

投射式电容屏规格书

Projected Capacitive Touch Panel Product Specification

客户 Customer	Public Version
品名 Production	7"投射式电容屏 19.5 INCH PROJECTED CAPACITIVE TOUCH PANEL
产品型号 Part NO.	CTP.01.00701001.V1
规格书通用级别 Application Level	<input checked="" type="checkbox"/> Sample Used Only. <input type="checkbox"/> Mass-Production Used.
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1、一般说明 GENERAL DESCRIPTION

1.1 产品摘要 OVERVIEW

这是一款最多可以支持10 指触控的投射式电容触摸面板。

This Projected Capacitive Touch Panel can be multi-touch (max to be 10 points touch).

1.2 产品特征 FEATURES

项次 ITEM	规格 SPECIFICATIONS
面板尺寸 Panel Size	7 inch
产品结构 Structures	Glass/Glass
总厚度值 Total Thickness	2 ± 0.2 mm (Lens 1.1 MM & Sca:0.2 MM& Sensor 0.7 MM)
作业条件 Operation Condition	-10°C~+60°C at Min 45% to Max 85% RH
储存条件 Storage Condition	-20°C~+70°C at Min 45% to Max 85% RH

备注 1：为确保触控模组有效发挥功能，请务必在作业时将控制器做有效的接地动作。

Note1: In order to make a touch panel operate normally, please make sure that the host device is grounded.

备注 2：作业环境设定值须小于一个大气压压力。

Note2: All environmental characteristics listed as above all should be less than 1 atmosphere.

备注 3：触控面板必须由双面胶或其它具有粘性的材料将 TFT-LCD 模组做组合作业，并将触控面版的控制器反折固定在 TFT-LCD 模组下的铁框或其它构件上并加以接地。

Note3: The touch panel must be assembled with LCD panel by VHB or other materials, the control board also be fixed on LCM bezel or other mechanical parts of the system and then be grounded.

备注 4：假设触控模组没有被有效的执行接地动作时，触控面板可能会有功能性受损或则不稳定等现象发生。

Note4: The touch panel may be damaged functionally or unstable if the panel does not be grounded through your system to earth.

1.3 通用规格 GENERAL SPECIFICATIONS

项次 ITEM	规格 SPECIFICATIONS	备注 NOTE
输入方式 Input Method	Finger or Cap. Stylus	USB
精确度 Accuracy	Within 2.5mm each target & 10% Jitter limit on moving	Based on WIN7/WIN8/WIN10/Linux/Android definition ppi (Pixel per inch)
分辨率 Resolution	25ppi (Min.)	By BYK-Gardner at 550nm.
玻璃穿透率 Transparency	大于 85 %	
玻璃雾度值 Haze	3% (Maximum)	

备注 1: 上表中所列之光学特性数值的测量是采用检测仪器 (BYK-Gardner) 在波长 550nm 的条件测得。

Note1: The optical characteristics listed as above are measured by BYK-Gardner instrument at 550nm wavelength.

1.4 触控面板规格 TOUCH PANEL SPECIFICATION

项次 ITEM	规格 SPECIFICATIONS
外观尺寸 TP.OD	179.7MM× 113.6MM×2MM× R1±0.2MM
盖板外形 Lens.OD	179.7MM× 113.6MM×2MM±0.2MM
盖板显示区域 Lens.AA	154.08MM× 85.92MM±0.2MM
功能片外形 Sensor.OD	164.9MM×99MM±0.2MM
功能片显示区域 Sensor.AA	157.5MM×85MM±0.2MM

备注 1: 触控面版的玻璃四周和两侧进行 R 角与 C 角加工, 相关加工规格请参照图面尺寸规格标识定义。

Note1: All of the corners and edges of the glass that have chamfer process by CNC machines and all dimensions and tolerances will be defined on the drawing of the touch panel.

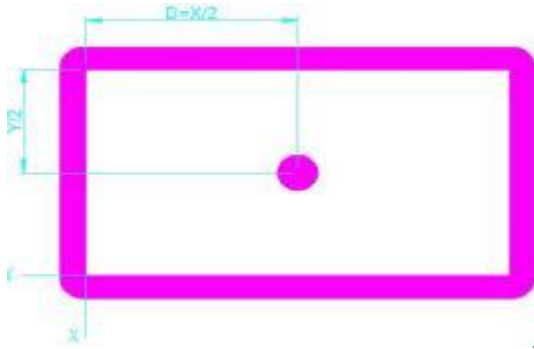
2.可靠度测试报告与规格 RELIABILITY TEST REPORT AND SPECIFICATIONS

2.1 机械特性 MECHANICAL CHARACTERISTICS

项次 ITEM	测试条件 CONDITIONS	允许条件 PASS CRITERIA
面板部分 Panel	落球测试 Ball Drop Test	5000g±2g 40cm No damage at each cycle drop 1points and each point drop 1 time only
	硬度测试 Hardness	Pencil: 6H Pressure:1N/45° Hardness ≥6H
	翘曲度 Warpage	By Cage Warpage ≤ Length*0.3% Unit:mm
FPC/COF 可靠性测试 FPC/COF Reliability	剥离测试方向 Direction of peeling off	90° Strength ≥ 500gf/cm
	拉力测试速度 Speed of Pulling out	50mm/min

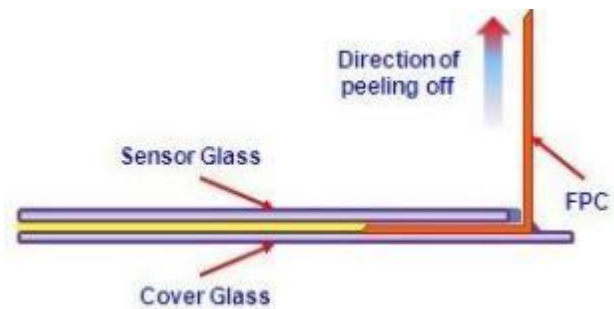
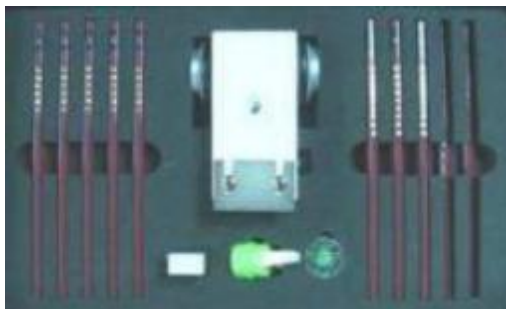
备注 1：钢球落下测试示意图如图一所示。

Note1:The ball drop test illustration is showed as follow.



备注 2：玻璃硬度测试依照 JIS-5400 系列标准规范手法；相关测试示意图如二、三所示。

Note2:The hardness test follows up the JIS K-5400 serials industry standard and the test illustration is showed asbelow.



备注 3：FPC/COF 的软板玻璃强度测试依照 ASTM D903/ASTM D3807 系列标准规范手法；测试示意图见图四。

Note3: The FPC/COF peeling strength test illustration is showed as below, and the test method follows the standard Of ASMT D903/ASMT D3807.

2.2 可靠度规格 RELIABILITY SPECIFICATIONS

环境测试条件类表如下所示 Environment test conditions are listed as follows.

恒温恒湿 constant temperature and humidity	The product should be allowed to stand at 60 °C with 90% RH for 240hrs un-load condition and allowed to be normalized for 4hrs.
冷热动擎测试 Thermal Shock	The product should be allowed to stand at -20 °C to +70 °C for 30min/cycle with totally 50cycles and allowed to be normalized for 4hrs.
高温储存测试 High Temp. Storage	The sample should be allowed to stand at +70 °C for 240hrs un-load condition and allowed to be normalized for 4hrs.
低温储存测试 High Temp. Storage	The sample should be allowed to stand at -20 °C for 240hrs un-load condition and allowed to be normalized for 4hrs.

3、外观检验 APPEARANCE AND COSMETIC INSPECTION

3.1 检验方法及条件 Inspection method and condition

3.1.1 检验环境：照明亮度：1000±200Lux，温度 22±3°C，湿度：55±15% RH，洁净室执行检验。

Inspection environment: illumination brightness 1000±200Lux,temperature 22±3°C,humidity 55±15

RH,inspection in the clean room.

Inspection method: The distance of the inspector to the product should be 30~40cm as shown in the image below.

3.2 检验时注意以下事项 Please note the following points in the inspection.

3.2.1 检验人员必须佩戴手/手指套;

The inspector must wear gloves/finger cots.

3.2.2 将检验的产品置于检验员前方的位置，双手小心托住产品边缘，不能使产品弯曲;

Put the TP product in front of the inspector, hold the edges of the product carefully with both hands to avoid bending the product.

3.2 使用工具 Inspection tool

3.2.1 尺寸检验：卡尺、机壳、按键等;

Dimension inspection : callipers,machine case,press key etc.

3.2.2 点状、线状缺陷：菲林尺;

Spot,line defects: Film ruler.

3.2.3 崩边、缺角、裂痕缺陷：10 倍及以上目视镜、CCD 放大镜;

Broken edge,broken angle,crack defect: 10 times or above eyepiece,CCD magnifier.

3.3 缺陷定义 Defect definition

3.3.1 点线缺陷（白点、气泡、凹凸点、污点、划伤、毛线）若缺陷长为宽的 2.5 倍以上,则视为线状缺陷,点大小直径计算: $D = (X+Y)/2$ (X、Y 为点最大直径和最小直径);

Spot and line defects(white spot,bubble,concave-convex spot,stain,scratch,burr line),if the length of the defect is over 2.5 times larger than the width then counted as line shape defect.Calculation of spot diameter : $D = (X+Y)/2$ (X,Y are the maximum and minimum diameter).

3.4 缺陷代码对照表 Defect codes checklist

代码 Code	名称 (单位) Name(unit)	代码 Code	名称 (单位) Name(unit)	代码 Code	名称 (单位) Name(unit)
D	直径 (mm) Diameter(mm)	DS	距离 (mm) Distance(mm)	H	深 (高) 度 (mm) Depth(height)(mm)
N	数目 (个) Number(pcs)	S	面积 (mm ²) Area(mm ²)	L	长度 (mm) Length(mm)

W	宽度 (mm) Width(mm)	T	厚度(um) Thickness(mm)	NA	无 Not applicable
3.5 检测标准 Inspection standard					
		10≤X≤15.6	15.6<X≤21.5	21.5<X≤32	
点状缺陷 (杂质、污点、白点、 凹痕、气泡、凸点等)	D ≤0.15MM 个数忽略不计，不可密集	D < 0.15MM 个数忽略不计，不可密集	D ≤0.20MM 个数忽略不计，不可密集		
	0.15 < D ≤0.20MM 允许 2 个，不可密集	0.15 < D ≤0.30MM 允许 3 个，不可密集	0.25 < D ≤0.35MM 允许 4 个，不可密集		
	0.20 < D ≤0.25 mm 允许 1 个	0.30 < D ≤0.35MM 允许 1 个	0.35 < D ≤0.45MM 允许 2 个，不可密集		
	D > 0.25MM, NG	D > 0.35MM, NG	D > 0.45MM,NG		
线状缺陷 (纤维、毛丝、划伤等)	W < 0.03MM 忽略不计，不可密集	W < 0.05MM 忽略不计，不可密集	W < 0.08MM 忽略不计，不可密集		
	0.03MM < W ≤0.05MM L < 10MM, 不可密集允收	0.05MM < W ≤0.07MM L < 10MM, 不可密集允收	0.08MM < W < 0.12MM L < 10MM, 不可密集允收		
	0.05MM ≤ W ≤0.06MM L < 5mm, 允许 1 个	0.07MM < W ≤0.08MM L < 10MM, 允许 2 个	0.12MM < W ≤0.13MM L < 10MM, 允许 3 个		
	0.06MM < W ≤0.07MM L < 2MM, 允许 1 个	0.08MM < W ≤0.1mm L < 5MM, 允许 1 个	0.13MM < W ≤0.15MM L < 3MM, 允许 1 个		
	W > 0.07MM, NG	W > 0.1MM, NG	W > 0.15MM, NG		
异色点	D > 0.2, 允收 1 个	D > 0.25, 允收 2 个	D > 0.3, 允收 3 个		
裂纹 CRACK	NOT allowed				
盖板崩边 COVER GALSS Broken edge	角落 angle	X ≤0.2, Y ≤0.2MM, Z ≤0.2 可允许; 超出则 NG Z ≤0.2 is acceptable;NG if larger			
	边缘 edge	X ≤0.2, Y ≤0.2MM Z ≤0.2 可允许, 超出则 NG Z ≤0.2 is acceptable;NG if larger			
FPC	3M 胶脱落 3M tape dropped			不允许 Not allowed	
	折痕/压痕: 导体上允许有轻微折/压痕但不可有锐角、明显压痕和变形。 Crease/Indentation: it is acceptable for slight crease/indentation on the conductive parts,but it must not have acute angle,obvious crease and deformation.				
	FPC撕裂 FPC tearing			不允许 Not allowed	
尺寸 Size	须符合规格书卡尺 Conform to the specification,callipers.				

3.6 说明 Statement

3.6.1 在合适的测试条件下，当检验人员于可视区表面，以肉眼 10 秒时间内无法目视到明显的点或线形状时，这个面板的外观视为可接受；

Under the proper test condition,when the inspector is checking the surface of the visual area,if there are no obvious spots or lines by visual checking within 10 seconds then the product appearance of the touch panel is acceptable.

3.6.2 可以用风吹离和简单擦除掉盖板表面的外来物，不视为缺陷；

The foreign matter that can be blew away or simply wiped off on the surface of the cover glass is not considered as a defect.

3.6.3 经组装生产过后，拆卸造成损伤之外观不良，不视为缺陷；

The damage of appearance caused by disassembling after installed for production is not considered as a defect.

3.7 检验注意事项及要求 Inspection attention and requirements

3.7.1 产品的颜色和所用原料以最近工程样板为准；

The product colour and raw material are subject to the latest engineering sample.

3.7.2 检验时线状缺陷根据缺陷的长度来判断，点状缺陷根据缺陷的直径来判断，划伤长度为划伤轨迹的长度；

During the inspection,the line shape defect is judged by the length of the defect,the spot defect is judged by the diameter of the defect,the length of scratch damage is the length of the track of scratching.

3.7.3 如果单个表面有多种缺陷时，总数不可超过三种缺陷；

If there are many types of defects on a single surface,the total defects must be no more than 3 types.

3.7.4 所有不可避免或难以量化的产品缺陷均以客户或品质工程的签样为判定标准；

All of the product defects that are inevitable or hard to be quantitative are subject to the signed sample by customer or quality engineer as the criterion for judging.

3.7.5 尺寸需严格按图纸管控；

Dimensions must be controlled strictly same as the technical drawing.

3.8 售后须知 After sales attention

3.8.1 客户端上线之后的表面明显划伤，破损，FPC 断线，银浆线划断我司无法吸收，需客户端自行承担

The obvious scratch,damage,broken FPC,broken silver line after the installation for production on client

side are borne by client himself.

3.8.2 另请客户上线挑选出的不良标注好位置后，重新将我司的专用保护膜覆好，避免产品再次遭受划伤和污染。

Please mark the position of the defect when customer found the defective product, and please repack it with our company's special protective film to avoid being scratched or polluted again.

4.预防措施 PRECAUTIONS

项次 ITEM	说明 EXPLANATION
储存 Storage	<p>1、触控面板必须被储存放置在一如规格书所建议的有从事环境温度与湿度控制的区域内。</p> <p>A touch panel should be stored under the environment temperature and humidity controlled as suggested.</p> <p>2、不可将触控面板直接暴晒在阳光下。</p> <p>Do not store a touch panel in direct sunlight.</p>
取放 Handling	<p>1、触控面板要自包装箱中取出时，请务必热别注意该包装外的箭头符号是否朝上。</p> <p>Unpack the carton with the printed red arrow pointing up.</p> <p>2、无论任何时候都必须以拿取触控面板本身为先。</p> <p>Hold a touch panel body instead of the FPC/COF all the time.</p> <p>3、当 Sensor Glass 的保护膜被移除而准备从事组装作业时，务必要避免 Sensor Glass 受到外在因素的污染。</p> <p>Avoid that the surface of the sensor glass is polluted after removing the protect film when assembly.</p>
项次 ITEM	说明 EXPLANATION
清洗 Cleaning	<p>1、若要清洗触控面板，请尽量避免使用诸如强酸或强碱之类的化学溶剂。</p> <p>Prevent using any kind of the chemical solvent, acidic or alkali solution when cleaning.</p> <p>2、若要清洗触控面板，我们建议使用中性的清洗剂或丙醇和酒精等。</p> <p>Neutral detergent or isopropyl alcohol was suggested if the panel is cleaned.</p>
组装 Assembly	<p>1、触控面板在组装时，请不要过度施力导致玻璃表面发生诸如变形或扭曲等变形现象的发生。</p>

	<p>Do not apply rough force such as bending or twisting to the touch panel during assembly.</p> <p>2、对于 FPC 或 COF 的作业时，过度的拉力或绷紧作业是必须被禁止和避免的。 Excessive force or strain to the panel or FPC/COF is prohibited.</p> <p>3、请在触控面板与 TFT-LCD 面版的中间间隙处选用适合的双面胶带或是具有粘性的泡棉加以阻绝外在的水份和污染源的干扰。 Past VHB tape or sponge with adhesive on the gap between a touch panel and a LCD module to segregate water and dust contamination.</p>
<p>操作 Operation</p>	<p>1、触控面板必须在稳定的环境状况下被使用，环境状态的突然急剧变化有可能会致触控面板的性能失效。 The panel must be operated in a steady environment, the abrupt change of the environment conditions may cause the malfunction of the panel.</p> <p>2、为确保触控面板的功能得以稳定有效的发挥呈现，请务必确认系统的接地回路与电源供应器的接地回路被正确的衔接与执行（与大地作共地回路是最佳的设计）。 In order to guarantee all functions of a touch panel stable, please make sure that system is grounded or a power adapter is connected correctly to ground loop (Connection to earth ground is suggested).</p> <p>3、触控面板在操作的过程中，请勿任意插拔触控面板与系统端的界面连接器。 Do not pull the interface connector in or out while the touch panel is operating.</p> <p>4、触控面板在操作的过程中，请务必禁止与避免使用任何尖锐或硬质物体去敲击触碰。 Any sharp edged or hard objects are interdiction to hitting when touch panel operation</p>
<p>项次 ITEM</p>	<p>说明 EXPLANATION</p>
<p>其它 Others</p>	<p>1、本产品满足 ROHS 的规范要求 The product meets the specification requirement of the ROHS standard criteria.</p> <p>2、在正常的操作条件基础上，提供 1 年的触控面板保修服务。 Provide 1 years product guarantee under normal operation Conditions.</p> <p>3、假设触控面板将被使用于诸如相对高温，高湿度，高海拔或长时间操作等较为严峻的操作条件时，中心的建议请事先咨询产品应用工程人员并取得相关意见；否则关于产品的可靠度与功能是无法被有效的确保。 If the panel will be used in extreme conditions such as high temperature, high</p>

humidity, high altitude or long operation time etc., It is strongly recommended to contact for field application engineer's advice. Otherwise, Its reliability and function may not be guaranteed.

- 4、在触控模组的单体下，请禁止与避免有任何高电压或则静电等外在因素被加诸在模组上。

Avoid high voltage and/or static charge being applied to touch module.

- 5、保持触控面板的清洁度并避免任何具有粘性的物质粘附在触控面板上。

Keep the panel surface clean. Prevent any kind of adhesive applied on the surface.

- 6、当操作触控面板时，应该避免有金属或导电物质放置在面板上。

To avoid the metal or any kind of the electric conduction materials on the touch screen when you are handling.

- 7、触控面板是由人体接触操作，若有任何非导体被应用于面板时，可能会出现触控面板的机能失效。

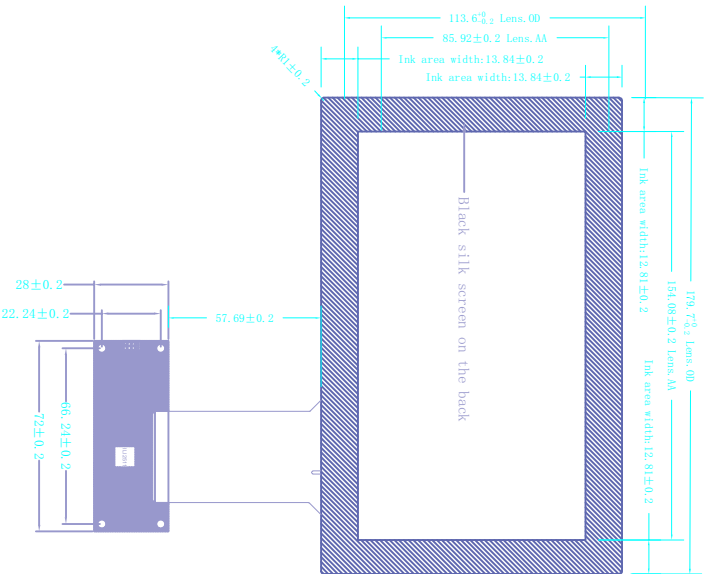
Any kind of the nonelectric conductor may cause the malfunction when that applied due to touch screen is sensing by human body.

- 8、客户端收到面板的机能产品后请于 30 天内使用完毕，否则会因存储环境或时间太长而造成产品表面形成雾状脏污。

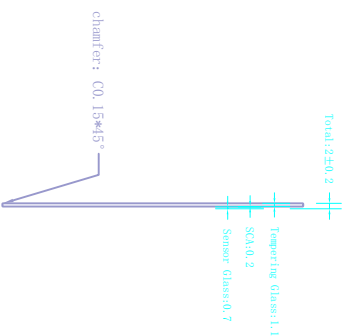
Please finish installation within 30 days after receive the products. Otherwise, Due to the storage environment and too long time stay, the surface of the product will be misty.

5. 触控面板图 TOUCH PANEL DRAWING

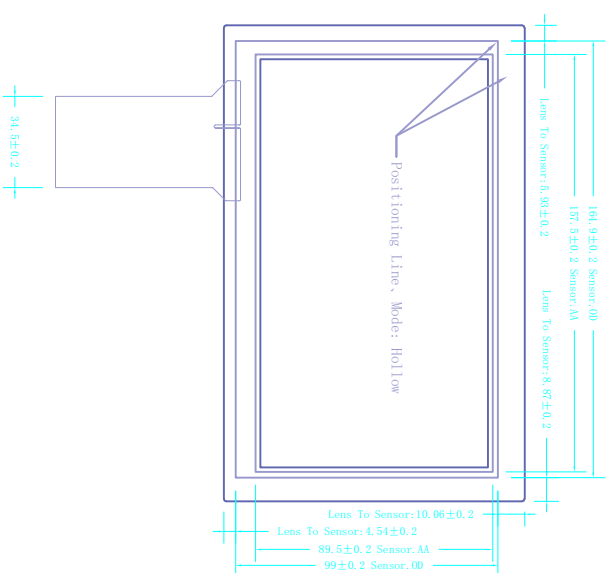
Front View



Side View



Dorsal View



Technical Parameter

Interface Mode	USB	Humidity Range	45%-85%RH	GB/T 1804-F Segment Tolerance	USB Definition
Product Structure	G+G	Transmittance	≥85%	0.5-30	VDD 3.3V
IC Option	ILI2511	Surface Hardness	≥6H	30-120	D-
Display Ratio	16:9	Working Environment	-10°C~+60°C, ≤85%RH	120-400	±0.2
Touch Point	10 Point	Storage Environment	-20°C~+70°C, ≤85%RH	400-1000	±0.3
Input Voltage	5V	Indimensional tolerances are selected in GB/T 1804-F class		1000-2000	±0.5

Product Model	CTP-01.007/01001.V1		View Direction	Unit	MM
Product Name	7"Touchpanel	Project Design	2024.06.22	Version	A0
Customer Number	Public	Project Audit	2024.06.22	Drawing Scale	1:1