

承认书

APPROVAL SHEET

客户名称 (CUSTOMER NAME) : 仁寶 (Compal)客户编号 (CUSTOMER CODE): BCX00产品名称 (DESCRIPTION) : TP+LCM 框贴模组TP+LCM Air-Bonding Module产品编号 (PRODUCT CODE): 910A0-000058A承认日期 (SAMPLE DATE): 2015-06-26承认书编号 (APPROVAL SHEET NO.): 20150626304

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目录 Contents (TP)

1. 基本规格 Specification	4
1.1 适用范围 Scope	4
1.2 特征和规格 Features and General Specifications	4
1.3 环境参数 Environment Conditions	4
1.4 机械性能 Mechanical characteristics	4
1.5 电气性能 Electric Characteristics	5
2 实验条件 Testing Condition	5
2.1 温湿度范围 Temperature and humidity range	5
2.2 耐冲击试验 Impact Resistance Test	5
2.3 引线拉力弯曲和耐热性测试 Flexible Pattern Bending and Heat Resistance	5
3 电气特性测试条件 Electric characteristics	6
3.1 绝缘阻抗 Insulation resistance	6
4 外观检验标准 Appearance limit standard	6
5 信赖性条件 Reliability Conditions	10
5.1 耐高温高湿测试 Temperature and Humidity Resistance	10
5.2 高温存储 Heat resistance	10
5.3 冷热冲击 Thermal Shock	10
6 包装及运送 Packaged and shipped	11
6.1 包装 Package	11
6.2 运送 transport	11
7 使用过程中的注意事项 Using Precautions	11
7.1 储存的注意事项 Cautions for Storage	11
7.2 搬运的注意事项 Cautions for unpacking	11
7.3 装配注意事项 Assembly precautions	11
8. 样品承认书的反馈 Samples of feedback admit it	12
9. 编号规则 Regulation of Code-making	13
10. 工程图 Engineering Drawing	13

1. 基本规格 Specification

1.1 适用范围 Scope

本规格书适用于消费类电子的电容式多点触摸屏（如 MID、车载 DVD 等）。

This specification applies to consumer electronics the capacitive touch screen (such as MID, multipoint vehicle DVD, etc.).

1.2 特征和规格 Features and General Specifications

规格 General Specifications (L=Length ; W=Width ; T=Thickness)

项目 Items	规格 Specifications
结构 structure	G/G
外形尺寸 Outline Dimensional	252.00mm*165.87mm
可视区 View Area	218.16mm*136.80mm
驱动区 Active Area	216.96mm*135.60
引脚定义 Pin Configuration	1. VDD(3.3V) 2.GND 3.INT(1.8V) 4.SCL(1.8V)5.SDA(1.8V) 6.RST(1.8V)

1.3 环境参数 Environment Conditions

项目 Items	标准	值 Value
工作环境	1. 功能 OK 2. 外观 OK	-10°C~+60°C, ≤90%RH
存储环境		-20°C~+70°C, ≤90%RH

1.4 机械性能 Mechanical characteristics

项目 Items	值 Value
Finger contact area 手指接触面积	$\Phi \geq 5\text{mm}$
光学特征 Optical Characteristics	透光率 Transmittance: ≥86%
表面硬度 Surface Hardness	7H

1.5 电气性能 Electric Characteristics

项目 Items	值 Value
工作电压 Working voltage	DC2.8V~3.3V
绝缘阻抗 Insulation Resistance	> 20M DC25V
工作电流 Working current	TBD
响应时间 Response time	TBD

2 实验条件 Testing Condition

2.1 温湿度范围 Temperature and humidity range

在常温条件 (5°C-35°C)，湿度为 45%-85%，和气压为 860hPa-1060hPa 下进行测试。必要对产品进行精确测试时，应在标准环境为：23°C，65%RH 和 1013hPa，放置 24 小时之后，进行测试。

In room temperature conditions (5 °C - 35 °C), humidity for 45% - 85%, and barometric pressure test 1060hPa 860hPa - under. Necessary to products accurately, should be in standard test for: 23 °C, environment and placed 1013hPa 65% RH and 24 hours later, tested.

2.2 耐冲击试验 Impact Resistance Test

1) 测试条件：当用 64g Φ25.4mm 钢球从 60cm 的高度垂直落在玻璃厚度为 0.7mm-3.0mm 的产品表面中心一次，玻璃不会损坏。

1) Test conditions: when using 64g Φ 25.4 mm ball from 60cm height vertical fell on the thickness of the glass is 0.7 mm - 3.0 mm product surface center once, glass won't damaged.

2) 判定基准：实验后产品各项特征满足，且变动率小于 20%。

2) determine the benchmark: after the experiment, and various features meet product is less than 20% changes rate.

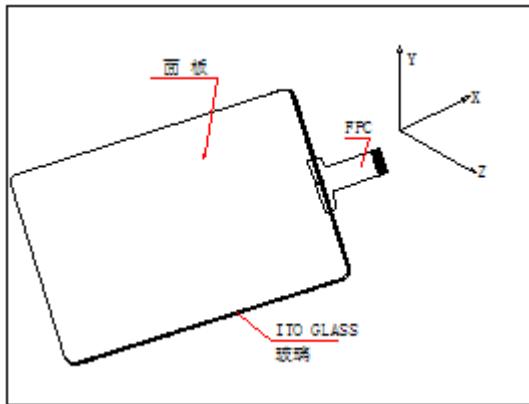
2.3 引线拉力弯曲和耐热性测试 Flexible Pattern Bending and Heat Resistance

1) 引线拉力测试 Flexible pattern heat seal peeling strength:

引线拉力测试于本压首件时进行。

90 度剥离: 测试值除以 FPC 的宽度, 拉力值需大于或等于 0.5Kgf/cm.方为 OK, 否则拒收。

180 度剥离: 测试值除以 FPC 的宽度, 拉力值需大于或等于 0.75 Kgf/cm 方为 OK, 否则拒收。



2) 引线耐变曲性测试 Flexible pattern bending resistance:

弯曲半径 1mm, 弯折 3 次, 满足电气性能的要求。

Bending radius of 1mm, bending 3 times, to meet the requirements of electrical performance

3 电气特性测试条件 Electric characteristics

3.1 绝缘阻抗 Insulation resistance

用绝缘表 (25V) 的负极测试头按压于引线末端, 测试产品的绝缘阻抗。确保绝缘阻抗 $>20M\Omega$ 。

With insulating table (25V) anode test head pressure test the product in the end, lead the insulation impedance. Ensure insulation resistance $\Omega > 20M$.

4 外观检验标准 Appearance limit standard

1. 目的:

为确保本公司产品质量有一统一判定标准、能和客户达成一致性, 使生产线目检人员及品质人员在检验时有所依循, 特制定本规范

2. 适应范围:

2. 1 本公司所有电容屏型号之制程、成品检验均适用本检验规范。

3. 缺点分类定义:

3. 1 致命缺陷(Critical Defect): 代号为"CR".

3. 1. 1 产品之结构或功能不符合销售地区之有关法令规定或具有使顾客安全遭受威胁之不良现象.

3. 1. 2 产品功能失效或外型尺寸超规格造成客户无法装机。

3. 2 重要缺陷(Major Defect): 代号为"MA".

- 3.2.1 缺点足以影响到客户不接收产品之缺点.
- 3.2.2 缺件或错误者.
- 3.2.3 产品失去部份主要功能与规格要求不符合.
- 3.3 次要缺陷(Minor Defect):代号为"MI".
- 3.3.1 不良程度,仅使工作性能产生部份偏差,却足以让客户所发现并作为挑剔及要求折价之理由者.
- 3.3.2 明显的外观修饰或操作(作业)缺点,此缺点为一般人员即可容易处理而不须经由修理人员处理的,或是虽无法处理,但为一般客户所容易忍受的.
- 3.3.3 比较标准品,略有偏差,非专业人员不易发现,且经常可由顾客本身轻易处理或忍受之缺陷.

4. 抽样计划:

4.1 依 GB/T2828.1:2003 计数抽样检验程序, 正常检验单次抽样一般检验 II 级水平抽样之。

5. 允收水准:

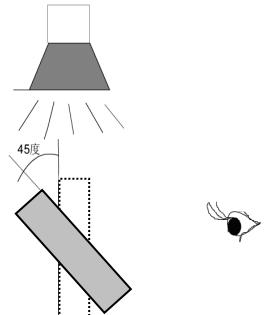
5.1. 致命缺陷(CR):AQL 0 5.2. 重要缺陷(MA):AQL 0.65 5.3. 次要缺陷(MI):AQL 1.0

6. 使用设备/工具

6.1. 台灯、离子风扇、菲林尺、卡尺、二次元等

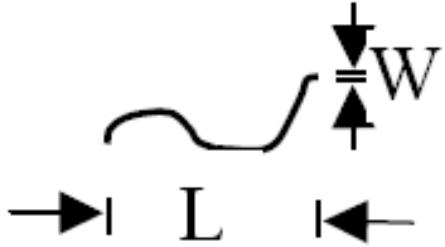
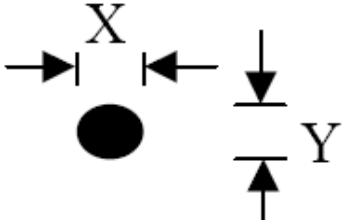
7. 检验方法

- 7.1. 在 27 瓦的冷白色的萤光台灯下(照度--1000±200LUX);
- 7.2. 电容屏测试软件测试 TP 之电气功能;
- 7.3. 人眼与被测物距离 30±5cm, 配黑/白底卡检查外观;
- 7.4. 人眼与被测物成 45±15 度;
- 7.5. 检验环境: 温度: 20±5°C; 湿度: 60%±10%RH; 洁净度: 10000 级;
- 7.6. 外观检验时间: 5-8S。



8. 检查项目及判定

项目		标准说明(判定标准)	缺点判定		
			CR	MA	MI
尺寸		外型尺寸超规格造成客户无法装机使用	√		
		其它尺寸超出规格书之公差范围		√	
原材料		原材料型号规格与规格书不一致。		√	
外观	脏污	内污目视从正面看不清为允收。			
		产品边缘内污, 机壳可以遮住则允收, 反之拒收。		√	
		内污目视从膜面看较明显, 拒收。		√	
		产品表面无法清洁的脏污按点状不良判定。		√	
		产品 B 面脏污不允许; A 面(正面)借助任何溶剂可擦拭干净者, 单批抽检不良比例≤5%, 判定允收, 否则拒收。			√

					
线状 (两线状缺陷距离应大于15mm, 有刮伤感不允许)		$W \leq 0.03\text{mm}, L \leq 3.0\text{mm}$, 可以忽略不计			
		$0.03\text{mm} < W \leq 0.04\text{mm}, L \leq 3.0\text{mm}$ 允许三条		✓	
		$0.04\text{mm} < W \leq 0.06\text{mm}, L \leq 3.0\text{mm}$ 允许二条		✓	
		$W > 0.06\text{mm}$ 或 $L > 3.0\text{mm}$ 不允许		✓	
项目		标准说明(判定标准)			
		缺点判定			
		CR	MA	MI	
外观	点状	 $\phi = (x + y) / 2$	点状不良可用机壳或面板盖住时则不计缺		
		$D \leq 0.15\text{mm}$, 忽略不计(密集不可)		✓	
		$0.15\text{mm} < D \leq 0.25\text{mm}$ 同一片产品上允许三个点, 且与另一点间距>15mm		✓	
		$D > 0.25\text{mm}$ 不允许		✓	
项目		标准说明(判定标准)			
		缺点判定			
		CR	MA	MI	
外观	透空				
		产品尺寸: 10.1吋以下(含 10.1吋)			
		$D \leq 0.1\text{mm}$ 忽略不计(密集不可, 线状透空不可)			
		$0.1\text{mm} < D \leq 0.15\text{mm}$ 同一片产品上允许五个点, 且与另一点间距>20mm			
		$D > 0.15\text{mm}$ 不允许			

项目	标准说明(判定标准)	缺点判定		
		CR	MA	MI
外观	汽泡	D≤0.1mm 时, 可忽略不计		✓
		0.1mm<D≤0.15mm 时, 与另一点相距>15mm 以上, 允许三颗,		✓
		0.15mm<D≤0.2mm, 与另一点相距>20mm 以上, 允许两颗		✓
		D>0.2mm 不允许	✓	
		气泡在可控区外, 机壳可以盖住, 可予忽略。		
	背胶/ 泡棉	贴附位置须与规格书一致, 不可露面板, 45° 角看不可入可视区	✓	
		贴附须平整, 接口不可重叠		✓
	水胶	产品(如面板、功能片及 FPC 等)上不可有残胶	✓	
		产品溢胶部分以可视区边线距功能片边沿距离的 2/3 管控	✓	
	保护胶	不可残留在产品表面, 否则拒收		✓
失效	摄像孔	锯齿/色差等依所签限度样判定		✓
		点状缺陷 D≤0.10mm, 允许 1 处		✓
	IR 半透 感应孔	锯齿/色差等依所签限度样判定		✓
		点状缺陷 D≤0.10mm, 允许 1 处		✓
	Logo	参照限度样品。	✓	
	角破损	X≤1.0mm 且 Y≤0.5mm 且 Z≤GT, 可予忽略		
		X>1.0mm 或 Y>0.5mm 或 Z>GT, 拒收		✓
	边破损	X≤2.0mm 且 Y≤0.5mm 且 Z≤GT, 可予忽略		
		X>2.0mm 或 Y>0.5mm 或 Z>GT, 拒收		✓
		Sensor 面崩边或崩角未伤及线路且正视不可见, 允收		
		Sensor 面崩边或崩角伤及线路或正视可见, 拒收	✓	
	破屏	不允许	✓	
	披锋/ 大边	不允许		✓
	变形	不允许	✓	
	蚀刻痕	比对样品或签样	✓	
	色差	比对样品或签样	✓	

	薰烟	可视区内有薰烟但可擦拭，拒收			✓
		可视区有薰烟但不可擦拭，拒收			✓
外观	回油	丝印印刷边缘不平整			✓
		字体：印刷模糊，重影不可辩识，拒收			✓
		图案字体清晰，无严重粗细现象，允许轻微图案字体渗透或干版字体线条变粗或变细较正常线宽≤1/3（且≤+/-0.1mm），无断字			
	引线	印刷的文字、符号清晰可辨认可以接受，字迹模糊、残缺、脱落、无法辨认不可以接受。			✓
		引线压反或导电面做反，拒收	✓		
		引线边缘撕裂，拒收	✓		
		短路、开路、补线，拒收	✓		
		不平整性翘曲，折痕，不影响功能，允收			
		引线划伤：不允许露出铜/镍层。铜镍层被暴露为 NG。		✓	
		器件焊反、焊歪、少焊、虚焊，拒收		✓	
		黑色电磁膜：边缘部分剥离在宽 0.3mm 以下、长度不限；内部剥离直径在 0.5mm 以下，且不影响功能，数量不限，密集不可。			✓

5 信赖性条件 Reliability Conditions

5.1 耐高温高湿测试 Temperature and Humidity Resistance

在 60°C, 90% RH 条件下存放 96 小时，取出在常温常湿下满足各项电气参数.

At 60 °C, 90% RH conditions 96 hours, remove deposit in normal temperature often wet all electrical parameters meet.

5.2 高温存储 Heat resistance

将产品放在在 70°C 条件下存放 120 小时，取出在常温下再存放 24 小时后,满足各项电气参数.

The requirements in 6 shall be satisfied after exposing at 70 °C, for 120 Hours and at nomal temperature and humidity for 24 hours.

5.3 冷热冲击 Thermal Shock

按照-20°C(0.5小时)→70°C(0.5小时)的条件循环100次,取出在常温常湿下再存放24小时后,满足电气参数.

According to - 20 °C (0.5 hour) - 70 °C (0.5 hour) conditions, take out 100 times in circulation under normal temperature often wet store again after 24 hours, meet the electrical parameters.

6. 包装及运送 Packaged and shipped

6.1 包装 Package

批量出货产品采用纸箱内嵌吸塑盒方式包装.

The batch outgoing goods use cartons with embedded Blister box board packing.

6.2 运送 transport

避免产品直接暴露在阳光直射下运输.

Avoid products under direct exposure to direct sunlight transportation.

7 使用过程中的注意事项 Using Precautions

7.1 储存的注意事项 Cautions for Storage

储存产品时须按样品承认书的温湿度要求放置，注意不可受日光直射或重物重压.

According to the sample must be stored product placement of temperature and humidity admit it, note are not required under direct sunlight or clog weigh.

7.2 搬运的注意事项 Cautions for unpacking

- 1) 尽量减少搬运次数。
1) Minimize the number of handling.
- 2) 尽量使用搬运工具。
2) Try to use handling tools.
- 3) 堆放不能超过九层，轻拿轻放，向上放置。
3) No more than nine layer, pile up gentle with place.

7.3 装配注意事项 Assembly precautions

- 1) 不要对产品施加额外的拉力。
1) Do not exert extra force to touch panel.
- 2) 须保持产品的透明清晰度，请在接触产品之前戴上指套或手套。请注意玻璃边角部位。
2) Since touch panel is transparent and clear, make sure to wear fingerstall or glove before touching. Be careful your hands and other parts from injury at handling by glass corners.
- 3) 当掌握产品时，请握住产品的四周，不要握中央，以免指套或手套上的脏污会留在产品上。在取出产品时，请不要握拿引线，以免造成产品与引线松动。
3) When handling, make sure to hold the touch panel borders not center parts to avoid dirt to touch panel.

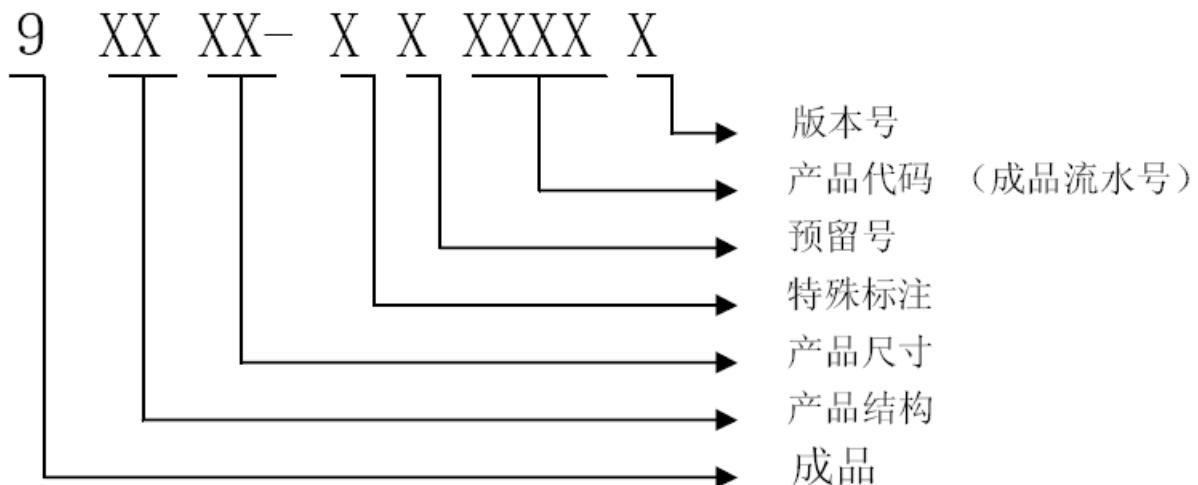
Do not lift touch panel by tail to avoid tail loosen.

- 4) 安装组合时, 请不要重拉 FPC, 因为重拉将使 FPC 从产品上剥离。
- 4) When installing and assembling, do not lift tail with heavy force to avoid tail peeling off touch panel.
- 5) 请不要在 FPC 上粘贴或安装其它物品。如: 在 FPC 上贴一层 FILM 或金属板, 因为这些附加物会对 FPC 顶部施加一个额外的压力, 从而导致 FPC 内侧松动。
- 5) Do not stick or mount other parts on the tail, such as additional film or metal plate. As it will exert extra force to tail tip and cause tail loosen.
- 6) 请不要从侧边使力拉 FPC, 因为侧边给的拉力会使 FPC 破裂。
- 6) Please don't pull makes force from side to side, because the FPC tension will make FPC burst.
- 7) 如有通气槽, 请在设计产品结构时, 注意产品附的不能有液体物和粉状物。
- 7) If there is air groove on touch panel, when design product structure, make sure no liquid and powder near the air groove.
- 7) 为了不使 TP 表面受压, 因此机壳与我司 TP 组合间隙须保持在 0.2mm-0.5mm 的范围内。
- 7) In order to avoid heavy stress to touch panel surface, make sure to keep 0.2mm-0.5mm assembling gap between touch panel and case.

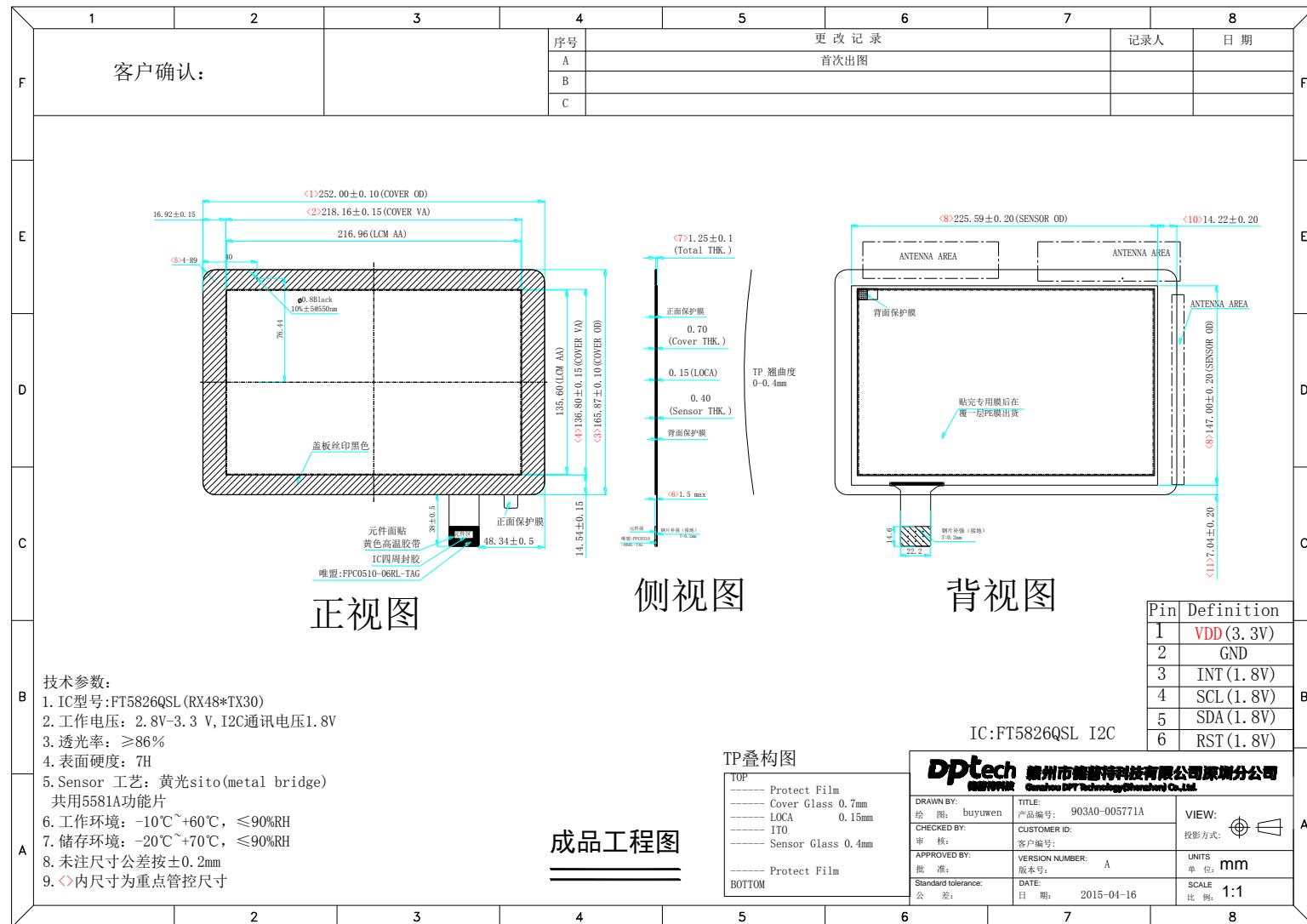
8. 样品承认书的反馈 Samples of feedback admit it

- 1) 此样品承认书只为产品的品质保障。实际上机使用, 请检查和评估我司产品与贵司机器设备的配置状况。
 - 1) The sample for the quality of the products admitted book guarantee. The actual computer use, please check and evaluate our products and the expensive department machine equipment status.
- 2) 当贵司评估后, 请贵司在我司的确认书上盖上确认图章, 并且将附本寄回我司, 倘若在量产前副本或承认样品未达到我司, 我们将默认贵司承认了我司的样品及承认书。
 - 2) when the expensive department assessment, please the expensive department in our confirmation on the cover, and will confirm chop attached in return we, if copy or admit sample amount antenatal fails to achieve our company, we will default the expensive department acknowledged our samples and admitted that book.
- 3) 样品承认书变更内容需针对实际情况进行协商变更, 需重新更新承认书。
 - 3) Sample admit it to change content must negotiate according to the actual conditions change, to reconsider update admitted that book.

9. 编号规则 Regulation of Code-making



10. 工程图 Engineering Drawing





深圳市国显科技股份有限公司

Shenzhen K&D Technology Co. Ltd

- Preliminary Specification
- Approval Specification

SPECIFICATION FOR LCD MODULE

Customer : _____

Product Model: KD101N9-40TA-A37

Sample code: _____

Designed by	Checked by	Approved by
Liyang Liu	Huaxing Li	Junhua Zhang

Final Approval by Customer

<input type="checkbox"/> LCM Machinery OK Checked By _____ <input type="checkbox"/> LCM Display OK Checked By _____	<input type="checkbox"/> LCM OK <input type="checkbox"/> NG , Problem survey: Approved By _____
--	---

- ※ The specification of "TBD" should refer to the measured value of sample . If there is difference between the design specification and measured value, we naturally shall negotiate and agree to solution with

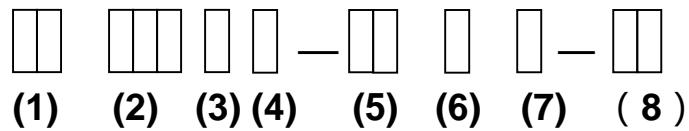
customer.

Revision History

Contents

No.	Item	Page
1.	Numbering System	4/18
2	Scope	5/18
3	Normative Reference	5/18
4	Definitions	5/18
5	Block Diagram	7/18
6	Technology Specifications	7/18
7	Reliability Test	15/18
8	Handling Precautions	15/18
9	Precaution for use	16/18
10	Package Drawing	17/18
11	Outline Dimension	18/18

1. Numbering System



No	Definition	Specifications
(1)	TFT LCM Productor No.	KD ---- Kingdisplay technologiy Co.,Ltd
(2)	Display monitor opposite angle line size	Unit :mm (size <10 inch: takes two integers ; size >=10 inch: takes three integers)
(3)	Productor Types	D ---- PMP / Tablet PC G ----GPS M ----MP P ----Mobile-Phone N ----Net Book / Notebook / MID
(4)	Productor Development Series No.	By two figures characters expression from 1 to 99
(5)	Interface PIN Number	By two figures characters expression from 1 to 99
(6)	With Touch Panel Or Not	T----With T/P ; N----Without T/P
(7)	LCD Type	A----AUO ; M----CMI ; C----CPT ; B----BOE ; L----LG ; W----Wintek ; H----HSD ; S----Century T----Tianma ; Y----Hydis ; I----INNOLUX ; U---Samsung ; V---IVO ; P----Panasonic
(8)	Productor Development edition No.	By The English letters : A1~ Z999

2. Scope

This specification applies to the TFT LCD module which is designed and manufactured by LCM Factory of Shenzhen K&D Technology Co. Ltd.

3. Normative Reference

GB/T4619-1996 《Liquid Crystal Display Test Method》

GB/T2424 《Basic environmental Testing Procedures for Electric and Electronic Products.》

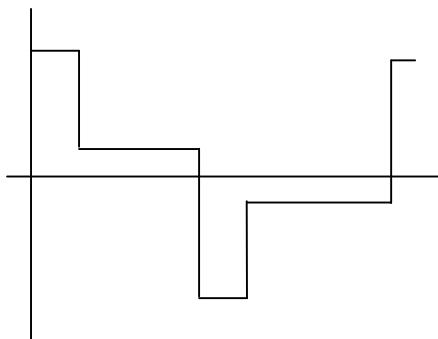
GB/T2423 《Basic Testing Procedures for Electric and Electronic Products》

IEC61747-1 《SIXTH PART GB2828`2829-87 《National Standard of PRC》

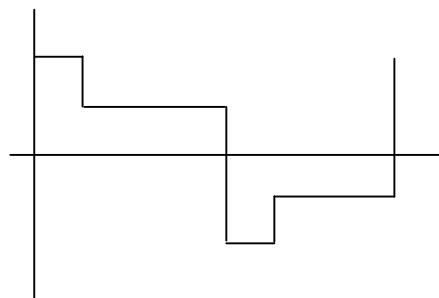
4. Definitions

4.1 Definitions of Vop

The definitions of threshold voltage V_{th1} , V_{th2} the following typical waveforms are applied on liquid crystal by the method of equalized voltage for each duty and bias.



【 selected waveform 】



【 non-selected waveform 】

① V_{th1} : The voltage which the brightness of segment indicates 50% of saturated value on the conditions of selected waveform

($f_r=80\text{Hz}$, $\Phi=10^\circ \Theta=270^\circ$ at 25°C)

② V_{th2} : The voltage which the brightness of segment indicates 50% of saturated value on the conditions of non-selected waveform

($f_r=80\text{Hz}$, $\Phi=10^\circ \Theta=270^\circ$ at 25°C)

③ V_{op} : $(V_{th1}(50\%)+V_{th2}(50\%))/2$ ($f_r=80\text{Hz}$, $\Phi=10^\circ \Theta=270^\circ$ at 25°C)

4.2 Definition of Response Time T_r , T_d

① T_r : The time required which the brightness of segment becomes 10% from 100% when waveform is switched to selected one from non-selected one. ($f_r=80\text{Hz}$, $\Phi=10^\circ \Theta=270^\circ$ at 25°C)

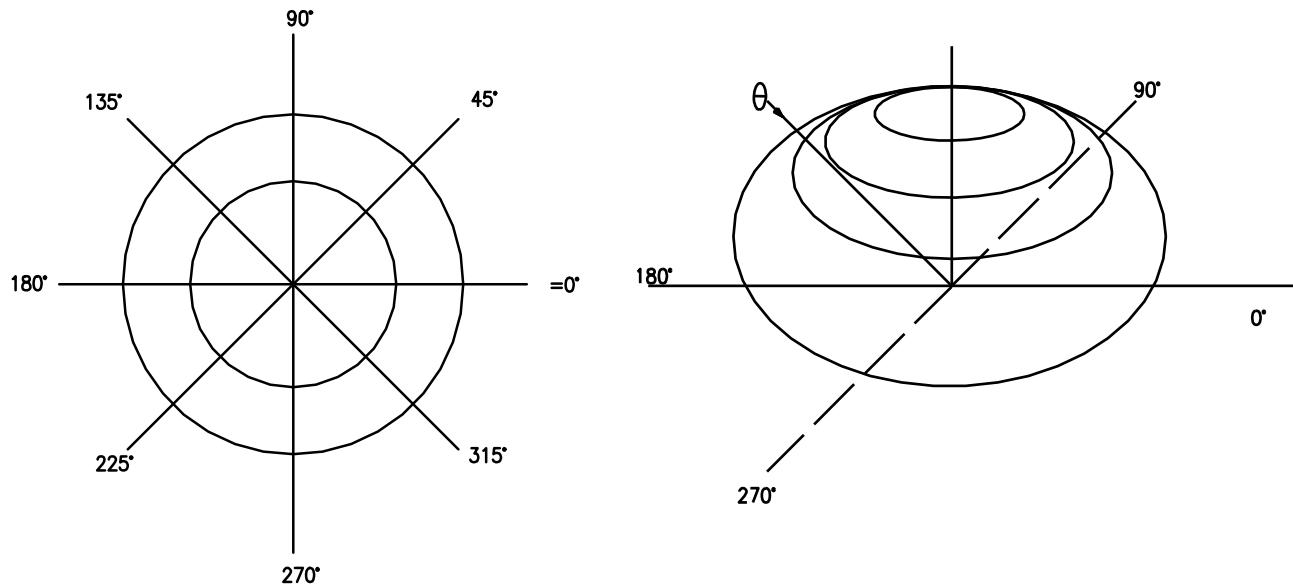
② T_d : The time required which the brightness of segment becomes 90% from 10% when waveform is switched to selected one from non-selected one. ($f_r=80\text{Hz}$, $\Phi=10^\circ \Theta=270^\circ$ at 25°C)

4.3 Definition of Contrast Ratio Cr

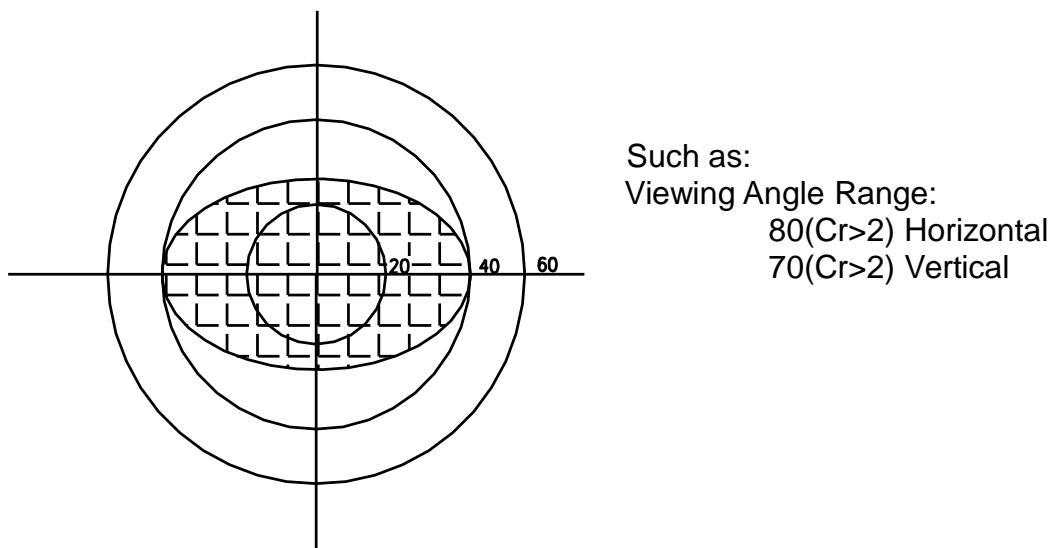
$$Cr = A/B$$

- ① A: Segments brightness in case of non-selected waveform
- ② B: Segments brightness in case of selected waveform

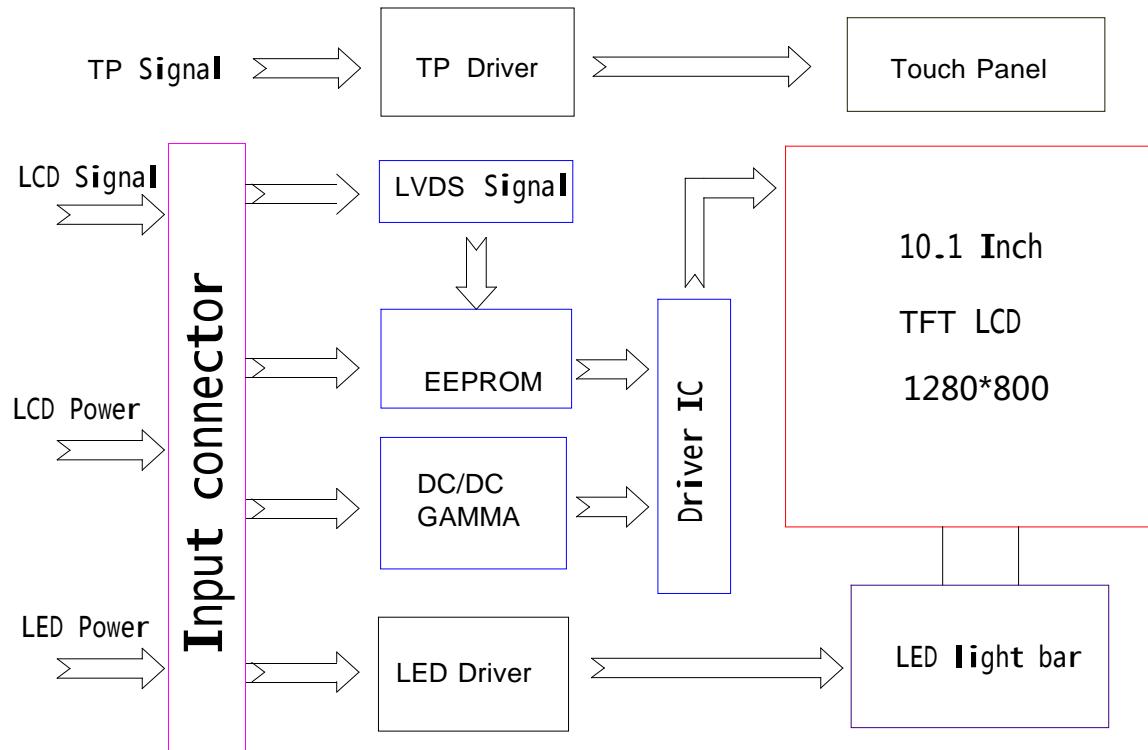
4.4 Definition of Angle and Viewing Range



Angular Graph: Contrast Ratio



5. Block Diagram



6. Technology Specifications

6.1 Features

This single-display module is suitable for use in MID products. The LCD adopts one backlight with High brightness 36-lamps white LED. Construction: 10.1 " a-Si color TFT-LCD ,With AUO Cell,White LED backlight, FPC ,T-CON and CTP.

6.2 General Specifications

No.	Item	Specification
1	LCD size	10.1 inch
2	Resolution	1280 (RGB)X800
3	Display mode	Normally black
4	Pixel pitch	0.1695(H)X0.1695(V) mm
5	Active area	216.96 (H)X135.60 (V) mm
6	LCM size	229.46(H)X149.10(V)X2.37(T)mm
7	LCM & CTP size	252(H)X165.87(V)X3.82(T)mm
8	Pixel arrangement	RGB-stripe
9	Surface Treatment	HC, Hardness 2H
10	Interface	LVDS (8 bit)
11	Backlight power consumption	3W(typ)
12	Panel power consumption	0.83W(typ)
13	Luminance for LCM	350 cd/m ² (typ)

6.3 Absolute Max. Rating

Item	Symbol	Values		Unit
		Min.	Max.	
Power Voltage	VDD	-0.5	5.0	V
	V _{LED}	-0.5	15	V
Backlight forward current	I _{LED}	0	25	mA(For each LED)
Input Signal Voltage	V _I	-0.3	VDD	V
Operation Temperature	T _{OP}	-10	50	°C
Storage Temperature	T _{ST}	-20	60	°C

6.4 Typical Operation Conditions

Item	Symbol	Values			Unit
		Min.	Typ.	Max.	
Power Voltage	V _{DD}	3.0	3.3	3.6	V
	V _{LED}	5	12	15	V
Current Consumption	I _{CC}	-	250	-	mA
	I _{V_{LED}}	-	250	-	mA

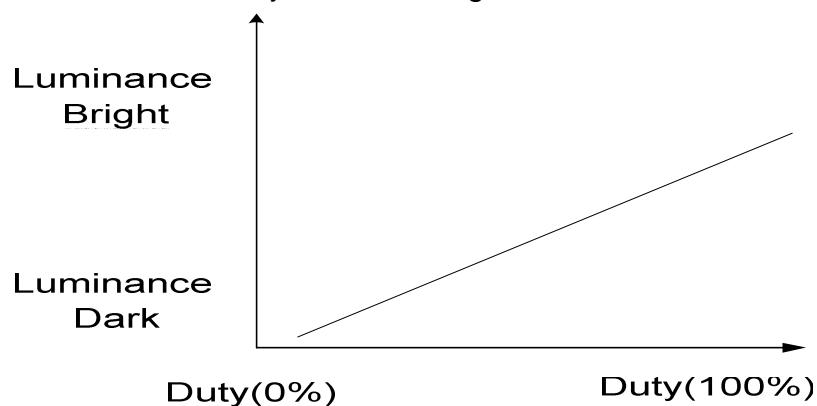
6.5 Interface Pin Connection

Connector is used for electronics interface. The recommended model is 111A40-0000RA-G3 manufactured by CEMG.

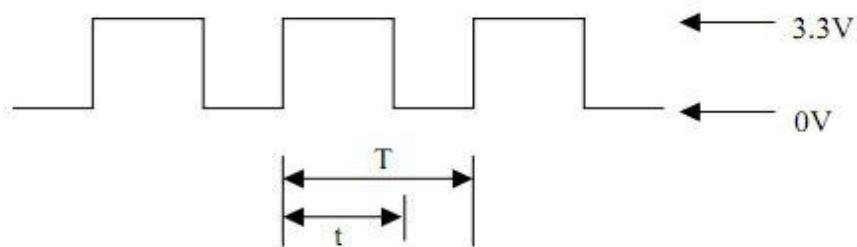
Pin No.	Symbol	Function
1	NC	No Connection(Reserve)
2	VDD	Power Supply,3.3V(typical)
3	VDD	Power Supply,3.3V(typical)
4	NC	No Connection(Reserve)
5	NC	No Connection(Reserve)
6	NC	No Connection(Reserve)
7	NC	No Connection(Reserve)
8	Rin0-	- LVDS differential data input
9	Rin0+	+ LVDS differential data input
10	GND	Ground
11	Rin1-	- LVDS differential data input
12	Rin1+	+LVDS differential data input
13	GND	Ground
14	Rin2-	- LVDS differential data input
15	Rin2+	+LVDS differential data input
16	GND	Ground
17	ClkIN-	-LVDS differential clock input
18	ClkIN+	+LVDS differential clock input

19	GND	Ground
20	Rin3-	- LVDS differential data input
21	Rin3+	+LVDS differential data input
22	GND	Ground
23	NC	No Connection(Reserve)
24	NC	No Connection(Reserve)
25	GND	Ground
26	NC	No Connection(Reserve)
27	NC	No Connection(Reserve)
28	GND	Ground
29	NC	No Connection(Reserve)
30	NC	No Connection(Reserve)
31	GND	Ground
32	GND	Ground
33	GND	Ground
34	NC	No Connection(Reserve)
35	PWM	LED BLU Brightness Control(Note 1,2)
36	LED-EN	LED Converter Enable(3.3V)
37	NC	No Connection(Reserve)
38	VLED	LED Converter Input Power
39	VLED	LED Converter Input Power
40	VLED	LED Converter Input Power

Note1: PWM is used to adjust the B/Lbrightness.



Note 2: PWM signal=0~3.3V, Operation Frequency:100 Hz~100KHz,

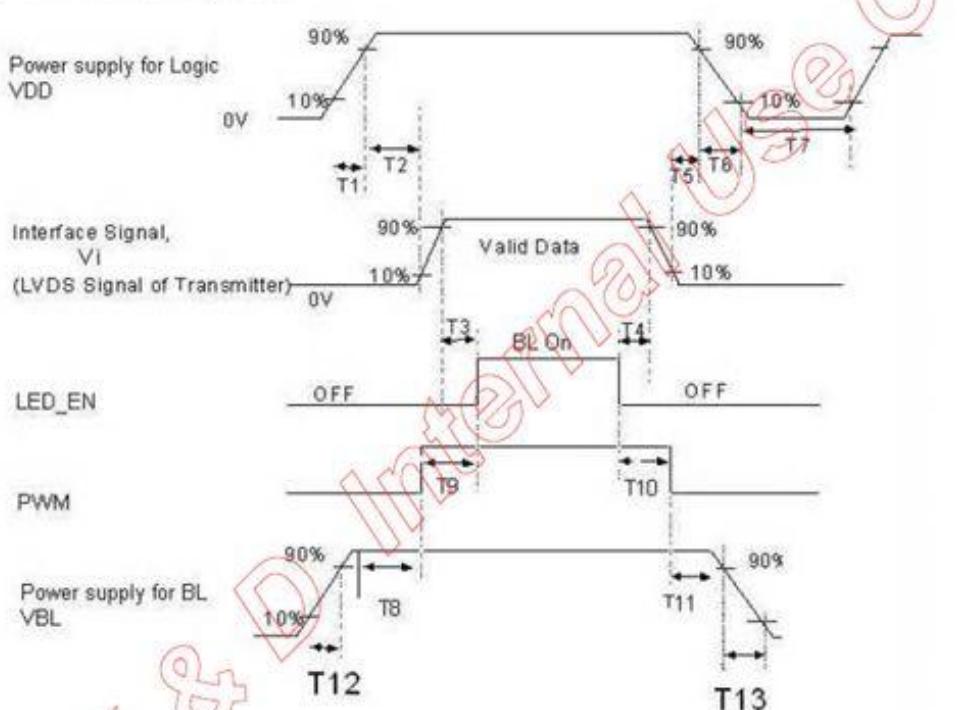


$$\text{Duty Cycle} = t / T * 100\%$$

$$T = 1 / F$$

6.6 Power Sequence

1) Power on/off sequence



Parameter	Value			Unit
	Min.	Typical	Max.	
T1	0.5	-	10	[ms]
T2	0	40	50	[ms]
T3	200	-	-	[ms]
T4	200	-	-	[ms]
T5	0	16	50	[ms]
T6	0	-	10	[ms]
T7	500	-	-	[ms]
T8	10	-	-	[ms]
T9	0	-	180	[ms]
T10	0	-	180	[ms]
T11	10	-	-	[ms]
T12	0.5	-	10	[ms]
T13	0	-	10	[ms]

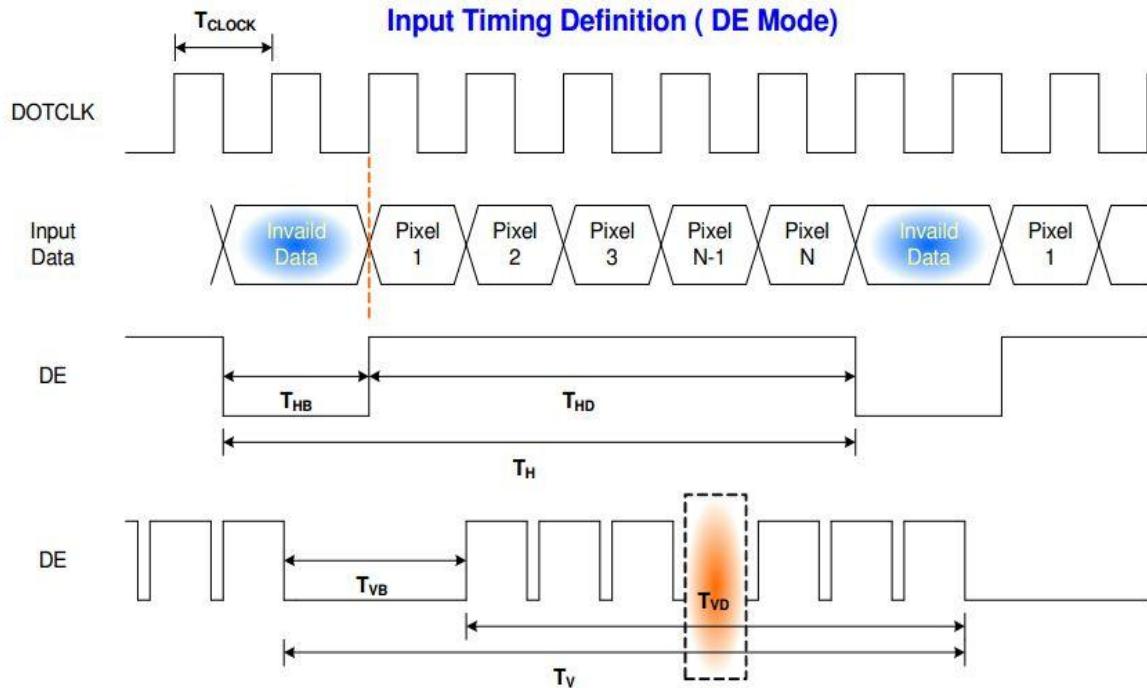
6.7 Timing Conditions

Basically, interface timings should match the 1280x800 /60Hz manufacturing guide line timing.

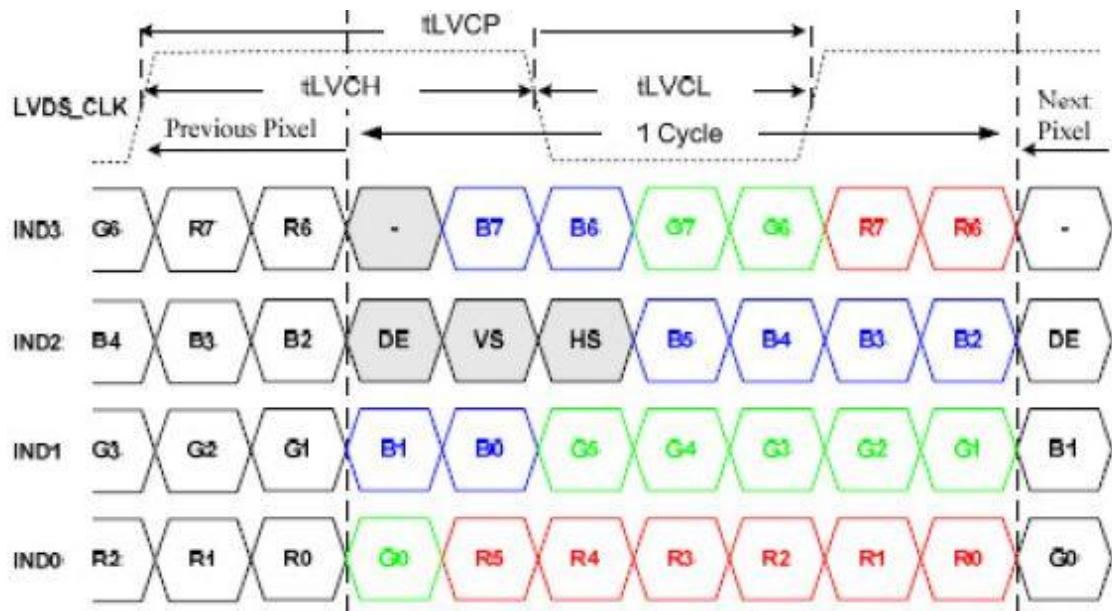
Parameter	Symbol	Min.	Typ.	Max.	Unit
Frame Rate	---	---	60	---	Hz
Clock frequency	$1/T_{Clock}$	---	66.1	69	MHz
Vertical Section	Period	T_V	---	810	---
	Active	T_{VD}	800		
	Blanking	T_{VB}	8	10	---
Horizontal Section	Period	T_H	---	1360	---
	Active	T_{HD}	1280		
	Blanking	T_{HB}	48	80	---

Note : DE mode only

Timing Diagram



6.8 The Input Data Format



6.9 Optical specifications

Item	Symbol	Condition	Values			Unit	Remark
			Min.	Typ.	Max.		
Viewing angle (CR≥ 10)	θ_L	$\Phi=180^\circ$ (9 o'clock)	-	85	-	degree	Note 1
	θ_R	$\Phi=0^\circ$ (3 o'clock)	-	85	-		
	θ_T	$\Phi=90^\circ$ (12 o'clock)	-	85	-		
	θ_B	$\Phi=270^\circ$ (6 o'clock)	-	85	-		
Response time Rise+Fall	T_{RT}	Normal $\theta=\Phi=0^\circ$	-	30	-	msec	Note 3
Contrast ratio	CR		600	800	-	-	Note 4
Color chromaticity	W_x		0.283	0.313	0.343	-	Note 2
	W_y		0.299	0.329	0.359	-	Note 5 Note 6
Luminance	L		300	350	-	-	Note 6
Luminance uniformity	Y_u		70	75	-	%	Note 6,7

Note 1: Definition of viewing angle range

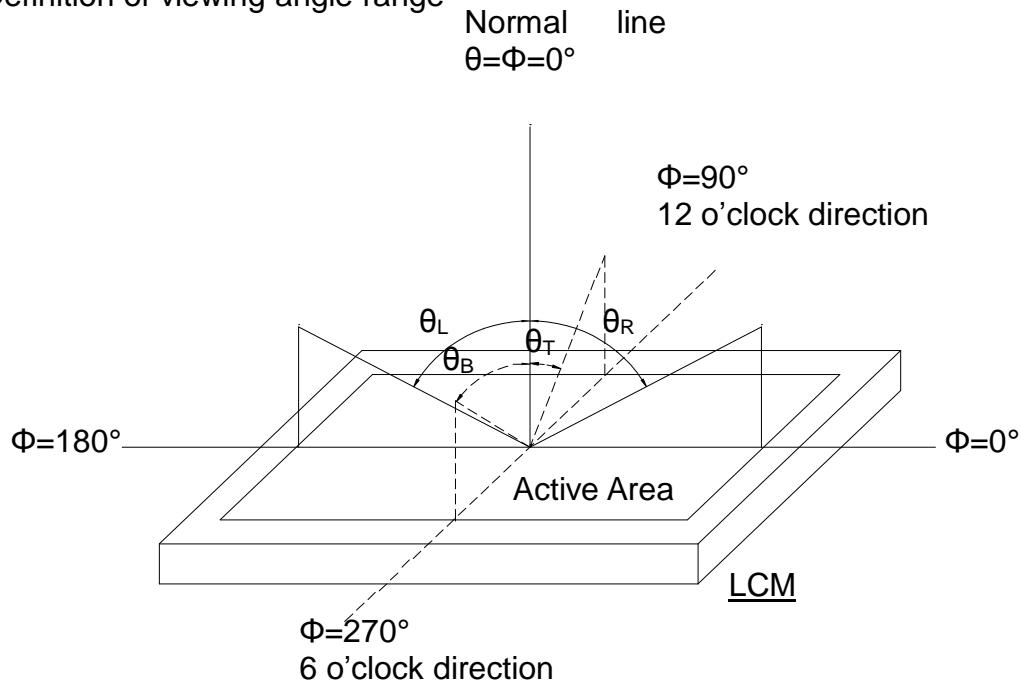


Fig. 4-1 Definition of viewing angle

Note 2: Definition of optical measurement system.

The optical characteristics should be measured in dark room. After 30 minutes operation, the optical properties are measured at the center point of the LCD screen. (Viewing angle is measured by ELDIM-EZ contrast/Height :1.2mm ,Response time is measured by Photo detector TOPCON BM-7, other items are measured by BM-5A/Field of view: 1° /Height: 500mm.)

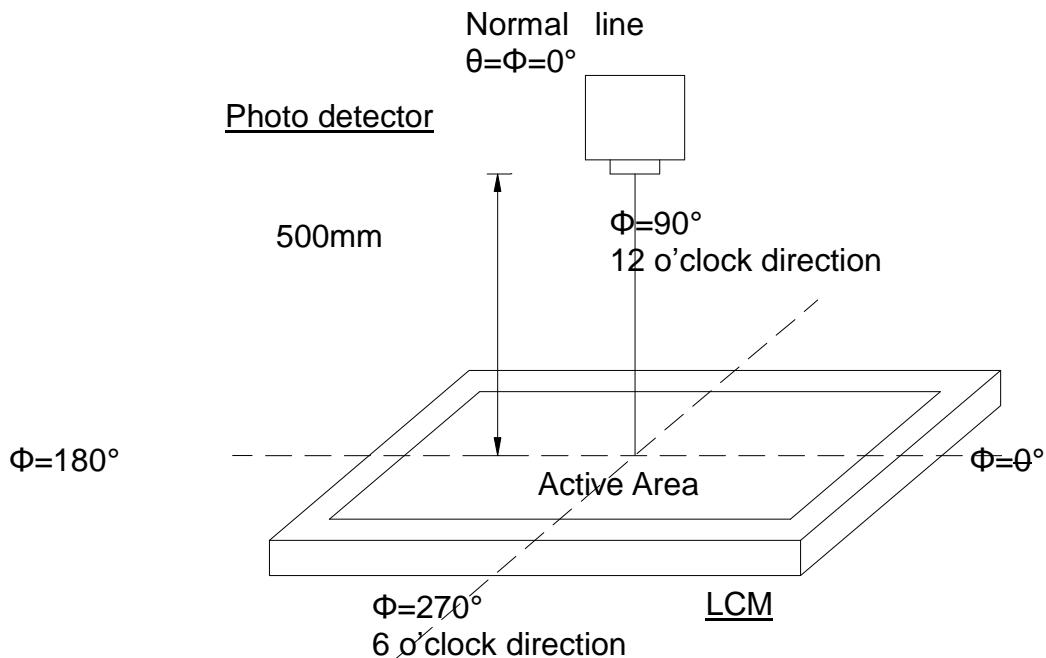


Fig. 4-2 Optical measurement system setup

Note 3: Definition of Response time

The response time is defined as the LCD optical switching time interval between "White" state and "Black" state. Rise time (T_{ON}) is the time between photo detector output intensity changed from 90% to 10%. And fall time (T_{OFF}) is the time between photo detector output intensity changed from 10% to 90%.

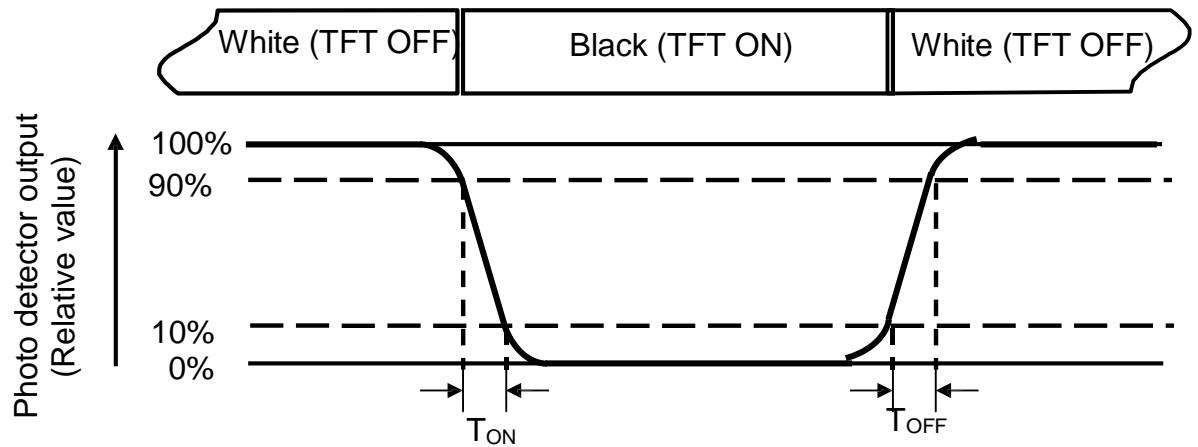


Fig. 4-3 Definition of response time

Note 4: Definition of contrast ratio

$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when LCD on the "White" state}}{\text{Luminance measured when LCD on the "Black" state}}$$

Note 5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of LCD.

Note 6: All input terminals LCD panel must be ground while measuring the center area of the panel. The LED driving condition is $V_{LED}=12V$

Note 7: Definition of Luminance Uniformity

Active area is divided into 9 measuring areas (Refer to Fig. 4-4). Every measuring point is placed at the center of each measuring area.

$$\text{Luminance Uniformity (Yu)} = \frac{B_{min}}{B_{max}}$$

L-----Active area length W---- Active area width

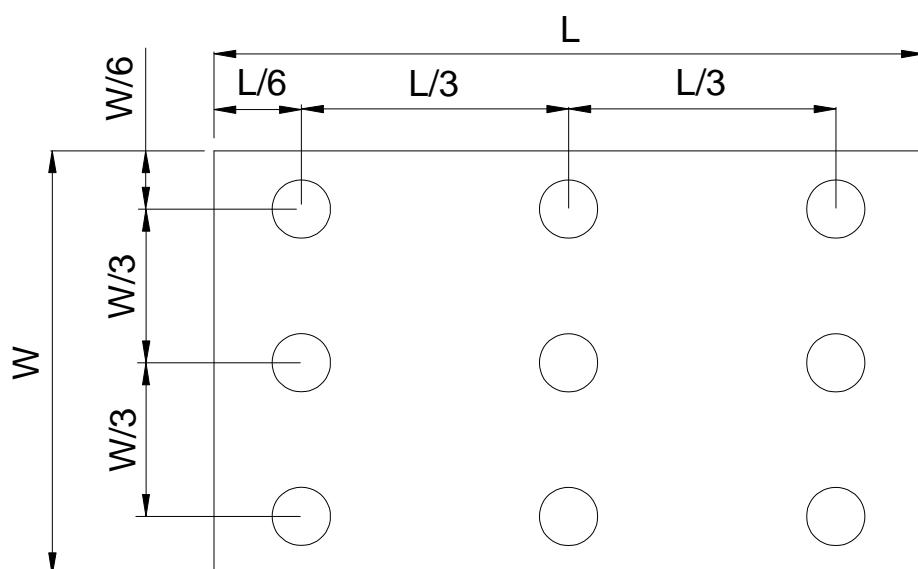


Fig. 4-4 Definition of measuring points

B_{max} : The measured maximum luminance of all measurement position.

B_{min} : The measured minimum luminance of all measurement position.

7. Reliability Test Conditions And Methods

Item	Test Conditions	Remark
High Temperature Storage	Ta = 60°C	96hrs
Low Temperature Storage	Ta = -20°C	96hrs
High Temperature Operation	Ts = 50°C	96hrs
Low Temperature Operation	Ta = -10°C	96hrs
Operate at High Temperature and Humidity	+50°C, 90%RH max.	96 hrs
Thermal Shock	-20°C~ +60°C 10 cycles 1Hrs/cycle	Non-operation
Electrostatic Discharge	Contact=±4KV, class B Air=±8KV, class B	

8. Handling Precautions

8.1 Mounting method

The LCD panel of K&D LCD module consists of two thin glass plates with polarizers which easily be damaged. And since the module is so constructed as to be fixed by utilizing fitting holes in the printed circuit board.

Extreme care should be needed when handling the LCD modules.

8.2 Caution of LCD handling and cleaning

When cleaning the display surface, Use soft cloth with solvent [recommended below] and wipe lightly

1 Isopropyl alcohol

1 Ethyl alcohol

Do not wipe the display surface with dry or hard materials that will damage the polarizer surface.

Do not use the following solvent:

1 Water

1 Aromatics

Do not wipe ITO pad area with the dry or hard materials that will damage the ITO patterns

Do not use the following solvent on the pad or prevent it from being contaminated:

1 Soldering flux

1 Chlorine (Cl) , Sulfur (S)

If goods were sent without being silicon coated on the pad, ITO patterns could be damaged due to the corrosion as time goes on.

If ITO corrosion happen by miss-handling or using some materials such as Chlorine (Cl), Sulfur (S) from customer, Responsibility is on customer.

8.3 Caution against static charge

The LCD module use C-MOS LSI drivers, so we recommended that you:

Connect any unused input terminal to Vdd or Vss, do not input any signals before power is turned on, and ground your body, work/assembly areas, assembly equipment to protect against static electricity.

8.4 packing

- 1** Module employ LCD elements and must be treated as such.
- 1** Avoid intense shock and falls from a height.
- 1** To prevent modules from degradation, do not operate or store them exposed direct to sunshine or high temperature/humidity

8.5 Caution for operation

- 1** It is an indispensable condition to drive LCD's within the specified voltage limit since the higher voltage then the limit cause the shorter LCD life.
- 1** An electrochemical reaction due to direct current causes LCD's undesirable deterioration, so that the use of direct current drive should be avoided.
- 1** Response time will be extremely delayed at lower temperature than the operating temperature range and on the other hand at higher temperature LCD's show dark color in them. However those phenomena do not mean malfunction or out of order with LCD's, which will come back in the specified operation temperature.
- 1** If the display area is pushed hard during operation, some font will be abnormally displayed but it resumes normal condition after turning off once.
- 1** A slight dew depositing on terminals is a cause for electro-chemical reaction resulting in terminal open circuit.
Usage under the maximum operating temperature, 50%Rh or less is required.

8.6 storage

In the case of storing for a long period of time for instance, for years for the purpose or replacement use, the following ways are recommended.

- 1** Storage in a polyethylene bag with the opening sealed so as not to enter fresh air outside in it. And with no desiccant.
- 1** Placing in a dark place where neither exposure to direct sunlight nor light's keeping the storage temperature range.
- 1** Storing with no touch on polarizer surface by anything else.
[It is recommended to store them as they have been contained in the inner container at the time of delivery from us]

8.7 Safety

- 1** It is recommendable to crush damaged or unnecessary LCD's into pieces and wash off liquid crystal by either of solvents such as acetone and ethanol, which should be burned up later.
- 1** When any liquid leaked out of a damaged glass cell comes in contact with your hands, please wash it off well with soap and water

9. Precaution for use

9.1

A limit sample should be provided by the both parties on an occasion when the both parties agreed its necessity. Judgment by a limit sample shall take effect after the limit sample has been established and confirmed by the both parties.

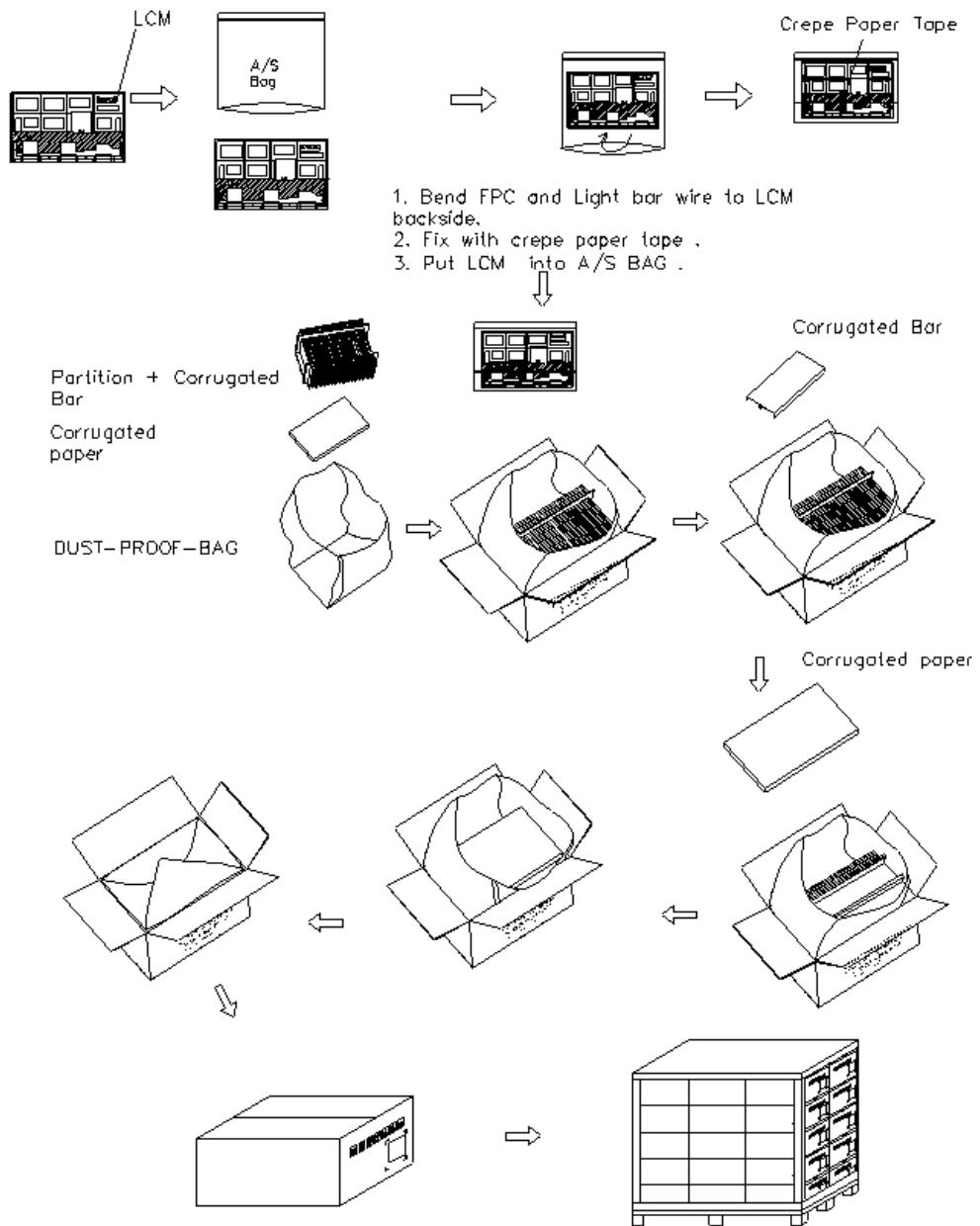
9.2

On the following occasions, the handing of problem should be decided through discussion and agreement between responsible of the both parties.

- 1** When a question is arisen in this specification

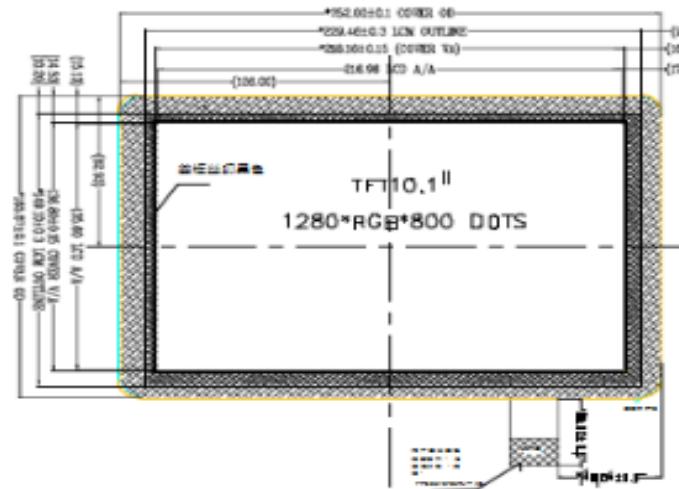
- 1 When a new problem is arisen which is not specified in this specifications
- 1 When an inspection specifications change or operating condition change in customer is reported to K&D , and some problem is arisen in this specification due to the change
- 1 When a new problem is arisen at the customer's operating set for sample evaluation in the customer site.

10. Package Drawing

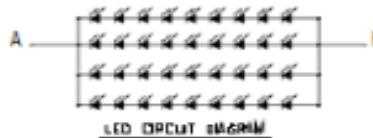
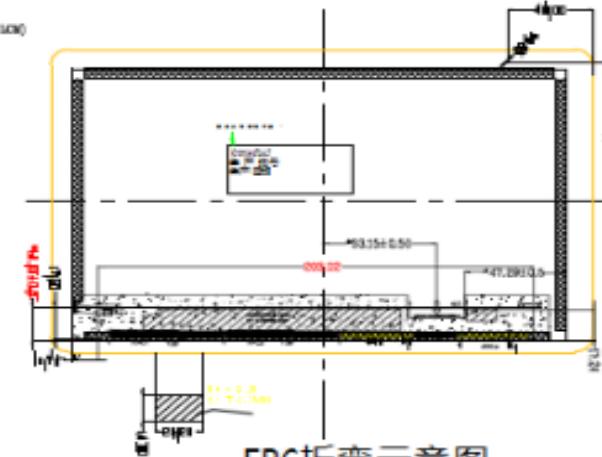


注：标注 * 请重点确认

A31	First Issue	2015-05-14
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0.70 [0.68-0.80]
TPI.050±0.1 [0.040-0.060]
-0.40 (Recess+ TBC)
-0.20 SCA

LED CIRCUIT DIAGRAM
Vi=28.8V(4~4*2.1mA)

FPC折弯示意图
FPC折弯出货

PIN DESCRIPTION	
1	NC
2	VDD
3	VDD
4	NC
5	NC
6	NC
7	NC
8	RIN0-
9	RIN0+
10	GND
11	RIN1-
12	RIN1+
13	GND
14	RIN2-
15	RIN2+
16	GND
17	CLKIN-
18	CLKIN+
19	GND
20	RIN3-
21	RIN3+
22	GND
23	NC
24	NC
25	GND
26	NC
27	NC
28	GND
29	NC
30	NC
31	GND
32	GND
33	GND
34	NC
35	PWM
36	LED-EN
37	NC
38	VLED
39	VLED
40	VLED

PIN	Definition
1	VDD(3.3V)
2	GND
3	INT(1.8V)
4	SCL(1.8V)
5	SDA(1.8V)
6	RST(1.8V)

NOTES:

1. DISPLAY TYPE: 10.1" TFT LCD, 16.7M COLORS
2. DISPLAY MODE: AHVA(Normally Black)
3. OPERATING TEMP: -10°C TO 50°C, STORAGE TEMP: -20°C TO 60°C
4. BACK LIGHT: 36 CHIP WHITE LED(20mA/LED), Vi=28.8V
LCD BRIGHTNESS: 300cd/m² (MIN), 350cd/m² (TYP) (9 measuring areas) 不包括TP亮度
5. KEY DIMENSION: * REFERENCED DIMENSION ()
6. REQUIREMENTS ENVIRONMENTAL PROTECTION: RoHS
7. TP IC型号: FT58260SL(RX48*TX30)

SCALE: F1:1		Shenzhen K&D Technology Co.,Ltd
SHEET: 1 OF 1		深圳市国显科技股份有限公司
GENERAL TOL: ±0.3MM		K&D
APP:		Model No.: KD101N9-40TA-A37
CHE:		Print No.:
Date:	2015-05-14	Model: LCM-TP

目录 Contents (TP+LCM)

1. 基本规格 Specification	3
1.1 适用范围 Scope	3
1.2 特征和规格 Features and General Specifications.....	3
2. 外观检验标准 Appearance limit standard.....	3
3. 包装及运送 Packaged and shipped	9
3.1 包装 Package	9
3.2 运送 transport	9
4. 使用过程中的注意事项 Using Precautions.....	9
4.1 储存的注意事项 Cautions for Storage	10
4.2 搬运的注意事项 Cautions for unpacking	10
4.3 装配注意事项 Assembly precautions	10
5. 样品承认书的反馈 Samples of feedback admit it	11
6. 工程图 Engineering Drawing	12



德普特科技有限公司

DPT Technology Co.,LTD

产品变更记录单 Revision sheet

版本号 Revision No.	变更次数 Times	变更日期 Date	变更内容 Revision	变更原因 Reason	签名 Sign
A.0 版本	首次下发	2015.06.26	初次制定	无	肖华

备注 Remark:

1. 基本规格 Specification

1.1 适用范围 Scope

本规格书适用于工控类电子的 TP+LCM 框贴合产品。

This specification applies to consumer electronic products TP+LCM Air-Bonding .

1.2 特征和规格 Features and General Specifications

规格 General Specifications (L=Length ; W=Width ; T=Thickness)

项目 Items	规格 Specifications
结构 structure	TP+LCM
外形尺寸 Outline Dimensional	252.00mm*165.87mm
可视区 View Area	218.16mm*136.80mm
驱动区 Active Area	216.96mm*135.60mm
引脚定义 Pin Configuration	1.VDD 3.3v 2.GND 3.INT 1.8v 4.SCL 1.8v 5.SDA 1.8v 6.RST 1.8v

2 外观检验标准 Appearance limit standard

1. 目的:

为确保本公司产品质量有一统一判定标准、能和客户达成一致性,使生产线目检人员及品质人员在检验时有所依循,特制定本规范。

2. 适应范围:

2.1 本公司所有全贴合成品之制程、成品检验均适用本检验规范。

3. 缺点分类定义:

3.1 严重缺陷(Critical Defect):代号为"CR".

3.1.1 产品之结构或功能不符合销售地区之有关法令规定或具有使顾客安全遭受威胁之不良现象.

3.1.2 产品功能失效或外型尺寸超规格造成客户无法装机。

3.2 主要缺陷(Major Defect):代号为"MA".

3.2.1 缺点足以影响到客户不接收产品之缺点.

3.2.2 缺件或错误者.

3.2.3 产品失去部份主要功能与规格要求不符合.

3.3 次要缺陷(Minor Defect):代号为"MI".

3.3.1 不良程度,仅使工作性能产生部份偏差,却足以让客户所发现并作为挑剔及要求折价之理由者.

3.3.2 明显的外观修饰或操作(作业)缺点,此缺点为一般人员即可容易处理而不须经由修理人员

处理的,或是虽无法处理,但为一般客户所容易接受的.

3.3.3 比较标准品,略有偏差, 非专业人员不易发现,且经常可由顾客本身轻易处理或接受之缺陷.

4. 抽样计划:

4.1 全贴合产品依 GB/T2828.1:2003 计数抽样检验程序, 正常检验单次抽样一般检验 II 级水平抽样之。

9. 允收水准

5.1. 致命缺点(CR):AQL 0

5.2. 主要缺点(MA):AQL 0.4

5.3. 次要缺点(MI):AQL 1.0

10. 使用设备/工具

10.1. 电脑、测试转接板、台灯、菲林尺等。

11. 检验方法

7.1. 在 27 瓦冷白色的萤光台灯下, 检查外观;

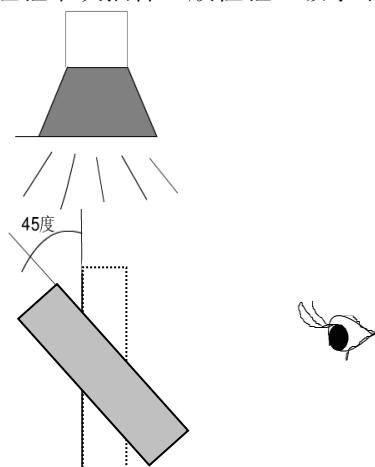
7.2. 电容屏成品测试软件测试 TP、LCD 之电气性能;

7.3. 检验距离: 人眼与被测平板表面距离为 30±5cm;

7.4. 检验角度: 垂直面对检验面, 及上下左右±45° 范围内进行检验;

7.5. 温湿度: 温度--22±5°C, 湿度—30%-85%;

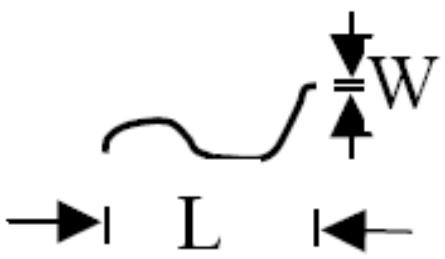
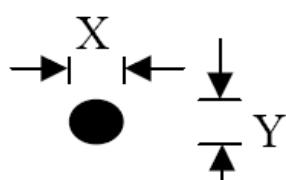
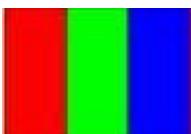
7.5. 检视时间: 10±5S (单一面)。



12. 检查项目及判定

项目		标准说明(判定标准)			
产品尺寸		CR	MA	MI	
10.1 吋~17 吋(含 10.1 吋)					
尺寸	外型尺寸超规格造成客户无法装机使用	√			
	其它尺寸超出规格书之公差范围		√		
原材料			√		
结构	引线拉力	引线拉力测试于本压首件时进行.	√		
外观		上线与引线成 $90^\circ \geq 1KG$ 方为 OK, 达不到则不能允收	√		
		上线与引线成 $180^\circ \geq 2KG$ 方为 OK, 达不到则不能允收	√		
		下线与引线成 $-90^\circ \geq 1KG$ 方为 OK, 达不到则不能允收	√		
外观	脏污	内污目视从正面看不清为允收		√	
		产品边缘内污,有机壳时实套机壳,机壳可以遮住则允收,反之拒收	√		
		内污目视从膜面看较明显, 则不能允收。	√		

		产品表面脏污用清洁布不可擦拭干净者		√	
		产品表面脏污用清洁布可擦拭干净者			√
	披锋/大边	不允许		√	
	变形	边缘及屏面变形不允许		√	
	蚀刻痕	比对样品		√	
	色差	比对样品		√	
	回油	丝印印刷边缘不平整		√	
		字体：印刷模糊，重影不可辩识		√	
		图案字体清晰，无严重粗细现象，允许轻微图案字体渗透或干版 字体线条变粗或变细较正常线宽≤1/3（且≤+/-0.1mm），无断字			√
	Logo	Logo（铭牌及印刷字体）本身及周围 5mm 内不允许有任何缺陷：如模糊、移位、重影、缺失、与产品规格不符。		√	
	专用膜	贴附后不可有明显汽泡。			√
	泡棉	泡棉不可进入可视区。		√	
		泡棉与泡棉结合处不可有缝隙。			√
	引线	引线压反或引线用错	√		
		引线边缘撕裂	√		
		引线处光学胶未固化完全	√		
		短路、开路、补线		√	
		引线压偏，功能测试 OK，金手指外露		√	
		金手指外露		√	
		走线缺损>1/3 线宽		√	
		压合位金手指处缺导电胶		√	
		压合位引线卷边(折角)		√	
		FPC 走线露铜、电极氧化、脏污、不平整、有折痕		√	
		引线压偏≤0.1mm，功能测试 OK，金手指未外露			√
	脏污	内污目视从正面看不清为允收			√
		产品边缘内污,有机壳时实套机壳,机壳可以遮住则允收,反之拒收		√	
		内污目视从膜面看较明显，则不能允收。		√	
		产品表面脏污用清洁布不可擦拭干净者		√	
		产品表面脏污用清洁布可擦拭干净者			√

				
外观	划伤、刮伤及线状异物(毛丝、毛屑、纤维等)	$W \leq 0.05\text{mm}, L \leq 5.0\text{mm}$, 忽略不计		
		$0.05\text{mm} < W \leq 0.1\text{mm}, L \leq 5.0\text{mm}$, 间距 $L \geq 15\text{mm}$, 允许三条		✓
		$W > 0.1\text{mm}$, 或 $L > 5\text{mm}$, 不允许	✓	
		有感, 不允许	✓	
外观	点状尘点及全贴合后汽泡	 $\phi = (X + Y) / 2$		
		$D < 0.1\text{mm}$, 忽略不计		✓
		$0.1\text{mm} < D \leq 0.2\text{mm}$, $DS > 15\text{mm}$, 允许二个点		✓
		$0.2\text{mm} < D \leq 0.3\text{mm}$, 允许一个点	✓	
		$D > 0.3\text{mm}$, 或整面超过五个点, 不允许	✓	
	边缘透光	$W \leq 0.25\text{mm}, L \leq 8\text{mm}$, 间距 $L \geq 15\text{mm}, N \leq 1$, (包含 R 角)		✓
	角破损	$X \leq 3.0\text{mm}$ 且 $Y \leq 0.5\text{mm}$ 且 $Z \leq GT$, 可予忽略		✓
		$X > 3.0\text{mm}$ 或 $Y > 0.5\text{mm}$ 或 $Z > GT$, 则不能允收	✓	
	边破损	$X \leq 3.0\text{mm}$ 且 $Y \leq 0.5\text{mm}$ 且 $Z \leq GT$, 可予忽略		✓
		$X > 3.0\text{mm}$ 或 $Y > 0.5\text{mm}$ 或 $Z > GT$, 则不能允收	✓	
LCD	油墨针孔	$0.1\text{mm} < D \leq 0.2\text{mm}$, 且间距 $L \geq 15\text{mm}$, 允许二个点		✓
	变形度	$\leq 0.3\text{mm}$	✓	
LCD	术语	描述	示意图	
	点定义	液晶显示屏, 每像素 (Pixel) 包含 R、G、B (sub-pixel) 三个点 (dot)。 “  ” 即 dot 又称为 sub-pixel, 有红  、绿  、蓝  (简称 R、G、B) 三种颜色, 从左至右连续的 R、		

		G、B 3 个点组成一个“像素”。	
亮点	LCD 上的 R/G/B 三色（红/绿/蓝）发光单元中的任何一色在本不应发光的情况下发光。		
暗点	LCD 上的 R/G/B 三色发光单元中的任何一色在本应发光的情况下不发光。		
两点连续	两个相邻的 R/G/B 发光单元均为亮点或均为暗点。对于相邻的两个点中一个为亮点另一个为暗点的情况按照单个亮、暗点分别判定不良。（水平方向或垂直方向）		
白点	同一个像素中 R、G、B 三个点在黑色画面下全亮称为白点。		
黑点	同一个像素中 R、G、B 三个点在白色画面下全不发光称为黑点。		
两点间距示意图	间距取两点之间X轴相对距离或Y轴相对距离之中最大值。 		
三点及三点以上连续	以亮点图例为例子来表述水平方向和垂直方向的三点及三点以上连续。 		
LCD 检验项目	标准说明(判定标准)	缺点判定	
		CR	MA
亮点	单点	红+绿+蓝≤2 个	√
	两点连续	红+绿+蓝≤1 个	√
	三点及三点以上连续	红+绿+蓝=0 个	√
	亮点总数	N≤2 个	√
暗点	单点	红+绿+蓝≤2 个	√
	两点连续	红+绿+蓝≤1 个	√

	三点及三点以上连续	红+绿+蓝=0个		√	
	两暗点间距	$L \geq 15\text{mm}$		√	
	暗点总数	$N \leq 2$ 个		√	
亮、暗点	总数	2: 2: 4, $N \leq 4$ 个		√	
LCD 水波纹	不可出现水波纹			√	
LCD 变形度	$\leq 0.5\text{mm}$			√	
LCD 性能测试	标准说明(判定标准)		缺点判定		
			CR	MA	MI
一般功能检查	不显示、背光管不亮、显示暗、过热、无法调节亮暗度、闪烁等异常现象，漏光、亮线、黑角、暗线。			√	
	在 5 色（全白、全红、全绿、全蓝、全黑）及 16 色彩条画面时，各彩条颜色不正常，偏色，分界线不清晰、模糊、扩散等异常现象不允许，或以签样为准。			√	
	开机后 LCD 四边靠近 Bezel 处无亮边、漏光，关机后 LCD 四边靠近 Bezel 处不露金属边。			√	
阴影	在各单色画面时，偏色、不均匀，有明显阴影，其它标准参考白斑管控。			√	
水波纹	静置时 LCD 出现水波纹；LCD 打开至 90°，正常敲击（敲击力量 80g）键盘有水波纹；用单个手指拨 LCD 左、右上角，或敲击（为控制敲击力度，建议使用中指手指肚敲击）TouchPad 两侧主机上壳，有水波纹，且在 3 秒内未消失；			√	
LCD 均匀度	各背景下有肉眼可见不均匀对比现象，有边缘亮度与中心亮度的差异。			√	
LCD 白斑	由于安装不平或 LCD 表面变形导致的颜色发白的现象，各颜色下或在各画面下出现时均计为不合格品；仅在全灰画面目视明显时使用 6%滤光片辅助检查（条件：眼睛距离 LCD 30cm、手持滤光片一距离眼睛 5cm、确认时间 3S）能看到白斑视为不合格。			√	

LCD 残影	关机时，背光灯熄灭后，画面仍停留在屏幕时造成影像残留，停留时间≤5S 为允收。		√	
鬼影	开机时或画面切换（例如 BIOS 自检后、进入 Windows 桌面前、STR 唤醒过程、开关机等）时在屏幕上出现扩散或收缩状影像，停留时间≤3S 为允收。		√	
牛顿环	LCD 不点亮，在压力状态下，LCD 及 TP 进干涉而显现出的一种水渍图样，不允许有。		√	
缺划	全显状态下，出现部分不显示。		√	
条纹	在全显或部分显示画面，出现斜/条纹。		√	
字符变形	显示状态下字符出现形变。		√	
无显示	LCD 无字符显示，不允许。		√	

3. 包装及运送 Packaged and shipped

3.1 包装 Package

批量出货产品采用气泡袋包装产品然后放入纸箱卡刀固定

Volume shipments of products using bubble bag packaging products and then put into the carton fixed cutting tool

3.2 运送 transport

避免产品直接暴露在阳光直射下运输.

Avoid products under direct exposure to direct sunlight transportation.

4 使用过程中的注意事项 Using Precautions

4.1 储存的注意事项 Cautions for Storage

储存产品时须按样品承认书的温湿度要求放置，注意不可受日光直射或重物重压.

According to the sample must be stored product placement of temperature and humidity admit it, note are not required under direct sunlight or clog weigh.

4.2 搬运的注意事项 Cautions for unpacking

1) 尽量减少搬运次数。

1) Minimize the number of handling.

- 2) 尽量使用搬运工具。
2) Try to use handling tools.
- 3) 堆放不能超过九层，轻拿轻放，向上放置。
3) No more than nine layer, pile up gentle with place.

4.3 装配注意事项 Assembly precautions

- 1) 不要对产品施加额外的拉力。
1) Do not exert extra force to touch panel.
- 2) 须保持产品的透明清晰度，请在接触产品之前戴上指套或手套。请注意玻璃边角部位。
2) Since touch panel is transparent and clear, make sure to wear fingerstall or glove before touching. Be careful your hands and other parts from injury at handling by glass corners.
- 3) 当拿握产品时，请握住产品的四周，不要握中央，以免指套或手套上的脏污会留在产品上。在取出产品时，请不要握拿引线，以免造成产品与引线松动。
3) When handling, make sure to hold the touch panel borders not center parts to avoid dirt to touch panel.
Do not lift touch panel by tail to avoid tail loosen.
- 4) 安装组合时，请不要重拉 FPC，因为重拉将使 FPC 从产品上剥离。
4) When installing and assembling, do not lift tail with heavy force to avoid tail peeling off touch panel.
- 5) 请不要在 FPC 上粘贴或安装其它物品。如：在 FPC 上贴一层 FILM 或金属板，因为这些附加物会对 FPC 顶部施加一个额外的压力，从而导致 FPC 内侧松动。
5) Do not stick or mount other parts on the tail, such as additional film or metal plate. As it will exert extra force to tail tip and cause tail loosen.
- 6) 请不要从侧边使力拉 FPC，因为侧边给的拉力会使 FPC 破裂。
6) Please don't pull makes force from side to side, because the FPC tension will make FPC burst.
- 7) 如有通气槽，请在设计产品结构时，注意产品附的不能有液体物和粉状物。
7) If there is air groove on touch panel, when design product structure, make sure no liquid and powder near the air groove.
- 7) 为了不使 TP 表面受压，因此机壳与我司 TP 组合间隙须保持在 0.2mm-0.5mm 的范围内。
7) In order to avoid heavy stress to touch panel surface, make sure to keep 0.2mm-0.5mm assembling gap between touch panel and case.

5. 样品承认书的反馈 Samples of feedback admit it

- 1) 此样品承认书只为产品的品质保障。实际上机使用, 请检查和评估我司产品与贵司机器设备的配置状况。
1) The sample for the quality of the products admitted book guarantee. The actual computer use, please check and evaluate our products and the expensive department machine equipment status.
- 2) 当贵司评估后, 请贵司在我司的确认书上盖上确认图章, 并且将附本寄回我司, 倘若在量产前副本或承认样品未达到我司, 我们将默认贵司承认了我司的样品及承认书.
2) when the expensive department assessment, please the expensive department in our confirmation on the cover, and will confirm chop attached in return we, if copy or admit sample amount antenatal fails to achieve our company, we will default the expensive department acknowledged our samples and admitted that book.
- 3) 样品承认书变更内容需针对实际情况进行协商变更, 需重新更新承认书。
3) Sample admit it to change content must negotiate according to the actual conditions change, to reconsider update admitted that book.

6 工程图 Engineering Drawing

