Project No. 项目编号	XBY101BHD039M01
Customer 客户名称	
Module No. 客 户型号	
Product type 产 品内容	Standard LCM Switch FPC 800RGB x 1280 Dots 10.1”TFT LCD
Signature by customer: 客户确认签章：	

编　　制	电子审核	结构审核	批　　准

Document revision history :

DOCUMENT REVISION	DATE	DESCRIPTION	PREPARED BY	APPROVED BY
A	2020.05.10	First Release.		

1. General Feature:

Item	Standard Value	Unit
Display Size	10.1’	--
Number of Pixels	800(H)x3(RGB)x1280(V)	--
Active Area	135.36(H)*216.576(V)	mm
Pixel pitch	0.1692(H) × 0.1692(V)	mm
Outline Dimension	143(L) ×228.6(W) × 2.6(T)	mm
Pixel Arrangement	RGB vertical stripe	-
Display Mode	Normally Black	-
Number of color	16.7M	-
Viewing Direction	All Viewing direction	-
Surface Treatment	Anti-Glare	-
Interface	MIPI	-
Driver IC	ILI9881C	-
Driver Condition	3.3	V
Backlight	White LED	-
Touch Panel	No Touch Panel	-
Operation Temperature	-10~60	℃
Storage Temperature	-20~70	℃
Weight	TBD	g

Shenzhen Starbillions Electronics Co.,Ltd

2.Mechanical Dimension

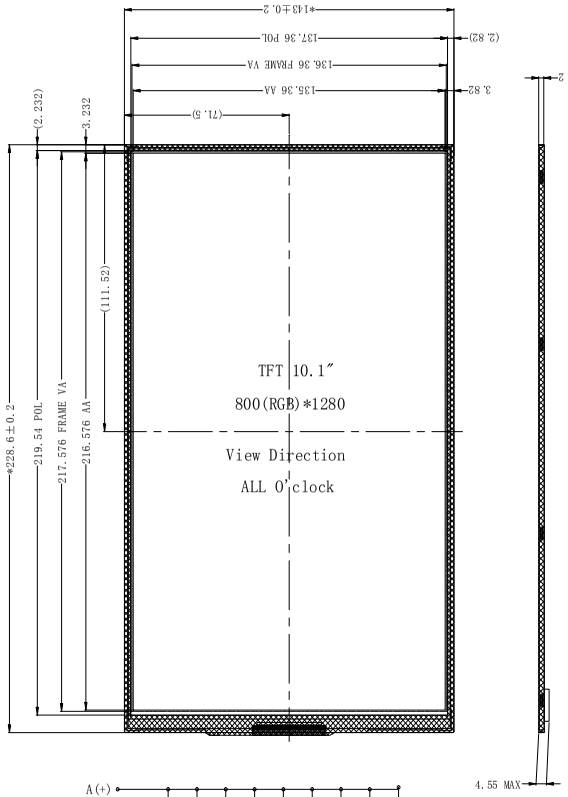
Customer's Approval	
Customer	
Date	

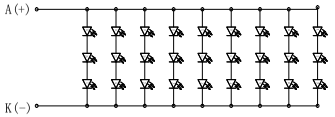
未注尺寸以CAD图面为准

REV	DESCRIPTION	DATE
V1.0	NEW	2017.10.10

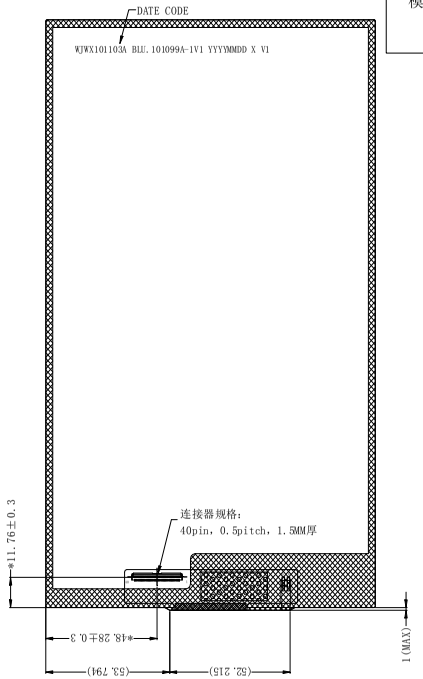
测试距离:500mm
Measure distance:500mm
测量角度:1°,9个点
Angle:1°,9 Points
亮度值是用BM-7色度仪测试
The Measurement instrument is:BM-7
均匀性=最小/最大亮度值*100%
Uniformity=min/max*100%

1.图中FRAME VA为推荐TP视窗位置、大小，建议TP视窗位置、大小不要超过FRAME VA。
2.整机机壳带泡棉产品，建议客户机壳泡棉进入LCD单边0.5MM MIN,防止漏光。
3.整机机壳不带泡棉产品，建议客户整机TP的丝印黑油开窗或者LENS丝印黑油开窗比LCD A.A区单边大0.6MM MAX。
4.客户需保证触摸屏下表面到玻璃上表面最少0.3MM MIN(非贴合)。





LED CIRCUIT DIAGRAM:
IF=20mA*9=180mA,VF=8.4~10.8V



FPC注意机壳避空

DATE CODE

WJWX1011103A BLU.101099A-1V1 YYYYMMDD X V1

模组型号 背光型号 生产日期 线别 版本号

PIN	SYMBLE	PIN	SYMBLE
1	NC	21	MIPI_TDP3
2	VDDIN	22	GND
3	VDDIN	23	NC
4	GND	24	NC
5	RESET	25	GND
6	NC	26	NC
7	GND	27	NC
8	MIPI_TDN0	28	NC
9	MIPI_TDP0	29	NC
10	GND	30	GND
11	MIPI_TDN1	31	LED-
12	MIPI_TDP1	32	LED-
13	GND	33	NC
14	MIPI_TCN	34	NC
15	MIPI_TCP	35	NC
16	GND	36	NC
17	MIPI_TDN2	37	NC
18	MIPI_TDP2	38	NC
19	GND	39	LED+
20	MIPI_TDN3	40	LED+

ITEM								
LCD TYPE	10.1" TFT	Luminous intensity	250(min)270(typ)cd/m2	SCALE	1:1			
Viewing direction	ALL O'Clock	Luminous Uniformity	75%(min)	UNIT	mm			
Drive method	MIPI	Genral Tolerance	±0.2	DRAWN BY	ZWEI	PROJECT NAME	C101BHD013M01	
Display mode	Transmissive	Operating TEMP	-10° C ~ 60° C	CHECKED BY		DRAWING NAME	Module	
Drive IC		Storage TEMP	-20° C ~ 70° C	STANDARD BY		VIEW ANGLE	DCN / PAGE / EDITION	
conform to ROHS standard				APPROVED BY			A1 / 1 OF 1 / V1	

3.Pin Description

Pin NO.	Symbol	Description
1	NC	OPEN
2-3	VDDIN	Power SUPPLY(+3.3V)
4	GND	Ground
5	RESET	Global reset signal(+2.8V)
6	NC	OPEN
7	GND	Ground
8	MIPI_TDN0	MIPI data input.
9	MIPI_TDP0	MIPI data input.
10	GND	Ground
11	MIPI_TDN1	MIPI data input.
12	MIPI_TDP1	MIPI data input.
13	GND	Ground
14	MIPI_TCN	MIPI clock input.
15	MIPI_TCP	MIPI clock input.
16	GND	Ground
17	MIPI_TDN2	MIPI data input.
18	MIPI_TDP2	MIPI data input.
19	GND	Ground
20	MIPI_TDN3	MIPI data input.
21	MIPI_TDP3	MIPI data input.
22	GND	Ground
23-24	NC	OPEN
25	GND	Ground
26	NC	OPEN
27	NC	OPEN
28	NC	OPEN
29	NC	OPEN
30	GND	Ground
31-32	LEDK	LED Cathode
33-38	NC	OPEN
39-40	LEDA	LED Anode

4. Electrical Characteristics

4.1 TFT LCD Module Operating Conditions

Item	Symbol	Min	Type	Max	Unit	Note
Supply Voltage	VDD	3.0	3.3	3.6	V	
	AVDD	-	5	-	V	
	AVEE	-	-5	-	V	
	VGH	-	15	-	V	
	VGL	-	-11		V	
VCOM	VCOM	-	-	-		
Input signal voltage	VIH	$0.7V_{CC}$	-	V_{CC}	V	
	VIL	0	-	$0.3V_{CC}$	V	

4.2 Environment Absolute Rating

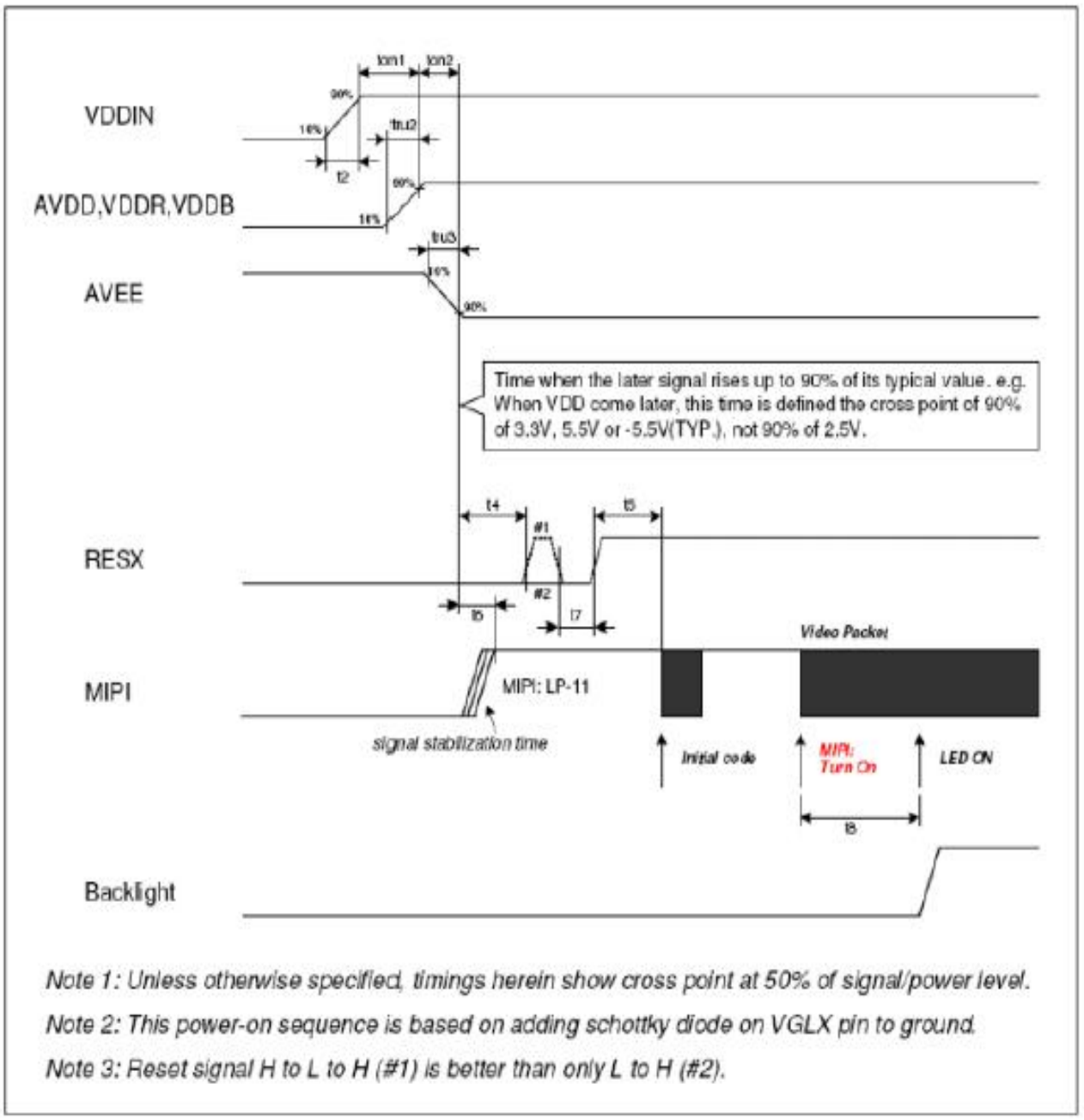
Item	Symbol	Min	Max	Unit	Note
Operation temperature	TOPR	-10	60	℃	
Storage temperature	TSTG	-20	70	℃	

4.3 LED back light specification (per a chip)

Item	Symbol	Condition	Min	Type	Max	Unit
Forward voltage	Vled	If=20mA /1-chip	-	9.6	-	V
Forward current	Iled		-	180	-	ma
PWM Signal Voltage	PWM_h	-	2.0	3.3	3.6	V
PWM Signal Voltage	PWM_l	-	0	-	0.5	V
Output PWM frequency	PWM_f	-		200	1k	Hz
LED enable high Voltage	EN_h	-	2.6	3.3	3.6	V
LED enable low Voltage	EN_l	-	0	-	0.4	V
Luminance color	white					

5. Power、Signal Sequence

Power ON

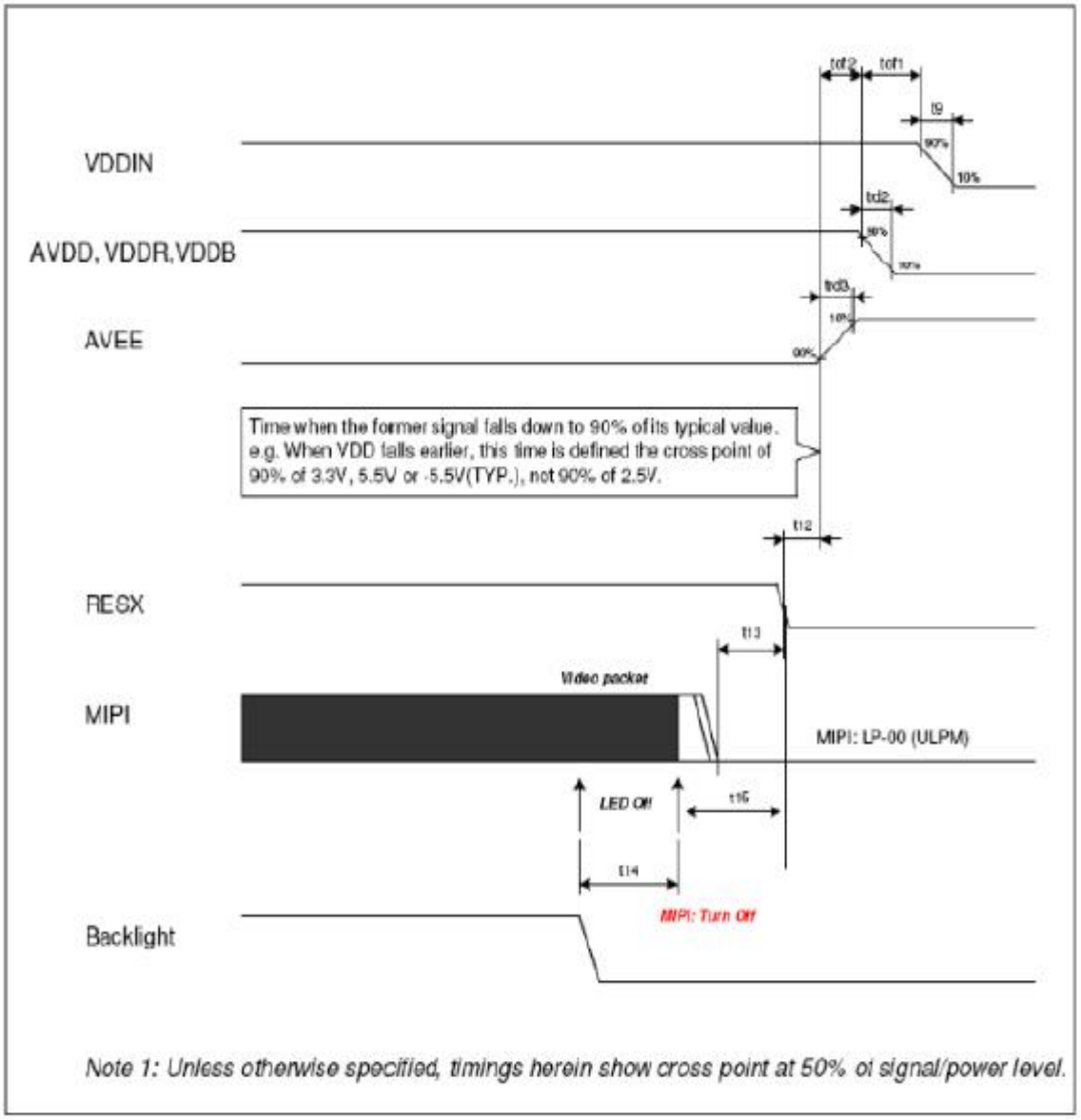


Note 1: Unless otherwise specified, timings herein show cross point at 50% of signal/power level.

Note 2: This power-on sequence is based on adding schottky diode on VGLX pin to ground.

Note 3: Reset signal H to L to H (#1) is better than only L to H (#2).

Power OFF

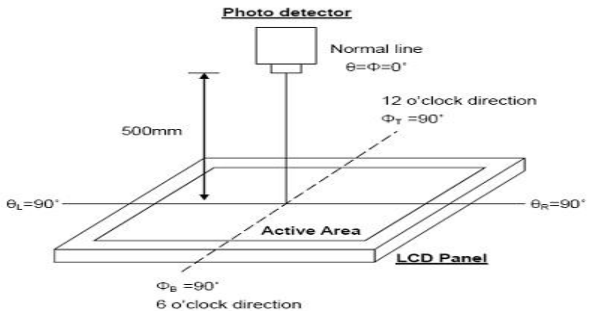


Note 1: Unless otherwise specified, timings herein show cross point at 50% of signal/power level.

6. Optical Characteristics

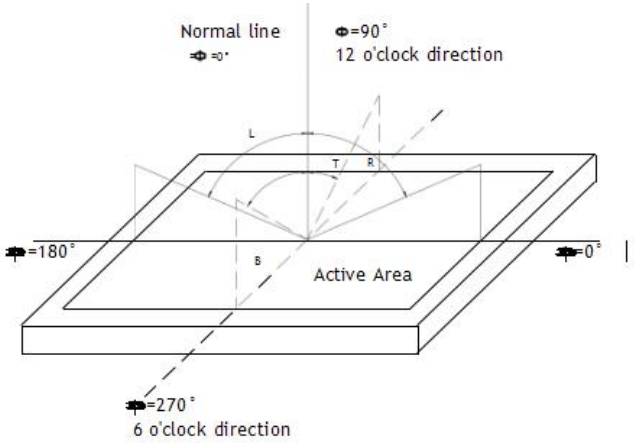
Item		Symbol	Min	Typ	Max	Unit	Note
Contrast Ratio		CR	800	1000	-		Note1 Note3
Luminance(center)		L	220	250	-	cd/m2	Note1 Note5 Note7
Luminous Uniformity(9 Point)		LU	75	-		%	Note7
Response Time		Rising+ Falling	-	30	-	ms	Note1 Note4
Viewing Angle K=Contrast Ratio>10	horizontal	θR	75	80	-	degree	Note2
		θL	75	80	-		
	vertical	θU	75	80	-		
		θD	75	80	-		
Color Chromaticity (CIE1931)	Red	X	TYP- 0.03	TBD	Typ+ 0.03	-	Note1 Note5 Note7
		Y		TBD			
	Green	X		TBD			
		Y		TBD			
	Blue	X		TBD			
		Y		TBD			
	White	X		0.295			
		Y		0.331			
Color gamut (NTSC ratio)		-	-	58		%	

Note1: Definition of optical measurement system (BM-7)



Note2: Definition of viewing angle range and measurement system

Viewing angle is measured at the center point of the LCD by CONOSCOPE (ergo-80).



Note3: Definition of Response time

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

photo detector output intensity changed from 10% to 90%.

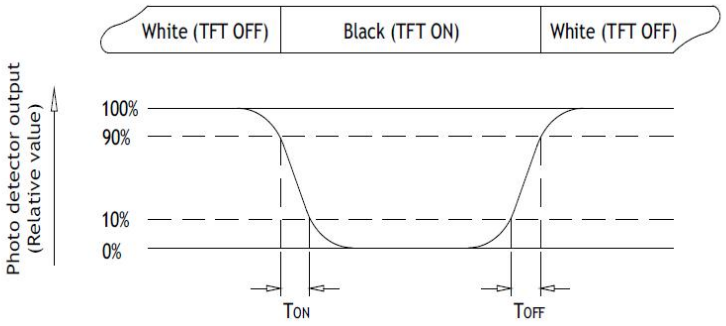


Fig. 6-3 Definition of response time

Note4: Definition of contrast ratio

$$\text{Contrast ratio(CR)}=\frac{\text{Luminance measured when LCD on the Whitestate}}{\text{Luminance measured when LCD on the Blackstate}}$$

"White state ": The state is that the LCD should drive by Vwhite. "Black state": The state is that the LCD should drive by Vblack. Vwhite: To be determined Vblack: To be determined.

Note5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of LCD.

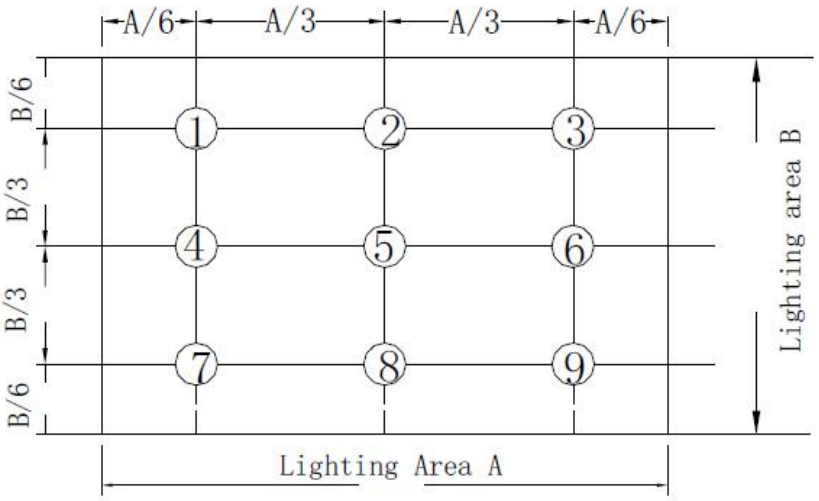
Note6: All input terminals LCD panel must be ground while measuring the center area of the panel. The LED driving condition is IL=60mA

Note7: Definition of Luminance Uniformity

Active area is divided into 9 measuring areas.Every measuring point is placed at the center of each measuring area.

Luminance Uniformity (U) = Lmin/ Lmax

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



Bmax: The measured maximum luminance of all measurement position.

Bmin: The measured minimum luminance of all measurement position.

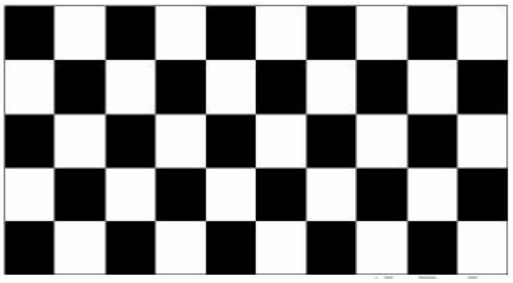
7. RELIABILITY TEST

7-1 Temperature and Humidity

TEST ITEMS	CONDITIONS	NOTE
High Temperature Operation	50℃ ; 96hrs	
High Temperature Storage	60℃ ; 96hrs	
High Temperature High Humidity Operation	50℃; 90%RH ; 96hrs (No condensation)	
Low Temperature Operation	-10℃ ; 96hrs	
Low Temperature Storage	-20℃ ; 96hrs	
Thermal Shock	-20℃ (0.5hr) ~ 50℃ (0.5hr) ; 10 Cycles	Non-Operating
Image Sticking	25℃ ; 2hrs	1

Note 1: Condition of Image Sticking test：25℃ ±2℃

Operation with test pattern sustained for 4 hrs, then change to gray pattern immediately.After 5 mins, the mura must be disappeared completely .



(a) Test Pattern (chess board Pattern)



(b) Gray Pattern

7-2 Shock and Vibration

ITEMS	CONDITIONS
Packing Shock (Non-Operation)	● Shock level:980m/s^2 ● Waveform:1/2 Sine wave,6msec ● ±X, ±Y ±Z,each axis 1 times
Packing Vibration (Non-Operation)	● Frequency range:8-33.3HZ ● Stoke:1.0mm ● Sweep: 10Hz-50Hz ● x,y,z 2 hours for each direction

7-3 Electrostatic Discharge

TEST ITEM	CONDITIONS
ESD (Non-operation)	150pF,330Ω，Contact±4KV,Air :±8KV.Note 1
	200pF,0Ω，±200V Contact test.Note 2

Note:Measure Point:

1.LCD glass and metal bezel

2.IF connector pins

8. HANDLING PRECAUTION

(1) Don.t disassemble and reassemble the module by self.

(2) Acid, alkali, alcohol or touched directly by hand will damage the display.

(3) Static electricity will damage the module. Please configure grounding device.

(4)The strong vibration, shock, twist or bend will cause material damage, even module broken.

(5) It is easy to cause image sticking while displaying the same pattern for very long time.

(6) The response time, brightness and performance will vary from different temperature.

(7)12 months of the product term, the starry shipment date began to count.

- END -