

14

Starting from 2000

14 years TP manufacture history.
World's leading OGS production process

» Truly-Opto Touch module

Extensive product structure

- OGS(G1M\G1\G2)
- GFF\G1F\GF
- GG

Personalized customization

- Colorization
- Narrow border
- Borderless

New technology application

- Metal mesh technology
- Nano-silver technology

Wide application range

- Smartphone
- Consumer electronics
- Automotive and industrial applications
- wearable devices

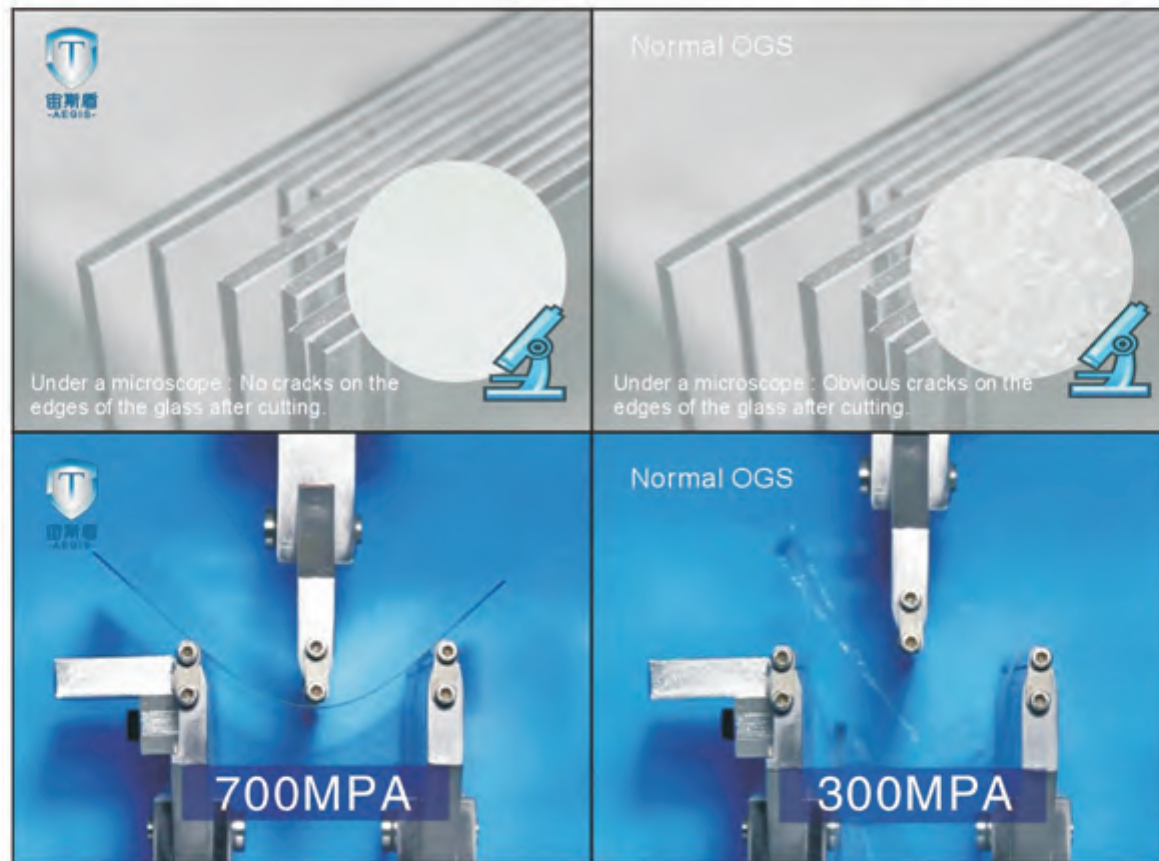
OGS

OGS is short for One Glass Solutions,
which is a protective glass with conductive film and sensor technology.



Touch » High Strength OGS

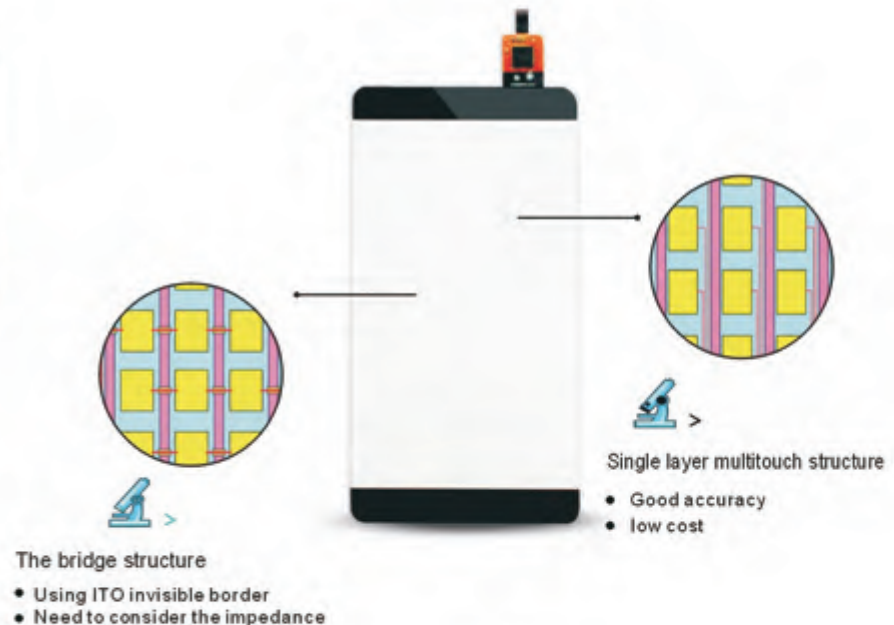
- Reduce the damage on the edge of the OGS glass through new technology, which make the overall strength of OGS enhanced significantly. High Strength OGS improves the drop resistance and shock resistance of mobile phone, which can prolong the service life.



The test results of intensity experiment.

Touch » Ultra Narrow-border & Borderless OGS

- Ultra narrow bezel makes the appearance of the phone better.
- Ultra narrow bezel creates higher screen-front panel ratio.
- Realizing non-border effect of touch panel module by adopting ITO route technology.
- The phone screen-front panel ratio was increased greatly to realize larger and wider vision experience.



Touch » Economic Ultra-thin Capacitive Touch Panel

- Only one layer of ITO coating, shorter production cycle.
- Low cost solution, Cheaper than OGS bridge structure.
- Thinner than film structure(GFF and GF) CTP.

The thickness comparison of the different structure.
(LENS+Explosion-proof membrane)


Unit:mm

Glass Substrate	GF	GFF	G1	G1M
0.7 glass	0.95	1.15	0.8	0.8
0.55 glass	0.8	0.95	0.65	0.65



G1/G1M

Touch » Narrow Bonding (NB-G1M)

 **Narrow Bonding G1M:** Reduce two-thirds of FPC bonding area.

- Avoid radio frequency interference.
- Only one layer of ITO coating, short production cycle, Cheaper than OGS bridge structure.
- The structure makes the smartphone design more flexible.



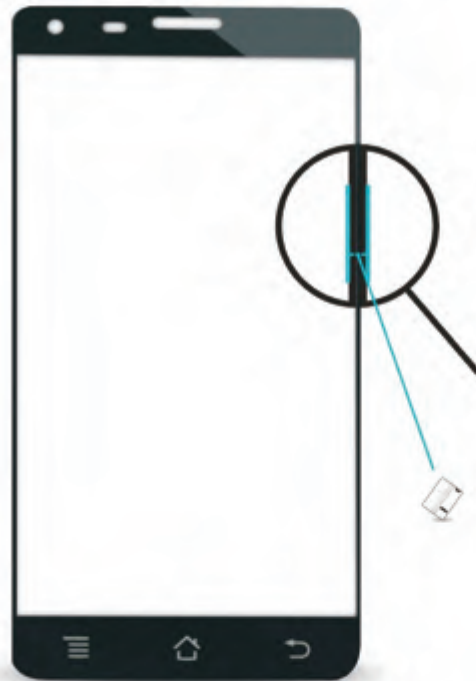
Traditional G1M



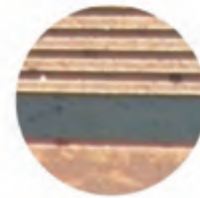
NB- G1M

Touch » Narrow Bezel GFF

- Ultra narrow bezel GFF structure makes the appearance of the phone better.
- Higher screen-front panel ratio provides better vision experience !
- Various crafts of narrow border technology: laser carve、Ag exposure、copper plating routing.



Narrow-border: 1.75mm



Ag exposure
L/S :30/30



Laser carving
L/S :30/30-30/20

Copper plating tech
L/S :20/20

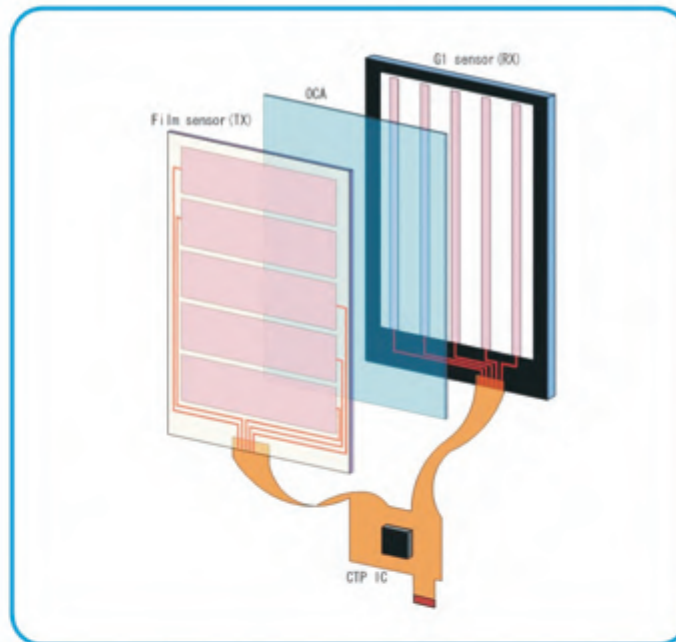
Roll to Roll, Double Sides Copper Plating (D-ITO) Proposal.

Touch » Ultra Thin Film CTP-G1F Structure

📌 G1F is the mixture of GFF and OGS. Its principle is to plate one ITO sensor layer on glass , and the other ITO sensor on film .

> Advantages:


- Thinner than the GFF
- Sufficient capacity
- Better anti-interference ability
- Easier for colorization



< G1F Structure

- Support multi-touch +gestures
- The thinnest thickness : 0.9mm
- Colorization available

Touch » Colorized CTP

 Colorized CTP can make smart phones more fashion and personalization.



Colorized Film-structure CTP has been put into mass production.

Touch » NanoSilver Wire CTP/ MetalMesh CTP

📌 Metal (mainly silver now) can be made to nano scale metal wire whose diameter is less than 60nm and length is more than 50um, then it can be used to produce transparent conductive film by coating it on the substrate.

> Advantages

- The reserves of silver is larger than the indium, which is the major raw material of ITO.
- Lower sheet resistance than ITO film: 60~130 Ω/\square .
- Better flexibility than ITO.
- Can be used on larger size CTP than ITO solution: up to more than 23.



Tablet

📌 The transparent conductive layer on the substrate was made of metal mesh pattern. The width of wire is less than 5um. Generally the raw material of metal mesh is Silver or Copper.

> Advantages

- The reserves of Ag or Cu are larger than the Indium, which is the major raw material of ITO.
- Lower sheet resistance than ITO film: 30~60 Ω/\square .
- More flexible than ITO.
- Can be used on larger size CTP than ITO solution: up to more than 50.



All-In-One PC

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Starting from 2008

6 years Full lamination producing history

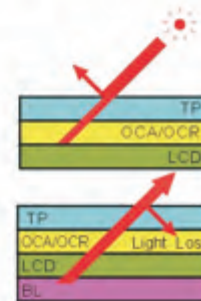
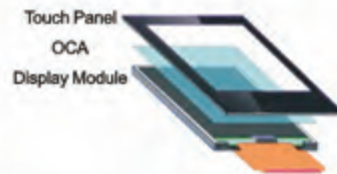
The biggest full lamination manufacturer in China

Working with oversea equipment suppliers, Truly customized its full automatic lamination equipments. With many years experience, Truly stores sufficient knowhow of the industry. Relying on its unique manufacturing process, and stable production management team, Truly has been chasing for excellent performance, and breaking its yield record year by year.

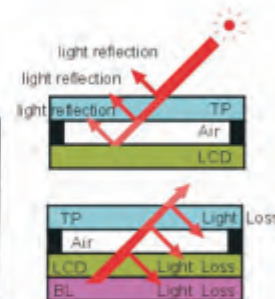
Bonding » Full lamination

- Full lamination will reduce the light reflection and loss dramatically. Comparing to air bonding, full lamination has the following advantages:

- Improve surface brightness:
Indoor environment: improved by 8%-10%
outdoor environment: improved by 10%.
- Improve contrast ratio:
Contrast ratio can be improved by approx. 22% to 50% (under sunlight). The color will be showier.



Full lamination



Air bonding

Bonding » EB (Economical Bonding)

-

- By optimizing the module structure, EB can achieve almost the full lamination performance on normal bonding module.
- Anti-explosion film is removed.
 - Display performance when power off is similar to full lamination.
 - Better performance without adding any cost.
 - Ultra-thin design.



Comparison among EB and Other			
Ltem	EB air bonding	Normal air bonding	Full lamination
Stand by display Performance	Black	Grey	Pure black
Display performance	Good	Good	Better
Cost	Low	Low	High
Thickness	Thinner	Thick	Much thinner
Yellow Mura issue	No	No	Yes