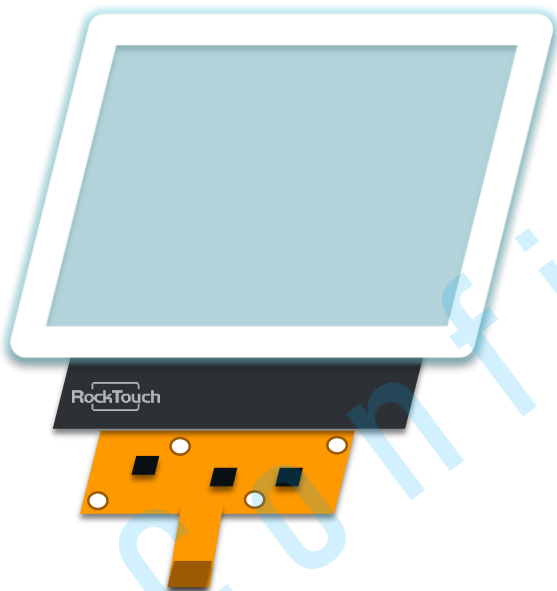




Agenda

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



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 Line

The unique Embedded Family concept applied to touch screen product



Firmware: The Core

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



Solar Radiation Test

A special Test made by RockTouch in SGS Lab for outdoor use



A Road Map to the Future

Rocktouch keep innovating

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Company Organization and Milestone

Our international organization,
distribution channels
and company milestones

WHAT HAPPENS WHEN
Italian CREATIVITY and
MARKET KNOWLEDGE



MEETS
Taiwan TECHNOLOGY
AND PRODUCTION
SCALABILITY?



EXTRAORDINARY
THINGS BECOME
REALITY





Rocktouch Taipei Office

Taipei, Taiwan

Sales with Software & FirmWare support division (6 people)



Rocktouch European Headquarter

Monticello Brianza –Lecco- (5 people)

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

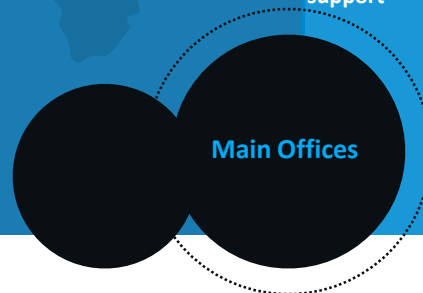


Rocktouch Headquarter

Tainan, Taiwan (26 People)

Warehouse and total solution assembly (LCD + TP)

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

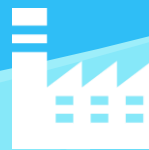


3 Main Offices

25 Authorized Distributor Channels



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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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Product Concept and Family Line

Introduction of:

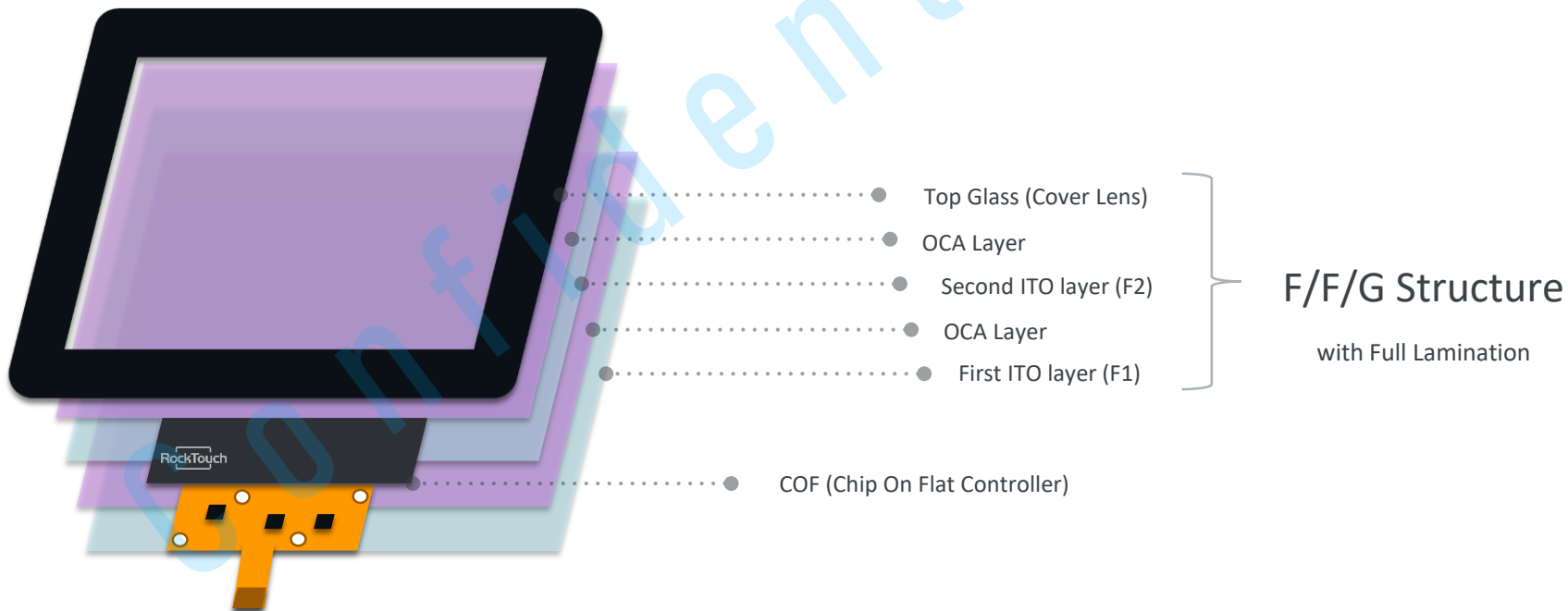
Technology

Full Product Family & Concept

Customization Availability

A brief introduction of our Technology

The following is the structure of our Projected Capacitive Technology

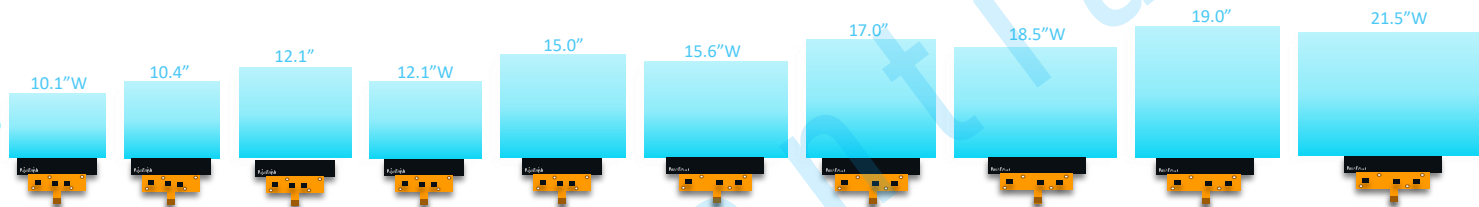


The Industrial Embedded Family Line Concept (X line H line)

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

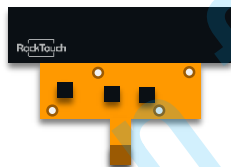
10 F/F Sizes

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



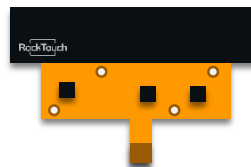
Industrial COF1

Advanced Design
Drive touch from
10.1"W up to 15.0"



Industrial COF2

Advanced Design
Drive touch from
15.6"W up to 21.5"W



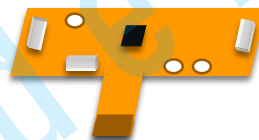
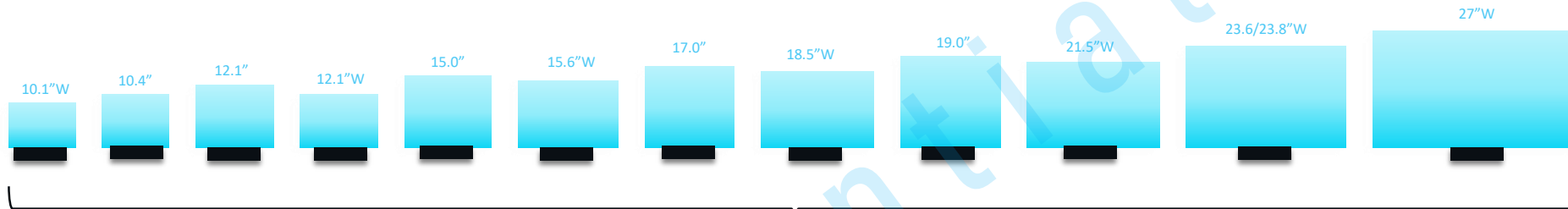
Same Pinout!!!



6 Pins only

You can select different interface
once you order: I2C/USB/RS-232

Ruggedize Line (R line) Full Product Line Family



1 External Embedded COF
COMBO I2C/USB and GPIO function
Current Cables and accessory can be used

And then also 7W
Ruggedize Line Available:



COF Solution
COMBO I2C/USB & GPIO function
Current Cables and accessory can be used

The Standard Cover Lens Family Line (No Tooling)

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

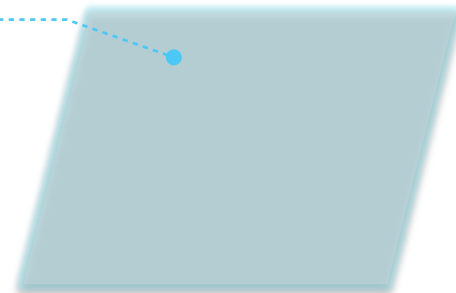
Black and White Glass

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

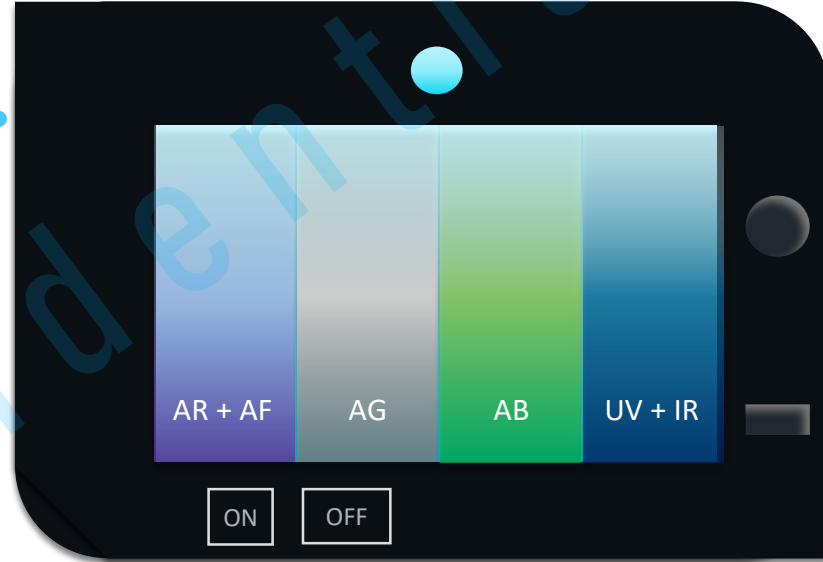
Different Printings Style

Different Shapes and **Holes**

Transparent Area

Buttons with semi transparent effect

Surface treatments

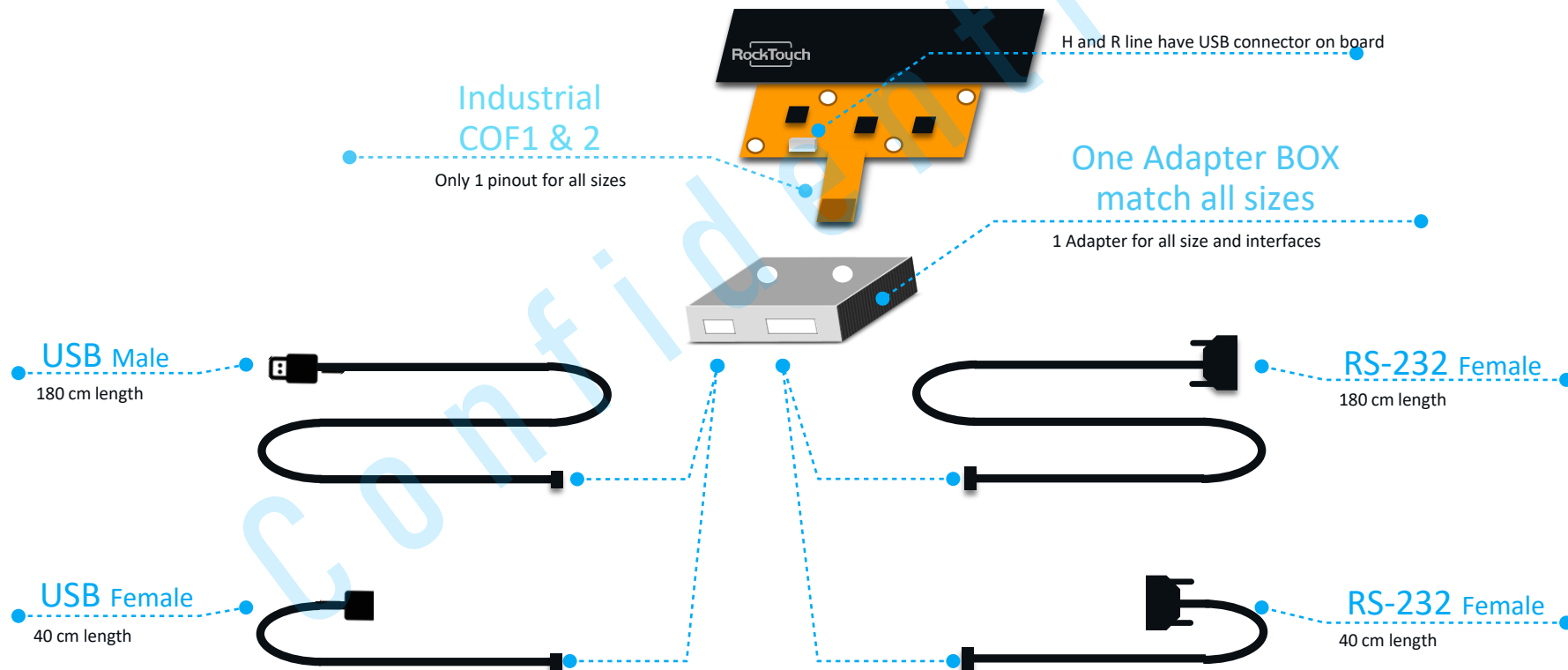


Thickness From 0.4 mm
Up to 10 mm



The Embedded Accessories

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



The current 3 Industrial Products Line

The A line is the first Industrial Line, Then X line (XcalibuR) was added later then H line for full water support, and now new R line for Ruggedize solution (X + H line together)



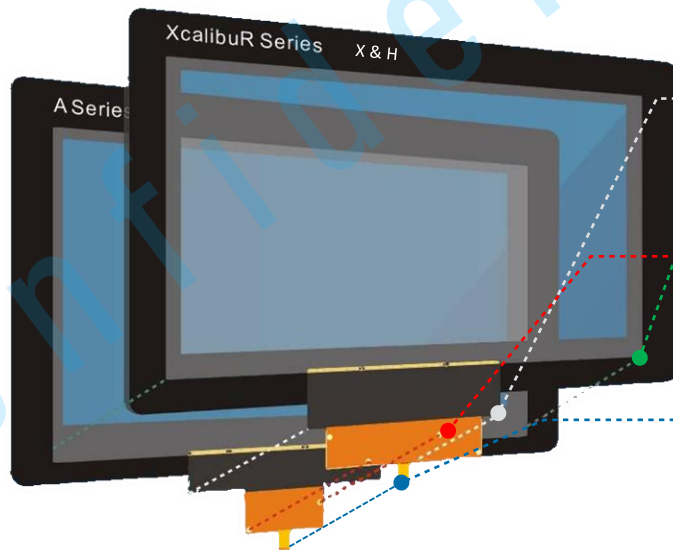
X Vs H line Vs New R line

In 2012 we developed our first industrial Pcap line called A LINE, main features are: 2 fingers with front glass up to 6 mm (phase out in 2018)

As February 2015 we launch X Line (XCALIBUR), featuring 10 fingers, High Voltage, Palm Rejection, Water Rejection and Air Gap Solution.

As February 2016 we add a new line called H (H2O), this new line will support a full water feature for outdoor application

As February 2019 we Mass production of our new R line (Ruggedize), this line will provide both benefits of H and X combined and have removable COF solution



Borderless ITO film Design

Same COF film Design approach

Same position of 2 Holes

Same pinout

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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



Outdoor



Marine



Automation



Vending



Home Appliance



Medical



FIRMWARE: the amazing features of Rocktouch

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

Features performance are based on quantity and type of mix, choose by the final application



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



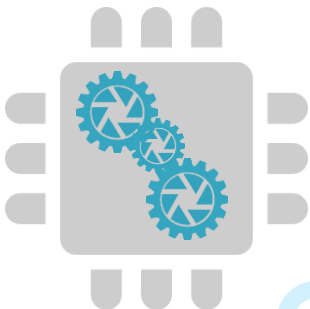
Ice and Snow



Light Freq Cutting



Air Gap



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SUN Solar Radiation Test

A solar Radiation Test Performed by RockTouch

RockTouch vs Competitors

Solar Radiation Test

SGS Regulation: IEC60068-2-5 Edition 2.0:2010, Procedure B

Irradiance all light sources from Sunlight: 1120W/m² at 300-3000 nm

Test condition: 20 hours direct sun 90 degree (noon condition) and 4 hour dark

Temperature: 40 degree Celsius

Number of cycle: 10 cycles (vs common 1 or 5 cycles)

What Products we tested:

The Test was done with different Rocktouch Sensor in different condition such as: 1-

Sensor Only

2- Sensor with LCD by DSA

3- Sensor with LCD by Liquid bonding.

Cover lens from 0.7 mm up to 6mm

We also test AR and AG cover lenses

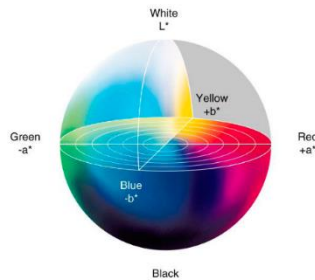
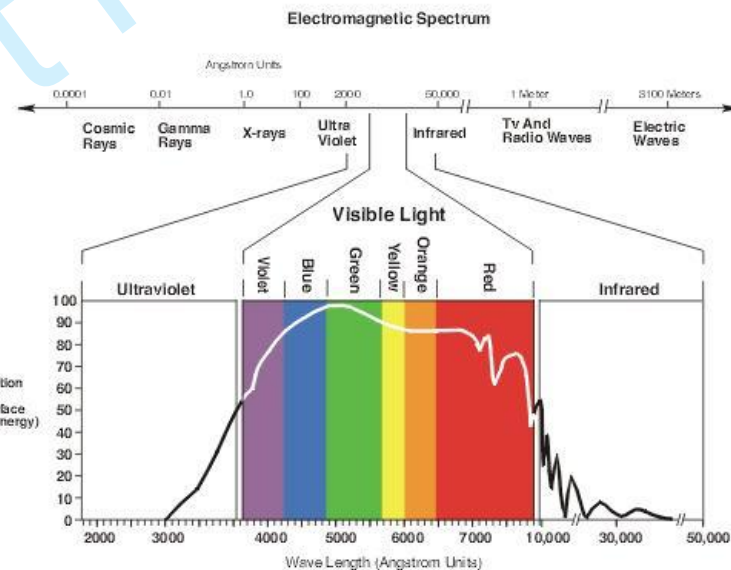
Test Results:

Transparency Variation: Pass

Transmittance test: Pass

Haze: Pass

We pass IEC60068 standard test



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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!



Developing a new approach to see how to implement the Force Sensing Technology on Pcap Industrial Touch Solution (push Touch) & Push Button

Rocktouch is always investing now not only on HW but also on software part based on some additional new feature and security requirements from Industrial Market.

RockTouch Evolution

Electronics, Optical, Chemical comes together for next Evolution



ELECTRONICS



OPTICAL



RockTouch



CHEMICAL



RESEARCH

RockTouch is a FutureLabs Sister Company, let's briefly introduce FutureLabs



The Tailor-Made Visual Solution Company

Full Custom Tailor Made Solution is our Strength

OPTICAL SOLUTIONS

Optical Bonding



DSA
Double Side Adhesive



Special Filter
Privacy, Polarizer,
etc



Backlight
Enhancement



ELECTRONIC SOLUTIONS

T-con Board
Mipi/LVDS/eDP



A/D Board
VGA/DVI/HDMI/D
P

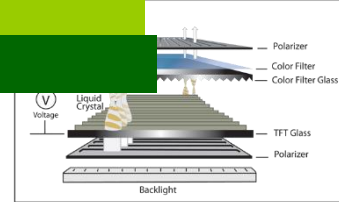


Custom Cables

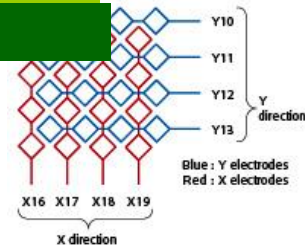


FULL DESIGN

TFT Custom Design



Pcap Touch Design



Small size G/G FutureLabs Touch with FutureLabs External Controller (V.I.NO board)



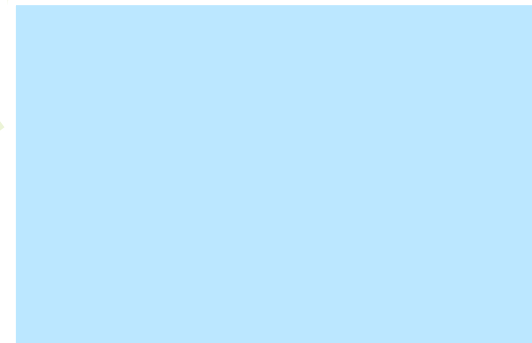
Sizes: 4.3"W 5"W 7"W 10.1"W 11.6"W



Touch Available to work with AIR gap



Cover Glass Can be Customize


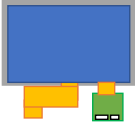





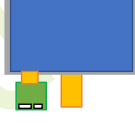






Controller interface
I2C or USB


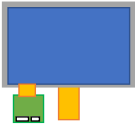





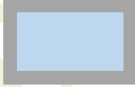

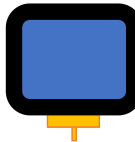


For USB Interface
Standard Cables are Available

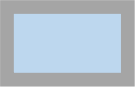
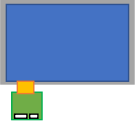


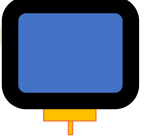
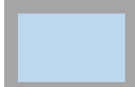

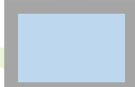

Embedded Display Standard Product List

Size	Part number series	Display only	Display with Transparent Touch	Display with Black Border Touch	Notes
4.3"W	QX-043 & QP-043				4.3"W 480x272 TFT, Pcap Black Cover 3 side equal, bottom side bigger, touch controller right side
5"W	QX-050 & QP-050				5"W 800x480 TFT, Pcap Black Cover 3 side equal, bottom side bigger, touch controller right side
7.0"W	QX-070 & QP-070				7"W 800x480 1024x600 TFT, Pcap Black cover Top bottom equal, left right equal, touch controller left side
7.0"W	FLT-070 & DSAM-07				7"W 800x480 & 1024x600 TFT, All in one board back side, one connector, Pcap RockTouch series COF
7.0"W	FLC-070DMP3000SA1				7"W 800x480 TFT, IPS like LCD full view High brightness 780 nits

Embedded Display Standard Product List

Size	Part number series	Display only	Display with Transparent Touch	Display with Black Border Touch	Notes
10.1"W	QX-101WSVGA & QP-101WSVGA				10.1"W 1024x600 TFT, Pcap Black cover, Top bottom equal, left right equal border, touch controller left side
10.1"W	QX-101WXGA & QP-101WXGA				10.1"W 1280x800 TFT, Pcap Black cover, Top bottom equal, left right equal border, touch controller left side
10.1"W	FLC-101HML0000SA2				10.1"W 1280x800 TFT, 1000 nits high brightness LED driver on board
10.1"W	FLC-101NML3000SA1				10.1"W 1920x1200 TFT, 700 nits LED driver on board
10.4"	FLC-104 & FLD104				10.4" 800x600 TFT, RockTouch 3 mm Black COF

Embedded Display Standard Product List

Size	Part number series	Display only	Display with Transparent Touch	Display with Black Border Touch	Notes
11.6"W	QX-116 & QP-116 & FLC-116 & FLD-116				11.6"W 1920x1080 TFT, QX and QP are eDP version and need external LED drv, FLC and FLD are LVDS with LED driver version, Pcap Black cover, Top bottom equal, left right equal border, touch controller left side
15.0"	FLC-150 & FLD-150				15.0" 1024x768 TFT, RockTouch 3 mm Black COF
15.6"W	FLC-156 & FLD-156				15.6"W 1366x768 TFT, RockTouch 3 mm Black COF and High Brightness with AG version
21.5"W	FLC-215 & FLD-215				21.5"W 1920x1080 TFT, RockTouch 3 mm Black COF

Full Custom Tailor Made Solution is our Strength

In house Clean Room for assembly 10.000/1.000 Level



**RESTRICTED
AREA**
GREEN PROCESS

Clean Bench 100 Level (for automotive)



AI LAMINATION



In-House new Lamination technology with full automation



Under ISO9001 certification process

Automotive Level Temperature Testing Chamber

Temperature range from -40 + 100 C

Automotive level temperature test chamber

Can handle 6 pcs of 32" together



Logistic Center for standard and custom product





RockTouch