Project No. 项目编号	WJWU070139A
Customer 客户名称	
Module No. 客户型号	
Product type 产品内容	Standard LCM Switch FPC 1200RGB x 1920 Dots 7.0”TFT LCD
Signature by customer: 客户确认签章：	

编　　制	电子审核	结构审核	批　　准

公司地址：深圳市宝安区航城安防智慧园B栋805
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Document revision history :

DOCUMENT REVISION	DATE	DESCRIPTION	PREPARED BY	APPROVED BY
A	2016.10.25	First Release.		

1. General Feature:

Item	Standard Value	Unit
Display Size	7.0’	--
Number of Pixels	1200(H)x3(RGB)x1920(V)	--
Active Area	94.5(H)*151.2(V)	mm
Pixel pitch	0.07875(H) × 0707875(V)	mm
Outline Dimension	99.7(L) ×160.93(W) × 2.3(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	TBD	-
Driver Condition	1.8	V
Backlight	White LED	-
Touch Panel	No Touch Panel	-
Operation Temperature	-10~50	℃
Storage Temperature	-20~60	℃
Weight	TBD	g

2. Mechanical Dimension

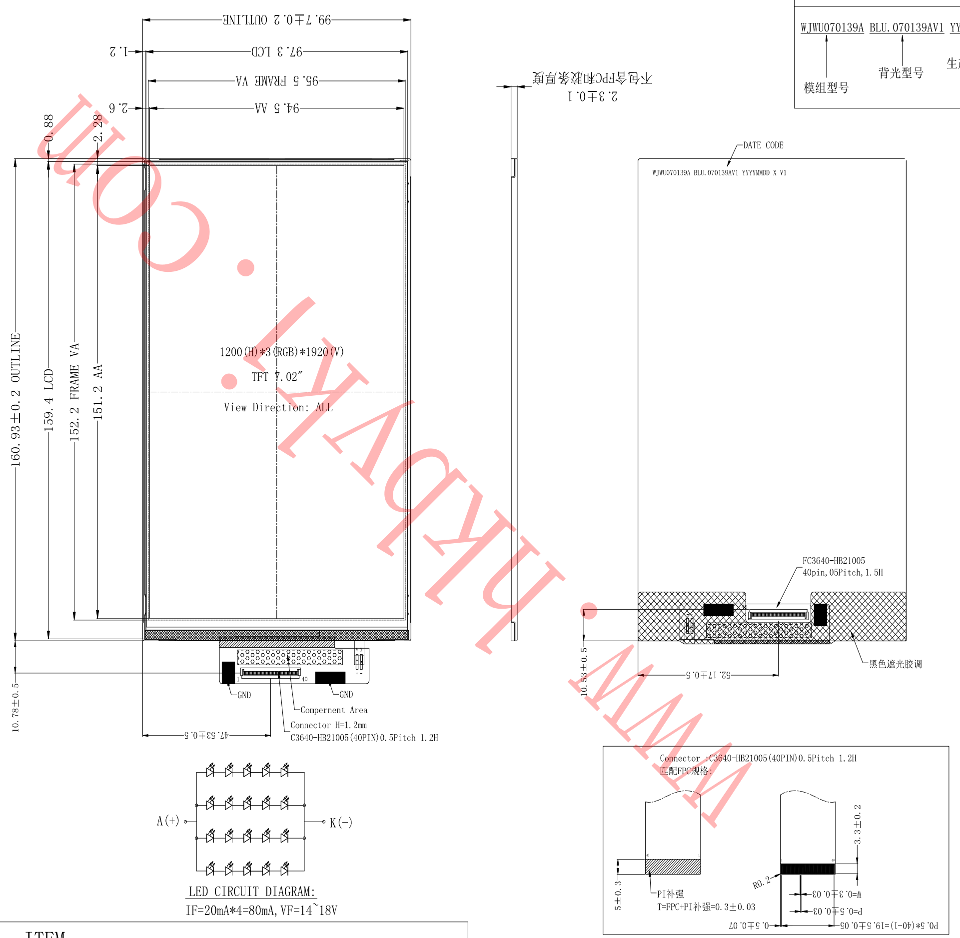
Customer's Approval	
Customer	
Date	

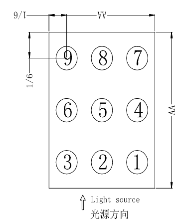
未注尺寸以CAD图面为准

REV	DESCRIPTION	DATE
V1	NEW	2016.10.11

DATE CODE

WJWU070139A BLU.070139AV1 YYYYMMDD X V1
模组型号 背光型号 生产日期 线别 版本号





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)。

PIN	SYMBLE	PIN	SYMBLE
1	NC	21	MIPI_3P
2	IVOCC1.8V	22	GND
3	IVOCC1.8V	23	HS
4	GND	24	VS
5	RST	25	GND
6	NC	26	NC/TE
7	GND	27	PWMO
8	MIPI_0N	28	NC/BIST
9	MIPI_0P	29	NC
10	GND	30	GND
11	MIPI_1N	31	LED-
12	MIPI_1P	32	LED-
13	GND	33	NC
14	MIPI_CKN	34	VSN
15	MIPI_CKP	35	VSN
16	GND	36	NC
17	MIPI_2N	37	VSP
18	MIPI_2P	38	VSP
19	GND	39	LED+
20	MIPI_3N	40	LED+

ITEM			
LCD TYPE	7.02" TFT	Luminous intensity	210(min),230(TYP) cd/m²
Viewing direction	ALL 0'Clock	Luminous Uniformity	75%(min)
Drive method	MIPI	Genral Tolerance	±0.2
Display mode	Transmissive	Operating TEMP	-10°C ~ 50°C
Drive IC	Renesas R699429	Storage TEMP	-20°C ~ 60°C
conform to ROHS standard			

SCALE	1:1					
UNIT	mm					
DRAWN BY	ZWEI	PROJECT NAME	WJWU070139A-V1			
CHECKED BY		DRAWING NAME	Module			
STANDARD BY		VIEW ANGLE		DCN	PAGE	EDITION
APPROVED BY				A1	1 OF 1	V1

3. Pin Description

Pin NO.	Symbol	Description
1	NC	Not connect
2~3	IOVCC	Power supply for system 1.8V
4	GND	Ground
5	RESET	Global reset pin
6	NC	Not connect
7	GND	Ground
8	MIPI_TD0N	MIPI data Negative signal D0N
9	MIPI_TD0P	MIPI data Negative signal D0P
10	GND	Ground
11	MIPI_TD1N	MIPI data Negative signal D1N
12	MIPI_TD1P	MIPI data Negative signal D1P
13	GND	Ground
14	MIPI_TCN	MIPI CLK Negative signal CLK-
15	MIPI_TCK	MIPI CLK Negative signal CLK+
16	GND	Ground
17	MIPI_TD2N	MIPI data Negative signal D2N
18	MIPI_TD2P	MIPI data Negative signal D2P
19	GND	Ground
20	MIPI_TD3N	MIPI data Negative signal D3N
21	MIPI_TD3P	MIPI data Negative signal D3P
22	GND	Ground
23	NC	Not connect
24	NC	Not connect
25	GND	Ground
26~29	NC	Not connect
30	GND	Ground
31~32	LEDK	Backlight negative(-)
33	NC	Not connect
34~35	VSN	Analog supply negative voltage(-5.5V)
36	NC	Not connect
37~38	VSP	Analog supply positive voltage(+5.5V)
39~40	LEDA	Backlight positive(+)

4. Electrical Characteristics

4.1 TFT LCD Module Operating Conditions

Item	Symbol	Min	Type	Max	Unit	Note
Supply Voltage	IOVCC	1.7	1.8	1.9	V	
	VSP	5.3	5.5	5.7	V	
	VSN	-5.7	-5.5	-5.3	V	
	VGH	-	-	-	V	
	VGL	-	-		V	
VCOM	VCOM	-	-	-		
Input signal voltage	VIH	$0.7V_{CC}$	-	V_{CC}	V	
	VIL	0	-	$0.3V_{CC}$	V	

4.2 Environment Absolute Rating

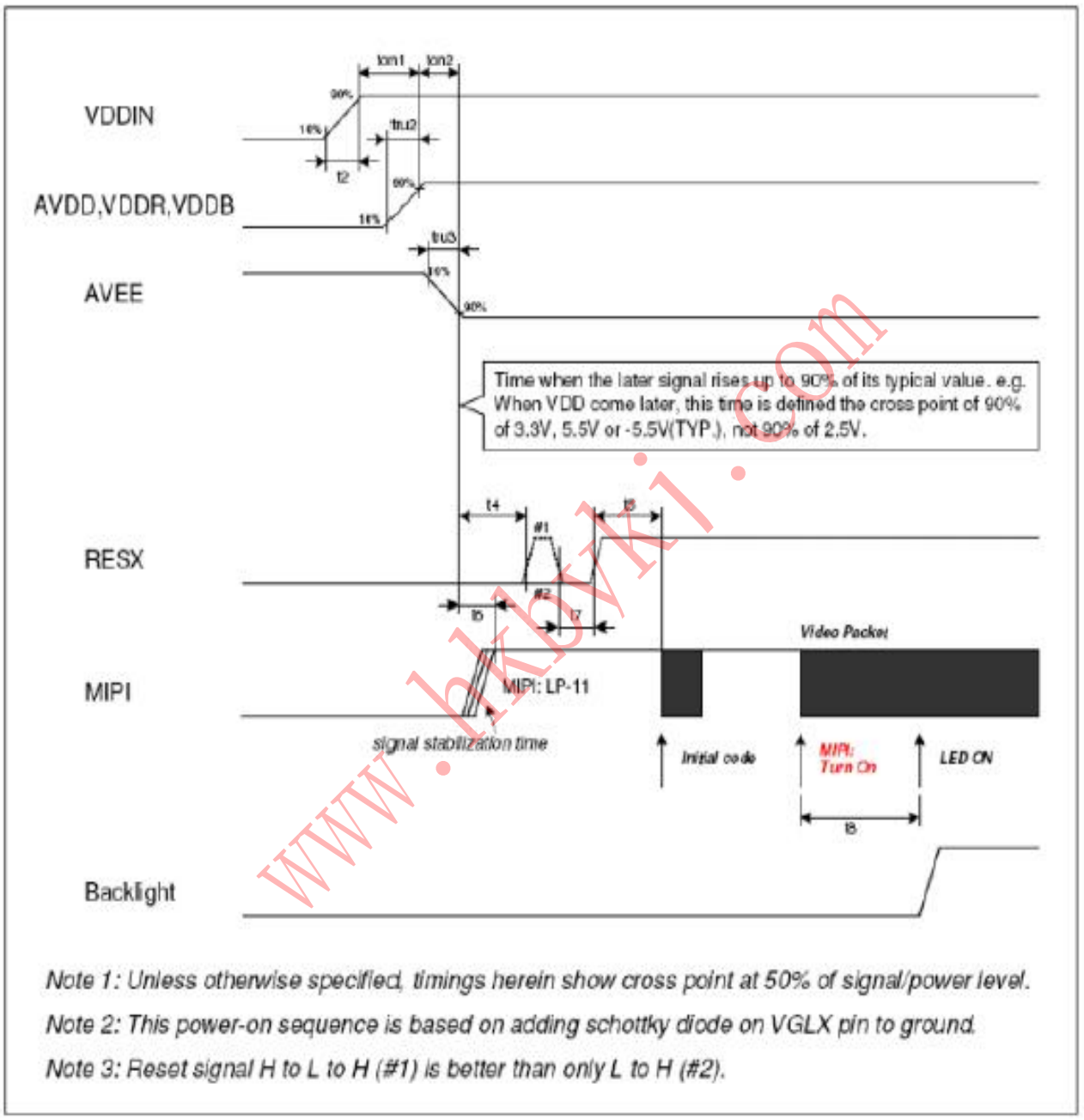
Item	Symbol	Min	Max	Unit	Note
Operation temperature	TOPR	-10	50	℃	
Storage temperature	TSTG	-20	60	℃	

4.3 LED back light specification (per a chip)

Item	Symbol	Condition	Min	Type	Max	Unit
Forward voltage	Vled	If=20mA /1-chip	14	16	18	V
Forward current	Iled		-	80	-	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

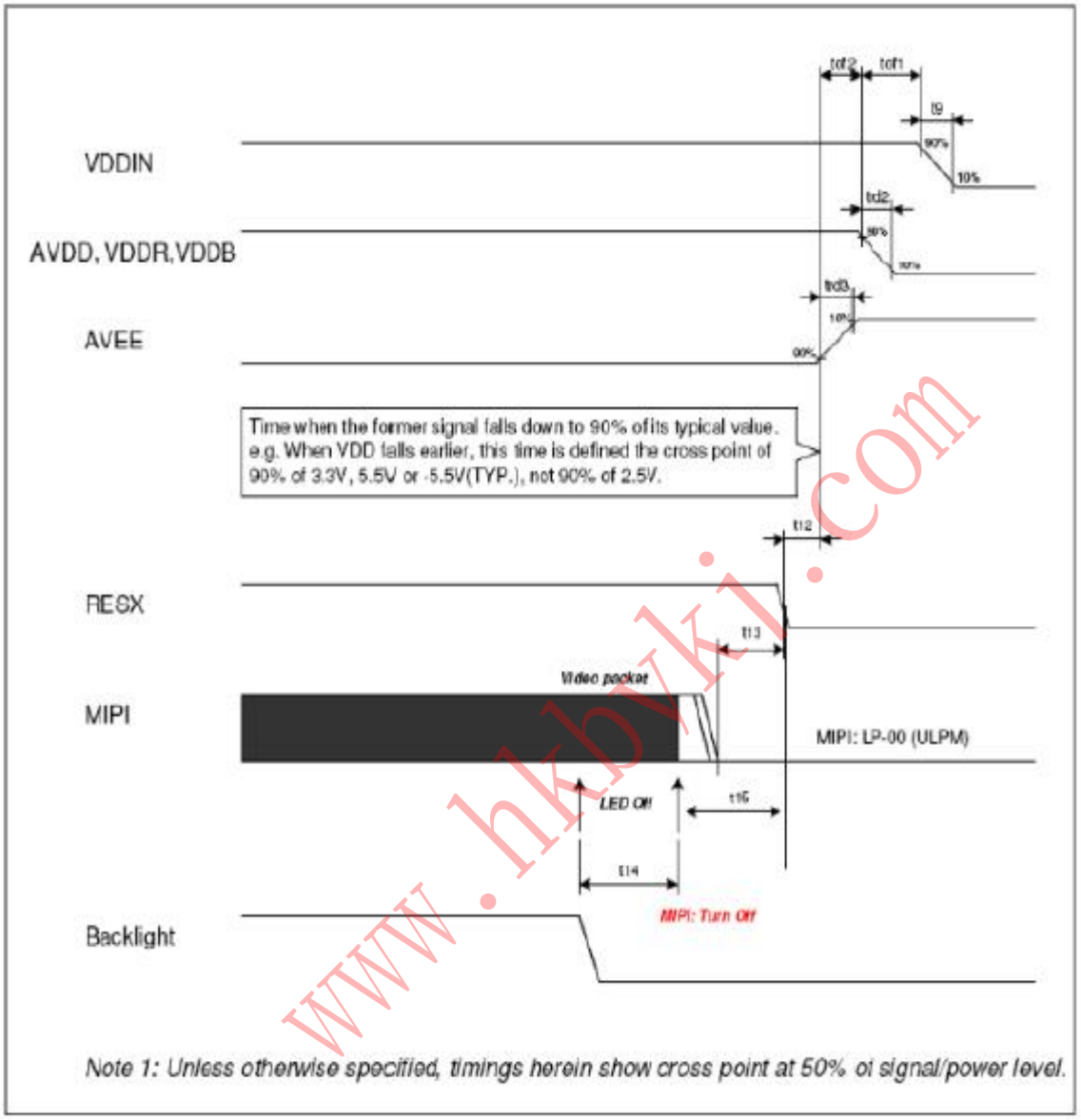


Note 1: Unless otherwise specified, timings herein show cross point at 50% of signal/power level.

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

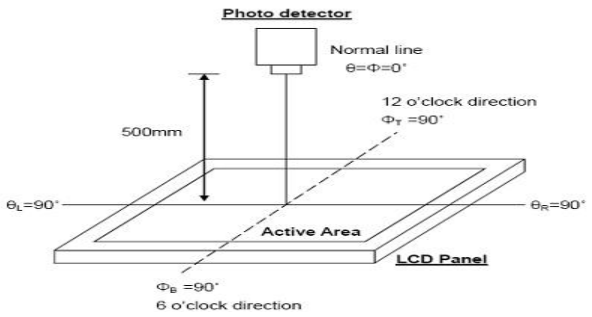


Note 1: Unless otherwise specified, timings herein show cross point at 50% of signal/power level.

6. Optical Characteristics

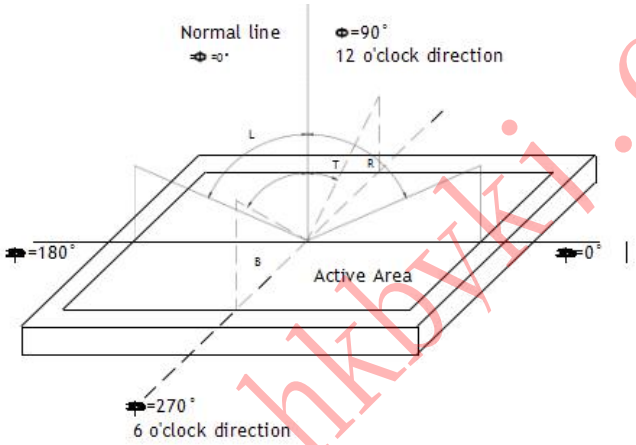
Item		Symbol	Min	Typ	Max	Unit	Note
Contrast Ratio		CR	-	1200	-		Note1 Note3
Luminance(center)		L	210	230	-	cd/m2	Note1 Note5 Note7
Luminous Uniformity(9 Point)		LU	70	75		%	Note7
Response Time		Rising+ Falling	-	25	-	ms	Note1 Note4
Viewing Angle K=Contrast Ratio>10	horizontal	θR	80	85	-	degree	Note2
		θL	80	85	-		
	vertical	θU	80	85	-		
		θD	80	85	-		
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)		-	-	71.5		%	

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%.

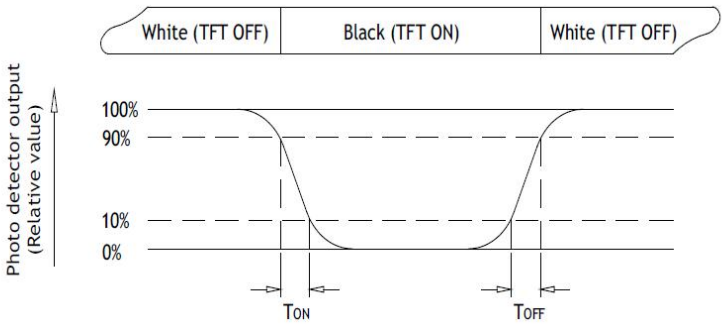


Fig. 6-3 Definition of response time

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.

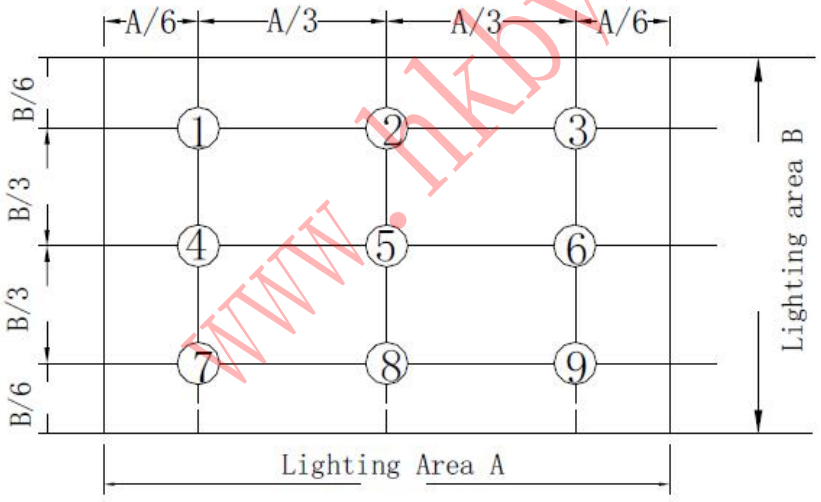
Note6: All input terminals LCD panel must be ground while measuring the center area of the panel. The LED driving condition is IL=60mA

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.

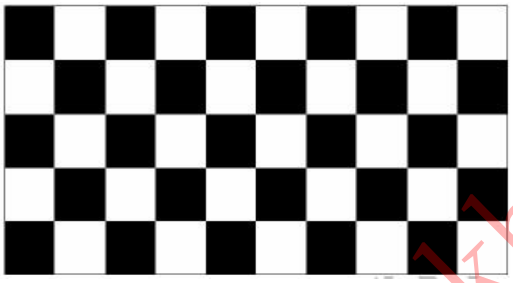
7. RELIABILITY TEST

7-1 Temperature and Humidity

TEST ITEMS	CONDITIONS	NOTE
High Temperature Operation	50℃ ; 96hrs	
High Temperature Storage	60℃ ; 96hrs	
High Temperature High Humidity Operation	40℃; 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 -