



倍勝光電產品介紹



*The way of TP
revolution,
we drive it!*

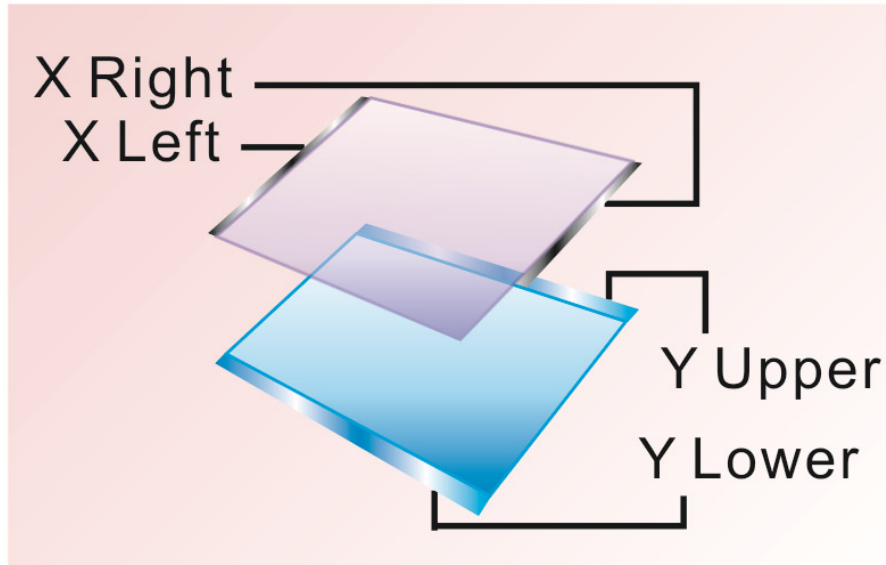
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電阻式觸控面板





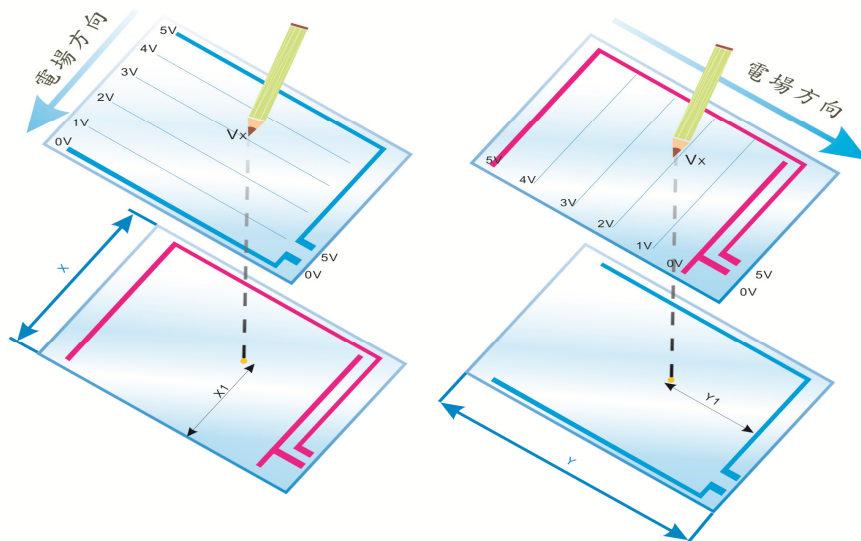
原理:

1. 下層Glass為電極(Y+,Y-),上層Film其中一條線做為感應線,偵測Y軸位置
2. XY軸切:換上層Film為電極(X+,X-),下層Glass其中一條線做為感應線,偵測X軸位置

※如上述重複快速的抓取XY的位置即可得知使用者點的是哪一個點,當有移動時則連續的點將會成為一條線

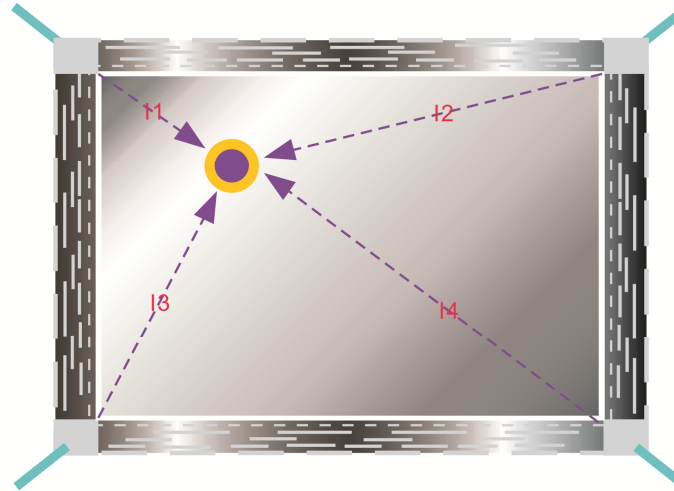
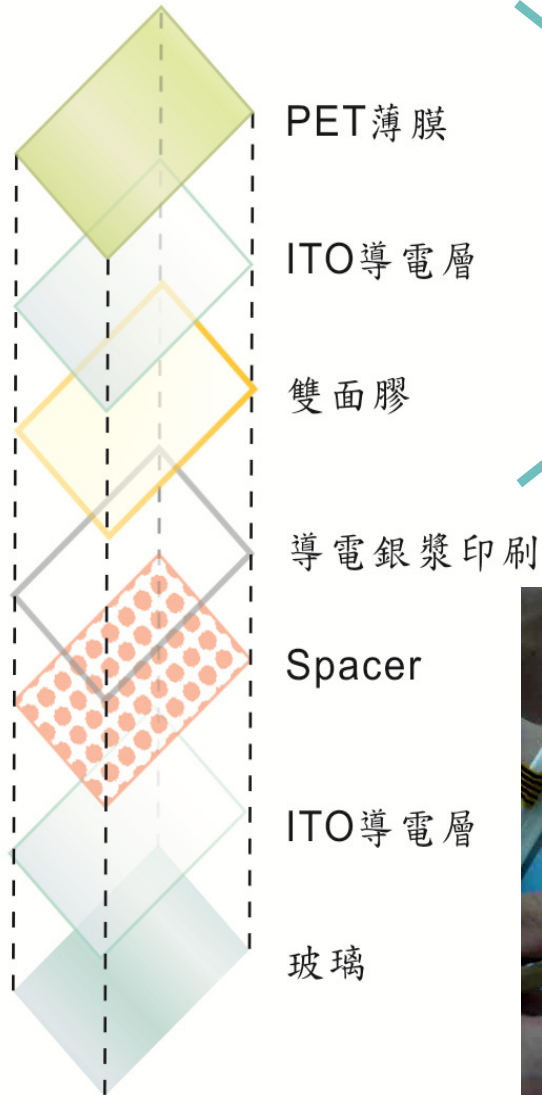
$$X1 = V_x / 5 \times X$$

$$Y1 = V_y / 5 \times Y$$



用途: POS機/車機等單點觸控, 環境易受電磁訊號干擾的環境下的選用觸控面板

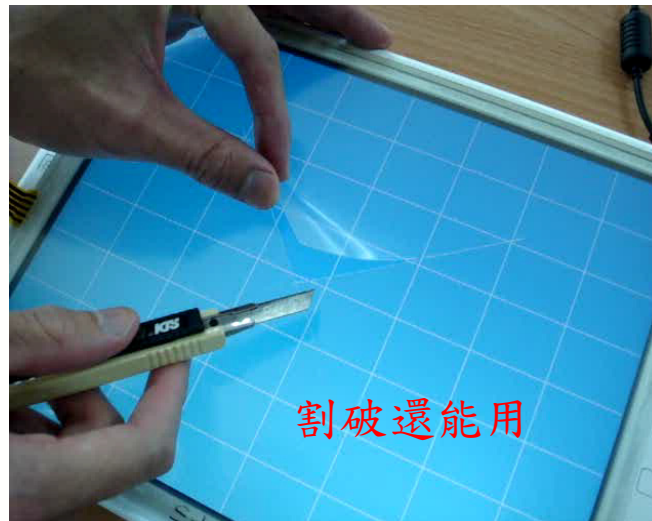
五線式觸控面板



原理：

1. 五線式 X軸 Y軸電極全部設計在ITO Glass上，但為了避免短路電極採短、斷線設計，為了改善四周電場扭曲問題採多層電極設計與蝕刻補償設計；

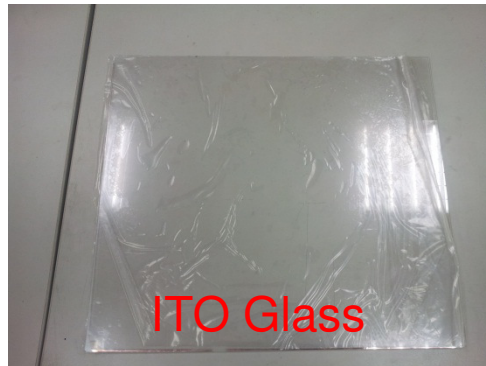
2. X軸 Y軸電極全部設計在ITO Glass上，ITO Film只是Sensor端，因此當ITO film受損時觸控定位電場並不會受損；耐用性最高的電阻式產品；



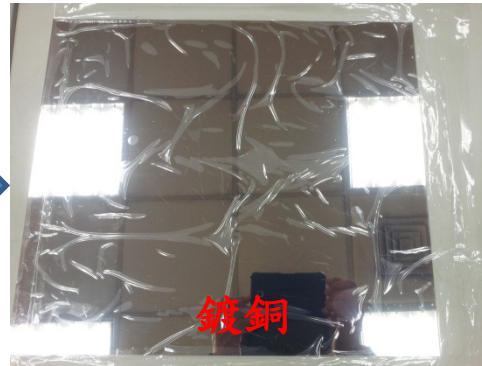
用途：

POS機/車機等單點觸控，環境易受電磁訊號干擾的環境下要求耐用性高的選用觸控面板

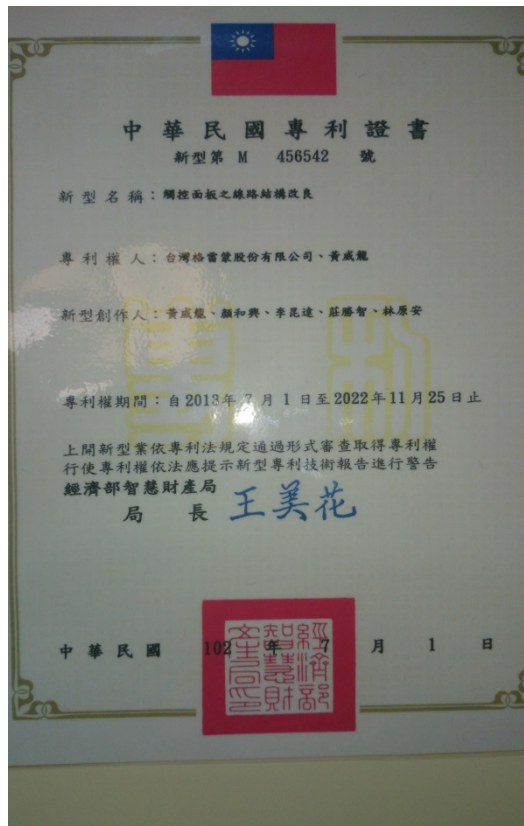
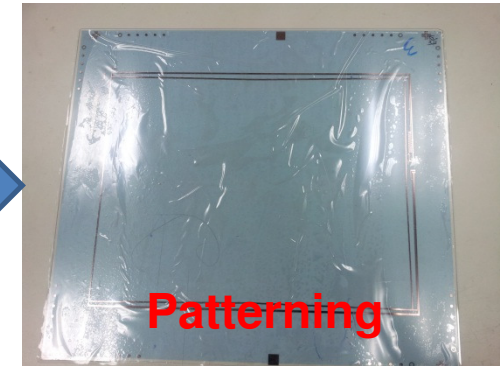
倍勝五線式觸控面板製程再突破



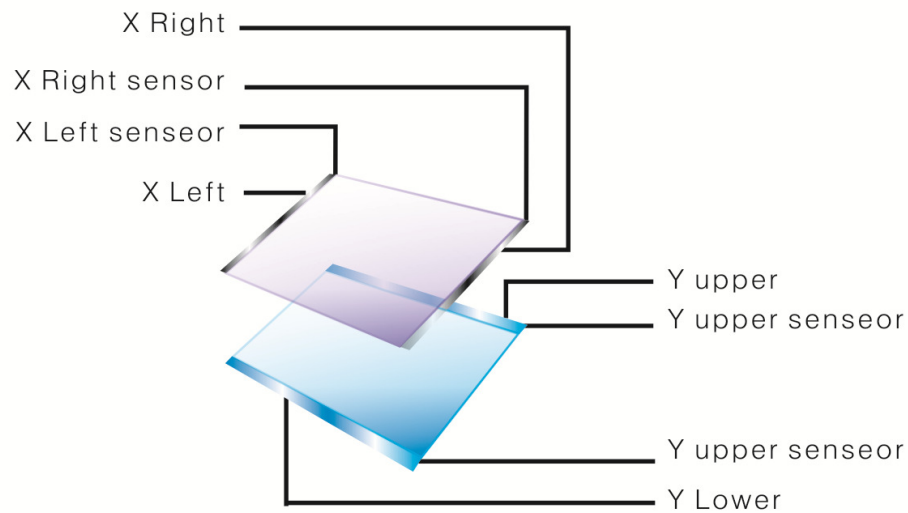
鍍膜



黃光
蝕刻



1. 利用鍍膜與黃光製程改善線性良率不好的問題；
2. 利用真空鍍膜的銅覆著力與耐候性，提升5倍耐候性；
高溫/高溫高濕的環測規格直接開1000小時；
3. 真正將Pattern設計、線寬線距(窄邊寬需求)、線性良率、量產性、生產效率、耐候性等問題均兼顧到的有誠意的設計；
4. 針對舊市場、舊產品、舊客戶提供高規格的新設計，
團隊展現永續經營合作夥伴關係的誠意設計



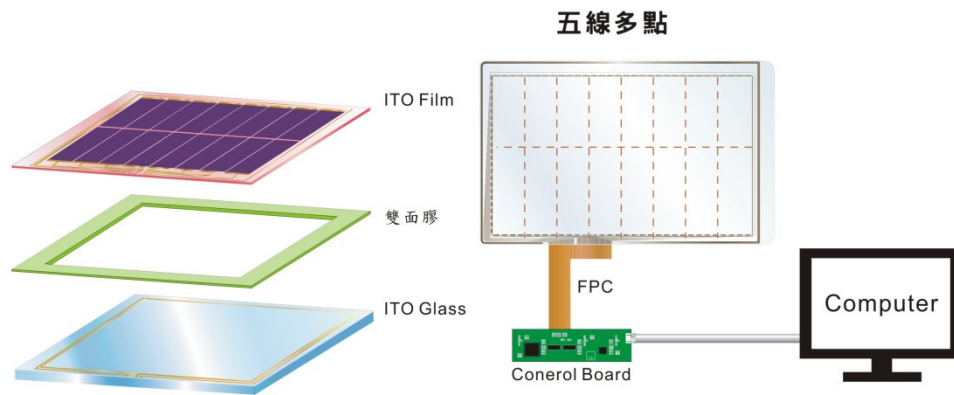
原理:

1. 8線式是在上下層的4條線旁邊在個別多拉1條感應線出來, 此感應線可供控制卡偵測端點阻抗是否有變化以修正其線性偏移
2. 可以補償因為環境變化影響ITO 阻抗, 造成定位偏移量誤差, 使定位不會有偏移量產生

用途:

1. 耐環境變化的工業用途
2. 耐有電池波干擾的環境下定位要精準的用途
3. 美國軍用NB常使用的一種觸控

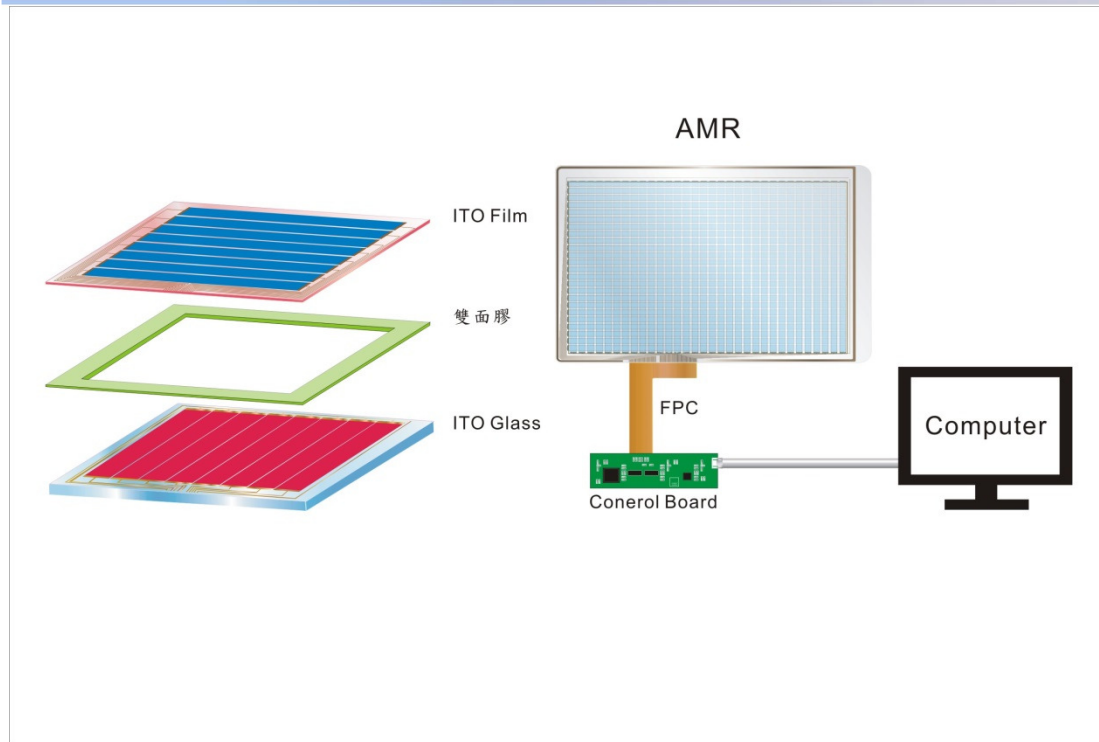
車機用途五線多點觸控面板



1. 原理:X軸 Y軸電極全部設計在ITO Glass上, ITO Film 只是Sensor端, 利用film蝕刻成多格設計, 利用觸控IC 掃描程式達成真實多點設計;
2. 利用電阻式不會受電磁干擾造成誤動作的原理, 讓真實多點的設計運用到汽車車機控制上;
3. 利用真空濺鍍與黃光顯影技術讓五線多點電阻的耐候性與可靠度達到最佳狀態, 真正適合被運用到未來車機市場上的觸控面板設計;
4. 此款設計已經成功導入多家汽車車機設計, 2014年底前會陸續量產;



AMR多點電阻觸控面板



1. 原理:把一片觸控面板，利用蝕刻技術，劃分成多片4線式觸控面板設計，利用ITO Film與ITO Glass蝕刻成多格設計，搭配專用的IC達成多點觸控的一個電阻式觸控面板，利用利用AMR觸控IC掃描程式達成真實多點設計；

2. 利用電阻式不會受電磁干擾造成誤動作的原理，讓真實多點的設計運用到工業與特殊場合觸控控制上；

3. 利用本公司黃光蝕刻技術，達成細線路的事實，讓電阻式的ITO Film 可以蝕刻成視覺感受不到蝕刻線路的設計；更讓有抗牛頓的電阻 ITO Film可以應用到本產品上，讓本產品的光學與視覺效果達到最佳狀態！！



Resistance Type Touch Window



Touch Panel

+

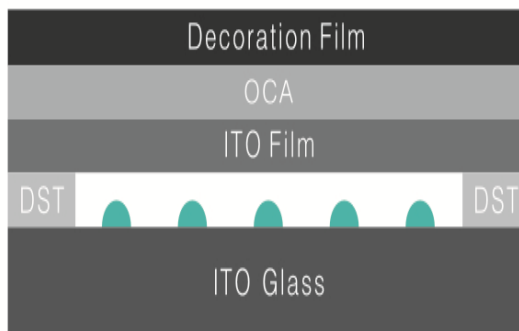


Decoration Film



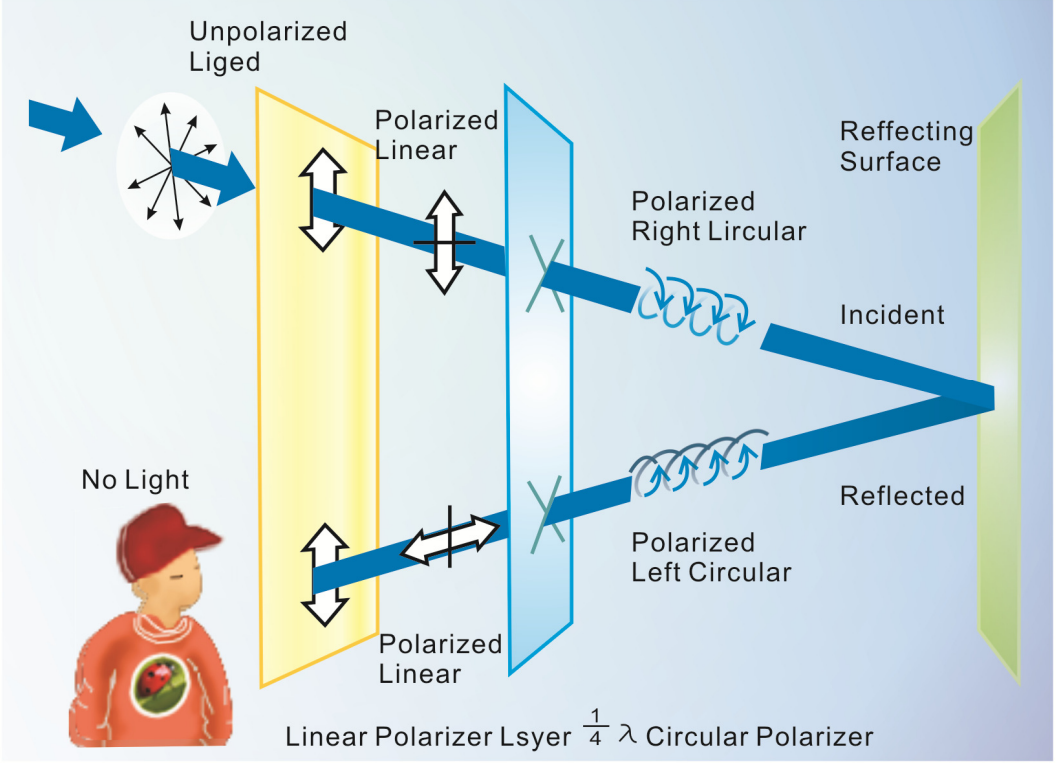
Touch Window

F+F+Glass



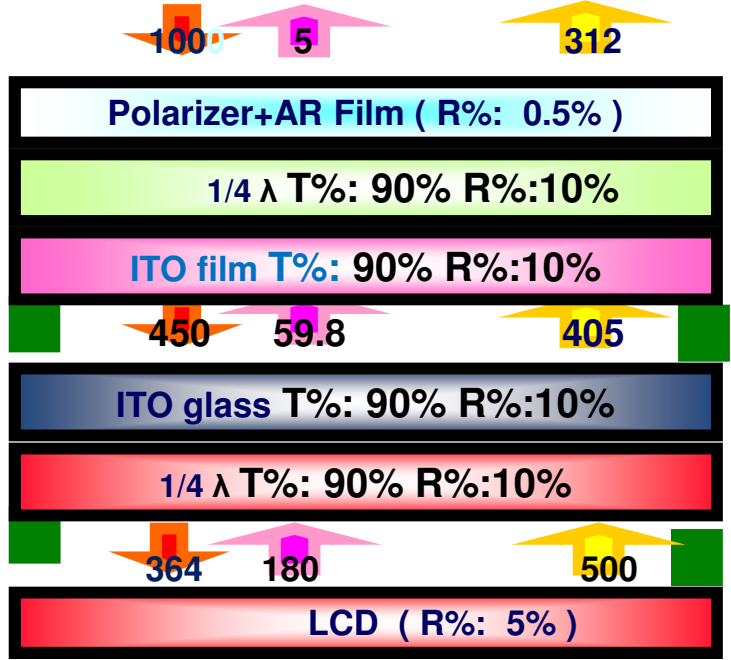
1. Complete flat surface design results in better visual effects
2. Foreign objects won't be stuck in the edge due to complete flat touch screens, as it may result in mis-operations.
3. Complete flat surface, perfectly integrates with bezel of the phone/PDA makes it slimmer.
4. No edge effects which may result in function failiures.

Sunlight Readable Touch Panel



$312 - 5 = 307 \text{ cd/m}^2$

自然光: 透過率50%
偏振光: 透過率95%



Circular Polarizer Type TP

Contrast 1:1000

Sunlight Readable Touch Panel

SR 電阻產品	SR I	SR II	SR III
偏光原理	線偏光片	圓偏光片	圓偏光片
表面處理	AR+AG	AR+AG	AR+AG
ITO Film類型	單向性材料	1/4 λ ITO Film	1/4 λ + 1/2 λ ITO Film
搭配LCD類型	穿透式顯示器	穿透式顯示器	半穿半反顯示器
反射率	5~8%	1~3%	1~2%
霧度(Haze)	5%	5%	5%

SR 產品	SR I	SR II	SR III
LCD Bonding	可	可	可
Bonding後 反射率	3%	1%以下	0.5%



4W 電阻式觸控面板(4W Resistive Touch Screen)

Mechanical		Reliability	
Available Size	3.5" ~ 24"	Operating temperature	-20°C to +60°C
Available Size	Finger/Gloved Hand /Pencil/Conductive Stylus	Storage temperature	-20°C to +70°C
Glass Thickness	a. 0.7~ 3mm	High temperature Storage	80°C 240 hr
	b. Can be customized(Max. 9mm)	Low temperature Storage	-20°C 240 hr
	C Chemical strengthened glass optional	High temperature & High humidity Storage	60°C 90% RH 240 hr
Activation Force	Typically less than 80g	Thermal Shock	-20°C ~ +70°C (1hr eachCycle,10Cycle)
Electrical		Durability	
Insulation resistance	10M ohm@25V DC	Pencil Hardness	3H or higher per ASTM-D3363 (JIS-K5600)
Linearity(100g)	1.5%	Touch Life	Pen sliding: >100K times Pen hitting: >1M times Finger touch: >1M times
Optical		Warranty	a. 1 year limited warranty b. depends on construct (Max 5 year)
Transmittance(T%)			
a. None AR Coating(T%)	80%		
b. AR Coating (T%)	85%		
Haze (h%)			
a. None AG Coating(h%)	≤ 2%		
b. AG coating(h%)	3%/5%/9% optional		

5W 電阻式觸控面板(5W Resistive Touch Screen)

Mechanical		Reliability	
Available Size	5" ~ 24"	Operating temperature	-20°C to +60°C
Available Size	Finger/Gloved Hand /Pencil/Conductive Stylus	Storage temperature	-20°C to +70°C
Glass Thickness	a. 0.7~ 3mm	High temperature Storage	80°C 1000 hr
	b. Can be customized(Max. 9mm)	Low temperature Storage	-20°C 1000 hr
	C Chemical strengthened glass optional	High temperature & High humidity Storage	60°C 90% RH 1000 hr
Activation Force	Typically less than 80g	Thermal Shock	-20°C ~ +70°C (1hr eachCycle,10Cycle)
Electrical		Durability	
Insulation resistance	10M ohm@25V DC	Pencil Hardness	3H or higher per ASTM-D3363 (JIS-K5600)
Linearity(100g)	1.5%	Touch Life	Pen sliding: >1M times Pen hitting: >10M times Finger touch: >10M times
Optical		Warranty	a. 1 year limited warranty b. depends on construct (Max 5 year)
Transmittance(T%)			
a. None AR Coating(T%)	80%		
b. AR Coating (T%)	85%		
Haze (h%)			
a. None AG Coating(h%)	≤ 2%		
b. AG coating(h%)	3%/5%/9% optional		

8W 電阻式觸控面板(8W Resistive Touch Screen)

Mechanical		Reliability	
Available Size	5" ~ 24"	Operating temperature	-20°C to +80°C
Available Size	Finger/Gloved Hand /Pencil/Conductive Stylus	Storage temperature	-20°C to +80°C
Glass Thickness	a. 0.7~ 3mm	High temperature Storage	80°C 240 hr
	b. Can be customized(Max. 9mm)	Low temperature Storage	-20°C 240 hr
	C Chemical strengthened glass optional	High temperature & High humidity Storage	60°C 90% RH 240 hr
Activation Force	Typically less than 80g	Thermal Shock	-20°C ~ +70°C (1hr eachCycle,10Cycle)
Electrical		Durability	
Insulation resistance	10M ohm@25V DC	Pencil Hardness	3H or higher per ASTM-D3363 (JIS-K5600)
Linearity(100g)	1.5%	Touch Life	Pen sliding: >100K times Pen hitting: >1M times Finger touch: >1M times
Optical		Warranty	a. 1 year limited warranty b. depends on construct (Max 5 year)
Transmittance(T%)			
a. None AR Coating(T%)	80%		
b. AR Coating (T%)	85%		
Haze (h%)			
a. None AG Coating(h%)	≤ 2%		
b. AG coating(h%)	3%/5%/9% optional		

AMR 電阻式觸控面板(AMR Resistive Touch Screen)

Mechanical		Reliability	
Available Size	5" ~ 24"	Operating temperature	-20°C to +60°C
Available Size	Finger/Gloved Hand /Pencil/Conductive Stylus	Storage temperature	-20°C to +70°C
Glass Thickness	a. 0.7~ 3mm	High temperature Storage	80°C 240 hr
	b. Can be customized(Max. 9mm)	Low temperature Storage	-20°C 240 hr
	C Chemical strengthened glass optional	High temperature & High humidity Storage	60°C 90% RH 240 hr
Activation Force	Typically less than 80g	Thermal Shock	-20°C ~ +70°C (1hr eachCycle,10Cycle)
Electrical (10 touches)			
Insulation resistance	10M ohm@25V DC	Durability	
Linearity(100g)	1.5%		
Optical		Pencil Hardness	3H or higher per ASTM-D3363 (JIS-K5600)
Transmittance(T%)		Touch Life	Pen sliding: >100K times Pen hitting: >1M times Finger touch: >1M times
a. None AR Coating(T%) 80%		Warranty	a. 1 year limited warranty b. depends on construct (Max 5 year)
b. AR Coating (T%) 85%			
Haze (h%)			
a. None AG Coating(h%) ≤ 2%			
b. AG coating(h%) 3%/5%/9% optional			

五線多點電阻式觸控面板(5W Multi-touch Resistive Touch Screen)

Mechanical		Reliability	
Available Size	5" ~ 24"	Operating temperature	-20°C to +60°C
Available Size	Finger/Gloved Hand /Pencil/Conductive Stylus	Storage temperature	-20°C to +70°C
Glass Thickness	a. 0.7~ 3mm	High temperature Storage	80°C 240 hr
	b. Can be customized(Max. 9mm)	Low temperature Storage	-20°C 240 hr
	C Chemical strengthened glass optional	High temperature & High humidity Storage	60°C 90% RH 240 hr
Activation Force	Typically less than 80g	Thermal Shock	-20°C ~ +70°C (1hr eachCycle,10Cycle)
Electrical (Real Multi-touch)			
Insulation resistance	10M ohm@25V DC	Durability	
Linearity(100g)	1.5%		
Optical		Pencil Hardness	3H or higher per ASTM-D3363 (JIS-K5600)
Transmittance(T%)		Touch Life	Pen sliding: >1M times Pen hitting: >10M times Finger touch: >10M times
a. None AR Coating(T%)	80%	Warranty	a. 1 year limited warranty b. depends on construct (Max 5 year)
b. AR Coating (T%)	85%		
Haze (h%)			
a. None AG Coating(h%)	≤ 2%		
b. AG coating(h%)	3%/5%/9% optional		

全平面電阻式觸控面板(Resistance Type Touch Window)

Mechanical		Reliability	
Available Size	3.5" ~ 24"	Operating temperature	-20°C to +60°C
Available Size	Finger/Gloved Hand /Pencil/Conductive Stylus	Storage temperature	-20°C to +70°C
Touch Panel Design	1. 4W/5W/8W	High temperature Storage	80°C 240 hr
	2. AMR/5W Multi-touch	Low temperature Storage	-20°C 240 hr
Activation Force	Typically less than 100g	High temperature & High humidity Storage	60°C 90% RH 240 hr
Electrical		Thermal Shock	-20°C ~ +70°C (1hr eachCycle,10Cycle)
Insulation resistance	10M ohm@25V DC		
Linearity(100g)	1.5%		
Optical		Durability	
Transmittance(T%)		Pencil Hardness	3H or higher per ASTM-D3363 (JIS-K5600)
a. None AR Coating(T%)	80%	Touch Life	Depends on Touch Panel Design
b. AR Coating (T%)	85%	Warranty	a. 1 year limited warranty b. depends on construct (Max 5 year)
Haze (h%)			
a. None AG Coating(h%)	≤ 2%		
b. AG coating(h%)	3%/5%/9% optional		

SR電阻式觸控面板(Sunlight Readable Resistive Touch Screen)

Mechanical		Reliability	
Available Size	3.5" ~ 24"	Operating temperature	-20°C to +60°C
Available Size	Finger/Gloved Hand /Pencil/Conductive Stylus	Storage temperature	-20°C to +70°C
Touch Panel Design	1. 4W/5W/8W	High temperature Storage	80°C 240 hr
	2. AMR/5W Multi-touch	Low temperature Storage	-20°C 240 hr
Activation Force	Typically less than 80g	High temperature & High humidity Storage	60°C 90% RH 240 hr
Electrical		Thermal Shock	-20°C ~ +70°C (1hr eachCycle,10Cycle)
Insulation resistance	10M ohm@25V DC		
Linearity(100g)	1.5%		
Optical		Durability	
Transmittance(T%)		Pencil Hardness	3H or higher per ASTM-D3363 (JIS-K5600)
a. None AR Coating(T%)	76%	Touch Life	Depends on Touch Panel Design
b. AR Coating (T%)	80%	Warranty	a. 1 year limited warranty b. depends on construct (Max 5 year)
Haze (h%)			
a. None AG Coating(h%)	≤ 3%		
b. AG coating(h%)	3%/5%/9% optional		
Reflective rate	SRI 5%; SRII &III 1%		



Thank you!!

