Shenzhen Leadtek Electronics Co.,Ltd

PRODUCT SPECIFICATION

TFT-LCD MODULE

Module No：LTK070P4077TX-QC-V4

☑ Preliminary Specification

☐ Approval Specification

Designed by	Checked by	Approved by
		

Final Approval by Customer

Approved by	Comment

※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.

1.Document Revision History

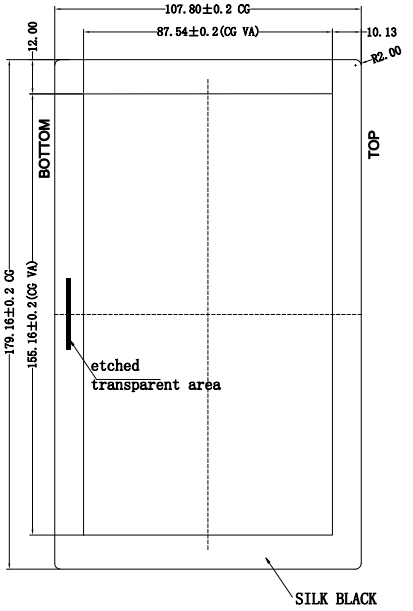
Version	Contents	Date	Note
V0	Original	2021.12.10	
V1	Modify size	2021.12.11	
V2	The back of the steel sheet is changed to T=1.5mm foam	2022.05.14	
V3	Correct the connector position	2022.05.19	
V4	Mod,fy draw,ngs according to customer requ,rements	2023.06.19	

2. General Description

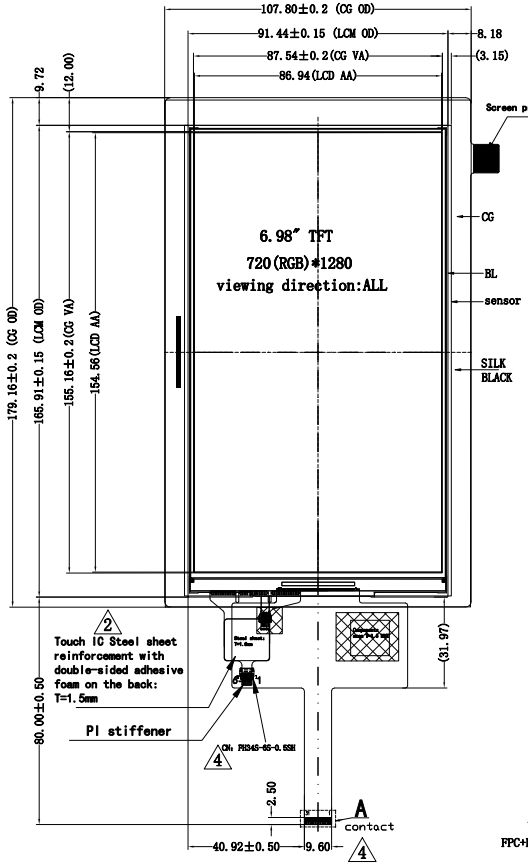
No	Item	Specification	Unit
1	Screen Size	7.0	inch
2	LCD Type	TFT	
3	Viewing Direction	ALL	Best Image
4	Display Mode	Normally Black	
5	Resolution	720（H）*RGB*1280 （V）	Pixel
6	Active Area	86.94（H）*154.56(V)	mm
7	LCM+CTP Outline Dimension	107.80W) ×179.16(H) ×4.15(T)	mm
8	Interface	4Line MIPI Interface	

3.EXTERNAL DIMENSIONS

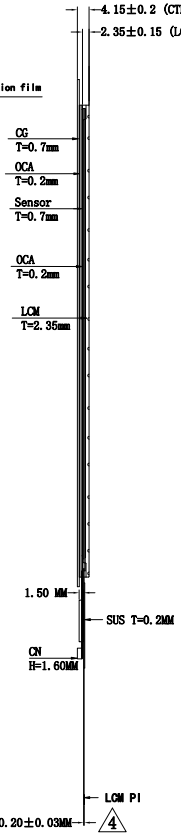
Front View



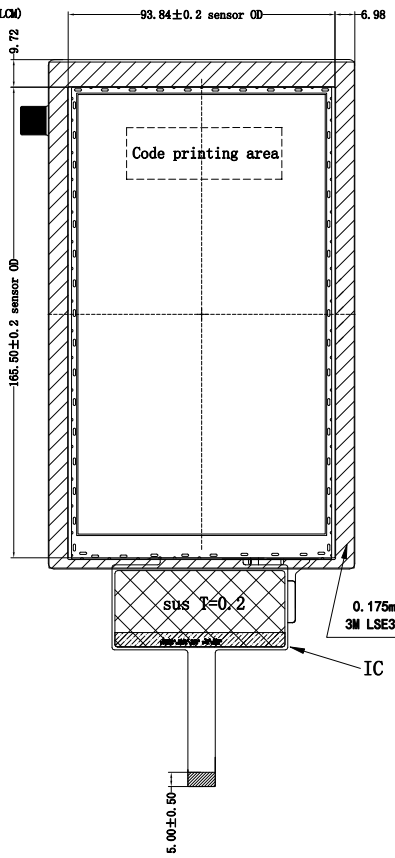
Front View



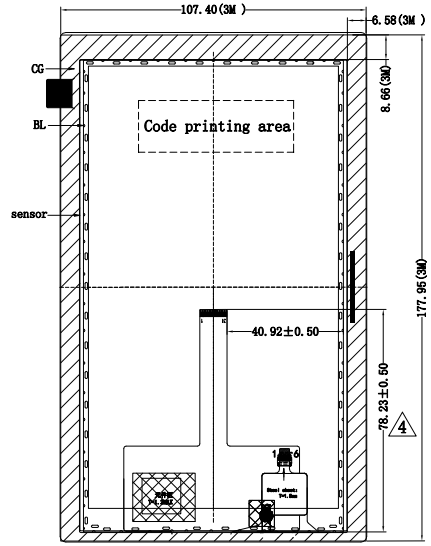
Side View



Back View



Back View



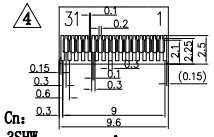
4 Display Pin interface

1	GND
2	TOUCH_3V3
3	GND
4	TOUCH_INT
5	TOUCH_RST
6	TOUCH_SDA
7	TOUCH_SCL
8	GND
9	LED-
10	LED+
11	ID
12	RSTN
13	NC
14	IOVCC_1.8
15	VCC_2.8
16	GND
17	D3P
18	D3N
19	GND
20	D2P
21	D2N
22	GND
23	CKP
24	CKN
25	GND
26	D1P
27	D1N
28	GND
29	D0P
30	D0N
31	GND

mipi interface

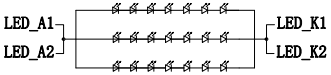
CTP NOTE:
1. G+G
   LENS GLASS: 0.7mm 旭硝子 (AGC-sodalime)
   ITO GLASS:0.7mm IC: GT911
2. Operation Voltage：CTP_VCC 2.8V-3.3 V
3. Transmittance：≥80%
4. The cover hardness：6H
*5. Please add pull-up resistors on
the motherboard for SDA and SCL
6. Unmarked tolerance tolerance: ±0.2

NOTES:
1. DISPLAY TYPE: 6.98", 720*1280 TFT LCD
2. DISPLAY MODE: transmissive Normally Black
3. VIEWING DIRECTION: ALL
4. DRIVER IC:ILI9881C
5. LCM (White 9 AVG 1/9) :
   Brightness: 370cd/m² (TYP);LCM+CTP Brightness:320cd/m² (TYP)
   Uniformity:80%(MIN)
6. BACK LIGHT: 21 chip white LEDs If=60mA,Vf=19.6V-22.4V
7. OPERATING TEMP: -20° C TO 70° C,STORAGE TEMP: -30° C TO 80° C
8. * Critical Parameter,( ) ref Parameter,[ ] cpk Parameter
   Unspecified Tolerances:±0.20mm
   Modification mark:
9. SUGGESTION:TP window size unilateral increase 0.3~0.5mm than LCM A.A
10. REQUIREMENTS ENVIRONMENTAL PROTECTION: RoHS



Reference Cn:
FH26W-31S-0.3SHW

SCALE 4:1



Vled=22.4V(TYP) Iled= 3*20mA=60mA

COVER GLASS (0.7mm)			
OCA-(0.2mm)			
SENSOR GLASS (0.7mm)			
OCA-(0.2mm)			
LCM (2.35mm)			
LCM+CTP:OCA bonding			

4 TP-PIN

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

REV	DESCRIPTION	DATE	NAME
4	Modify drawings according to customer requirements	2023.05.18	Jack
3	Correct the connector position	2022.05.19	Ian
2	The back of the steel sheet is changed to T=1.5mm foam	2022.05.14	Ian
1	Modify size	2021.12.11	Allen
0	New	2021.12.10	Allen

LEADTEK DISPLAY

LEADTEK COMPANY LIMITED

SCALE:1/1	UNIT:mm	PAGE:1/1	Approve	Check	Drawn
Part No:	LTK070P4077TX-QC	VER:V4	Ian	Jona	Jack
Customer No:					

4. Interface Specification

No	Symbol	Function 功能描述
1	GND	Power ground.
2	TOUCH_3.3V	Power Supply For CTP.
3	GND	Power ground.
4	TOUCH_INT	Interrupt request to the host, or Wakeup request from the host.
5	TOUCH_RST	External Reset, Low is active.
6	TOUCH_SDA	I2C data input and output.
7	TOUCH_SCL	I2C clock input.
8	GND	Power ground.
9	LED-	Power supply for backlight cathode input terminal
10	LED+	Power supply for backlight anode input terminal.
11	ID	MIPI_DP2+ are differential data signal line
12	RESET	Reset signal（Low: Active).
13	NC	NC
14	IOVCC_1.8V	I/O Voltage (VDDI to DGND): 1.65V ~ 3.3V
15	VCC_2.8V	Power supply : 2.8V ~ 3.3V
16	GND	Power ground.
17	D3P	MIPI_DP3+ are differential data signal line
18	D3N	MIPI_DP3- are differential data signal line
19	GND	Power ground.
20	D2P	MIPI_DP0+ are differential data signal line
21	D2N	MIPI_DP0- are differential data signal line
22	GND	Power ground.
23	CLKP	CLOCK Lane positive-end input pin
24	CLKN	CLOCK Lane engative-end input pin
25	GND	Power ground.
26	D1P	MIPI_DP1+ are differential data signal line
27	D1N	MIPI_DP1- are differential data signal line
28	GND	Power ground.
29	D0P	MIPI_DP0+ are differential data signal line
30	D0N	MIPI_DP0- are differential data signal line
31	GND	Power ground.

5. Electrical Characteristics

5.1 TFT DC Characteristics

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage for I/O	VDDIO	1.65	1.8	3.3	V
Supply Voltage for(DC/DC)	VDD	2.8	3.3	3.6	V
Current Consumption	IDD	--	--	150	mA
	IDD-SLEEP	--	160	--	uA

6. LED Backlight Specification

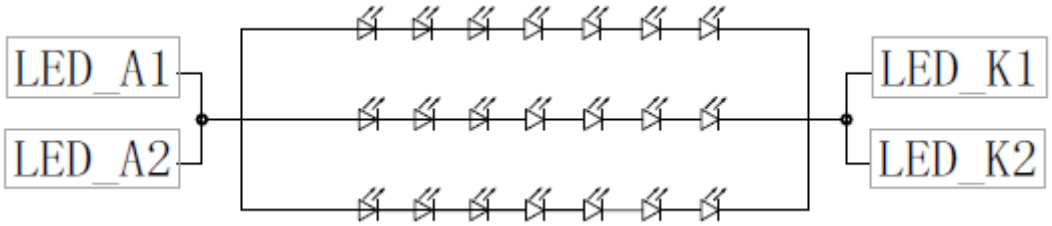
The back-light system is an edge-lighting type with 21 white LEDs. The characteristics of the back-light are shown in the following tables.

Item	Symbol	Min	Typ	Max	Unit	Notes
Forward voltage	Vf	-	22.4	-	V	-
Forward current	IF	-	60	-	mA	-
LED life time	N/A	-	30000	-	Hr	Note 1

Note:

(1) The “LED life time” is defined as the module brightness decrease to 50% of original brightness at IL=20mA/LED. The LED life time could be decreased if operating IL is larger than 25mA/LED.

Backlight circuit diagram shown in below:



7. Timing Characteristics

7.1 Porch data parameter:

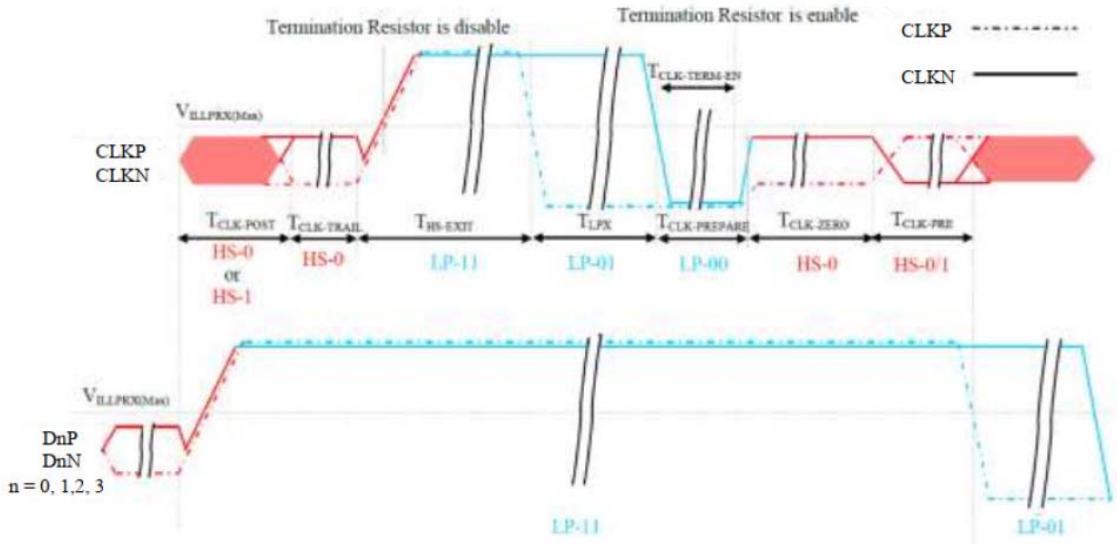
Parameters	Symbols	Min.	Typ.	Max.	Units
Vertical sync. active	VSA	2	8	-	Line
Vertical Back Porch	VBP	18	24	-	Line
Vertical Front Porch	VFP	8	16	-	Line
Active lines per frame	VACT	-	1280	-	Line
Horizontal sync. active	HSA	2	20	-	Pixel
Horizontal Back Porch	HBP	1.88	90	-	us
Horizontal Front Porch	HFP	0.94	90	-	us
Active pixels per line	HACT	-	720	-	Pixel
Bit rate	BR_{bps}	400	440	--	Mbps/lane

7.2 DSI-MIPI Interface Timing Characteristics of IC

NormalWrite Mode (VCC = IOVCC=2.4~3.3V)

Clock Lanes - High Speed Mode to/from Low Power Mode Timings

Signal	Symbol	Description	Min	Max	Unit
CLKP/N	$T_{CLK-POST}$	Time that the MCU shall continue sending HS clock after the last associated Data Lanes has transitioned to LP mode	60+52xUI	-	ns
CLKP/N	$T_{CLK-TRAIL}$	Time to drive HS differential state after last payload clock bit of a HS transmission burst	60	-	ns
CLKP/N	$T_{HS-EXIT}$	Time to drive LP-11 after HS burst	100	-	ns
CLKP/N	$T_{CLK-PREPARE}$	Time to drive LP-00 to prepare for HS transmission	38	95	ns
CLKP/N	$T_{CLK-TERM-EN}$	Time-out at Clock Lane to enable HS termination	-	38	ns
CLKP/N	$T_{CLK-PREPARE}$ + $T_{CLK-ZERO}$	Minimum lead HS-0 drive period before starting Clock	300	-	ns
CLKP/N	$T_{CLK-PRE}$	Time that the HS clock shall be driven prior to any associated Data Lane beginning the transition from LP to HS mode	8xUI	-	ns



Clock Lanes - High Speed Mode to/from Low Power Mode Timings

7.3 Reset Description:

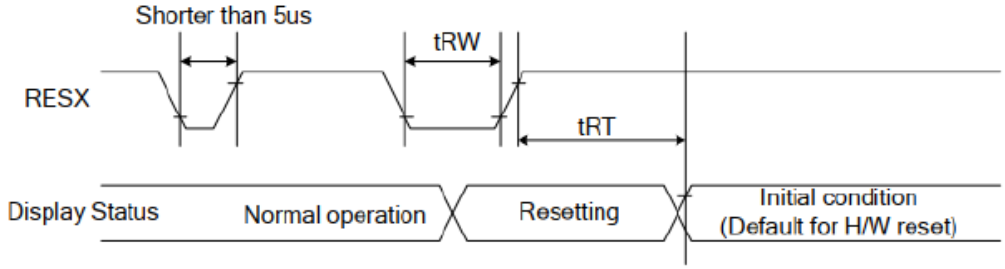


Figure 124: Reset Timing

Table 47: Reset Timing

Signal	Symbol	Parameter	Min	Max	Unit
RESX	tRW	Reset pulse duration	10		uS
	tRT	Reset cancel		5 (note 1,5)	mS
				120 (note 1,6,7)	mS

Notes:

1. *The reset cancel also includes required time for loading ID bytes, VCOM setting and other settings from EEPROM to registers. This loading is done every time when there is H/W reset cancel time (tRT) within 5 ms after a rising edge of RESX.*
2. *Spike due to an electrostatic discharge on RESX line does not cause irregular system reset according to the Table 48.*

Table 48: Reset Descript

RESX Pulse	Action
Shorter than 5us	Reset Rejected
Longer than 10us	Reset
Between 5us and 10us	Reset starts

3. During the Resetting period, the display will be blanked (The display enters the blanking sequence, which maximum time is 120 ms, when Reset Starts in the Sleep Out mode. The display remains the blank state in the Sleep In mode.) and then return to Default condition for Hardware Reset.
4. Spike Rejection can also be applied during a valid reset pulse, as shown below:

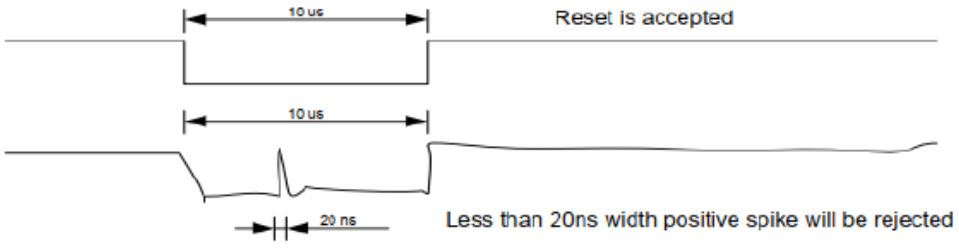


Figure 125: Positive Noise Pulse during Reset Low

5. When Reset applied during Sleep In Mode.
6. When Reset applied during Sleep Out Mode.
7. It is necessary to wait 5msec after releasing RESX before sending commands. Also Sleep Out command cannot be sent for 120msec.

8.Optical Specification

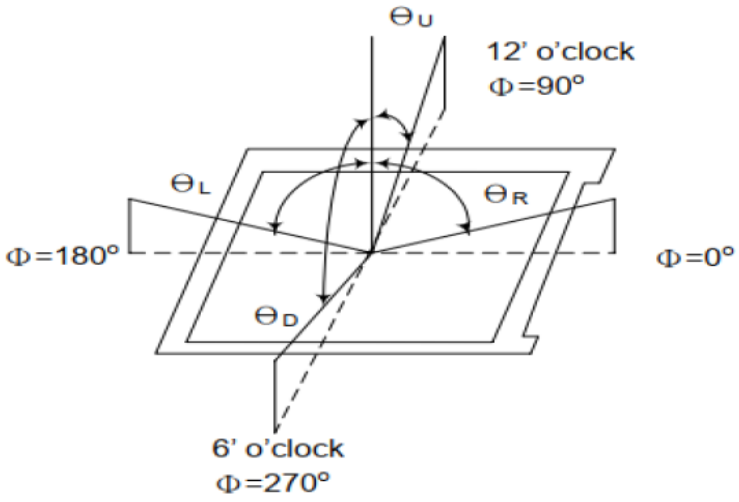
Item	Symbol	Condition	Min	Typ	Max	Unit	Remark
Transmittance（with Polarizer）	T(%)	Θ=0O Ø=0o Ta=25˚C	-	-	-	-	Measuring with Polarizer Reference Only
Transmittance（without Polarizer）	T(%)		-	10.8	-	-	
Response time	Tr		-	10	15	ms	
	Tf		-	20	25		
Contrast ratio	Cr		640	800			
Color gamut	S（%）		-	70	-	%	C-light
Luminance uniformity	WHITE		80			%	
Viewing angle range	Θx+	CR≧10 Ta=25˚C		80		deg	CF glass
	Θx-			80		deg	
	Θy+			80		deg	
	Θy-			80		deg	
Luminance（CTP+LCM）	LV	Θ=0o Ø=0o Ta=25˚C		320		dc/㎡	
CIE(X,Y)Chromaticity	White(X)		0.284	0.304	0.324	-	
	White(Y)		0.304	0.324	0.344	-	

- Measuring surrounding : dark room
- Ambient temperature : 25±2Oc
- 15min. warm-up time.

Measuring Equipment

- FPM520 of Westar Display technologies, INC., which utilized SR-3 for Chromaticity and BM-5A for other optical characteristics.

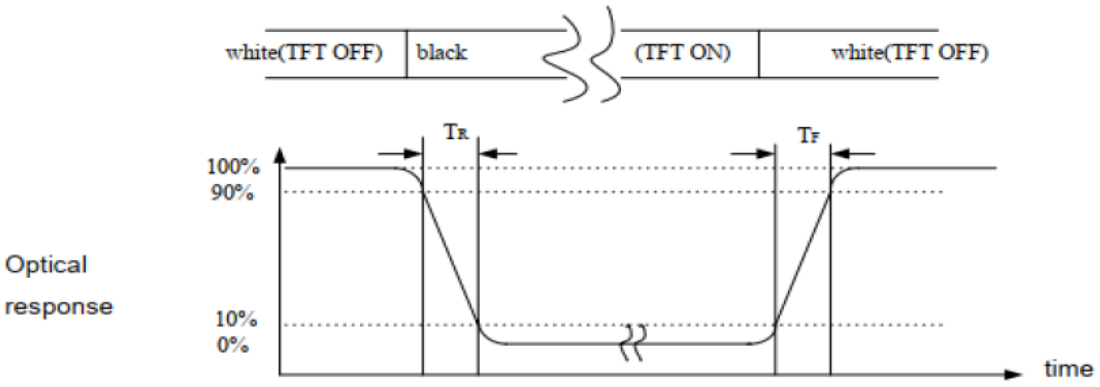
Note (1) Definition of Viewing Angle:



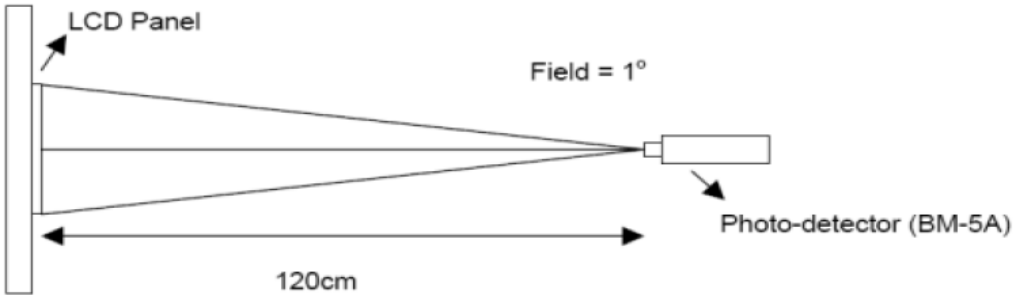
Note (2) Definition of Contrast Ratio (CR) :
measured at the center point of panel

$$CR = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

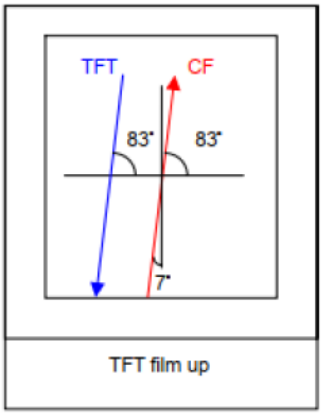
Note (3) Definition of Response Time : Sum of T_R and T_F



Note (4) Definition of optical measurement setup



Note (5) Rubbing Direction (The different Rubbing Direction will cause the different optima view direction.)



9.Reliability Test Items

Item	Test Condition	Criterion
High Temperature Operation	70 ℃, 48hrs	Note1，Note2
Low Temperature Operation	-20 ℃, 48 hrs	
High Temperature Storage	80 ℃, 48hrs	
Low Temperature Storage	-30 ℃, 48 hrs	
High Temp. & High Humidity Storage	50 ℃, 90％ RH, 48hrs	
Thermal Shock (Static)	-20℃, 30 min /60℃, 30 min, 50 cycles	

Note1:Evaluation should be tested after storage at room temperature for two hours.

Note2:

Pass: Normal display image no line defect.

Fail: No display image, or line defects.

Partial transformation of the module parts should be ignored.

10.Precautions

Please pay attentions to the followings as using the LCD module.

Handling

(a) Do not apply strong mechanical stress like drop, shock or any force to LCD module. It may cause improper operation, even damage.

(b) Because the polarizer is very fragile and easy to be damaged, do not hit, press or rub the display s urface with hard materials.

(c) Do not put heavy or hard material on the display surface, and do not stack LCD modules.

(d) If the display surface is dirty, please wipe the surface softly with cotton swab or clean cloth.

(e) Avoid using Ketone type materials (e.g. Acetone), Toluene, Ethyl acid or Methyl chloride to clean t he display surface. It might damage the touch panel surface permanently. The recommended solvents are water and Isopropyl alcohol.

(f) Wipe off water droplets or oil immediately.

(g) Protect the LCD module from ESD. It will damage the LSI and the electronic circuit.

(h) Do not touch the output pins directly with bare hands.

(i) Do not disassemble the LCD module.

(j) Do not lift the FPC of Touch Panel.

Storage

(a) Do not leave the LCD modules in high temperature, especially in high humidity for a long time.

(b) Do not expose the LCD modules to sunlight directly.

(c) The liquid crystal is deteriorated by ultraviolet. Do not leave it in strong ultraviolet ray for a long time.

(d) Avoid condensation of water. It may cause improper operation.

(e) Please stack only up to the number stated on carton box for storage and transportation. Excessive w eight will cause deformation and damage of carton box.

Operation (a) When mounting or dismounting the LCD modules, turn the power off.

(b) Protect the LCD modules from electric shock.

(c) The Driver IC control algorithms stated above should always obeyed to avoid damaging the LSI an d electronic circuit.

(d) Be careful to avoid mixing up the polarity of power supply for backlight.

(e) Absolute maximum rating specified above has to be always kept in any case. Exceeding it may cau se non-recoverable damage of electronic components or, nevertheless, burning.

(f) When a static image is displayed for a long time, remnant image is likely to occur.

(g) Be sure to avoid bending the FPC to an acute shape, it might break FPC.

(h) Most of the touch screens have air vent to equalize the inside air pressure to the outside one. The air vent must be open and liquid contact must be avoided as the liquid may be absorbed if the liq uid is accumulated near the air vent.

(i) For the fragility of ITO film, it should avoid to use too tapering pen as the input material.

Touch Panel Mounting Notes

(a) If a cushion is used between bezel/housing and film must be choose as free as enough to absorb t he expansion and contraction

to avoid the distortion of film.

(b) The cushion must be placed out of the Viewing Area.

(c) Bezel/Housing edge must be posited between Key Area and Viewing Area. The edge enters the Ke y Area may cause unexpected input if the gap is too narrow or foreign particles like dusts exist be tween Bezel/Housing and ITO film.

(d) Mounting example:

The corner part has conductivity. Do not touch any metal part after mounting.

Others

a) If the liquid crystal leaks from the panel, it should be kept away from the eyes or mouth.

b) For the fragility of polarizer, it is recommended to attach a transparent protective plate over the di splay surface.

c) It is recommended to peel off the protection film on the polarizer slowly so that the electrostatic c harge can be minimized.

11.HSF Requirements

☑ RoHS(Restriction of the use of certain Hazardous Substances)

☐HF (Halogen Free)

☐REACH (Regulation the Registration, Evaluaton, Authorization and Restricton of Chemicals)

☐ Other regulations

12.10 Packing form
TBD

深圳市丽台电子有限公司

Shenzhen Leadtek Electronics Co.,Ltd

Quality inspection standards

品质允收标准

MODEL No. / 产品型号： **Applies 5.0~9.0 TFT-LCD Panel**
UPDATED DATE / 生效日期： **2022-05-20**
VERSION / 版 本： **A0**
Customer Signature/客户签字： _____

RECORD OF REVISION/修订履历：

Version 版本	Revision Record 修订内容	Compile 修订者	Date of Revision 修订日期
V0	首发/Starting	Green	2022.05.20

1.Scope 1适用范围

This document shall be applied to 5.0~9.0 TFT-LCD Panel.

本文件适用于5.0~9.0 TFT-LCD Panel.

2.Inspection and Environment onditions/检查条件与环境

2. 1 Inspection Conditions 检查条件:

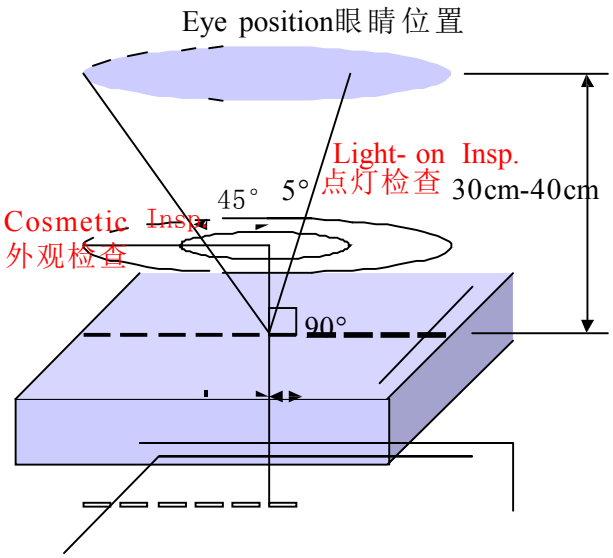
(1) Inspection Distance检测距离: 35 cm±5cm

(2) Each picture /每个画面：2~3 secs/秒，Cosmetic Inspection/外观10~12 secs/秒

(3) View Angle观看角度:

Light-on Inspection Angle点灯检验角度 ： ±45°

Cosmetic Inspection Angle外观检验角度 ： ±45°



(Perpendicular to LCD panel surface垂直于液晶显示表面)

2.2 Environment Conditions环境条件:

Ambient Temperature 温度		25℃±5℃
Ambient Humidity 湿度		55±5%RH
Ambient Illumination 亮度	Cosmetic Inspection 外观检验	800-1000 Lux
	Functional Inspection 点灯检验	200~300Lux

2.3 Sampling Conditions 抽样条件:

(1) Lot Size ： Quantity of shipment lot per model/.

批量：单次运送单一机型数量

(2) Sampling Method ：
抽样方法：

Sampling Plan 抽样计划		GB2828/2003
		Normal Inspection, Single Sampling 正常检验、单次抽样
		Geneal II Inspection 普通二级
AQL	Major Defect 主要缺点	0.25
	Minor Defect 次要缺点	0.65

(3) The classification of Major(MA) and Minor(MI) defects is shown as 3. Inspection Criteria.
主缺(MA)及次缺(MI)定义于”3.检查标准”

3.Terms and Definitions/术语和定义

3.1 Classification of defects缺陷的分类:

Major defects: A major defect is a defect that is likely to result in failure, or to reduce materially the usability of the product for its intended purpose.

主要缺陷：会导致产品功能失效或减少产品可用性的缺陷。

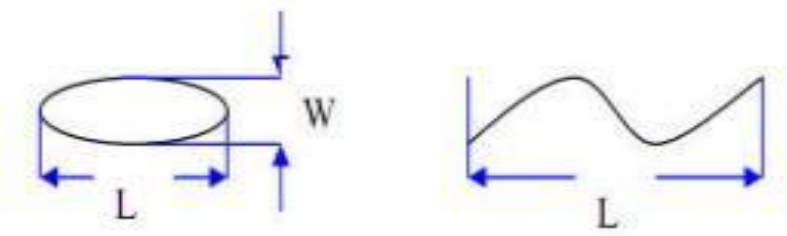
Minor defects: A minor defect either is a defect that is not likely to reduce materially the usability of the product for its intended purpose, or is a departure from an established having little bearing on the effective use or operation of the product.

次要缺陷：不会导致产品功能失效，不会减少产品的有效使用和操作。

3.2 Extraneous substances that can be wiped out ,like Finger point,Particles are not cnsidered as a defect . 可以被擦拭干净的表面物质不视为缺陷 (如手指印，尘粒) 。

3.3 Defects on the Black Matraix(outside ofActive Area) are not considered as a defect . BM 区域 (AA 区以外) 的缺陷不视为缺陷。

3.4 Size of circular defect,is defined by diameter”D” 。The defect average diameter D=1/2(W+L) 圆形缺陷的大小是由直径 D 定义的。缺陷的平均直径 D=1/2(W+L)



3.5 When defect size L≥2W,the defect count as liner type defect.Size of linear defect is defined by length(L) and the maximum width(W).

当缺陷尺寸 L≥2W 时，被视为线状缺陷。线状缺陷是由长度 (L) 和最大宽度 (W) 定义的。 3.6 3.6 Mura criteria :judged by ND filter6%,and can't be seen under at ND filter 6% .

3.6 MURA 判断标准：使用 ND6%判定，且透过 ND6% ，遮住不可见.

3.7 Dot defect is defind as the defective area of the dot is larger than 50% of the dot area and is visible through 6% ND filter

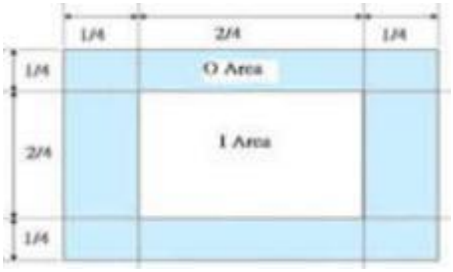
DOT 定义为点缺陷面积大于 50% DOT 面积, 且透过 ND6%遮住是可见的.

The drawing of 1/2 area sub-pixel definition: The 1/2 area sub-pixel can be defined as below one or more of specific shapes

1/2 面积的子像素定义绘图：1 / 2 面积的子像素可以定义为如下一个或多个特定形状图：

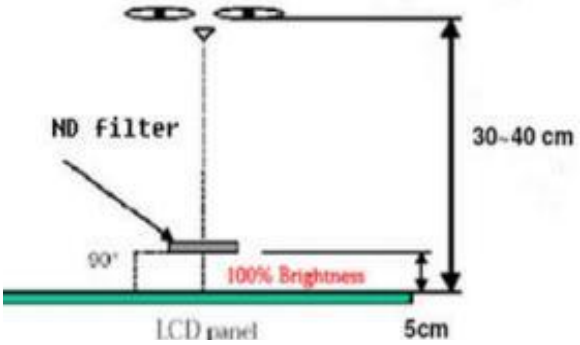
3.8 A dot defect that is smaller than the defined dot defect will be treated as small bright dot. 细碎亮点：小于"DOT 定义"的点缺陷视为细碎亮点。

I 区与 O 区比例：1：2：1



3.9 Inspection method of ND Filter - holding ND filter in front of the panel around 5cm and examine the panel from 35±5 cm in the front view for 2~3 second.

ND 卡的检查方法：在面板上方大约 5CM 处握住 ND 卡，眼睛距离面板 30-40CM ，通过 2~3 秒观察。



4. Inspection Criteria 检验标准

4.1 Appearance Inspection specification 外观检查规格:

Judge area 区域	Judge item 项目	Specification inspection 检查规格	Judge criterion	
			Major	Minor
Silicone 硅胶	Silicone spread 硅胶涂布	The height can't over C/F , color filter , or gomu 高度不能过超 C/F		MI
	Silicone residue 硅胶残余	Can't cover polarizer, FPC …etc. 不能覆盖 POL, FPC 等		MI
LCD 玻璃	Wire(on Array) 线路	No damage 不能损伤	MA	
	Edge 边缘	No extended crack 不可有延伸性裂纹	MA	
PCBA Connector FPC/FFC	Appearance 外观	Scratch or damage result in copper expose is not allowed 划伤或损伤不允许导致出现露铜		MI
	Component 零件	No damage 不能损伤	MA	
	Connection status 连接状况	Need correct connection 需要正确连接	MA	
	Broken 破裂	Not allowable 不允许	MA	
	Folding sign 对位记号折叠	Not allowable 不允许	MA	
POL 偏光片	Scract on the polarizer 偏光片划伤	1.W≤0.07mm; L≤5mm, Ignore (忽略)		MI
		2.0.07mm<W≦0.15mm ; L≤5mm ; N≤4 ; DS≥10mm		
		3.0. 15mm＜W; 5mm＜ L , Not allowable不允许		

Judge area 区域	Judge item 项目	Specification inspection 检查规格	Judge criterion	
			Major	Minor
POL 偏光片	Dent on the polarizer 偏光片凹痕	1.D＜0. 20mm，Ignore（忽略）		MI
		2.0.20mm＜D≤0.40mm；N≤4；DS≥10mm		
		3.0.40mm＜D，Not allowable不允许		
	POL Linear bubble 线状气泡	1.W≤0.07mm；L≤5mm，Ignore（忽略）		MI
		2.0.07mm<W≦0.15mm ; L≤5mm ; N≤4 ; DS≥10mm		
		3.0. 15mm＜W；5mm＜ L，Not allowable不允许		
	POL dot bubble 点状气泡	1.D＜0. 20mm，Ignore（忽略）		MI
		2.0.20mm＜D≤0.40mm；N≤4；DS≥10mm		
		3.0.40mm＜D，Not allowable不允许		
	POL edge bubble 片边缘气泡	1. The display area is 1/2BM outside，Not allowable 显示区往外 1/2BM 区域内，不允许 2. The display area is outside the outer 1/2BM area，Not allowable 显示区往外1/2BM区域以外，不管控		MI

Judge area 区域	Judge item 项目	Specification inspection 检查规格	Judge criterion	
			Major	Minor
TP&CG	Foreign Material in spot shape 点状异物	1.D≤0.20mm；Ignored（忽略） 2.0.20mm＜D≤0.40mm；N≤4；DS≥10mm 3.D＞0.40mm；Not allowable不允许		MI
	Fisheye/bubbles 鱼眼/气泡	1.D≤0.20mm；Ignored（忽略） 2.0.20mm＜D≤0.40mm；N≤4；DS≥10mm 3.D＞0.40mm；Not allowable不允许		MI
	Scratches on the surface 表面划伤	1.W≤0.07mm；Ignored（忽略） 2.0.07mm<W≤0.15mm，L≤5mm；N≤4；DS≥10mm 3.W＞0.15mm，L＞5mm；Not allowable不允许		MI
	Collapse corner、Crash edge 崩角、崩边	Product front:/产品正面： collapse corners, collapsed edges are not allowed 崩角、崩边不允许； Product back/产品背面： X≤ 0.5 , Y≤0.5，Z≤1/2T；N≤4；DS≥10mm	MA	
	Printed fonts/LOGO 丝印/LOGO	Printed fonts/LOGO clarity、complete、content right 字体/LOGO丝印清晰、完整、内容正确		MI
	Broken 破损	Not allowable不允许	MA	
	Dirty surfaces 表面脏污	Dirt cannot be wiped， Not allowable 不可擦拭的脏污，不允许		MI
	IR hole IR孔	Black spots/黑点： W ≤0.15mm，N≤2，Not visible against a black background/黑色背景下不可见		MI
		IR hole Scratches： 1.W＜0.05mm，Ignored（忽略） （Dense points Not allowable 不允许密集）； 2.0.05mm＜W≤0.07mm；L≤2mm；N≤2； 3.W＞0.07mm，L＞2mm，Not allowable 不允许		MI

4.2 Electrical Inspection specification电性检查规格:

Item 项目	Judgment Criteria 判定标准	Judge criterion	
		Major	Minor
LCD Bright /Dark dot 玻璃亮点/暗点	1.D≦0. 20mm， Ignored（忽略），Not dense（不可密集） 2.0.20mm<D≦0.40mm ； N≦4 ； DS≥10mm 3.D＞0.40mm ，Not allowed/不允许		MI
Mura	Invisible through 6% ND filter，200~300Lux 透过ND6% 遮住 ， 目测不可见即为OK， 200~300Lux		MI
Small bright dot 细碎亮点	Not allowed if it can be observed through ND Filter6% 透过ND6%目测看得见，不允许		MI
ZBD Rate 玻璃亮点比率	90:10		MI
Light Leakage 漏光	Invisible through 6% ND filter，OK 透过ND6%遮住目测不可见即为OK If necessary,set up set up Limit Sample. 如果有必要，可制订限度样品		MI
Bubble in Cell (LC Bubble/Actice Area) CELL气泡 (AA区LCD气泡)	Eyes should not find it . 目视观察不可见，视为 OK	MA	

Item 项目	Judgment Criteria 判定标准	Judge criterion	
		Major	Minor
Foreign Material in spot shape 点状异物	1.D≦0.20mm， Ignored（忽略） 2.0.20mm<D≦0.40mm ； N≦4； DS≥10mm 3.D＞0.40mm ， Not allowable/不允许		MI
Foreign Material in line or spiral shape 线状异物	1.W≦0.07mm ， Ignored（忽略） 2. 0.07mm<W≦0.15mm ； L≤5mm ； N≦4 3.W＞0.15mm ； L＞5mm ， Not allowable/不允许		MI
White dot in back-light 白点	1.D≦0. 20mm，Ignored（忽略） 2.0.20mm<D≦0.40mm ； N≦4 ； DS≥10mm 3.D＞0.40mm ， Not allowed/不允许		MI
TP no touch 无触摸	Not allowable 不允许	MA	
Abnormal Disply 显示异常	Not Allowed 不允许	MA	
NO display 无显示	Not Allowed 不允许	MA	
Line Defect 缺线	Not Allowed 不允许	MA	
Angle of view error 视角错误	Not Allowed 不允许	MA	
Tect crostalk 不消失的残影	Not Allowed 不允许	MA	