LCD MODULE

SPECIFICATION

Model:	LCM-UE046VQ-RB40-L001A
Version:	V1.0
Date:	20221023

Customer Confirmation 客户确认

Approved by	Notes

Please return one of the copies of the specification with your signature to us within two weeks after you receive this document. If it is not returned, we will assume that you agree to the entire contents of this specification document.

请贵司在收到规格书的两周内，将签好字的规格书原件或者复印件寄回.如果没有返回，我司将会认为贵司已经默认接受产品规格书中的全部资料和规范.

VIEWE Confirmation 优奕确认

Prepared by	Reviewed by	Approved by

REVISION HISTORY

Revision 版本号	Date 日期	Contents of Revision Change 修改内容	Remark 备注
V1.0	2022.10.23	Preliminary release	

TABLE of CONTENTS

1. GENERAL INFORMATION

1.1 Features

1) Pixel Arrangement：RGB Vertical Stripe
2) Interface Mode：3SPI-RGB 18bits
3) Driver IC： ST7701S or Equivalent
4) Operation Temperature：-20~70℃
5) Storage Temperature：-30~80℃
6) Backlight Type：White LED
7) Display mode： Normally Black
8) LED life time：30,000 Hours

1.2 Mechanical Specification

Item 项目	Specification 规格	Unit 单位	Remark 备注
Pixel Driving element	A-Si TFT	-	
Screen Size	4.58	Inch	Diagonal
Resolution	320(W)*3(RGB)*960(H)	Dots	
Interface	3SPI_RGB 18bits	-	40PIN
Module Power Consumption	TBD	Watt	Typ.
Active Area	36.77 (H)* 110.30 (V)	mm	
Module Size (W*H*D)	41.57 (H)*118.8 (V)*2.5(D)	mm	
Luminance	300	cd/m^2	Typ.
Viewing Direction	All	O'clock	-
Display Color	16.7M	Colors	18bits

2. ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit	Note
Power Supply voltage 1	VCI~GND	-0.3	+4.6	V	
Power Supply voltage 2	IOVCC~GND	-0.3	+4.6	V	
Logic Input Voltage Range	VIN	-0.3	IOVCC+0.5	V	
Logic Output Voltage Range	VO	-0.3	IOVCC+0.5	V	
Operating temperature	Topr	-20	+70	C	
Storage temperature	Tstg	-30	+80	C	

* The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

3. DC ELECTRICAL CHARACTERISTICS

3.1 Driving TFT LCD Panel

AGND = GND = 0V, Ta = 25C

Parameter	Symbol	Min	Typ	Max	Unit
Supply voltage for analog circuit	VCI	2.5	2.8	3.6	V
Supply voltage for logic circuit	IOVCC	2.5	2.8	3.6	V
Input voltage 'H'level	VIH	0.7*IOVCC	—	IOVCC	V
Input voltage 'L'level	VIL	GND	—	0.3*IOVCC	V
Output voltage 'H'level	VOH	0.8*IOVCC	—	IOVCC	V
Output voltage 'L'level	VOL	GND	—	0.2*IOVCC	V

3.2 Backlight Characteristics

Ta = 25C

Item	Symbol	Min	Typ	Max	Unit	Condition
Forward voltage	Vf	-	12.8		V	If=40 mA
Luminance	LV		8000	—	cd/m	
Number of LED	-	4X2			Piece	-
Connection mode	S/P	4Serial/2Parallel			-	-

Using condition: constant current driving method If= 2×20mA (+/-10%)

4. TIMING CHARACTERISTICS

4.1 Serial Interface Characteristics(3-line serial)

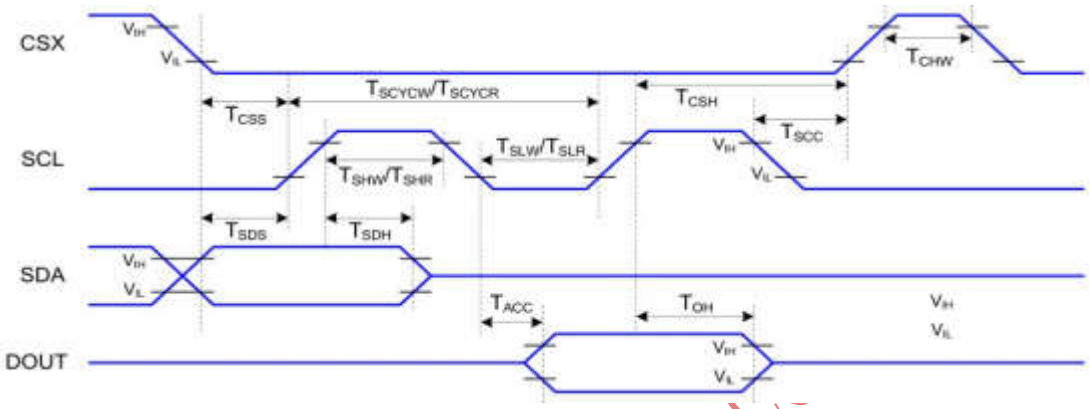


Figure 4.1 3-line serial Interface Timing Characteristics

Ta=25C, IOVCC=1.65~3.7V, VCC=2.5~3.7V

Signal	Symbol	Parameter	Min	Max	Unit	Description
CSX	TCSS	Chip select setup time(write)	15	-	ns	
	TCSH	Chip select hold time(write)	15	-	ns	
	TCSS	Chip select setup time(read)	60	-	ns	
	TSCC	Chip Select hold time(read)	60	-	ns	
	TCHW	Chip Select 'H' pulse width	40	-	ns	
SCL	TSCYCW	Serial clock cycle(write)	66	-	ns	Write Command & Data Ram
	TSHW	SCL 'H' pulse width(write)	15	-	ns	
	TSLW	SCL 'L' pulse width(write)	15	-	ns	
	TSCYCR	Serial clock cycle(read)	150	-	ns	Read Command & Data Ram
	TSHR	SCL 'H' pulse width(read)	60	-	ns	
	TSLR	SCL 'L' pulse width(read)	60	-	ns	
SDA (DIN)	TSDS	Data setup time	10	-	ns	
	TSDH	Data hold time	10	-	ns	

Note : The rising time and falling time (Tr, Tf) of input signal are specified at 15 ns or less. Logic high and low levels are specified as 30% and 70% of IOVCCfor Input signals.

Table 4.1 3-line Serial Interface Characteristics

4.2 RGB Interface Characteristics

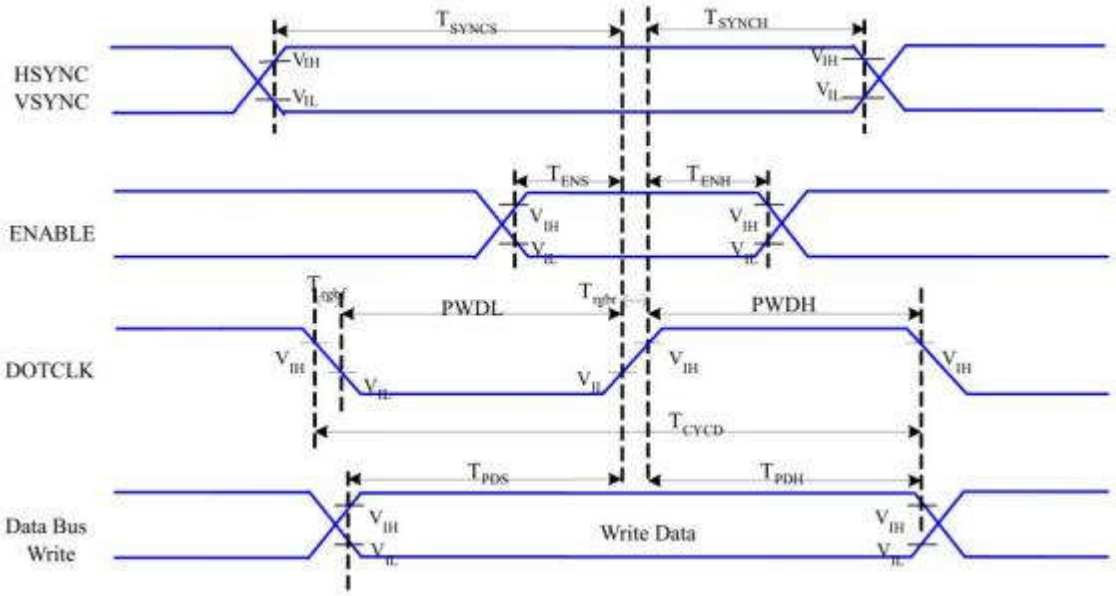


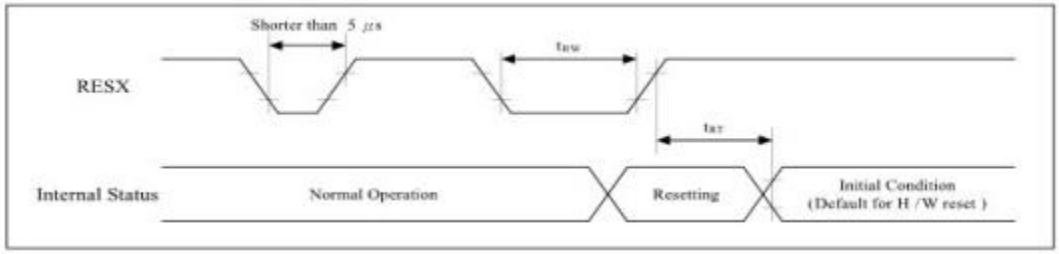
Figure 4.2.1 RGB Interface Timing Characteristics

Ta=25C, IOVCC=1.8V, VCC=2.8V

Signal	Symbol	Parameter	Min	Max	Unit	Description
HSYNC, VSYNC	TSYNCS	VSYNC,HSYNV Setup Time	5	-	ns	
ENABLE	TENS	Enable setup time	5	-	ns	
	TENH	Enable hold time	5	-	ns	
DOTCLK	PWDH	DOTCLK High-level Pulse Width	15	-	ns	
	PWDL	DOTCLK Low-level Pulse Width	15	-	ns	
	TCYCD	DOTCLK Cycle Time	33	-	ns	
	Trghr, Trghf	DOTCLK Rise/Fall time.	-	15	ns	
DB	TPDS	PD Data Setup Time	5	-	ns	
	TPDH	PD Data Hold Time	5	-	ns	

Table 4.2.2 18/16 Bits RGB Interface Timing Characteristics

5. Reset Timing



Signal	Symbol	Parameter	Min.	Max.	Unit
RESX	t_{RW}	Reset pulse duration	10(Note)	-	us
	t_{RT}	Reset cancel	-	10(Note)	ms
			-	120(Note)	ms

Notes:

1. The reset cancel also includes required time for loading ID bytes, VCOM setting and other settings from EEPROM (or similar device) to registers.

This loading is done every time when there is HW reset cancel time (tRT) within 10 ms after a rising edge of RESX.

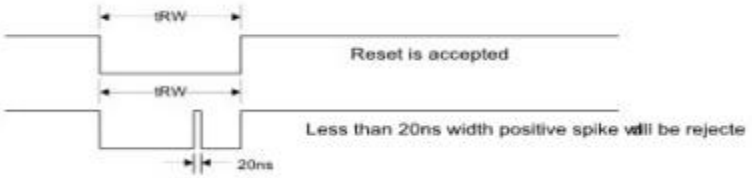
2. Spike due to an electrostatic discharge on RESX line does not cause irregular system reset according to the table below ：

RESX Pulse	Action
Shorter than 5us	Reset Rejected
Longer than 9us	Reset
Between 5us and 9us	Reset starts

3. During the Resetting period, the display will be blanked(The display is entering blanking sequence, which maximum time is 120 ms, when Reset

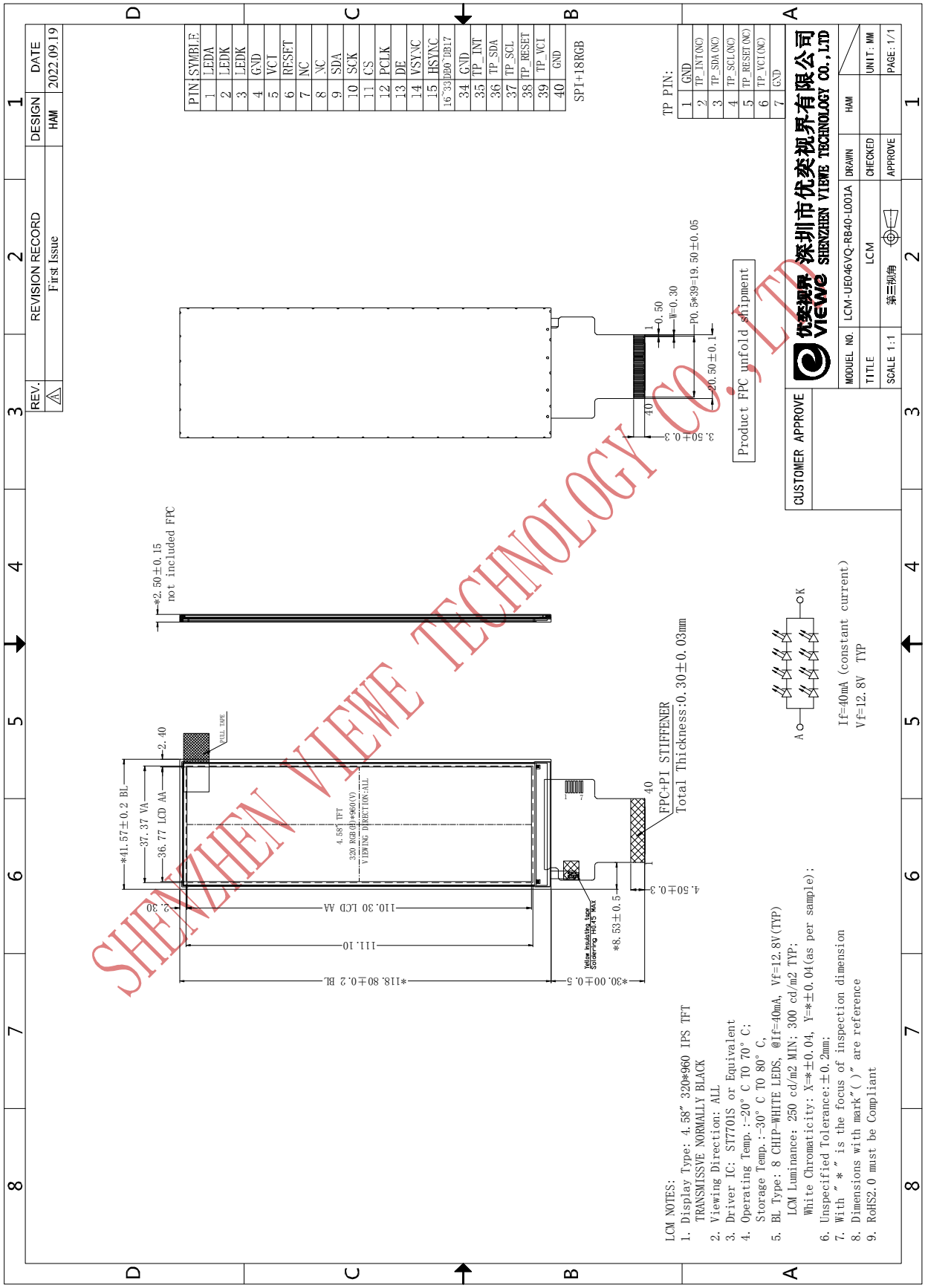
Starts at Sleep-Out status. The display remains the blank state in Sleep-In mode). Then return to Default condition for Hardware Reset

4. Spike Rejection also applies during a valid reset pulse as shown below ：



5. When Reset applied during Sleep-In Mode.
6. When Reset applied during Sleep-Out Mode
7. It is necessary to wait 10ms after releasing RESX before sending commands. Also Sleep Out command cannot be sent for 120 ms.

6. EXTERNAL DIMENSIONS



7. INTERFACE SIGNAL

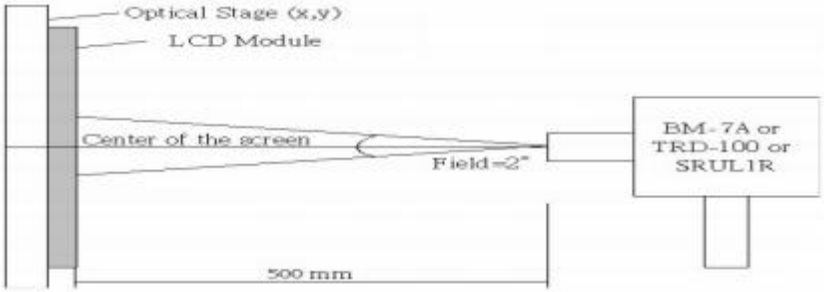
Pin No.	Symbol	Description
1	LEDA	LED backlight anode
2	LEDK	LED backlight cathode
3	LEDK	LED backlight cathode
4	GND	Power ground
5	VCC	Analog power supply
6	RESET	Reset signal(low active)
7	NC	NC
8	NC	NC
9	SDA	Serial data input pin in serial bus system interface
10	SCK	Pixel clock signal input pin
11	CS	Chip select
12	PCLK	Pixel clock signal in RGB interface
13	DE	Data enable signal in RGB I/F mode
14	VSYNC	Vertical synchronizing signal input pin
15	HSYNC	Horizontal synchronizing signal input pin
16~33	DB0~DB17	RGB data signal (DB0:BLUE LSB;DB5:BLUE MSB;DB6:GREEN LSB;DB11:GREEN MSB;DB12:RED LSB;DB17:RED MSB)
34	GND	Power ground
35	TP_INT	INT pin for CTP
36	TP_SDA	SDA pin for CTP
37	TP_SCL	SCL pin for CTP
38	TP_RESET	Reset pin for CTP
39	TP_VCI	Power supply for CTP
40	GND	Power ground

8. ELECTRO-OPTICAL CHARACTERISTICS

Item		Symbol		Condition	Min	Typ	Max	Unit	Note
Transmittance (w/o polarizer)		T%		θ=0° Ta=25C	--	5.7	-	%	1
Contrast ratio		Cr			1000	1200	-	-	3
Response time		Ton+Toff			-	25	35	ms	4
Surface Luminance		LV				300		cd/m	2
Viewing angle range		H or V er	Θx+	Center CR>10		80	-	deg	5
			Θx-			80	-	deg	
			ΘY+			80	-	deg	
			ΘY-			80	-	deg	
CIE(x,y) chromaticity	Red	x		Viewing normal angle Θx=θy=0° Ta=25C	0.627	0.647	0.667	-	6
		y			0.292	0.312	0.332	-	
	Green	x			0.241	0.261	0.281	-	
		y			0.545	0.565	0.585	-	
	Blue	x			0.117	0.137	0.157	-	
		y			0.090	0.110	0.130	-	
	White	x			0.27	0.30	0.33	-	
		y			0.29	0.33	0.36	-	

Note 1.Ambient condition： 25℃±2℃， 60±10%RH， under 10 Lunx in the darkroom。 Note 2.Measure device： BM-7A (TOPCON)， viewing cone=2°

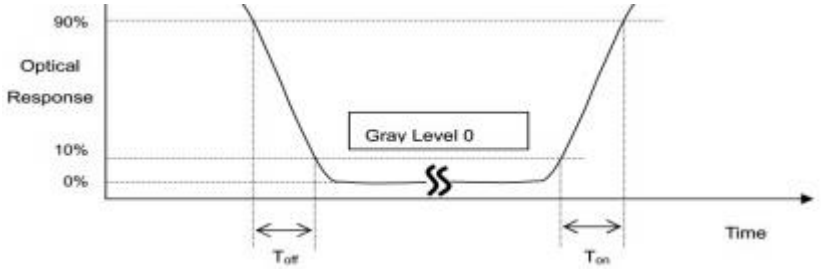
Lv = Average Surface Luminance with all white pixels (P1,P2,P3,P4,P5)



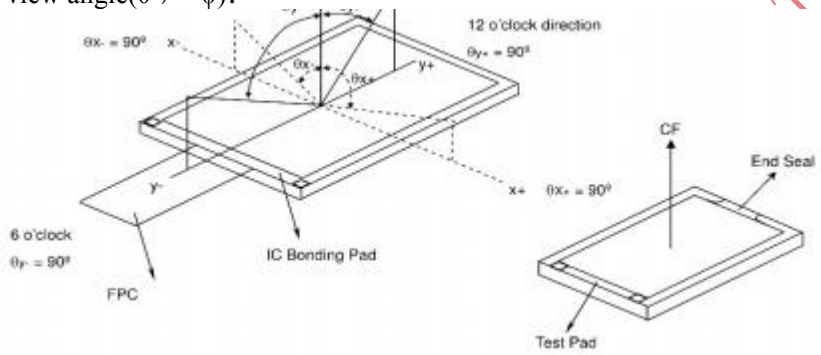
Note 3. Definition of Contrast Ratio：

$$CR = \frac{\text{Average Surface Luminance with all black pixels (P1,P2,P3,P4,P5)}}{\text{Average Surface Luminance with all white pixels (P1,P2,P3,P4,P5)}}$$

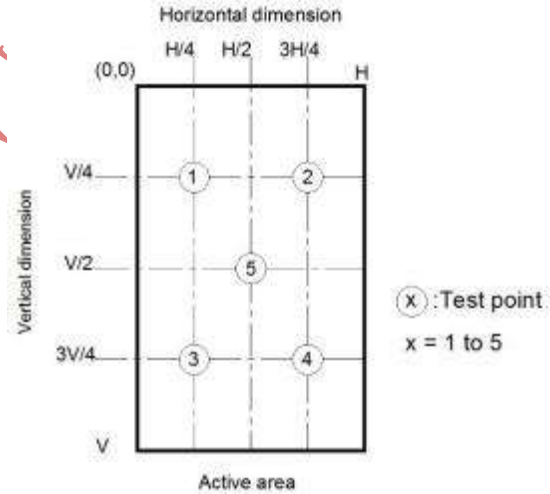
Note 4. Definition of Response Time (Ton, Toff), The response time is defined as the time interval between the 10% and 90% amplitudes.



Note 5. Definition of view angle(θ， ψ)：



Note 6. The LCD module should be stabilized at a given temperature for 20 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 20 minutes in a windless room. Measouring method for Contrast ratio, surface luminance, Luminance uniformity,CIE(x,y) chromaticity.



Light spot size □ =7mm, 500mm distance from the LCD surface to detector lens measurement instrument is TOPCON's luminance meter BM-7

9. RELIABILITY

Item 项目	Test Condition 测试条件	Remark 备注
High Temperature Storage	Ta =+80°C / 96Hours	Note1,2,3
Low Temperature Storage	Ta =-30°C / 96Hours	Note1,2,3
High Temperature Operating	Ta =+70°C / 96Hours	Note1,2,3
Low Temperature Operating	Ta =-20°C / 96Hours	Note1,2,3
Temperature Cycle storage Test	-30°C/30min Δ+70°C /30min for 30cycles,Transfer time less than 5min	Note2,3
Thermal humidity storage Test	80°C x 90%RH / 96Hours	Note2,3
Package Vibration Test	Frequency: 10Hz~55Hz,Amplitude:1.5mm, 1 hrs for each direction of X, Y, Z	Note2
Packing shock test	Drop to the ground from 60cm height, 1 corner, 3 edges, 6 surfaces.	Note2
ESD test	Contact: ±4KV Air: ±8KV	ESD

Inspection after Test:
Note1:Ta is the ambient temperature of samples.
Note 2: In the standard condition, there shall be no practical problem that may affect the display function. After the reliability test, the product only guarantees operation, but doesn't guarantee all the cosmetic specification.
Note 3: Before cosmetic and function tests , the product must have enough recovery time, at least 2 hours at room temperature.

10. INSPECTION CRITERION

This specification is made to be used as the standard acceptance/rejection criteria for Normal LCM Product.

1 Sample plan

Sampling plan according to GB/T2828.1-2003/ISO 2859- 1： 1999 and ANSI/ASQC Z1.4-1993,normal level 2 and based on:

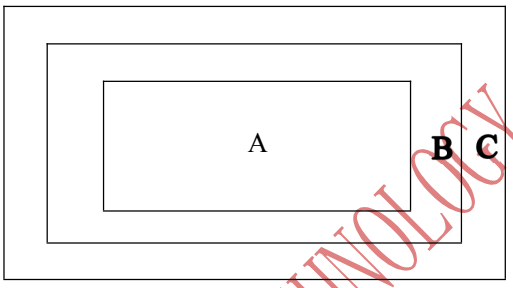
Major defect: AQL 0.65

Minor defect: AQL 1.0

2. Inspection condition

Viewing distance for cosmetic inspection is about 30cm with bare eyes, and under an environment of 20~40W light intensity, all directions for inspecting the sample should be within 45° against perpendicular line. (Normal temperature 20~25°C and normal humidity 60±15%RH).

3. Definition of inspection zone in LCD.



Zone A: character/Digit area

Zone B: viewing area except Zone A (Zone A + Zone B=minimum Viewing area) Zone C: Outside viewing area (invisible area after assembly in customer's product) Fig.1 Inspection zones in an LCD.

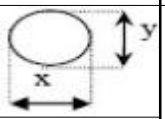
Note: As a general rule, visual defects in Zone C are permissible, when it is no trouble for quality and assembly of customer's product.

4.Standards of inspection items

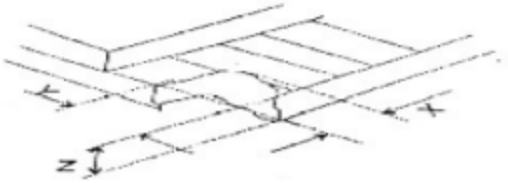
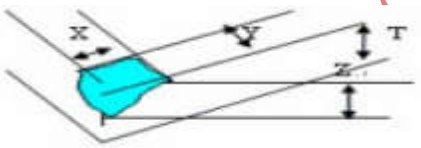
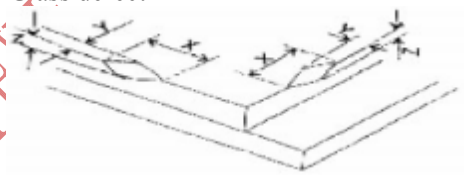
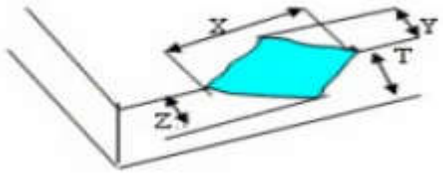
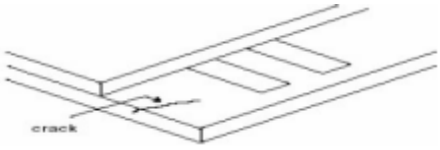
4.1 Major Defect

Item No	Items to be inspected	Inspection Standard	Classification of defects
4.1.1	All functional defects	1.No display	Major
		2.Display abnormally	
		3.Missing vertical， horizontal segment	
		4.Short circuit	
		5. Back-light no lighting, flickering and abnormal lighting	
4.1.2	Missing	Missing component	
4.1.3	Outline dimension	Overall outline dimension beyond the drawing is not allowed.	
4.1.4	linearity	No more than 1.5%	

4.2 Cosmetic Defect

<table>
<tr><th>Item No</th><th>Items to be inspected</th><th>Inspection Standard</th><th>Classification of defects</th></tr>
<tr><td rowspan="3">4.2.1</td><td>Clear Spots
Black and white Spot defect
Pinhole, Foreign Particle, polarizer Dirt</td><td>For dark/white spot, sizeΦis defined as Φ=(x + y)/2 
1
<table>
<tr><th rowspan="2">Zone
Size(mm)</th><th colspan="3">Acceptable Qty</th></tr>
<tr><th>A</th><th>B</th><th>C</th></tr>
<tr><td>Φ≤0. 15</td><td colspan="2">Ignore</td><td rowspan="4">Ignore</td></tr>
<tr><td>0.15＜Φ≤0.20</td><td colspan="2">2</td></tr>
<tr><td>0.20＜Φ≤0.30</td><td colspan="2">1</td></tr>
<tr><td>Φ＞0.30</td><td colspan="2">0</td></tr>
</table></td><td>Minor</td></tr>
<tr><td>Clear Spots
TP Dirt</td><td>2
<table>
<tr><th rowspan="2">Zone
Size(mm)</th><th colspan="3">Acceptable Qty</th></tr>
<tr><th>A</th><th>B</th><th>C</th></tr>
<tr><td>Φ≤0. 15</td><td colspan="2">Ignore</td><td rowspan="4">Ignore</td></tr>
<tr><td>0.15＜Φ≤0.20</td><td colspan="2">2</td></tr>
<tr><td>0.20＜Φ≤0.30</td><td colspan="2">1</td></tr>
<tr><td>Φ＞0.30</td><td colspan="2">0</td></tr>
</table></td><td>Minor</td></tr>
<tr><td>Dim Spots
Circle shaped and dim edged defects</td><td>3
<table>
<tr><th rowspan="2">Zone
Size(mm)</th><th colspan="3">Acceptable Qty</th></tr>
<tr><th>A</th><th>B</th><th>C</th></tr>
<tr><td>Φ≤0.2</td><td colspan="2">Ignore</td><td rowspan="4">Ignore</td></tr>
<tr><td>0.20＜Φ≤0.40</td><td colspan="2">2</td></tr>
<tr><td>0.40＜Φ≤0.60</td><td colspan="2">1</td></tr>
<tr><td>Φ＞0.60</td><td colspan="2">0</td></tr>
</table></td><td>Minor</td></tr>
</table>

<table>
<tr><th>Item No</th><th>Items to be inspected</th><th colspan="5">Inspection Standard</th><th>Classification of defects</th></tr>
<tr><td rowspan="6">4.2.2</td><td rowspan="3">Line defect
Black line,
White line,
Foreign material
on
polarizer</td><td colspan="2">Size(mm)</td><td colspan="3">Acceptable Qty</td><td rowspan="3">Minor</td></tr>
<tr><td rowspan="2">L(Length)</td><td rowspan="2">W(Width)</td><td colspan="3">Zone</td></tr>
<tr><td>A</td><td>B</td><td>C</td></tr>
<tr><td>Ignore</td><td>W≤0.05</td><td>Ignore</td><td rowspan="3">Ignore</td></tr>
<tr><td>L ≤5.0</td><td>0.05＜W≤0.08</td><td colspan="2">2</td></tr>
<tr><td></td><td>W＞0.08</td><td colspan="2">0</td></tr>
<tr><td rowspan="5">Foreign material
on
TP film</td><td colspan="7">The line can be seen after mobile phone in the operating condition:</td></tr>
<tr><td colspan="2">Size(mm)</td><td colspan="3">Acceptable Qty</td><td rowspan="2">Minor</td></tr>
<tr><td rowspan="2">L(Length)</td><td rowspan="2">W(Width)</td><td colspan="3">Zone</td></tr>
<tr><td>A</td><td>B</td><td>C</td></tr>
<tr><td>Ignore</td><td>W≤0.05</td><td>Ignore</td><td rowspan="3">Ignore</td></tr>
<tr><td>L ≤5.0</td><td>0.05＜W≤0.08</td><td colspan="2">3</td></tr>
<tr><td></td><td>W＞0.08</td><td colspan="2">0</td></tr>
<tr><td rowspan="6">4.2.3</td><td rowspan="6">Dim line defect
Polarizer scratch
TP film scratch</td><td colspan="7">If the scratch can be seen after mobile phone cover assembling or in the operating condition, judge by the line defect of 4.2.2. If the scratch can be seen only in
non-operating condition or some special angle, judge by the following.</td></tr>
<tr><td colspan="2">Size(mm)</td><td colspan="3">Acceptable Qty</td><td rowspan="5">Minor</td></tr>
<tr><td rowspan="2">L(Length)</td><td rowspan="2">W(Width)</td><td colspan="3">Zone</td></tr>
<tr><td>A</td><td>B</td><td>C</td></tr>
<tr><td>Ignore</td><td>W≤0.03</td><td>Ignore</td><td rowspan="3">Ignore</td></tr>
<tr><td>5.0＜
L≤10.0</td><td>0.03＜W≤0.05</td><td colspan="2">2</td></tr>
<tr><td>L≤5.0</td><td>0.05＜W≤0.08</td><td colspan="2">1</td></tr>
<tr><td></td><td>W＞0.08</td><td colspan="2">0</td></tr>
<tr><td rowspan="5">4.2.4</td><td rowspan="5">Polarize
Air bubble</td><td colspan="7">Air bubbles between glass & polarizer</td></tr>
<tr><td colspan="2" rowspan="2">Zone
Size(mm)</td><td colspan="3">Acceptable Qty</td><td rowspan="4">Minor</td></tr>
<tr><td>A</td><td>B</td><td>C</td></tr>
<tr><td colspan="2">Φ≤0.20</td><td>Ignore</td><td rowspan="3">Ignore</td></tr>
<tr><td colspan="2">0.20＜Φ≤0.3</td><td colspan="2">2</td></tr>
<tr><td colspan="2">Φ＞0.30</td><td colspan="2">0</td></tr>
</table>

<table>
<tr><th>Item No</th><th>Items to be inspected</th><th>Inspection Standard</th><th>Classification of defects</th></tr>
<tr><td rowspan="2">4.35</td><td rowspan="2">Glass defect</td><td>
(i) Chips on corner
A:LCD Glass defect

<table>
<tr><td>X(mm)</td><td>Y(mm)</td><td>Z(mm)</td></tr>
<tr><td>≤3.0</td><td>≤3.0</td><td>Disregard</td></tr>
</table>
Notes: S=contact pad length Chips on the corner of terminal shall not be allowed to extend into the ITO pad or expose perimeter seal.
B:TP Glass defect

<table>
<tr><td>X(mm)</td><td>Y(mm)</td><td>Z(mm)</td></tr>
<tr><td>≤3.0</td><td>≤3.0</td><td>Disregard</td></tr>
</table>
(ii)Usual surface cracks
A:LCD Glass defect

<table>
<tr><td>X(mm)</td><td>Y(mm)</td><td>Z(mm)</td></tr>
<tr><td>≤3.0</td><td><Inner border line of the seal</td><td>Disregard</td></tr>
</table>
B:TP Glass defect

<table>
<tr><td>X(mm)</td><td>Y(mm)</td><td>Z(mm)</td></tr>
<tr><td>≤6.0</td><td><2.0</td><td>Disregard</td></tr>
</table>
(iii) Crack
Cracks tend to break are not allowed.


</td><td rowspan="2">Minor</td></tr>
</table>

11. PRECAUTIONS FOR USE OF LCD MODULES

1. Handling Precautions

(1) The display panel is made of glass and polarizer. As glass is fragile. It tends to become or chipped during handling especially on the edges. Please avoid dropping or jarring. Do not subject it to a mechanical shock by dropping it or impact.

(2) If the display panel is damaged and the liquid crystal substance leaks out, be sure not to get any in your mouth. If the substance contacts your skin or clothes, wash it off using soap and water.

(3) Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary. Do not touch the display with bare hands. This will stain the display area and degraded insulation between terminals (some cosmetics are determined to the polarizer).

(4) The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarizer carefully. Do not touch, push or rub the exposed polarizers with anything harder than an HB pencil lead (glass, tweezers, etc.). Do not put or attach anything on the display area to avoid leaving marks on. Condensation on the surface and contact with terminals due to cold will damage, stain or dirty the polarizer. After products are tested at low temperature they must be warmed up in a container before coming is contacting with room temperature air.

(5) If the display surface becomes contaminated, breathe on the surface and gently wipe it with a soft dry cloth. If it is heavily contaminated, moisten cloth with one of the following solvents

- Isopropyl alcohol
- Ethyl alcohol

Do not scrub hard to avoid damaging the display surface.

(6) Solvents other than those above-mentioned may damage the polarizer. Especially, do not use the following.

- Water
- Ketone
- Aromatic solvents

Wipe off saliva or water drops immediately, contact with water over a long period of time may cause deformation or color fading. Avoid contacting oil and fats.

(7) Exercise care to minimize corrosion of the electrode. Corrosion of the electrodes is accelerated by water droplets, moisture condensation or a current flow in a high-humidity environment.

(8) Install the LCD Module by using the mounting holes. When mounting the LCD module make sure it is free of twisting, warping and distortion. In particular, do not forcibly pull or bend the I/O cable or the backlight cable.

(9) Do not attempt to disassemble or process the LCD module.

(10) NC terminal should be open. Do not connect anything.

(11) If the logic circuit power is off, do not apply the input signals.

(12) Electro-Static Discharge Control， Since this module uses a CMOS LSI, the same careful attention should be paid to electrostatic discharge as for an ordinary CMOS IC. To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.

- Before remove LCM from its packing case or incorporating it into a set, be sure the module and your body have the same electric potential. Be sure to ground the body when handling the LCD modules.
- Tools required for assembling, such as soldering irons, must be properly grounded. Make certain the AC power source for the soldering iron does not leak. When using an electric screwdriver to attach LCM, the screwdriver should be of ground potentiality to minimize as much as possible any transmission of electromagnetic waves produced sparks coming from the commutator of the motor. - To reduce the amount of static electricity generated, do not conduct assembling and other work under dry conditions. To reduce the generation of static electricity be careful that the air in the work is not too dried. A relative humidity of 50%-60% is recommended. As far as possible make the electric potential of your work clothes and that of the work bench the ground potential
- The LCD module is coated with a film to protect the display surface. Exercise care when peeling off this protective film since static electricity may be generated

(13)Since LCM has been assembled and adjusted with a high degree of precision, avoid applying excessive shocks to the module or making any alterations or modifications to it.

- Do not alter, modify or change the shape of the tab on the metal frame.
- Do not make extra holes on the printed circuit board, modify its shape or change the positions of components to be attached.
- Do not damage or modify the pattern writing on the printed circuit board.
- Absolutely do not modify the zebra rubber strip (conductive rubber) or heat seal connector.
- Except for soldering the interface, do not make any alterations or modifications with a soldering iron.
- Do not drop, bend or twist LCM.

2. Storage precautions

2.1 When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps.

2.2 The LCD modules should be stored under the storage temperature range. If the LCD modules will be stored for a long time, the recommend condition is:

Temperature : 0C ~ 40C Relatively humidity: ≤80%

2.3 The LCD modules should be stored in the room without acid, alkali and harmful gas.

2.4 The LCD modules should be no falling and violent shocking during transportation, and also should avoid excessive press, water, damp and sunshine.

12. PACKAGE DRAWING

第一步

将产品放入吸塑盘中，LCD AA 面朝上，注意防呆方向

第二步

每一层吸塑盘与相邻层，叠放时相错 180 度，最上层不放产品，总叠加层数参考

第三步

检查无误后用胶带固定吸塑盘，将捆好的吸塑盘放入无尘带中并封口；

First step

Putting products into the tray,
LCD A.A faces Upward,
(pay attention to the

Second step

Neighbouring trays should be staggered 180° while stacking up.
on the top,there is an empty tray without product

Third step

Taping up the tray after inspection,and put them into a PE

第四步

外箱内侧底部和四周放上泡棉将包好的产品装入纸箱，合盖；

第五步

最后胶带封箱，贴外箱标签

第六步

将每箱整齐放在栈板上并包裹最高可堆叠 6 层)

Fourth step

Putting EPE foams and products with trays into the carton;
Close the carton box

fifth step

Sealing the carton with cellulose tape ;
Stick on a carton label,

sixth step

Placing the boxes together on a pallet (6 layers at most),