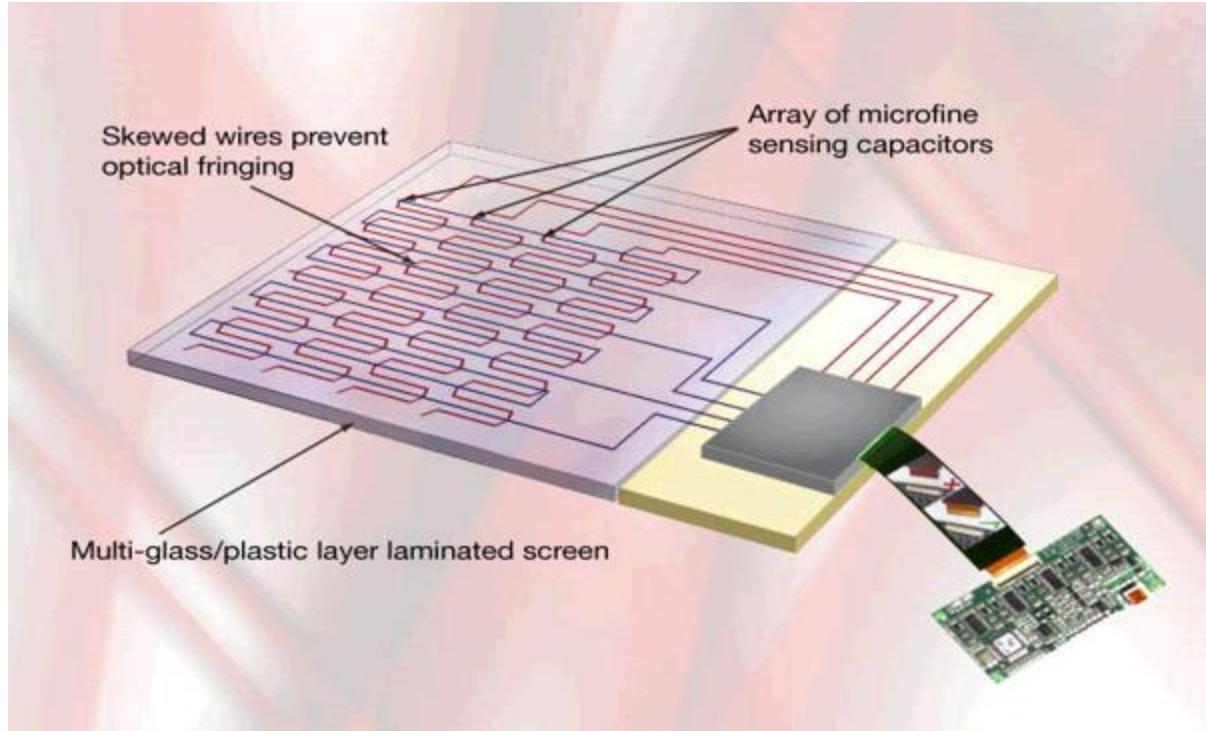
Zytronic

► X-Y Wire pattern



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Zytronic

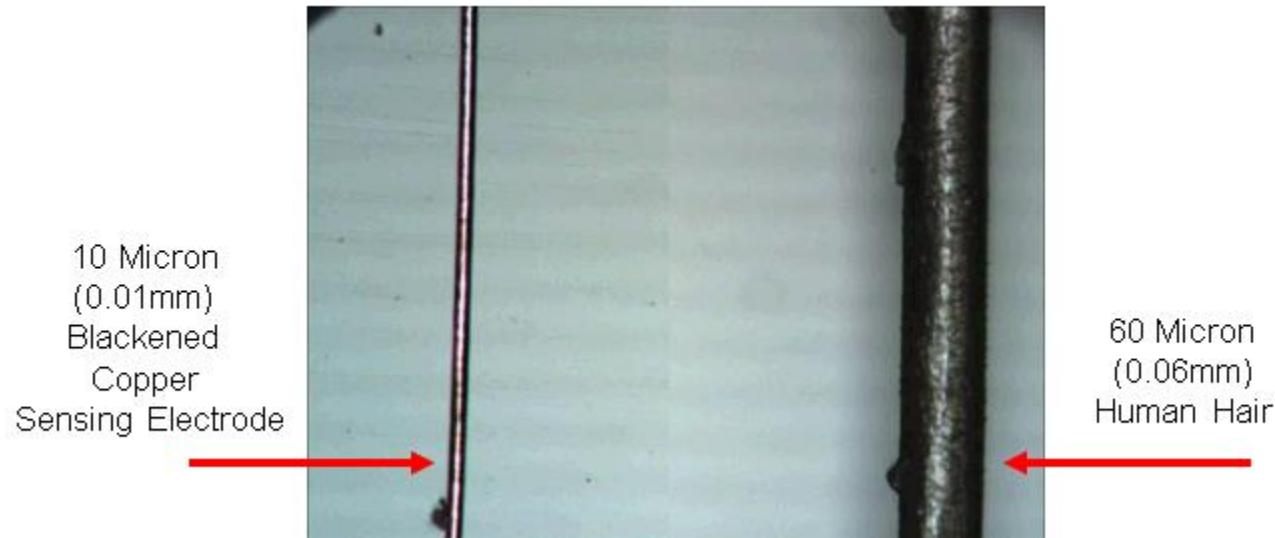


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Zytronic

- X –Y Wire μm dunner dan een mensenhaar



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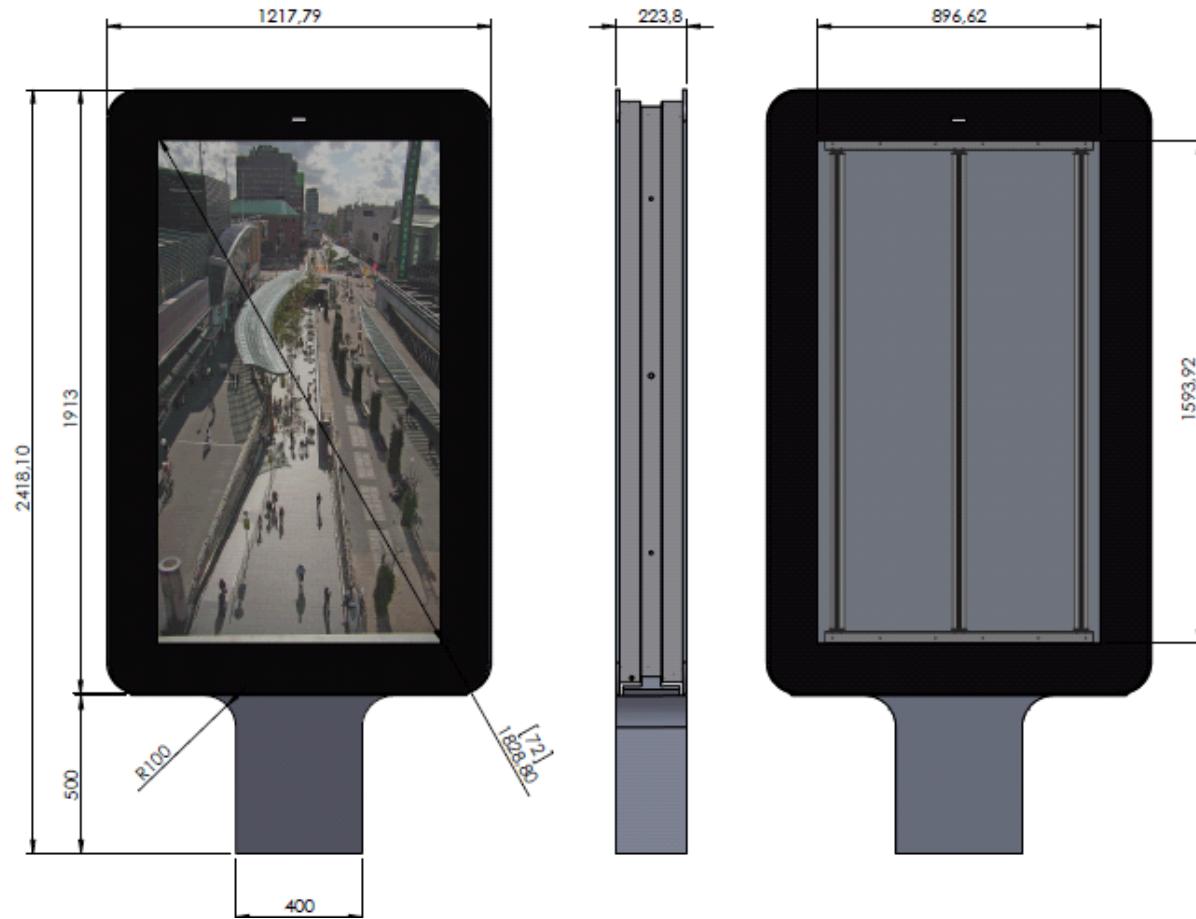
Zytronic

- ▶ Wires tov ITO
- ▶ Welke voordelen
- ▶ Custom tot 82" en groter??
- ▶ Case studies
 - ▶ Intelligent Lectern Systems B.V.
 - ▶ Surtronic International B.V.
 - ▶ Cityscape Media B.V.

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Surtronic International B.V.



THE SAFEST CHOICE
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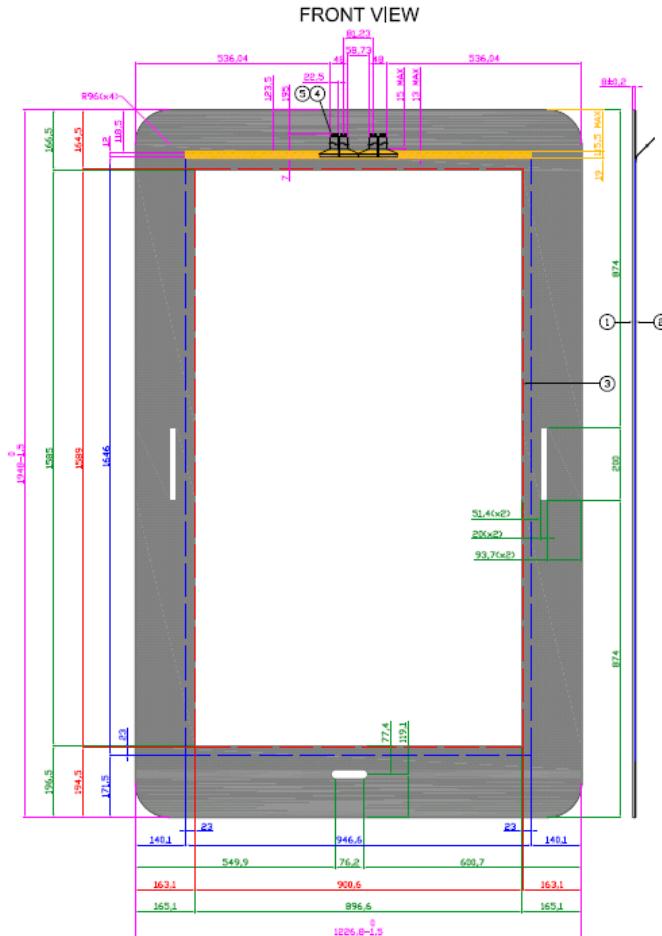
Surtronic International B.V.

- ▶ Vandaal bestendig
- ▶ Betrouwbare techniek
- ▶ Eenvoudig onderhoud
- ▶ Linux en Windows
- ▶ Hoge temperaturen
- ▶ Vooral groot
- ▶ IP65

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Surtronic International B.V.



1. 8,0mm PLAIN THERMALLY TOUGHENED GLASS GROUND & POLISHED WITH A 1,0mm 45° CHAMFER ON GLASS EDGES INCLUSIVE OF A PRINTED CERAMIC BLACK STRAIGHT LINE BORDER ON REAR FACE OF GLASS
2. HARD COATED POLYESTER FILM
3. ACTIVE AREA - BLACKENED WIRE
4. FLEXIBLE CABLE
5. SERIAL NUMBER STICKER ON FLEXI TAIL
6. KAPTON TAPE

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Surtronic International B.V.



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Cityscape Media B.V. TOMMY HILFIGER

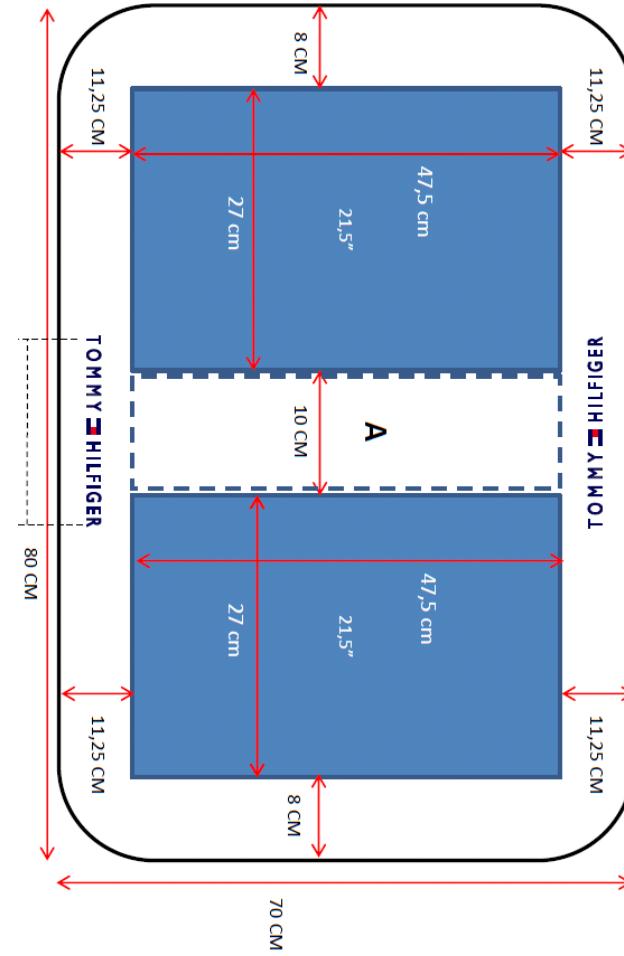


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Cityscape Media B.V. TOMMY HILFIGER

- ▶ 2x 22" in 1 glasplaat
- ▶ Vlakke bezel
- ▶ Custom design
- ▶ Image / Kleur gebruik
- ▶ Vandal / Child proof
- ▶ Windows 8



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Cityscape Media B.V. TOMMY HILFIGER

COLOR SPECIFICATION

Color is a very important part of a brand's identity. Many iconic brands use carefully chosen colors to make sure their logo remains distinct. Proper use of color can have a dramatic effect on how a logo or brand is perceived.

People recognize authentic Tommy Hilfiger products through proper use of our logo, including color treatment. In a world full of counterfeit garments, the proper use of our trademark is essential in signifying an authentic brand product. This is why it is so important to maintain consistency, even with color, at all times.

Traditionally, text should always appear in Tommy Hilfiger Blue. However, this does change when necessary, depending on the background.

All Tommy Hilfiger colors will be produced with the Pantone Matching System (PMS). The PMS color system is the most reliable color reproduction system available, and we should see a dramatic drop in color variations on our printed materials. Please be aware that there may still be discrepancies in color quality.

These are generally caused by:

- Change of texture / composition of colors within the worldwide PMS.
- Differences in paper from year to year.

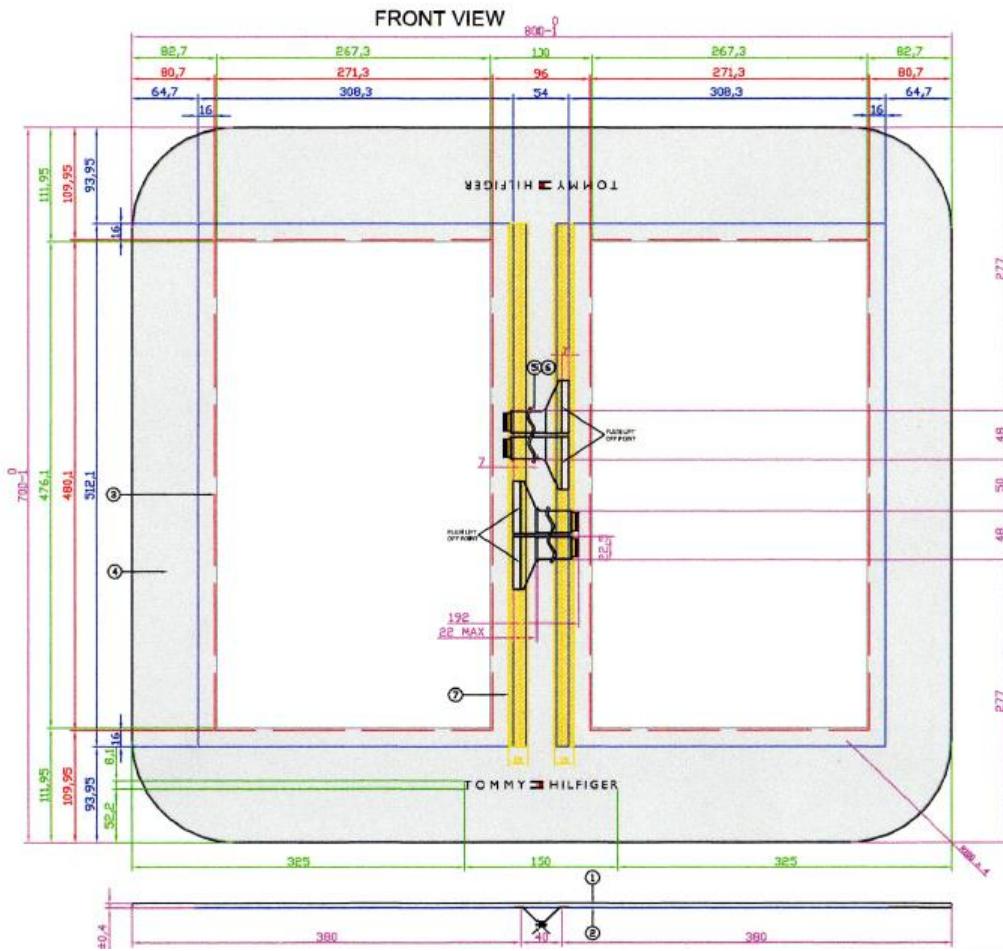
These are the Tommy Hilfiger color codes and specifications according to PMS and other systems:

TOMMY  HILFIGER

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Cityscape Media B.V. TOMMY HILFIGER



NOTES:

1. FRONT GLASS 4.0mm WATER WHITE THERMALLY TOUGHENED GROUND & POLISHED WITH AN R4 PENCIL EDGE
2. HARD COATED POLYESTER FILM
3. ACTIVE AREA - BLACKENED WIRE
4. PRINTED WHITE RAL 9003 STRAIGHT LINE BORDER ON REAR FACE OF GLASS 1.2mm±0.5mm AWAY FROM GLASS EDGE, (TOMMY HILGIFER LOGO IN BLUE BLACK RAL 5004 WITH WHITE BACKING AND RED PANTONE 186C WITH WHITE BACKING)
5. FLEXIBLE CABLE
6. SERIAL NUMBER STICKER ON FLEXI TAIL
7. TAPE

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Cityscape Media B.V. TOMMY HILFIGER



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Intelligent Lectern Systems B.V.

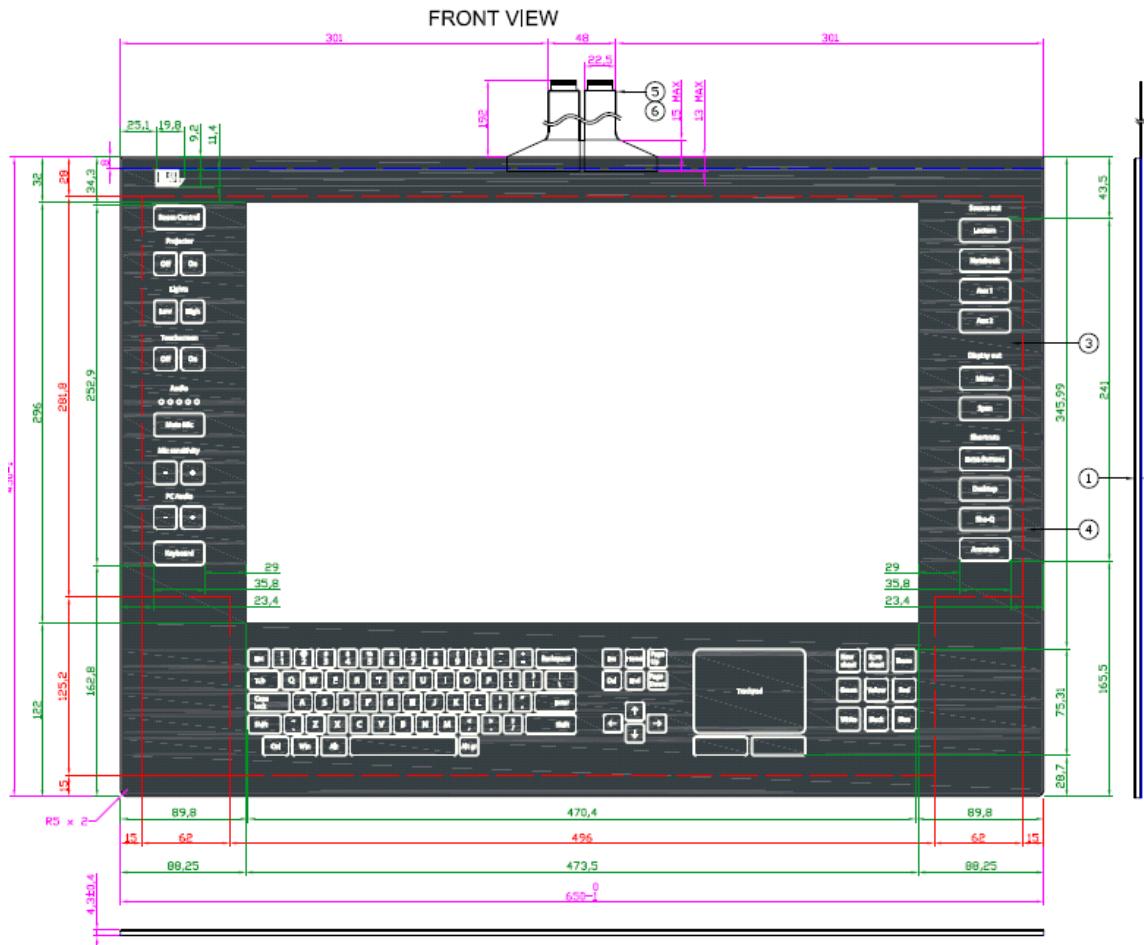
- ▶ Bestaand design
- ▶ Bestaande maatvoering
- ▶ Touch + Knoppen
- ▶ Hybride opbouw
- ▶ Windows 7 en 8
- ▶ 28,3"
- ▶ Dual naar Multi touch



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Intelligent Lectern Systems B.V.



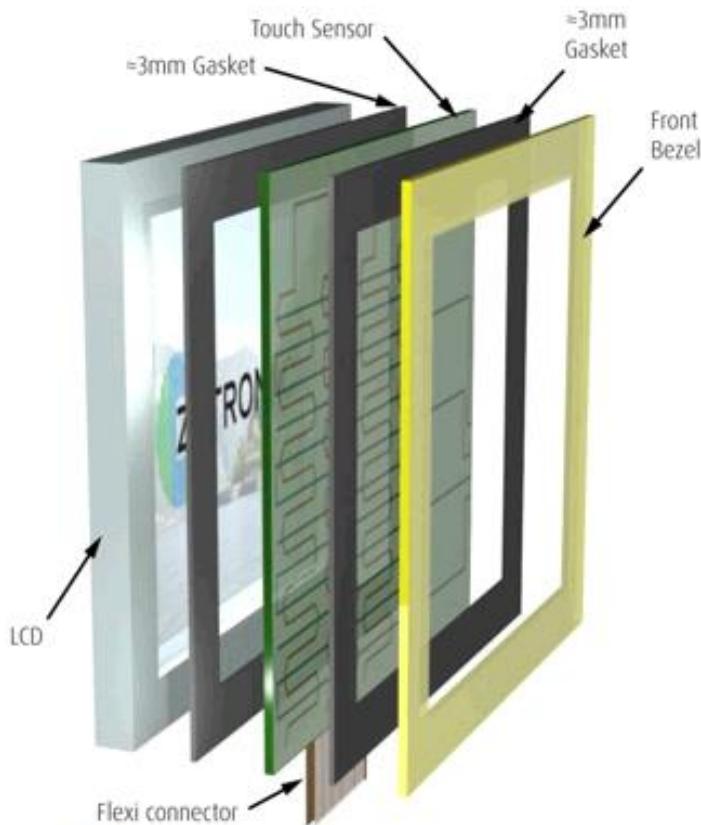
NOTES:

1. FRONT GLASS 4.0mm ANTI-GLARE THERMALLY TOUGHENED GROUND WITH A 0.5mm 45° CHAMFER
2. HARD COATED POLYESTER FILM
3. ACTIVE AREA - BLACKENED WIRE
4. PRINTED GREY RAL 7016 STRAIGHT LINE BORDER ON REAR FACE OF GLASS 1.5mm±0.5mm AWAY FROM GLASS EDGE (ALL DETAIL NON-PRINTED)
5. FLEXIBLE CABLE
6. SERIAL NUMBER STICKER ON FLEXI TAIL

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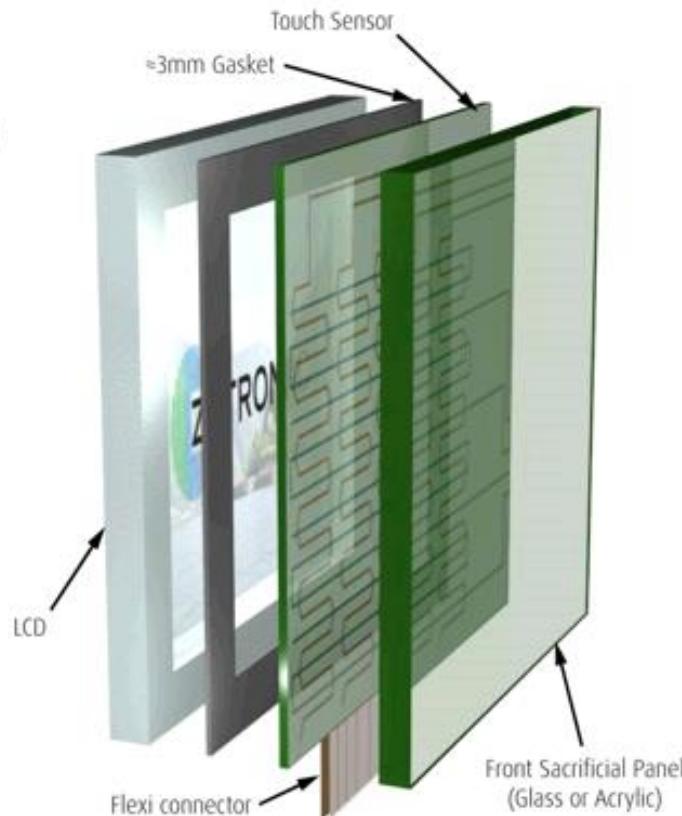
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Intergratie



Direct Touch Solution

- Finger or gloved hand applied directly to the surface of the sensor



Through Glass Touch Solution

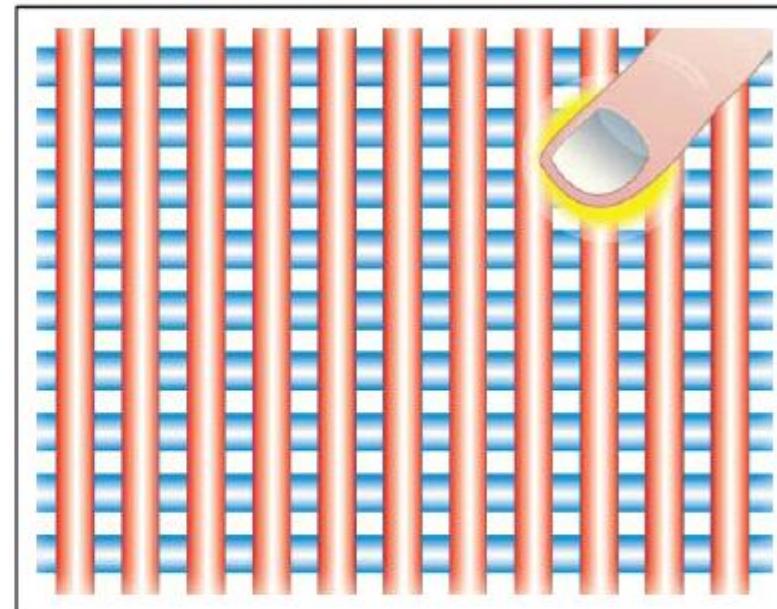
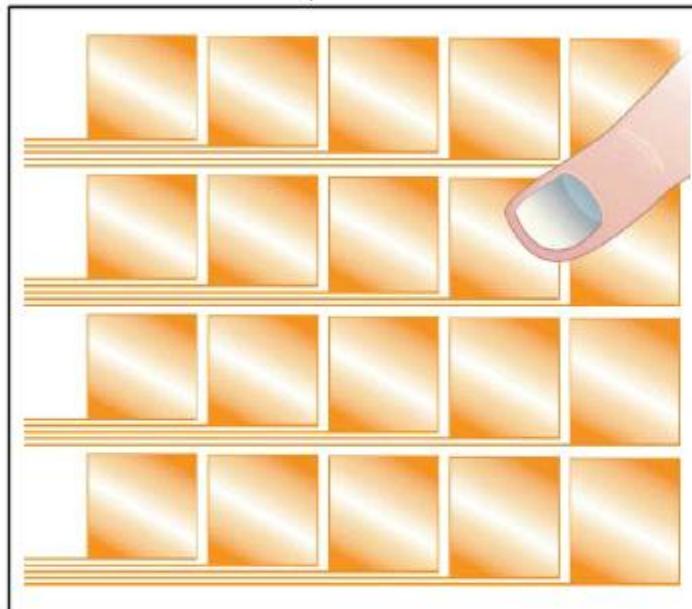
- Sensor activated through thick front sacrificial material (Glass or Acrylic)

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Dual Touch - Multi Touch

Self-capacitance electrode variations



Source:
3M

- ◆ Multiple separate pads in a single layer
- ◆ Each pad is scanned individually
- ◆ Rows and columns of electrodes in two layers
- ◆ Row & column electrodes are scanned in sequence

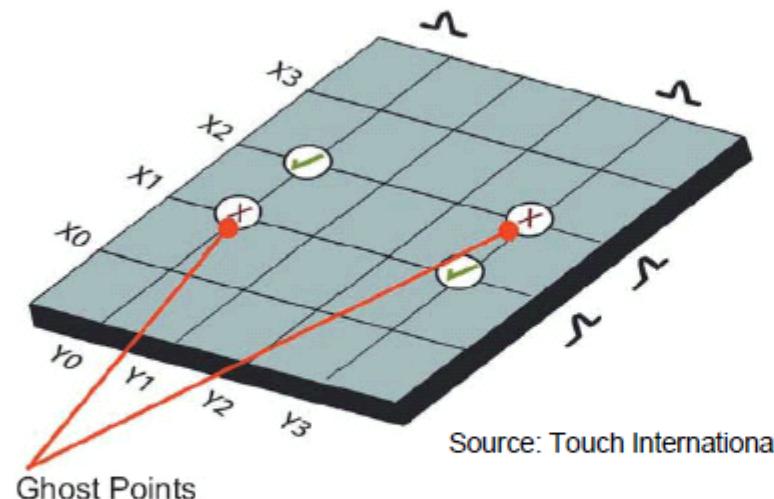
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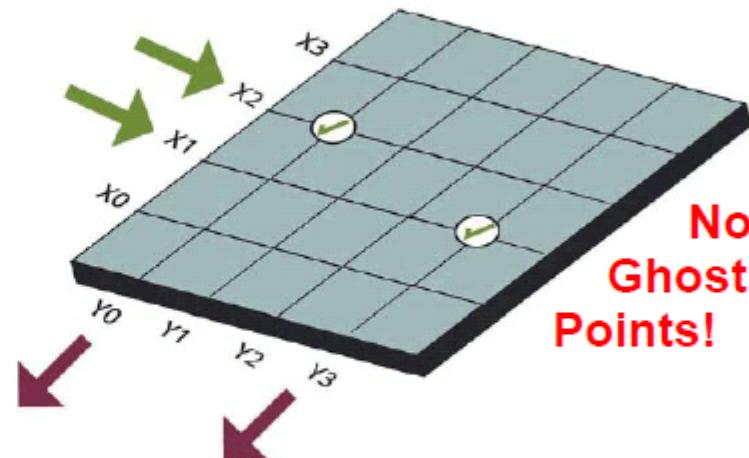
Dual Touch - Multi Touch

The problem with self-capacitance

Self Capacitance



Mutual Capacitance



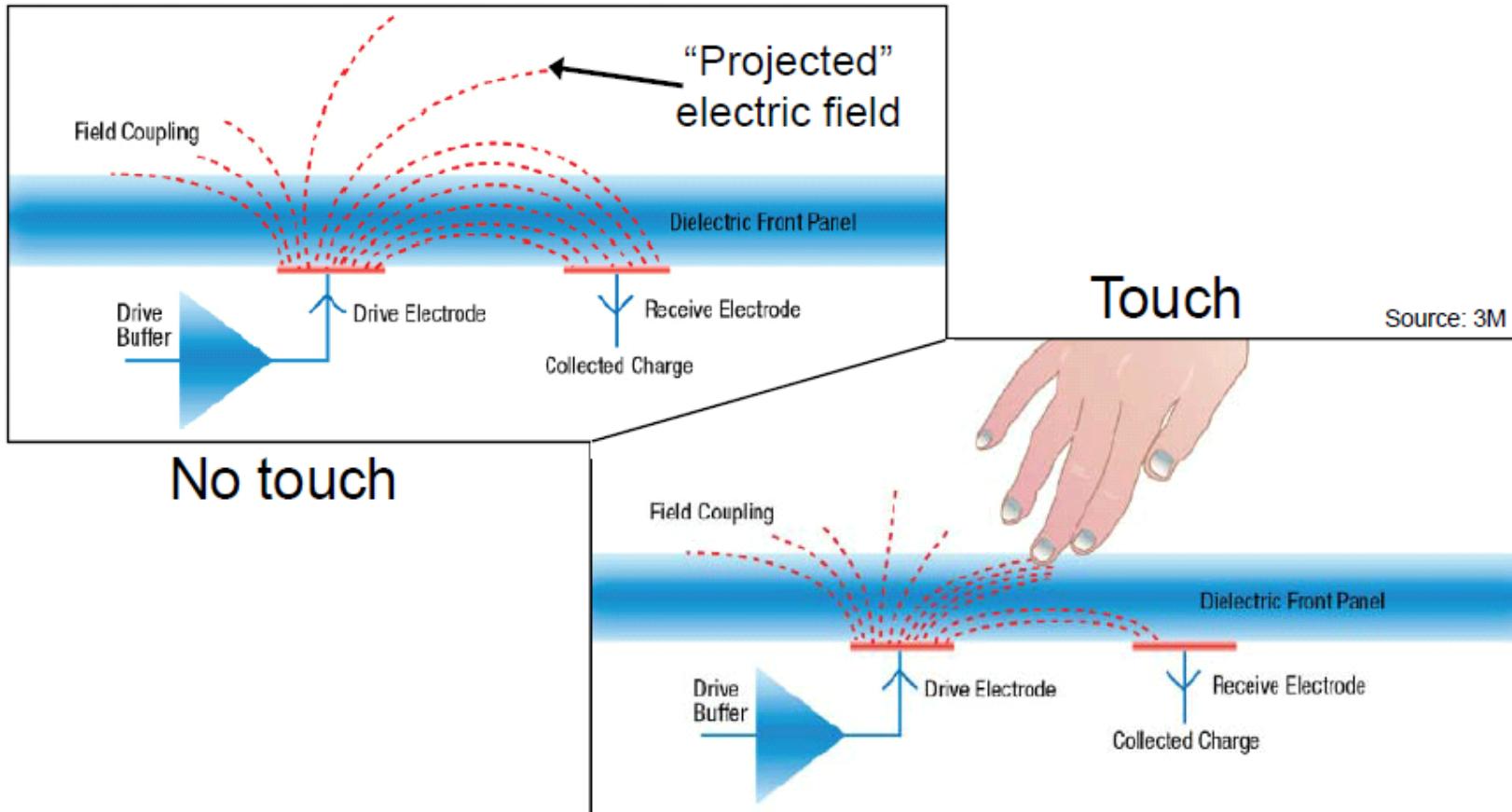
- ◆ Touches that are diagonally separated produce two maximums on each axis (real points & ghost points)
 - Ghost points: False touches positionally related to real touches

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Multi Touch

Mutual-capacitance principle



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Multi Touch

Zytronic's new multi-touch large-format p-cap

- ◆ Previous Zytronic products were self-capacitive (2-touch max)
 - Binstead's frequency-variation patent was the basis of sensing
- ◆ New product is mutual-capacitive with very dense electrode pattern
 - Traditional measurement of capacitance reduction caused by finger
 - ~1.5 mm electrode spacing in 6 mm x 6 mm cell
 - Density reduces visibility because the human visual system sees a more uniform contrast
 - 10-micron insulated copper wires allow crossover ("single layer")
 - 100's Ω/m at 10 μm
 - Can be applied to glass or film (including curved surfaces)
 - Initial controller handles all sizes up to 72"; 100"+ possible
 - Minimum 10 touches with palm rejection

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Vragen?

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