

# 深圳市宸宸科技有限公司

---

## SPECIFICATION FOR LCD MODULE

**Product Model(模组型号):** CC0702I40L-01

**Customer（客户）:** \_\_\_\_\_

**Customer No（客户型号）:** \_\_\_\_\_

Designed by	Checked by	Approved by

深圳市宸宸科技有限公司

## RECORDS OF REVISION

[illegible]

# 深圳市宸宸科技有限公司

---

## Contents

1	Introduction-----	4
2	General specification-----	5
3	Mechanical drawing-----	6
4	Absolute maximum ratings-----	7
5	Electrical characteristics-----	7
6	Optical characteristics -----	7
7	Pin Assignment -----	10
8	LCM quality criteria-----	11

# 深圳市宸宸科技有限公司

---

## 1. Introduction

### 1.1 Scope of application

This specification applies to the Negative type TFT transmissive dot matrix LCD module that is supplied by CCKJ. This LCD module should be designed for mobile Tablet pc Computer tv use. LCD specification: ALL, Dots 1024xRGBx600. As to basic specification of the driver IC, refer to the IC(TBD) specification and datasheet.

### 1.2 Structure:

Double display structure:

TFT Module + FPC + BL

FULL Color 7.0 inch TFT LCD size for main LCD;

One bare chip with gold bump (COG) ;

24-bits bus interface;

### 1.3 TFT features:

Structure: TFT PANNEL+IC+FPC;

Transmissive Type LCD

1024 dot-source and 600 dot-gate outputs;

FULL Color;

White LED back light;

### 1.4 Applications:

Mobile phone, MP5; PC Computer, TV

### 1.5 This module uses ROHS material

# 深圳市宸宸科技有限公司

## 2. General specification

ITEM	Standard value	UNIT
LCD Type	TFT Negative Transmissive	---
Driver element	a-Si TFT Active matrix	
Number of Dots	1024*(RGB)*600	Dots
Pixel Arrangement	RGB Vertical Stripe	
Pixel Pitch (W*H)	0.1506(W)x0.1432(H)	
Display Area	154.2144(H) x 85.92(V)	mm
Viewing Direction	ALL	
Module Size(W*H*T)	165(W) × 100(H) × 3.5(T)	mm
Approx. Weight	TBD	g
Back Light	White LED	
Data transfer	LVDS	

### 3. Mechanicaldrawing

Technical drawing of a rectangular object, likely a light fixture, showing dimensions and specifications.

**Dimensions:**

- Overall width:  $99.96 \pm 0.20$
- Overall height:  $102.0 \pm 0.191$
- Inner width:  $89.80$
- Inner height:  $85.92$
- Top flange width:  $2.78$
- Top flange height:  $4.72$
- Bottom flange width:  $(47.68)$
- Bottom flange height:  $154.12$
- Mounting hole diameter:  $\phi 6.9$
- Mounting hole spacing:  $102.0 \pm 0.5$
- Mounting hole diameter:  $\phi 6.9$

**Material/Finish:** 1024\*600, 0.1506\*0.1432, ALL

**Notes:**

1. RoHS must be complied.
2.  $\Delta$  Modification rev. number
3. Draft angle  $1.5^\circ$ :
4. All radii without dimension R0.3, Unspecified Tolerances is:  $\pm 0.2$

**Electrical-Optical Characteristics (Ta=25°C):**

Item (项目)	Symbol (符号)	min. (最小)	typ. (典型)	max. (最大)	Unit (单位)	Condition (测定条件)
Main screen luminance (亮度)	Lv		300		cd/m <sup>2</sup>	If=180 mA (恒定电流测试)
Main screen Uniformity (均匀度)	Avg	75			%	
Main screen Colour (色度坐标)	X	0.260		0.360		Measure tolerance: $\pm 5\%$
Main screen Coordinate	Y	0.270		0.370		Colour coordinate: $\pm 0.008$
Forward Voltage (正向电压)	Vf	8.7	9.6	10.5	V	Voltage: $\pm 0.1V$
Reverse Current (反向电流)	Ir		20		mA	Vr=0.8 V

**Operating Temperature (工作温度):**  $-20^\circ \sim 70^\circ \text{C}$  • **Storage Temperature (贮存温度):**  $-30^\circ \sim 80^\circ \text{C}$

**Storage condition Recommended:** temperature ( $25^\circ \text{C} \pm 5^\circ \text{C}$ ) and humidity ( $65\%RH \pm 20\%RH$ )

**LED CIRCUIT DIAGRAM:**

**MODEL NO.:** CC0702140L-01

**UNIT (单位):** mm

**THE THIRD ANGLE PROJECTION (第三角法):**

**EDITION (版本号):** A/0

**DESIGN (设计):**

**CHECKED (审核):**

**APPROVED (批准):**

**DATE (日期):**

# 深圳市宸宸科技有限公司

## 4. ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Supply voltage for logic	$V_{DD}$	-0.3	3.0	V
Input voltage for logic	$V_{IN}$	-0.5	$V_{DD} + 0.3$	V
Supply current (One LED)	$I_{LED}$		20	mA
Operating temperature	$T_{OP}$	-20	+70	°C
Storage temperature	$T_{ST}$	-30	+80	°C

## 5. ELECTRICAL CHARACTERISTICS

Item	Symbol	Min	Typ	Max	Unit	Applicable terminal
Supply voltage for logic	$V_{DD}$	2.8	3.3	3.5	V	$V_{DD}$
Input voltage	$V_{IL}$	-0.3	-	$0.2 V_{DD}$	V	
	$V_{IH}$	$0.8 V_{DD}$	-	$V_{DD}$	V	
Input leakage current	$I_{LKG}$				$\mu A$	
AVDD current		9.2	9.6	10	V	
VGH current		15	17	19	V	
VGL current		-7	-6	-5	V	
VCOM current			3.3		V	
LED Forward voltage	$V_f$	8.6	9.6	10.1	V	--
Input backlight current	$I_{LED}$		180		mA	With One LED

# 深圳市宸宸科技有限公司

## 6. OPTICAL CHARACTERISTICS

ITEM		SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE
				MIN.	TYP.	MAX		
Brightness		B	Viewing normal angle	280	300	--	Cd/m <sup>2</sup>	All left side data are based on LEAD's product reference only
Contrast Ratio		CR		500	800	--	--	
Response Time		Tr+Tf		--	25	40	ms	
CIE Color coordinate	Red	X <sub>R</sub>		--	0.571			
		Y <sub>R</sub>			0.352			
	Green	X <sub>G</sub>		--	0.345			
		Y <sub>G</sub>			0.557			
	Blue	X <sub>B</sub>		--	0.148			
		Y <sub>B</sub>			0.128			
	White	X <sub>w</sub>		--	0.314			
		Y <sub>w</sub>			0.334			
Viewing Angle	Hor.	$\theta_{x+}$	Center CR>=10	40	45	--	Deg.	
		$\theta_{x-}$		40	45	--		
	Ver.	$\theta_{y+}$		30	35	--		
		$\theta_{y-}$		10	15			
Uniformity	Un			80	85		%	



# 深圳市宸宸科技有限公司

## HV mode

### Horizontal input timing

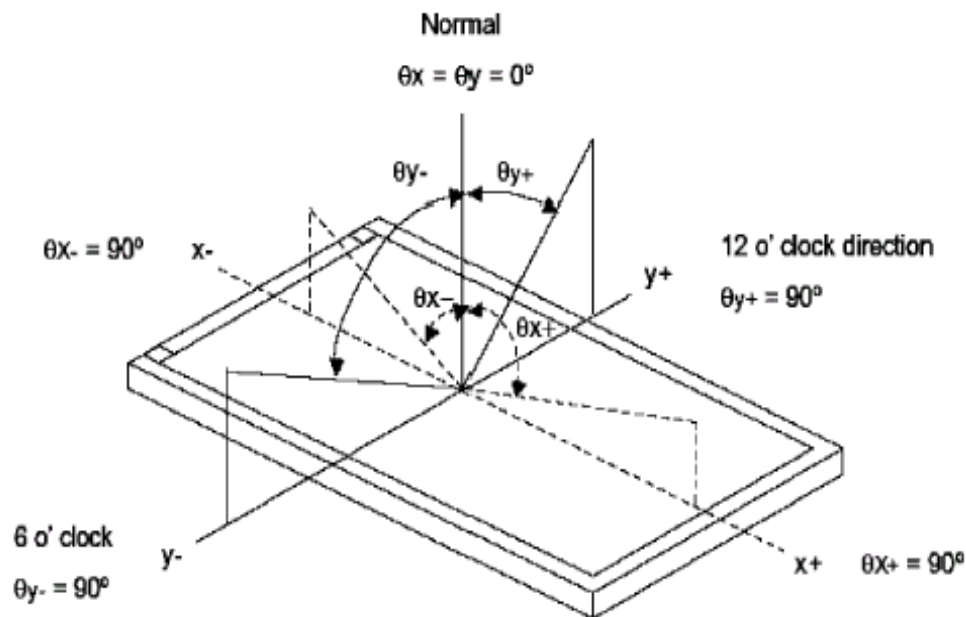
Parameter		Symbol	Value			Unit
Horizontal display area		thd	1024			DCLK
DCLK frequency @ Frame rate = 60Hz		fclk	Min.	Typ.	Max.	MHz
			44.9	51.2	63	
1 Horizontal Line		th	1200	1344	1400	DCLK
HSYNC pulse width	Min.	thpw	1			
	Typ.		-			
	Max.		140			
HSYNC blanking		thb	160	160	160	
HSYNC front porch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

### 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	-	20	H
VSYNC Blanking (tvb)	tvb	23	23	23	H
VSYNC Front porch (tvfp)	tvfp	1	12	127	H

# 深圳市宸宸科技有限公司

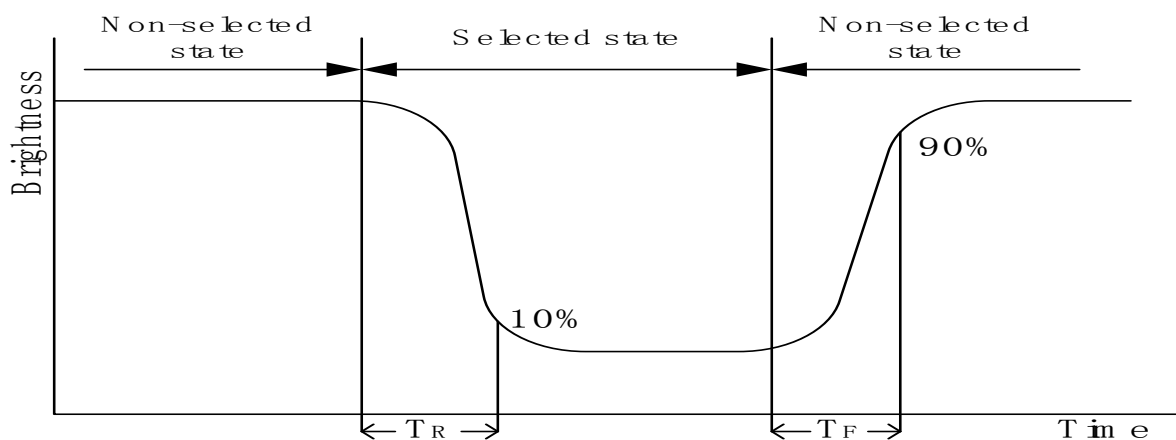
Note 1 : Definition of Viewing Angle  $\theta_x$  and  $\theta_y$ :



**Note 2: Definition of contrast ratio CR:**

$$C R = \frac{\text{Brightness of non-selected dots (white)}}{\text{Brightness of selected dots (black)}}$$

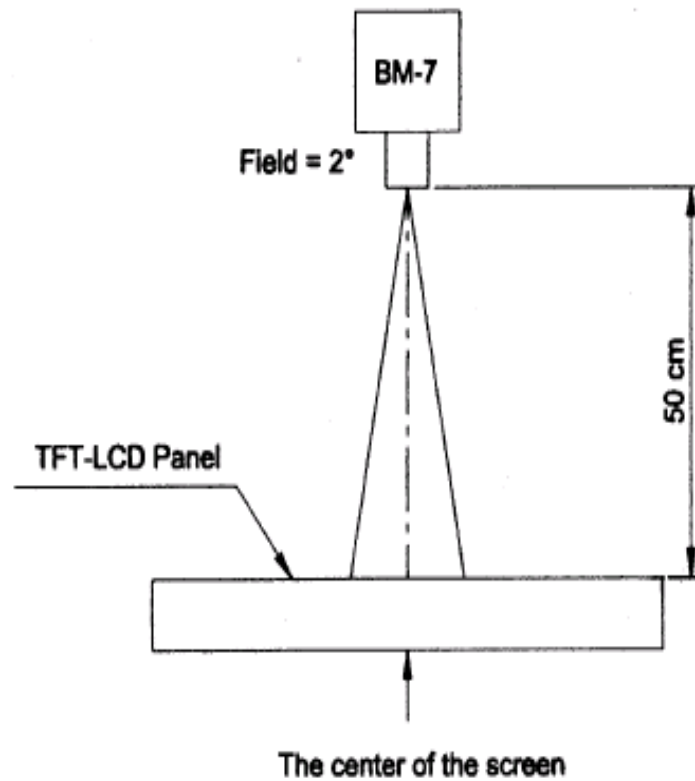
**Note 3: Definition of response time ( $T_R$ ,  $T_F$ )**



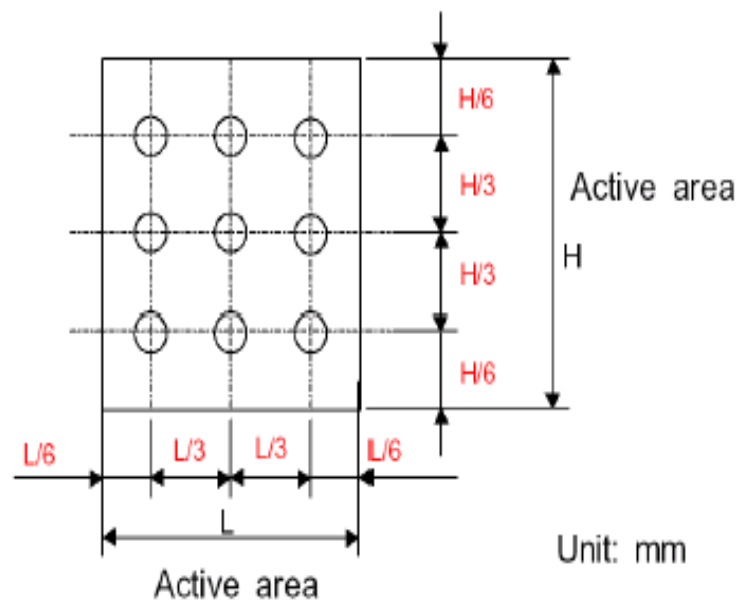
# 深圳市宸宸科技有限公司

: The brightness test equipment setup

20mA Field=2° (As measuring "black" image, field=2° is the best testing condition)



Note 4 :



中尺寸专业液晶模组厂

# 深圳市宸宸科技有限公司

## 7. MCU Interface Pin Function

PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	VCOM	31	LED-
2	VDD	32	LED-
3	VDD	33	SHLR
4	GND	34	UPDN
5	RESET	35	VGL
6	STBYB	36	NC/CABCEN1
7	GND	37	NC/CABCEN0
8	RXINO-	38	VGH
9	RXINO+	39	LED+
10	GND	40	LED+
11	RXIN1-		
12	RXIN1+		
13	GND		
14	RXIN2 -		
15	RXIN2+		
16	GND		
17	RXCLKIN-		
18	RXCLKIN+		
19	GND		
20	RXIN3-		
21	RXIN3+		
22	GND		
23	NC		
24	NC		
25	GND		
26	NC		
27	NC/PINCTL		
28	NC/DIMO		
29	AVDD		
30	GND		

# 深圳市宸宸科技有限公司

## LCM quality criteria-

### 8.1 RELIABILITY TEST

NO	ITEM	CONDITION	STANDARD
1	High temp. Storage	80℃, 48hrs	No function failure detected.
2	Low temp. Storage	-30℃, 48hrs	No function failure detected.
3	High temp. & High humidity operation	60℃, 90%, 48hrs	No function failure detected.
4	High temp. Operation	70℃, 48hrs	No function failure detected.
5	Low temp. Operation	-20℃, 48hrs	No function failure detected.
6	Thermal shock	-20℃, 30min~70℃, 30min, 10 cycles.	No function failure detected.

The reliability items will be fully performed in new sample qualification.

The reliability status will be tested as monitor during mass production. The individual reliability test shall be managed by lot. Moreover, the individual reliability item shall be decided according reliability plan.