



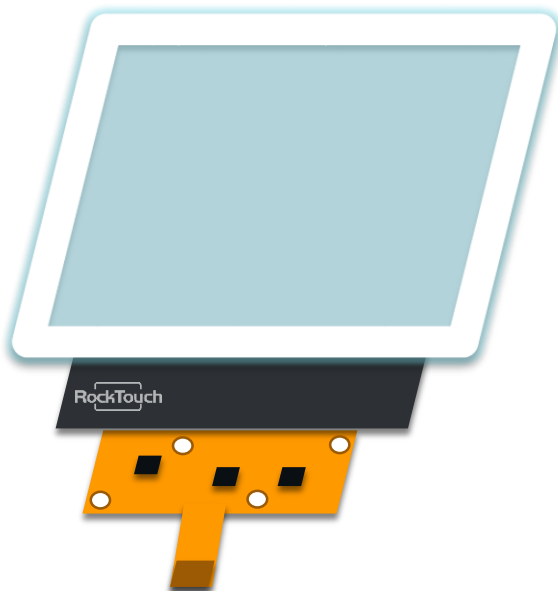
PCAP Touch Technology and Integration,
passing EMC regulations & new FW capabilities

Speaker: Eng. Davide Terrenghi

User Interface Design
Engineering & Design
6 April 2016 Eindhoven

Agenda

Here are the key points of today's presentation of Rocktouch Projected Capacitive Product Line



Product Concept and Line

The unique Embedded Family concept applied to touch screen product

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Rocktouch A Vs X Vs H2O line

Simple comparison between 3 main embedded lines

.....



Firmware: The Core

Explaining the core technology of Pcap and how they can adapt to different situation

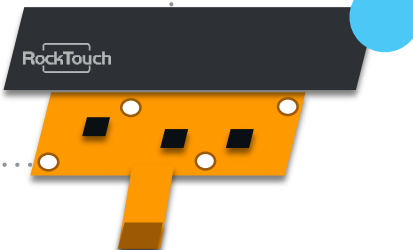
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How to integrate Pcap?

Mechanical is very important part for a good function of the Pcap into the final application

.....



Rocktouch Strength

What are the strength of Rocktouch Products?

.....



Case Studies

Some Rocktouch Comparison to Competitors and few Winning Case of Rocktouch Products

.....



A Road Map to the Future

Rocktouch keep innovating

.....



Company Organization and Milestone

Our international organization and company milestones

.....



Factory Certification and Production Capacity

Fully automated production line integrated with Japanese automation control and high standard certifications

.....



Product Concept and Family Line

Introduction of:

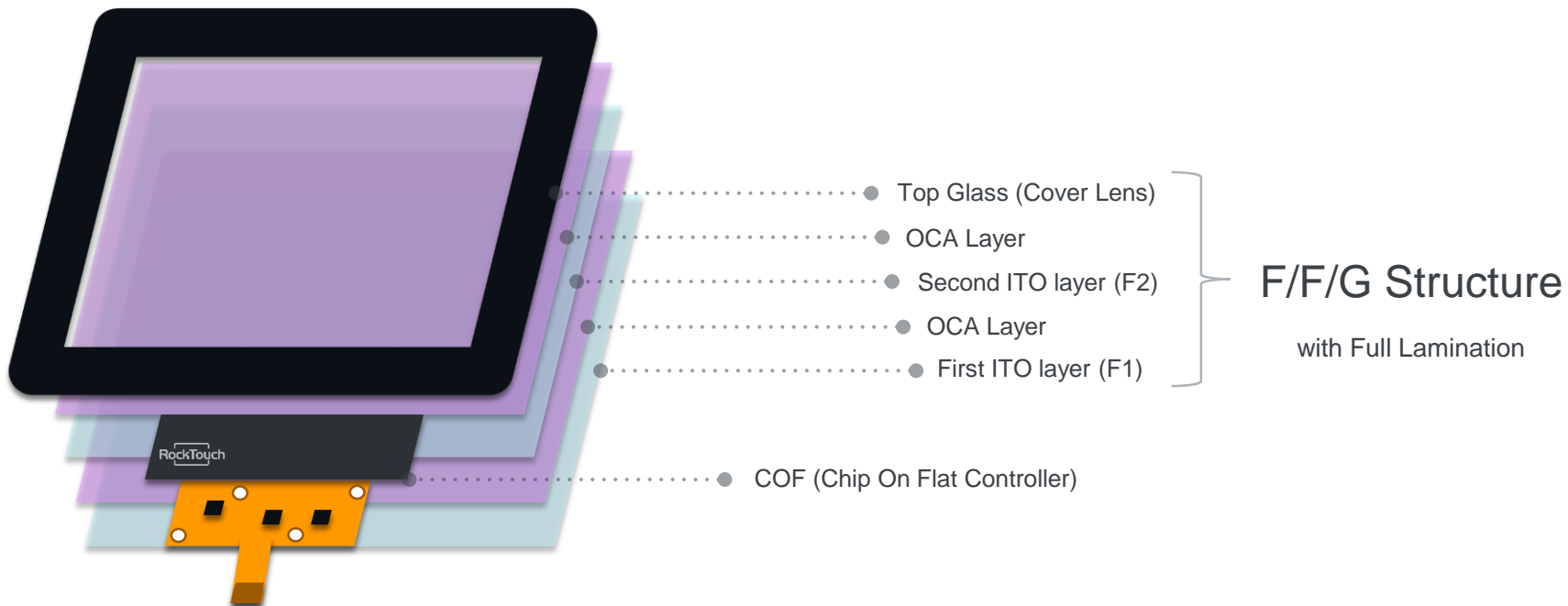
Technology

Full Product Family & Concept

Customization Availability

A brief introduction of our Technology

The following is the structure of our Projected Capacitive Technology

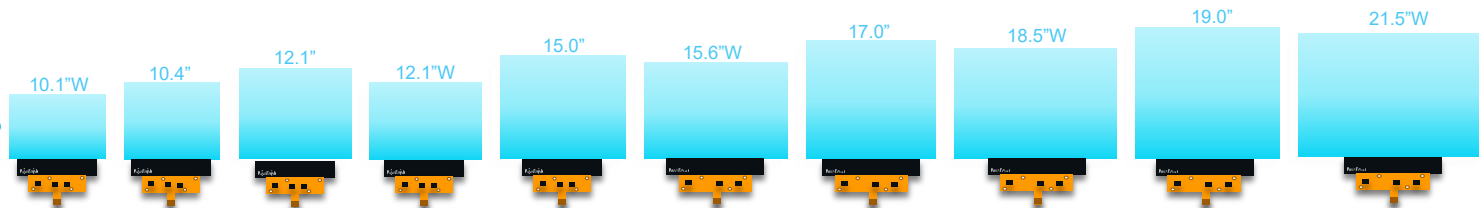


The Industrial Embedded Family Line Concept

Touch screen market have no standard such as Motherboard Market (ITX, Mini-Itx, etc), RockTouch **create** a standard for Touch

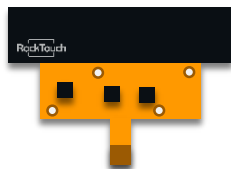
10 F/F Sizes

Embedded Family from 10.1"W up to 21.5"W matching major LCD display



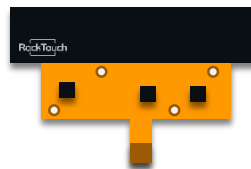
Industrial COF1

Advanced Design:
Fixing Holes + Extra Grounding
Drive touch from
10.1"W up to 15.0"



Industrial COF2

Advanced Design
Fixing Holes + Extra Grounding
Drive touch from
15.6"W up to 21.5"W



Same Pinout!!!



6 Pins only

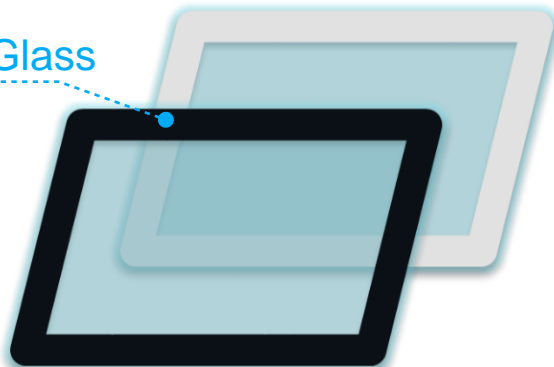
1 mm pitch (easy to Plug)
Stiffener for strong locking
3 different Optional Interfaces
USB
I2C
SERIAL

The Standard Cover Lens Family Line

We are able to provide our customers with our own Industrial Standard Cover Lens in Black, White and Transparent

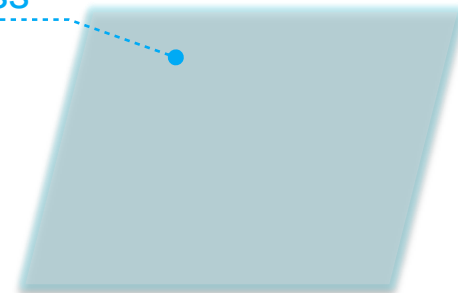
Black and White Glass

- Same outside dimensions
- Same R10 design
- Same border design



Transparent Glass

- Super slim design
- Small OD dimensions



3 mm Thickness

- Semi Tempered Glass
- PMMA printing



6 mm Thickness

- Fully Tempered Glass
- Ceramic printing



1.1 mm Thickness

- CS glass
- 10.1"W up to 15.6"W



1.8 mm Thickness

- CS glass
- 17.0" up to 21.5"W



Custom Cover Lenses?

Our customers can customize our Cover Lenses in according to their product designs

Cover lenses Options

Different Colors

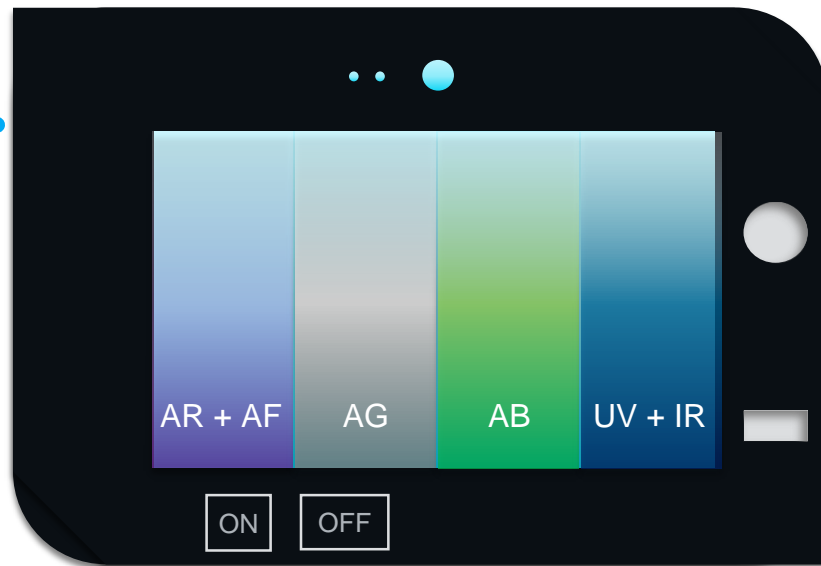
Different Printings Style

Different Shapes and Holes

Transparent Area

Buttons with semi transparent effect

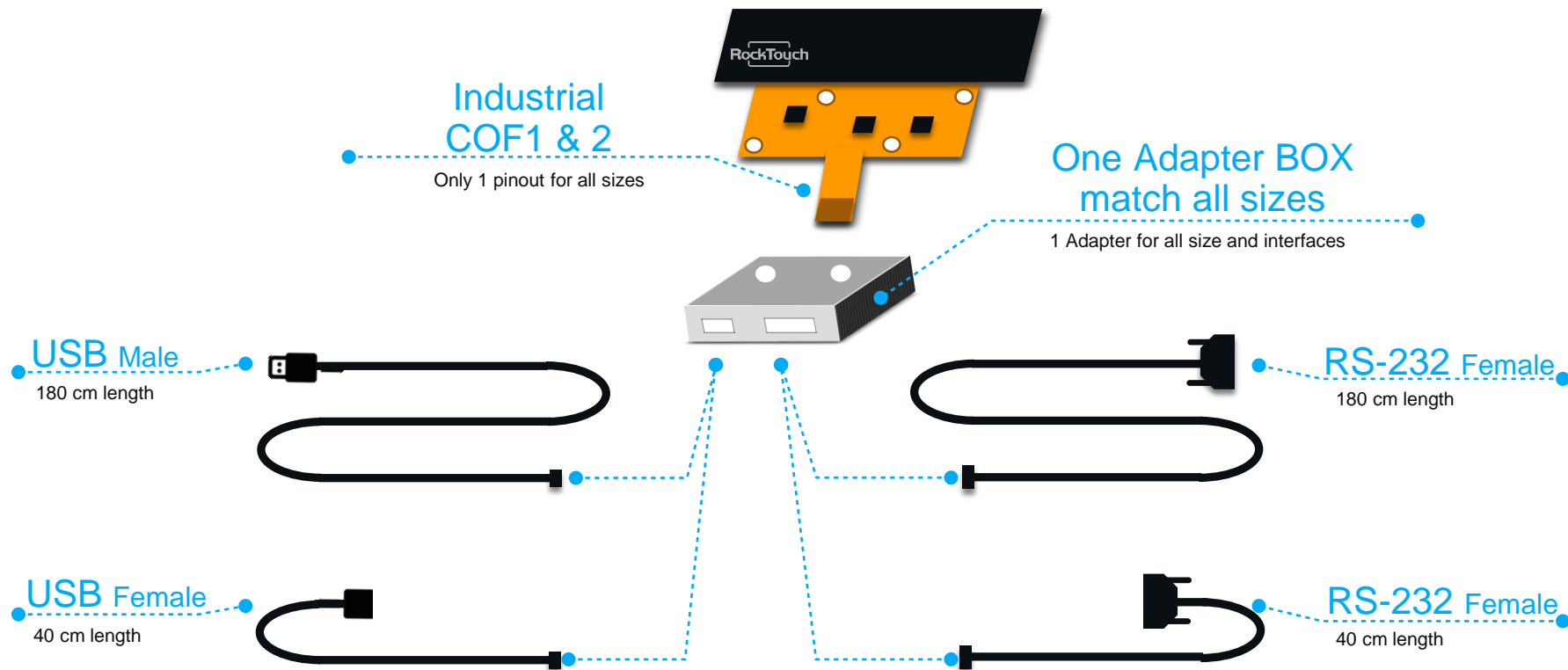
Surface treatments



Thickness From 0.4 mm
Up to 10 mm

The Embedded Accessories

Our clients are able to decrease expenses on accessories as all our accessories are compatible to all sizes of Touch





A Vs X Vs H2O line

A simple comparison between the 3 main lines
Of Rocktouch Embedded Design

The 3 Industrial Products Line

The A line is the first Industrial Line, Then X line (XcalibuR) was added later. And now our newest line is X-H2O for full water features



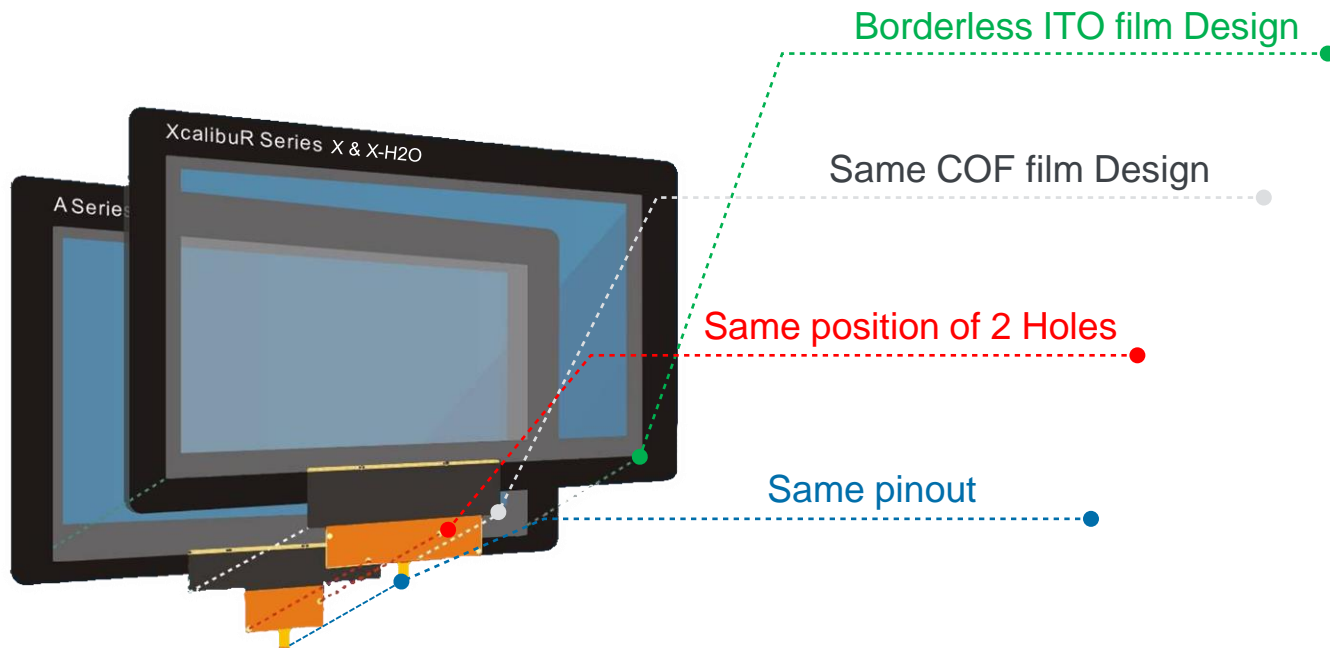
A line Vs XcalibuR Vs X-H2O line

In 2012 we developed our first industrial Pcap line called A LINE, main features are: 2 fingers with front glass up to 6 mm.

As February 2015 we launch our new XCALIBUR LINE, featuring 10 fingers, Palm Rejection, Water Rejection and Air Gap Solution.

As February 2016 we add a new XcalibuR line called X-H2O, this new line will support a full water feature for outdoor application

As an industrial manufacturer, we ensure our customers high product quality and technological innovation by providing our customers with backward compatibility for our products.



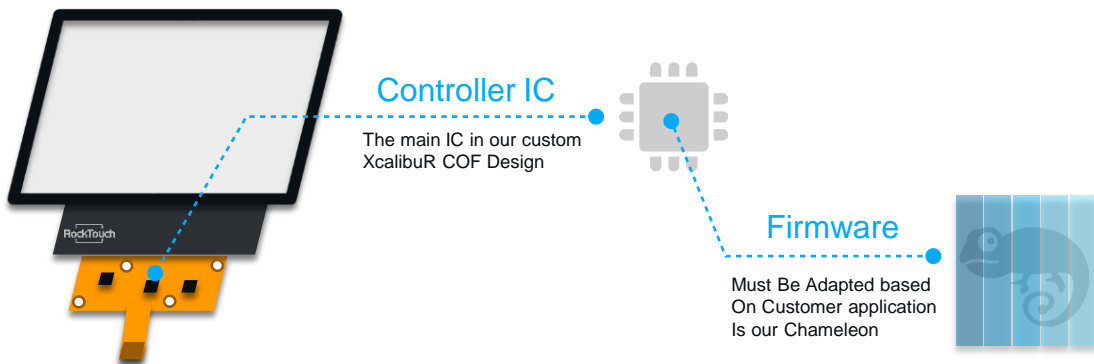


Firmware: The Core

What are the firmware capability?

FIRMWARE: The Core Of The Touch Technology

The core of the Pcap is the **Firmware** part and must be customized for each customer application



FIRMWARE: the amazing features of Rocktouch

Here the features possible with Rocktouch Touch Panel with standard or customized controller



Fingers Number



Water Droplet



Medical Gloves



Passive Pen



Glass Thickness



Rain Water



Industrial Gloves



Active Pen
Pressure Sensitive



Multiple Frequency



Sea Water



Palm Rejection



Pencil



High SNR



Ice and Snow



Light Freq Cutting



Air Gap



Mechanical Integration

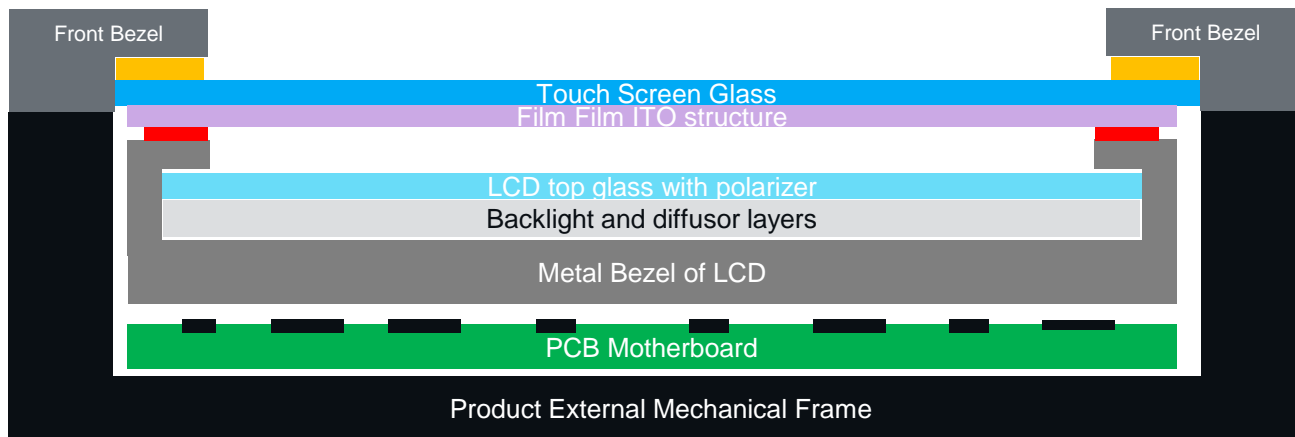
How to correctly integrate Pcap?

3 common cases of integration

How to do a correct Mechanical Integration?

Pcap technology is very sensitive to the surrounding, of course Pcap company must tune correctly the firmware for each customer application, but on application side we must have a correct mechanical integration, otherwise Pcap will never work correctly, this is a general guideline how to do that

Case 1: Transparent Cover Lens Design Pcap, DSA (double side tape, 3M or similar), TFT LCD, Motherboard, Mechanical



2D View



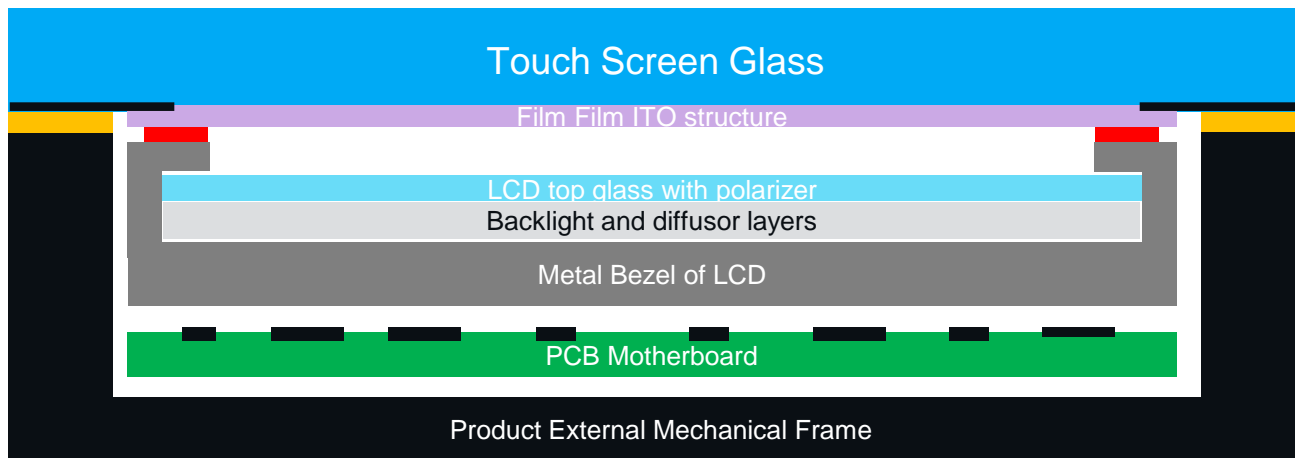
3D View

- DSA between LCD and Touch: min suggested thickness is 1 mm
- DSA between Mechanical and Touch: min suggested thickness is 2 mm

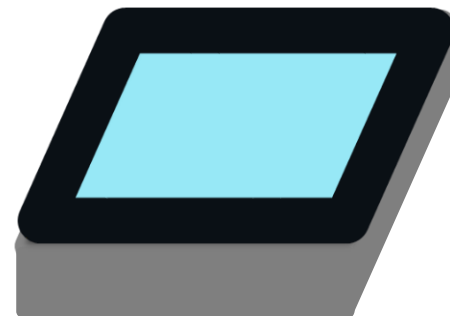
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Case 2: Flat Cover Lens Design Pcap, DSA (double side tape, 3M or similar), TFT LCD, Motherboard, Mechanical



2D View



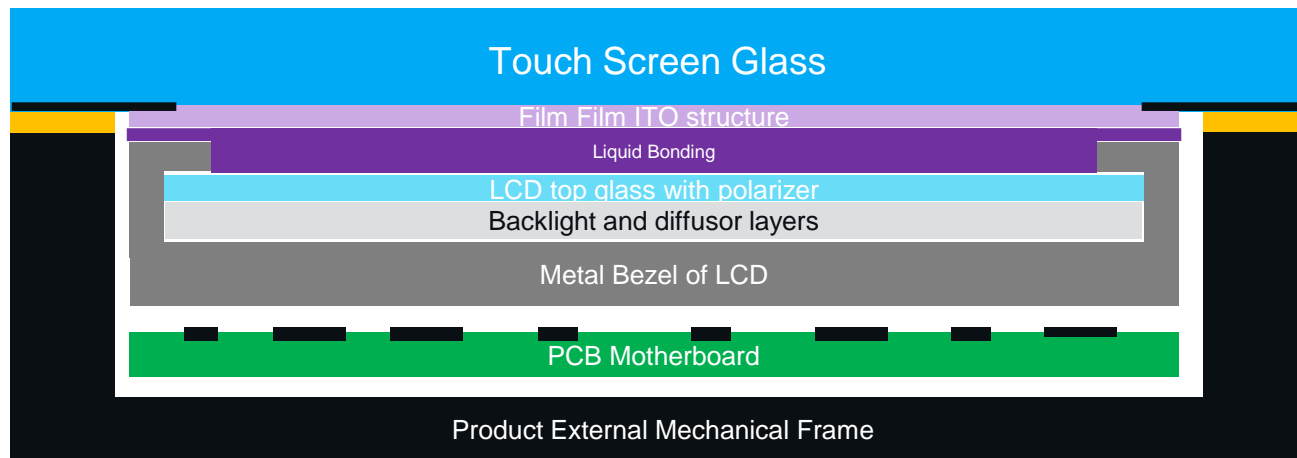
3D View

- DSA between LCD and Touch: min suggested thickness is 1 mm
- DSA between Mechanical and Touch: min suggested thickness is 2 mm

How to do a correct Mechanical Integration?

Pcap technology is very sensitive to the surrounding, of course Pcap company must tune correctly the firmware for each customer application ,but on application side we must have a correct mechanical integration, otherwise Pcap will never work correctly, this is a general guideline how to do that

Case 3: Flat Cover Lens Design Pcap, OCR (Liquid Bonding), TFT LCD, Motherboard, Mechanical



2D View



3D View

- OCR LCD and Touch: thickness depend by many factors, you must check with us before approve any process/material
- DSA between Mechanical and Touch: min suggested thickness is 2 mm



VS Rocktouch
Strength
A few strengths

RockTouch Strength

How simply Rocktouch is better than others?

Simple and Clean Design

The embedded design for all the product line with Industrial Temperature Range.



Best SNR

Highest Signal Noise Ratio in the market to help customer to pass High Voltage EMC up to 30V/m



Industrial COF Design

Rocktouch COF is designed to be strong for electronic noise and also mechanical stress



Here main
RockTouch
Advantage vs
competitors



Stunning Standard Cover Lens

If customers don't want to pay the tooling cost he can use our standard cover lens with the same design between all the sizes and between old and new cover lens



Fast and Customized Firmware

Rocktouch team can customize Firmware for different application in a very fast lead time without any tooling fee



Driver support

Full driver support for any operating system in the market



Some Case Studies

Few Examples of Rocktouch Custom
or semi custom solutions

Rocktouch Case Studies

Here few Example of Custom and Semi Custom Solution



Home Automation

Home Automation control 10.1"W, the XcalibuR line was used in this application because fast speed was required and also high EMC test certification.



Fitness Application

Customer choose Rocktouch 15.6"W and 18.5"W because of High Quality design, high transparency and robustness



Medical Application

Rocktouch 12.1" was selected for high capability Firmware as our touch can avoid strong noise source and provide high immunity



Home Appliance

Customer select Rocktouch after failing the integration of other Touch Maker, customer pay full tooling to design a 3.5" touch to avoid noise and water interaction



HMI

Top Tier HMI company use different sizes, thanks for the embedded design and also for reaching high end performance in firmware tuning and delivery customer requested features (pass also 20V/m EMC)

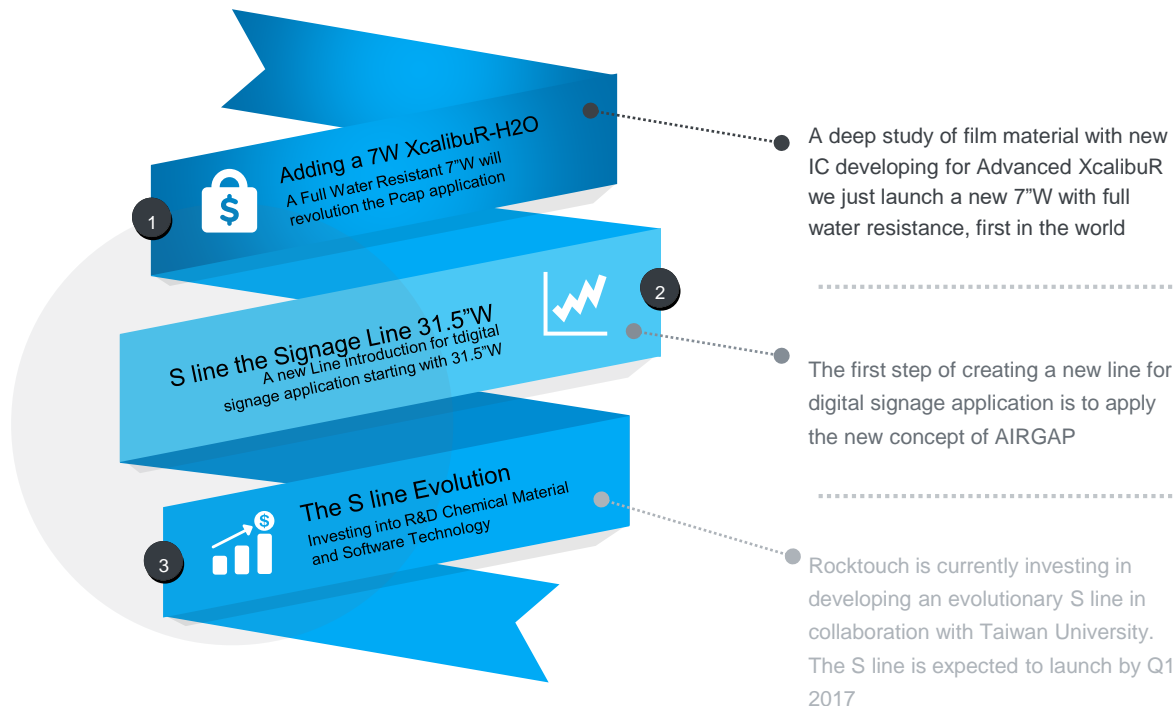


A Road Map to the Future

Rocktouch Innovation Never Stop

A Road Map to the Future

At Rocktouch Innovation never stop, our passion always Rocks!



7"W XcalibuR H20 New Model

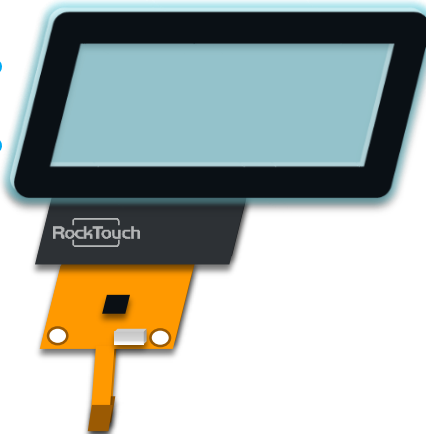
A new compact 7"W join the family in a smart way with Borderless design and Full Water Support

Current A line 7"W

Special small COF design for compact solution
COF pitch 0.5 mm

New X line 100% compatible!

One of Rocktouch milestone is to provide customers the full backward compatibility with previous versions of touch. As usual we did also this time, but of course we add Improvements, such as **Borderless** film design to match even small 7"W for tablet application (Ultra-Thin LCD Bezel)

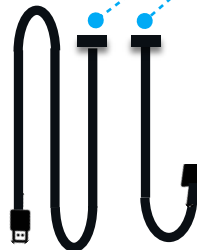


Exciting Improvements:

2 Fixing Holes

Smart USB
Connector onboard

YES!
You can use the
standard USB
Rocktouch cable
to connect the 7"
W XcalibuR



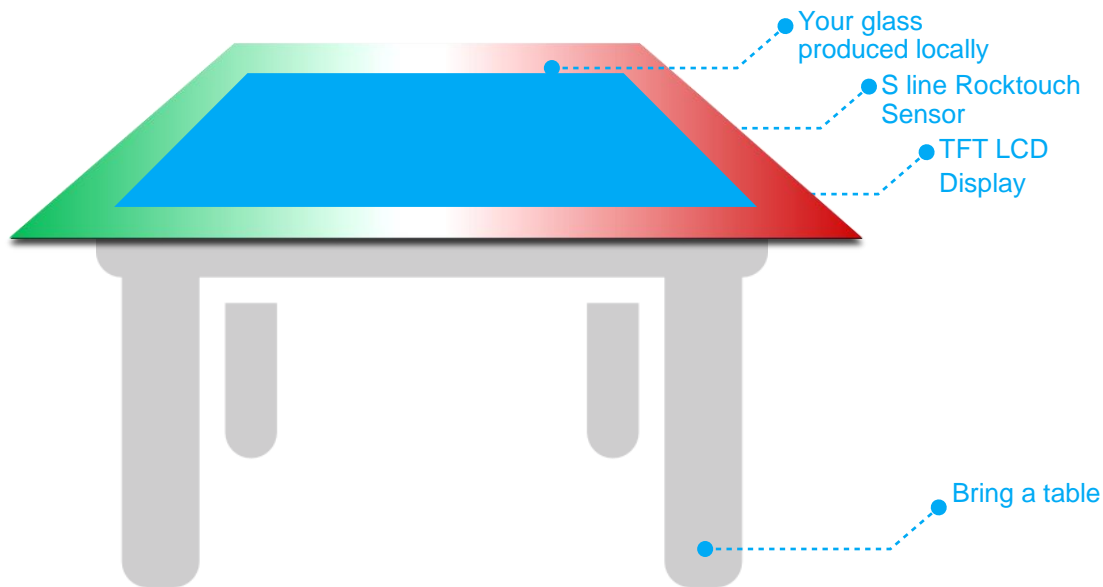
31.5"W Signage Line (S Line)

A solution working through air gap for Touch Windows Application

Imagine a touch where the cover lens can be applied on the top of the touch sensor and produced by your own glass supplier...

This is what our S line can offer to your digital signage application...

Simple glass installation, easy to produce by your own glass supplier...



S line Evolution

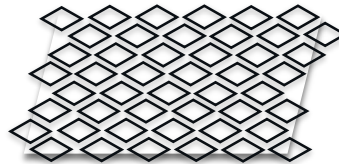
Electronics, Optical, Chemical comes together for next Evolution



ELECTRONICS



OPTICAL



RockTouch



CHEMICAL



RESEARCH



Company Organization and Milestone

Our international organization,
distribution channels
and company milestones



Rocktouch Headquarter

Tainan, Taiwan

Design and Development of our Projected Capacitive Touch
Production is done in Taiwan



Rocktouch European Headquarter

Monticello Brianza –Lecco-

Our EU office, support major distributor Channel and Customer.

We are the **ONLY** Asian Touch company with overseas office.

Pcap is an active touch solution, for this reason we must setup each features based on customer request, then real time support is a MUST.

EU office is a key advantage to provide real time communication, for Marketing, Commercial and Technical support

Main Offices

2 Main Offices

25 Authorized Distributor Channels





RockTouch Milestone

As innovative Projected Capacitive touch company, each of our milestones contribute to the industry, always being one step ahead to differentiate and improve current products.

On the right, we have listed a few of the important milestone Rocktouch has accomplished in the past few years

- 1 January 2012
- 2 December 2012
- 3 June 2013
- 4 February 2014
- 5 February 2015
- 6 February 2016



The Idea:

After 5 years of Projected Capacitive field and more than 16 years in Resistive field we decided to develop a real Industrial Pcap Line



Rocktouch A line completed:

The First Embedded Family Line of Projected Capacitive touch Panels from 10.1"W up to 21.5"W + 7W 6 month after



Computex Show 2013 Taiwan:

Launch of standard cover lens line with 6 and 3 mm with black and white standard color, + custom cover lens



Embedded Show 2014 Germany:

The most important Embedded show in Europe, introducing new detail about next generation XcalibuR product line



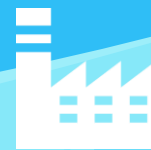
Embedded Show 2015 Germany and EU Office

Worldwide Launch of the XcalibuR Industrial product Line, strongest in the market and grand opening of EU Office



Embedded Show 2016 Germany: H20 line and 31.5"

Launch of 31.5"W S line and introduction of our new H20 line for water resistance features



Certification and Production Capacity

Factory Certifications and production
capability



RockTouch Factory Certification

To ensure product quality, our factory has been approved with different environmental certification.

We also fulfill high end certificate for production such as:

Automotive

Medical

Avionics

ISO 9001
Quality management

ISO 14001
Environmental
management

ISO14064
Green House Gas

QC 080000
RoHS and WEEE
directive

TS16949
Automotive

ISO13485
Medical

AS9100
Avionics

A fully Automated production line. Machine developed in Japan by Fujitsu team.

A 2 Film Production Line

B 4 Lamination line

C 6 automated Testing line

D 100K per month
production capability



Factory details

All production in Taiwan

Factory space: 12.000 square meter

Additional Certification: Sony Green Partner

Quality control: 100% test and control

Production shift: up to 2 shift (reach 200K/m)

Clean Room: 1000 and 10.000 level

Quality Standard



5.0



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