SPECIFICATION
FOR
LCD MODULE

Product Model(模组型号): CC0702I50R-01

Customer（客户）: _____

Customer No（客户型号）: _____

Designed by	Checked by	Approved by

RECORDS OF REVISION

Date	Version	Contents	Note
2017.07.14	**A0**	**First issue**	

Contents

1. Introduction

1.1 Scope of application

This specification applies to the Negative type TFT transmissive dot matrix LCD module that is supplied by **CC** 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) ;
MIPI 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:

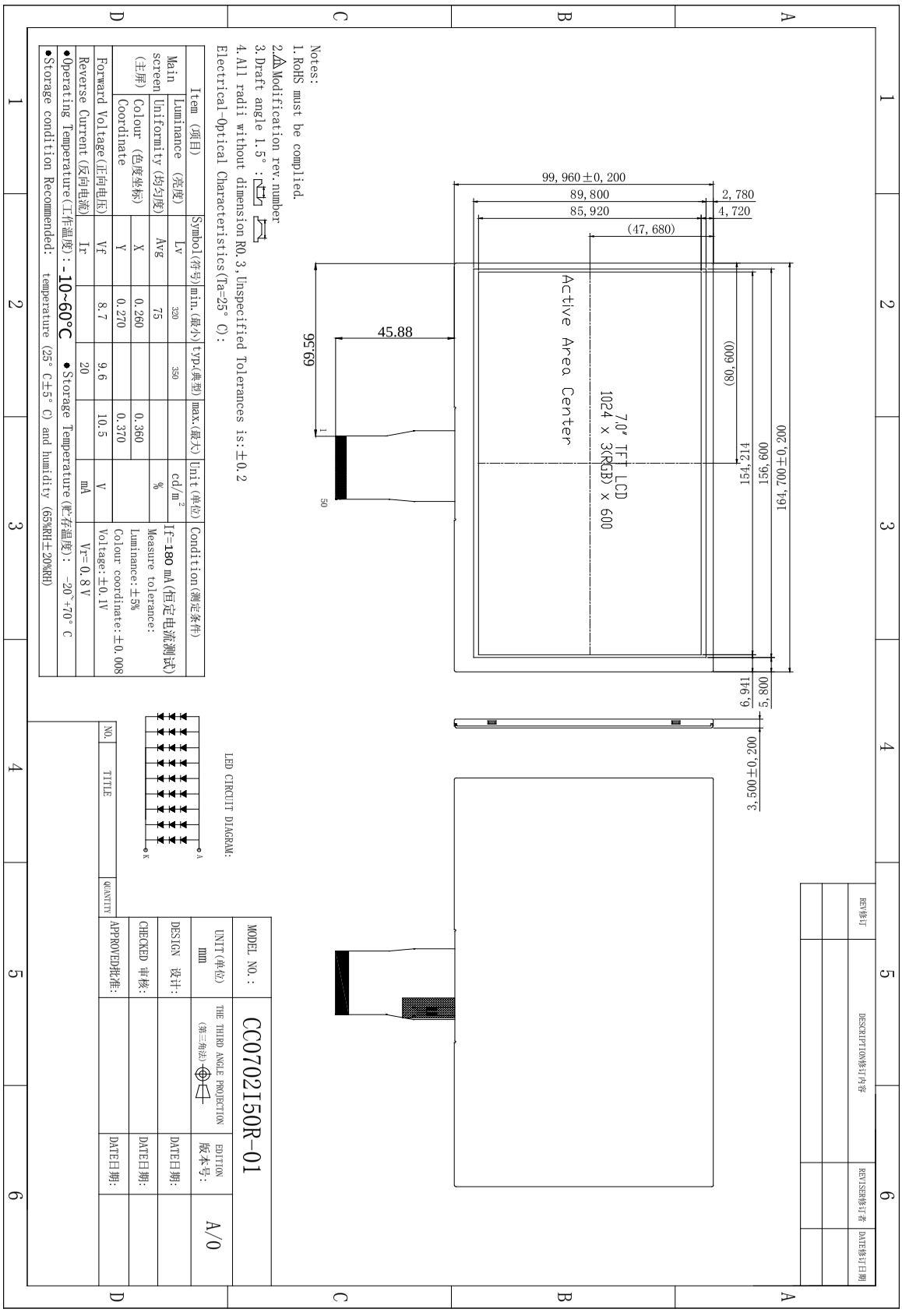
Mobile phone,MP5; PC Computer,TV

1.5 This module uses ROHS material

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	RGB	

3. Mechanicaldrawing



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}	-10	+60	℃
Storage temperature	T_{ST}	-20	+70	℃

5. ELECTRICAL CHARACTERISTICS

Item	Symbol	Min	Typ	Max	Unit	Applicable terminal
Supply voltage for logic	V_{DD}		3.3		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}				μA	
AVDD current		8	9.8	12	V	
VGH current		17	17.5	18	V	
VGL current		-5.5	-6	-6.5	V	
VCOM current		2.8	3.3	4.5	V	
LED Forward voltage	V_f	8.7	9.6	10.5	V	--
Input backlight current	I_{LED}		180		mA	With One LED

6. OPTICAL CHARACTERISTICS

ITEM		SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE
				MIN.	TYP.	MAX		
Brightness		B	Viewing normal angle	300	350	--	Cd/m^2	All left side data are based on LEAD's product reference only
Contrast Ratio		CR		600	800	--	--	
Response Time		Tr+Tf		--	25	40	ms	
CIE Color coordinate	Red	X_R		--	0.290			
		Y_R			0.331			
	Green	X_G		--	0.632			
		Y_G			0.311			
	Blue	X_B		--	0.297			
		Y_B			0.536			
	White	X_W		--	0.140			
		Y_W			0.154			
Viewing Angle	Hor.	θ_{X+}	Center CR>=10	80	85	--	Deg.	
		θ_{X-}		80	85	--		
	Ver.	θ_{Y+}		80	85	--		
		θ_{Y-}		80	85			
Uniformity	Un			80	85		%	

HV mode

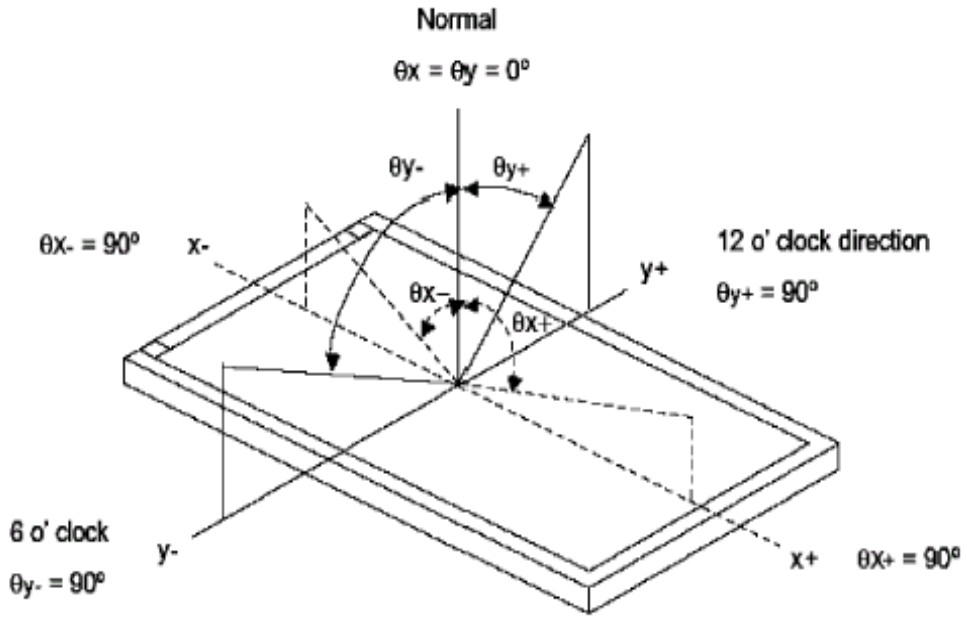
Horizontal input timing

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.		-			
	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

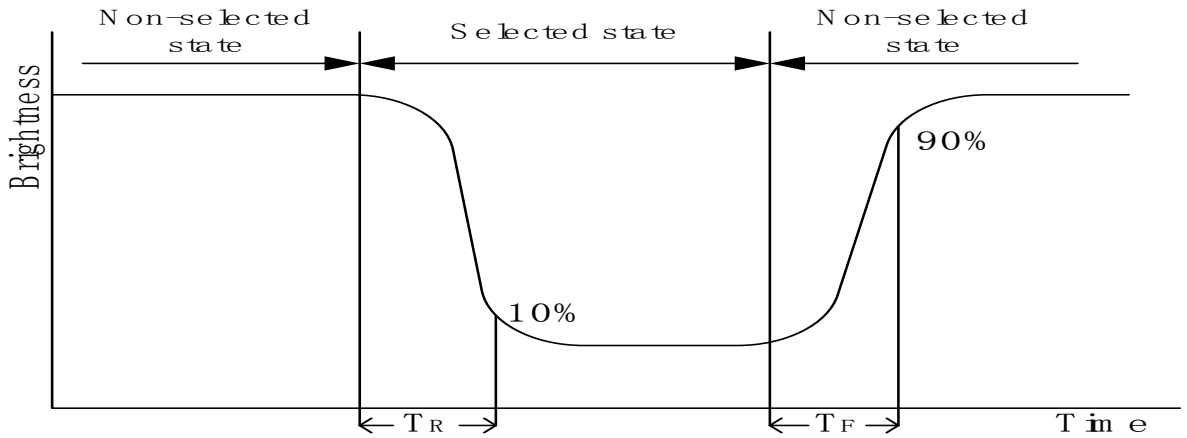
Note 1 : Definition of Viewing Angle θ_x and θ_y :



Note 2: Definition of contrast ratio CR:

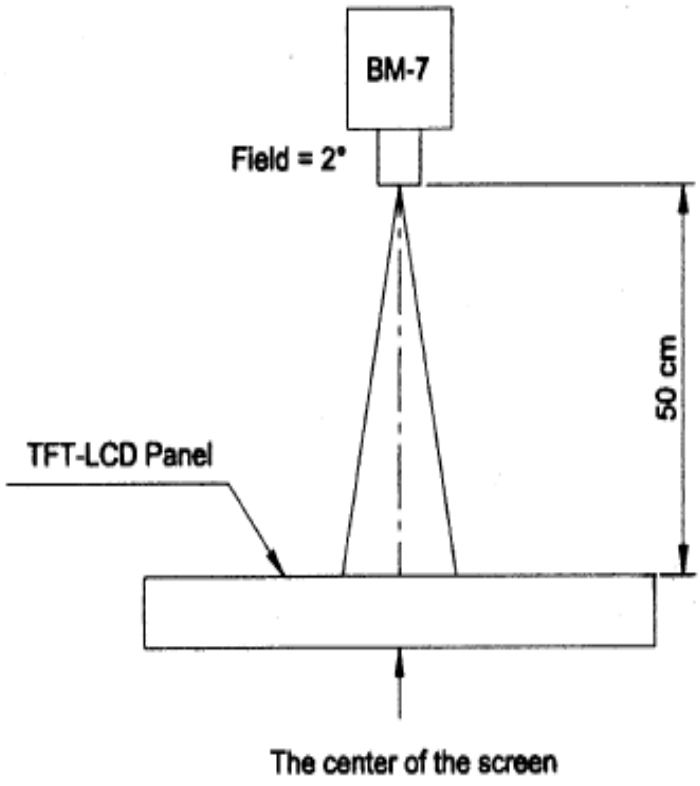
$$CR = \frac{\text{Brightness of non-selected dots (white)}}{\text{Brightness of selected dots (black)}}$$

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

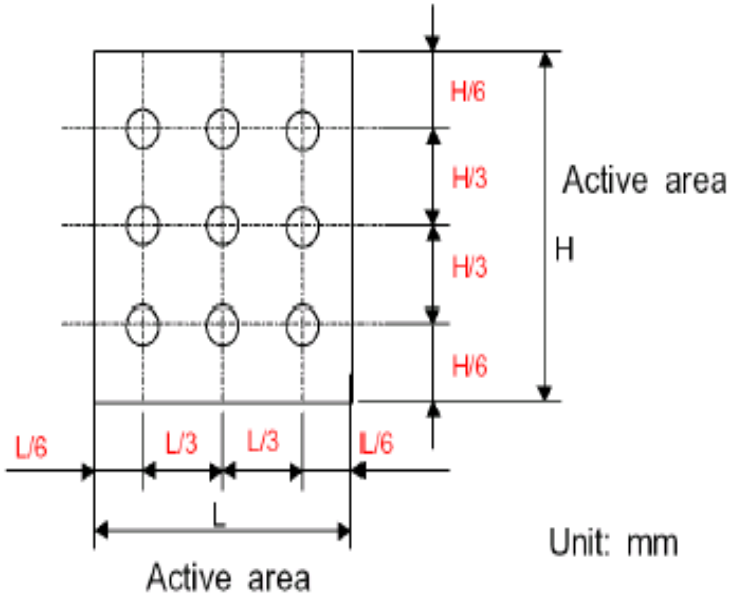


: The brightness test equipment setup

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



Note 4 :



7. MCU Interface Pin Function

Pin No.	Symbol	Function
1	LED+	LED Anode
2	LED+	LED Anode
3	LED-	LED Cathode
4	LED-	LED Cathode
5	GND	Ground
6	VCOM	Common Voltage
7	DVDD	Digital Power
8	MODE	DE/SYNC mode select. Normally pull high H: DE mode. L: HSD/VSD mode
9	DE	Data Enable signal
10	VSD	Vertical sync input. Negative polarity
11	HSD	Horizontal sync input. Negative polarity
12-19	B7-B0	Red data bus
20-27	G7-G0	Red data bus
28-35	R7-R0	Red data bus
36	GND	Ground
37	DCLK	Clock input
38	GND	Ground
39	SHLR	Left or Right Display Control
40	UPDN	Up / Down Display Control
41	VGH	Power supply for Gate on output.
42	VGL	Power supply for Gate off output.
43	AVDD	Analog Power
44	RSTB	Global reset pin. Active low to enter reset state. Suggest to connecting with an RC reset circuit for stability. Normally pull high. (R=10KΩ，C=1μF)
45	NC	No connection
46	VCOM	Common Voltage
47	DITHB	Dithering setting DITH=”H” 6bit resolution(last 2 bit of input data truncated) DITH=”L” 8bit resolution(default setting)
48	GND	Ground
49	NC	No connection
50	NC	No connection

8.1 RELIABILITY TEST

TEST ITEMS	CONDITIONS	NOTE
High Temperature Operation	60°C ; 240hrs	
High Temperature Storage	70℃ ; 240hrs	
High Temperature High Humidity Operation	60℃ ; 90%RH ; 240hrs (No condensation)	
Low Temperature Operation	-10°C ; 240hrs	
Low Temperature Storage	-20℃ ; 240hrs	

NOTE

1. All judgement of display are performed after temperature of panel return to room temperature.
2. Display function should be no change under normal operating condition.
3. Under no condensation of dew.
4. CPT only guarantee the above 5 test items, and without guarantee the others.