PRODUCT SPECIFICATION

	7.0 “1024*600 IPS
	IE-DS-1819CH03MP-CB-1

Revision Record

Rev No	Date	Description	Released by
V1.0	2023.10.30	Initial Released.	

CONTENTS

1. General Specifications
2. Electrical Specification
   2.1 Absolute Maximum Ratings
   2.2 Electrical Characteristics
   2.3 Power On/Off Sequence
   2.4 Input Timing Table
3. Optical Specification
   3.1 LCM Optical Characteristics
   3.2 Measurement system
4. Mechanical Drawing
5. Pin Assignments
6. Reliability Test Items
7. General Precautions
   7.1.Safety
   7.2.Handling
   7.3.Static Electricity
   7.4.Storage
   7.5.Cleaning
   7.6.The shelf life of the product

1. General Specifications

No.	Item	Specification	Unit	Remark
1	LCD Size	7.0″	inch	-
2	LCD Type	a-Si TFT	-	-
3	Resolution	1024(H)×RGB×600(V)	Pixel	-
4	Display Mode	Normally Black	-	-
5	Number of Colors	16.7M	-	-
6	Viewing Direction	ALL CLOCK	-	DEG
7	Color Gamut	50%	-	Typ.
8	Contrast Ratio	1000	-	Typ.
9	Luminance	300	cd/m2	Typ.
10	Response Time	35	Ms	max
11	LCM Size	164.70*99.96*2.8	mm	-
12	Panel Active Area	154.21*85.92	mm	-
13	Pixel Pitch	0.0502*RGB*0.1432	mm	-
14	Pixel Arrangement	RGB Vertical Stripe	-	-
15	Weight	TBD	g	-
16	LCM Driver IC	EK79007+EK73217	-	-
17	Interface	Mipi 4Lane	-	-
18	Surface typel	Anti-glare	-	-

I General Specifications 规格 (L=long 长; W=wide 宽; T= thickness 厚)

Item 项目	Specifications 规格	Unit 单位
TP Outline 外形尺寸	183.6（L）×120（W）×5.6(T:不含底胶)	mm
Viewing Area 可视区	154.81（L）×86.52（W）	mm
Active Area 驱动区	155.81（L）×87.52（W）	mm
Pin Configuration 引脚定义	见附件图纸	

TP Mechanical characteristics 机械性能

Items 项目	Value 值
Optical characteristics 光学特性	Transparency 透明度 ≥85%
Hardness 表面硬度	≥6H（500g）
Haze 表面雾度	≤3%

TP Electric characteristics 电气性能

Items	Value 值
Supply voltage 工作电压	2.8V（DC）
Insulation Resistance 绝缘阻抗	>20M DC25v
Working current 工作电流	5mA~20mA
Response time 响应时间	≤16ms

2. Electrical Specification

2.1 Absolute Maximum Ratings

The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit. Make sure all the design characteristics are adequate before the panel is initialed. All the measurements should be operated with driver IC and FPC mounted.

Parameter	Symbol	Min	Max	Unit	Remark
Operating Temperature	TOP	**-20**	**+70**	℃	
Storage Temperature	TST	**-30**	**+80**	℃	
Humidity	**RH**	**10**	**90**	**%**	
LC Operating Voltage	VOP	**--**	**5.0**	**V**	**Ta=25℃**

Note: [VSS = GND = 0V]

1. Non-condensation, when humidity = 90%RH (Max), Temp

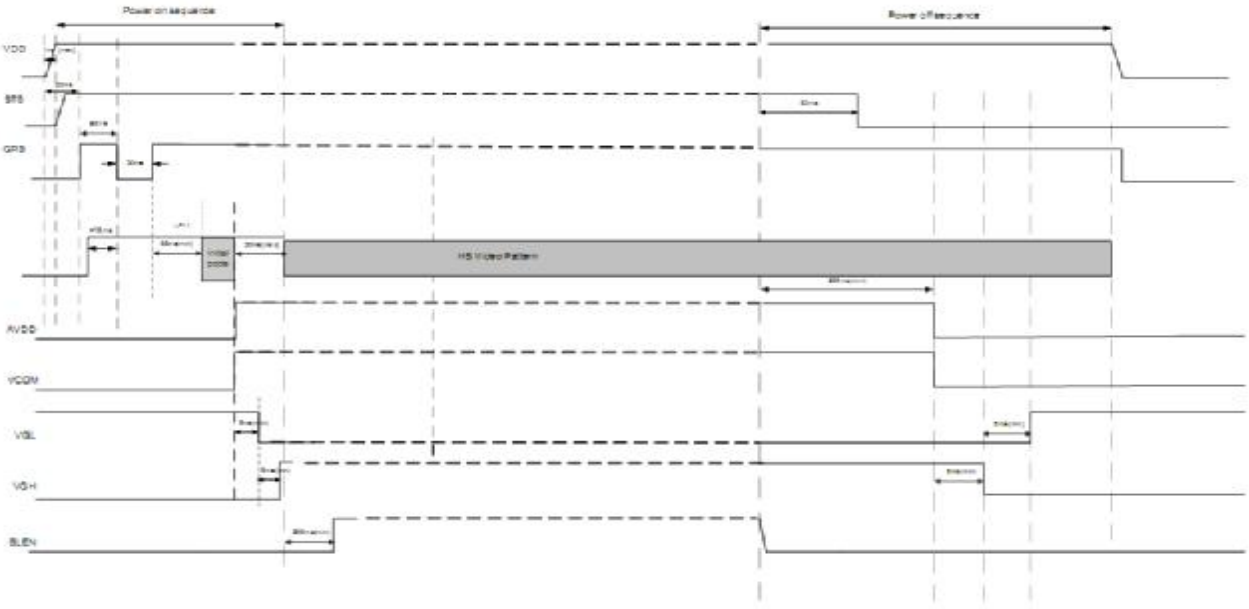
2.2Electrical Characteristics

Recommend Parameters for Electrical Characteristics

Parameter	Symbol	Min	TYP	MAX	Unit
Analog Supply Voltage	**VCI**	**-**	**-**	**-**	**V**
Interface Supply Voltage	**IOVCC**	**1.71**	**1.8**	**1.89**	**V**
TFT gate on voltage	**VGH**	**16.5**	**18**	**19.5**	**V**

TFT gate off voltage	VGL	-5.5	-6	-7.5	V
Analog supply voltage	AVDD	8.6	9.6	10.6	V
TFT common electrode voltage	VCOM		3.2		V
MIPI supply voltage	VDDIO	1.71	1.8	1.89	V
LED Current	I_B	-	160	-	mA
LED Voltage	V_f	8.4	9.6	9.9	V
LED life time	-		20000	-	Hr
Number of LED	-		24	-	pcs

2.3 Power On/Off Sequence



Note: CLK and Data Lanes should keep in LP11(stop state) before GRB.

2.4 Input Timing Table (4Lane)

DE mode

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
DCLK frequency @Frame rate=60hz	fclk	40.8	51.2	67.2	Mhz
Horizontal display area	thd		1024		DCLK
HSYNC period time	th	1114	1344	1400	DCLK
HSYNC blanking	thb+thfp	90	320	376	DCLK
Vertical display area	Tvd		600		H
VSYNC period time	Tv	610	635	800	H
VSYNC blanking	Tvb+Tvfp	10	35	200	H

HV mode
Horizontal input timing

Parameter		Symbol	Value			Unit
Horizontal display area		thd	1024			DCLK
DCLK frequency@ Frame rate=60hz		fclk	Min.	Typ.	Max.	
			44.9	51.2	63	Mhz
1 Horizontal Line		th	1200	1344	1400	DCLK
HSYNC pulse width	Min.	thpw	1			
	Typ.		70			
	Max.		140			
HSYNC blanking		thb	160	160	160	
HSYNC front porch		thfp	16	160	216	

HV mode
Vertical input timing

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Vertical display area	tvd		600		H
VSYNC period time	tv	624	635	750	H
VSYNC pulse width	tvpw	1	10	20	H
VSYNC back porch	tvb	23	23	23	H
VSYNC front porch	tvfp	1	12	127	H

3. Optical Specification

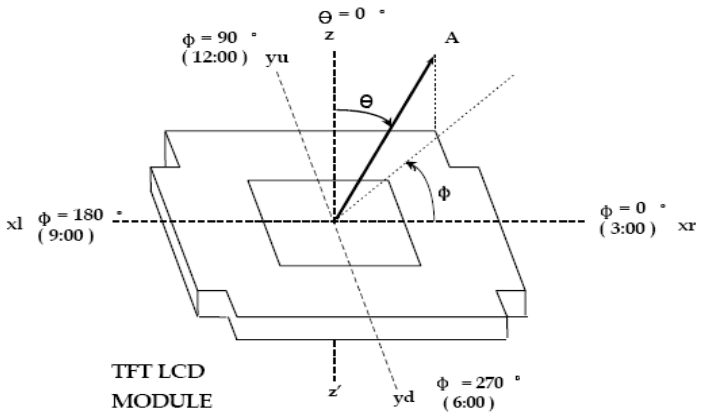
3.1 LCM Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle	**3:00**	θ_L	**CR≧10**	**80**	**-**	**-**	°	Note3.2.1
	6:00	θ_R		**80**	**-**	**-**	°	
	9:00	θ_T		**80**	**-**	**-**	°	
	12:00	θ_B		**80**	**-**	**-**	°	
Response Time		**Ton+Toff**	θ=Φ=0°	**-**	**25**	**35**	ms	Note3.2.2
Contrast Ratio		**CR**	θ=Φ=0°	**800**	**1000**	**-**		Note3.2.3
Luminance		**L**	θ=Φ=0°	**270**	**300**	**-**	**cd/㎡**	**With CG**
Uniformity 均匀度		**U_L**	θ=Φ=0°	**80**	**-**	**-**	**%**	

NTSC 色饱和度	%	θ=Φ=0°	45	50	-	%	

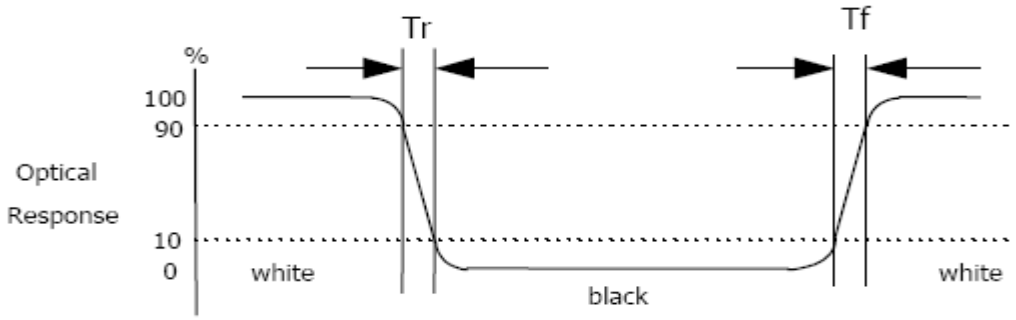
3.2 Measurement system

3.2.1 LCM Viewing Angle



Viewing angle is the angle at which the contrast ratio is greater than 10.The angles are determined for the horizontal or x axis and the vertical or y axis with respect to the z axis which is normal to the LCD surface.

3.2.2 Response time



Response time is the time required for the display to transition from white to black (Rising time, Tr) and from black to white (Falling time, Tf) for additional information.

3.2.3 Contrast Ratio (CR)

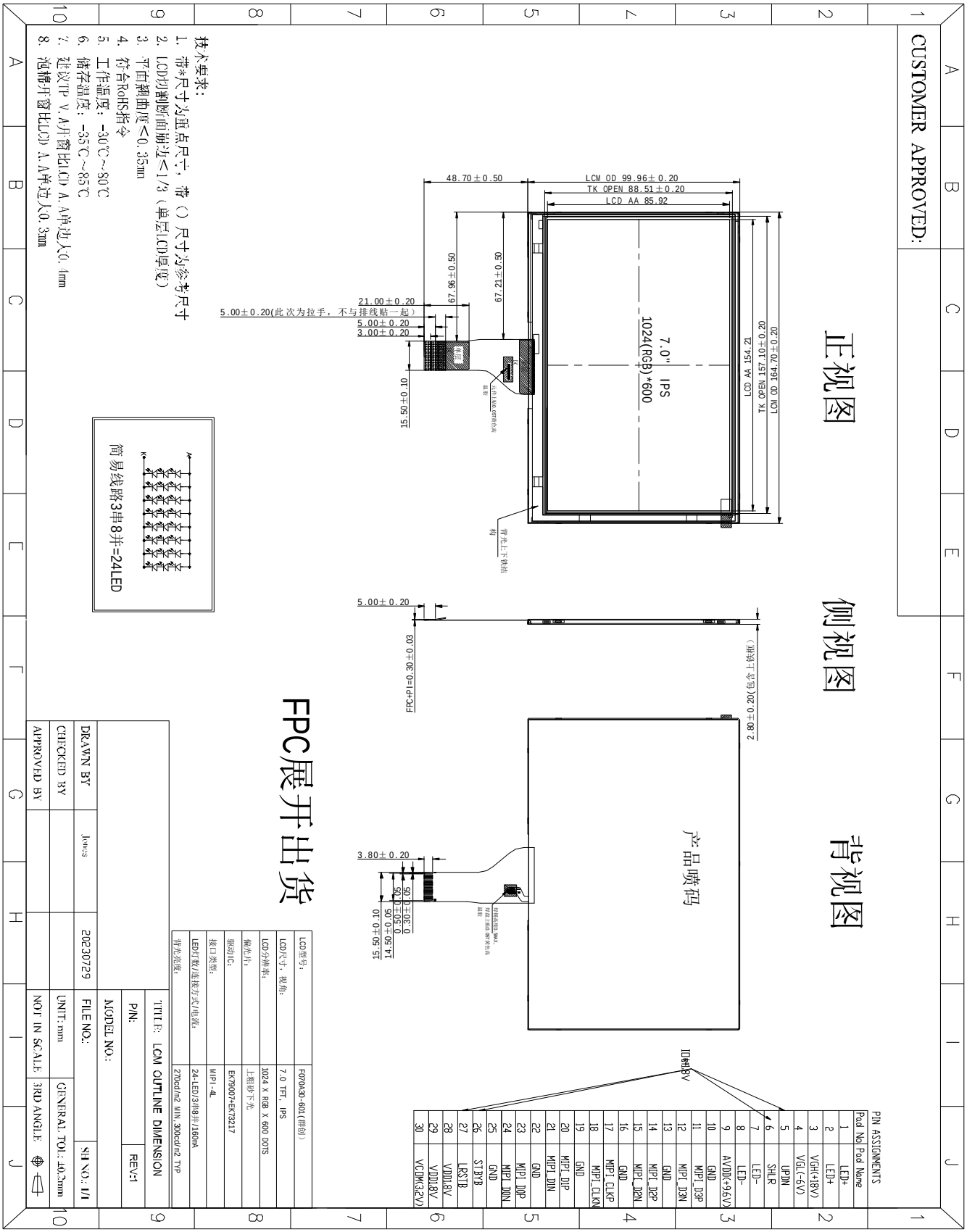
Contrast Ratio (CR) is defined mathematically as:

$$\text{Contrast Ratio} = \frac{\text{Surface Luminance with all white pixels}}{\text{Surface Luminance with all black pixels}}$$

Surface luminance is the center point across the LCD surface 500mm from the surface with all pixels displaying white.

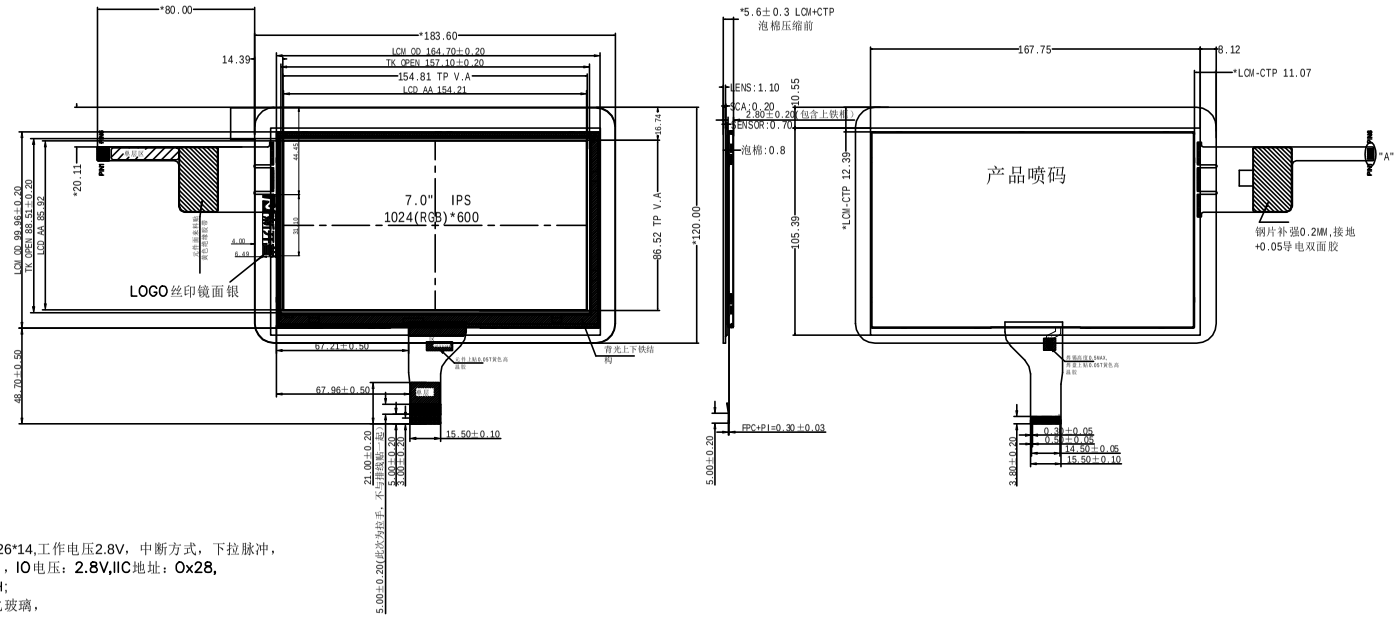
4. Mechanical Drawing

4.1 LCM Drawing



A0		2023.8.1	
A1		2023.11.16	

正视图　　侧视图　　背视图



PIN ASSIGNMENTS	
Pad No.	Pad Name
1	LED+
2	LED+
3	VGH(+18V)
4	VGL(-6V)
5	UPDN
6	SHLR
7	LED-
8	LED-
9	AVDD(+9.6V)
10	GND
11	MIPI_D3P
12	MIPI_D3N
13	GND
14	MIPI_D2P
15	MIPI_D2N
16	GND
17	MIPI_CLKP
18	MIPI_CLKN
19	GND
20	MIPI_D1P
21	MIPI_D1N
22	GND
23	MIPI_D0P
24	MIPI_D0N
25	GND
26	STBYB
27	LRSTB
28	VDD1.8V
29	VDD1.8V
30	VCOM(3.2V)

IOvin1.8V

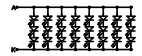
PIN	FUNCTION
OPT1	GND
OPT2	300K

TP不需要上拉电阻

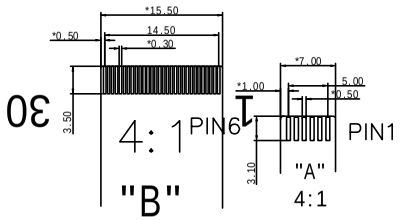
PIN	FUNCTION
1	GND
2	INT 2.8V
3	RST 2.8V
4	SCL 2.8V
5	SDA 2.8V
6	VCC 2.8V

CTP技术要求:
1、结构为:G+G;
2、IC:GT911，通道数26*14,工作电压2.8V，中断方式，下拉脉冲，FPC接口为IIC标准接口，IO电压：2.8V,IIC地址：0x28,
3、盖板表面硬度：≥6H;
4、Cover Glass: 钢化玻璃，
5、成品可视区透光率：≥85%;
6、玻璃硬度，落球实验:130g钢球，10CM可视区自由跌落1次无破损
7、操作环境：-20℃~+70℃，≤90%RH;
储存环境：-30℃~+80℃，≤90%RH;
8、所有材料符合RoHS 2.0标准;
9、未注公差±0.2。

Luminance:270cd/㎡ MIN
Luminance: 300cd/㎡ TYP



3串8并=24LED 160MA



Notes:

1.Display Mode:Normally BLACK
2.Viewing Angle: ALL O'CLOCK
3.LCD Driver IC: EK79007AD3+EK73217BCGA
4.Operating Temp:-10˚C ~ +60˚C
5.Storage Temp:-20˚C ~ +70˚C
6.*:Critical Dimension,( ):Reference Dimension
7.Undefinition Tolerance:±0.2
8.Requirements on Environmental Protection:RoHS 2.0

Confirm By:		Drawing NO:	
Checked By:		Customer Product NO:	
Drawn By: ZWB 2023.8.1		Vendors NO:	
		Third Angle Projection:	图纸比例 1:1 / 单位 MM / 頁碼 1-1

5.Pin Assignments

PinNo.	Symbol	Function
1	LED+	Power supply for LED backlight anode input.
2	LED++	Power supply for LED backlight anode input.
3	VGH	**TFT gate on voltage**
4	VGL	**TFT gate off voltage**
5	UPDN	**Gate up or down scan control.**
6	SHLR	**Source right or left sequence control.**
7	LED-	Power supply for LED backlight cathode input.
8	LED-	Power supply for LED backlight cathode input.
9	AVDD	**Power supply for analog circuits**
10	GND	Ground.
11	MIPI_D3P	**MIPI data input.**
12	MIPI_D3N	**MIPI data input.**
13	GND	Ground.
14	MIPI_D2P	**MIPI data input.**
15	MIPI_D2N	**MIPI data input.**
16	GND	Ground.
17	MIPI_CLKP	**MIPI clock input.**
18	MIPI_CLKN	**MIPI clock input.**
19	GND	Ground.
20	MIPI_D1P	MIPI data input.
21	MIPI_D1N	**MIPI data input.**
22	GND	Ground.
23	MIPI_D0P	**MIPI data input.**
24	MIPI_D0N	**MIPI data input.**
25	GND	Ground.
26	STBYB	Standby mode.
27	LRSTB	Global reset pin. Active Low to enter Reset State.
28	VDD1.8V	Power 1.8V supply for digital circuits .
29	VDD1.8V	Power 1.8V supply for digital circuits .
30	VCOM	Power supply for VCOM.

6.Reliability Test Items

No	Items	Conditions	Remark
1	High Temperature Storage test(HTS)	80℃, 48hrs, Non-operational	Note 1,Note 4
2	Low Temperature Storage test(LTS)	-30℃, 48hrs, Non-operational	Note 1,Note 4
3	High Temperature Operating test(HTO)	70℃, 48hrs, operational	Note 1,Note 4
4	Low Temperature Operating test(LTO)	-20℃, 48hrs, operational	Note 1,Note 4
5	Thermal Humidity Operating test(THO)	40℃/90%RH,48hrs, operational	Note 4
6	Thermal Cycle Storage test(TST)	-30℃/30 min~+80℃/30 min for a total5 cycles, Start with cold temperature and end with high temperature.	Note 4
7	Vibration Test	Frequency range:10~55Hz Stroke:1.5mm Sweep:10Hz~55Hz~10Hz 2 hours for each direction of X. Y. Z.(6 hours for total)	
8	Electro Static Discharge	□ □	

Note 1: Ta is the ambient temperature of samples.
Note 2: Ts is the temperature of panel’ s surface.
Note 3: In the standard condition, there shall be no practical problem that may affect thedisplay function. After the reliability test, the product only guarantees operation, but don’t guarantee all of the cosmetic specification.
Note 4: Before cosmetic and function test, the product must have enough recovery time, at least 2 hours at room temperature. The copyright belongs to Viete.Any unauthorized use is prohibited.

7 General Precautions

7.1 Safety

Liquid crystal is poisonous. Do not put it in your mouth. If liquid crystal touches your skin or clothes, wash it off immediately by using soap and water.

7.2 Handling

1. The LCD panel is plate glass. Do not subject the panel to mechanical shock or to excessive force on its surface.

2. The polarizer attached to the display is easily damaged. Please handle it carefully to avoid scratch or other damages.

3. To avoid contamination on the display surface, do not touch the module surface with bare hands.

4. Keep a space so that the LCD panels do not touch other components.

5. Put cover board such as acrylic board on the surface of LCD panel to protect panel from damages.

6. Transparent electrodes may be disconnected if you use the LCD panel under environmental conditions where the condensation of dew occurs.

7. Do not leave module in direct sunlight to avoid malfunction of the Ics.

7.3 Static Electricity

1. Be sure to ground module before turning on power or operating module.

2. Do not apply voltage which exceeds the absolute maximum rating value.

7.4 Storage

1. Store the module in a dark room where must keep at 25±10℃ and 65%RH or less.

2. Do not store the module in surroundings containing organic solvent or corrosive gas

3. Store the module in an anti-electrostatic container or bag.

7.5 Cleaning

1. Do not wipe the polarizer with dry cloth. It might cause scratch.

2. Only use a soft sloth with IPA to wipe the polarizer, other chemicals might permanent damage to the polarizer.

7.6 The shelf life of the product

1. The shelf life of the product is 12 months from the date of delivery.

-END-