HY-LINE®
COMPUTER COMPONENTS

TFT-Display Datenblatt

Modell OT080FSDDLV-00

Kurzdaten

Hersteller	ONation
Diagonale	8” / 20,3 cm
Format	4:3
Auflösung	800 x 600
Backlight	LED / 400 cd/m²
Interface	LVDS
Touchscreen	nein
Temperatur	-20…+70 °C (Betrieb)

HY-LINE Computer Components Vertriebs GmbH
Inselkammerstr. 10, 82008 Unterhaching bei München
Tel.: +49 89 614 503 40 || Fax: +49 89 614 503 50
computer@hy-line.de || www.hy-line.de/computer

ONation Corporation

CUSTOMER' S APPROVAL SPECIFICATIONS

MODEL: OT080FSDDLV-00
(Complied with RoHS)

CUSTOMER: _____

Version:P0.1

C O N T E N T S

ISSUE:DEC.15.2011

Spec Condition:preliminary

CUSTOMER	ONATION		
APPROVAL	APPROVAL	CHECKER	PREPARE
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2.RECORD OF REVISION

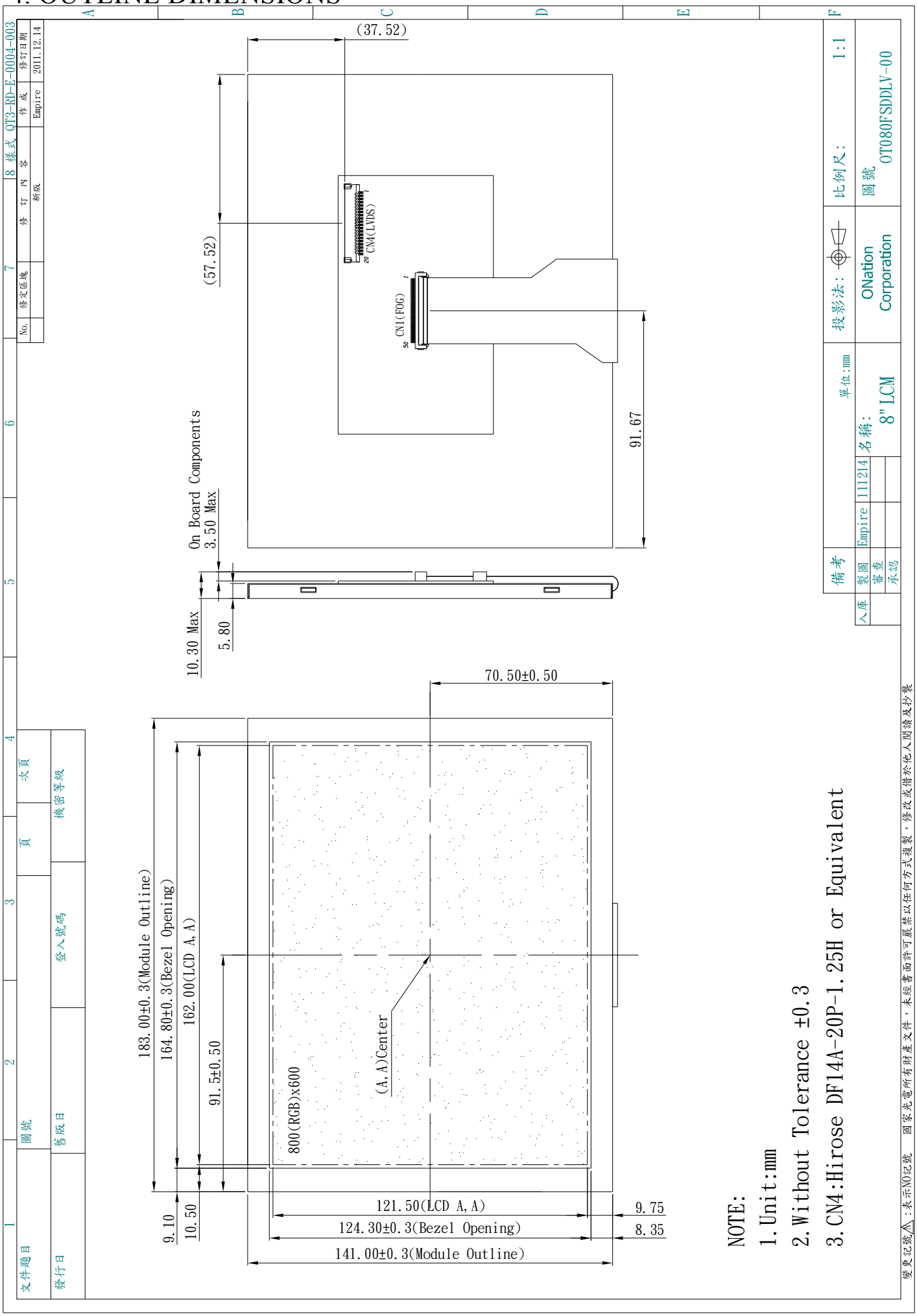
REV	DATE	PAGE	SUMMARY
0.1	2011.12.15	ALL	Preliminary specification was first issued

3.MECHANICAL SPECIFICATIONS

(1)	Number Of Dots (Dots)	800(R.G.B) X 600
(2)	Module Size(mm)	183.0(W) X 141.0(H) X 10.3(D) (**)
(3)	Active Area(mm)	162(H) X 121.5(V)
(4)	Pixel Pitch(mm)	0.2025 (H) X 0.2025(V)
(5)	LCD / Polarizer Model	TFT , Transmissive, Normally/White,Anti-glare
(6)	Backlight Color	White,LED
(7)	Viewing Direction	12 O'clock
(8)	Gray Scale Inversion Direction	6 O'clock
(9)	Electrical Interface	LVDS Interface
(10)	Color Configuration	R.G.B Stripe
(11)	Module Weight(g)	(TBD)

(**)Module include PCB and component.

4. OUTLINE DIMENSIONS

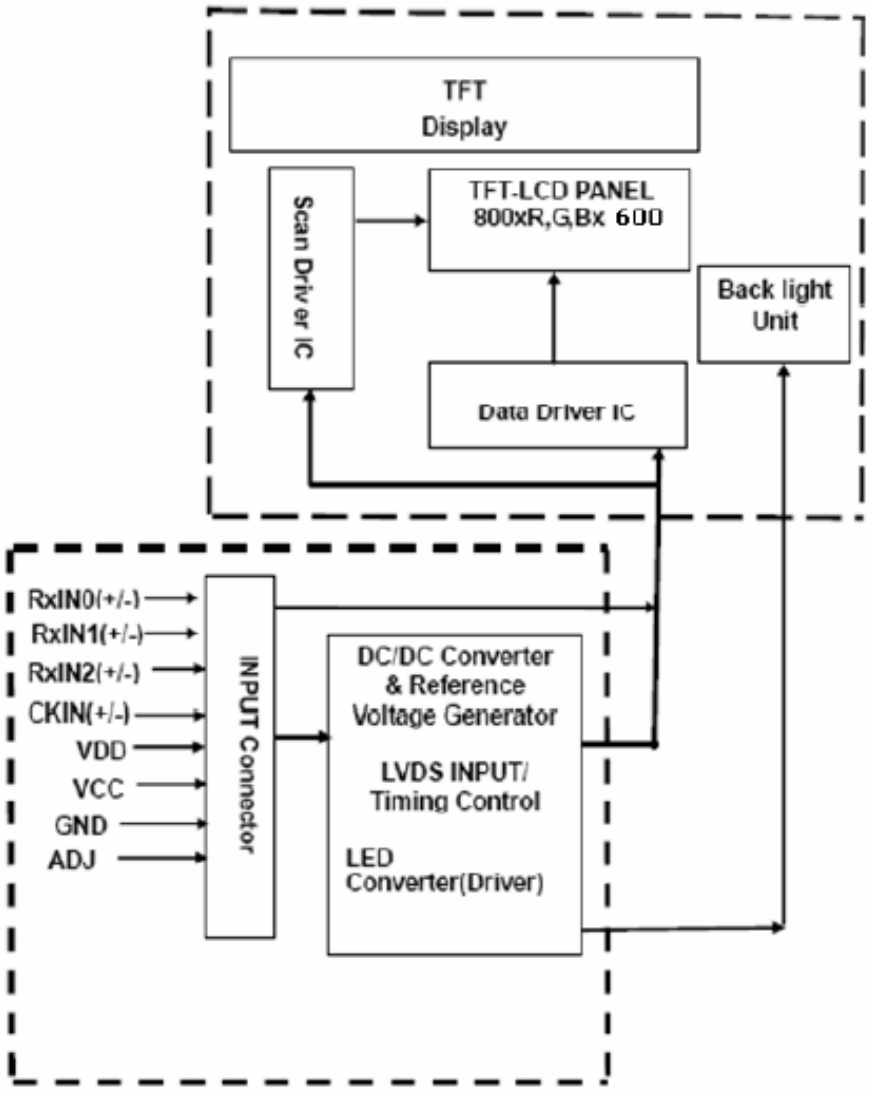


5. INTERFACE PIN CONNECTION

5.1 LCM PANEL DRIVING SECTION (CN4 Connector: Hirose DF14A-20P-1.25H or Equivalent)

Pin No	Symbol	Function	Remark
1	VCC	power supply for Digital Circuit	
2	VCC	power supply for Digital Circuit	
3	GND	Ground	
4	GND	Ground	
5	RxIN0-	Differential Data Input ,CH0(Negative)	
6	RxIN0+	Differential Data Input ,CH0(Positive)	
7	GND	Ground	
8	RxIN1-	Differential Data Input ,CH1(Negative)	
9	RxIN1+	Differential Data Input ,CH1(Positive)	
10	GND	Ground	
11	RxIN2-	Differential Data Input ,CH2(Negative)	
12	RxIN2+	Differential Data Input ,CH2(Positive)	
13	GND	Ground	
14	CKIN-	Differential Clock Input (Negative)	
15	CKIN+	Differential Clock Input (Positive)	
16	GND	Ground	
17	VDD	Power Supply for LED Driver Circuit	
18	VDD	Power Supply for LED Driver Circuit	
19	GND	Ground	
20	ADJ	Brightness control for LED B/L	

6. BLOCK DIAGRAM



7.ABSOLUTE MAXIMUM RATINGS

7.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	MAX.	UNIT	REMARK
Digital Supply Voltage	VCC	-0.5	+5.0	V	
Logic Input Voltage	V_{IN}	-0.3	VCC+0.3	V	
Logic Output Voltage	V_{OUT}	-0.3	VCC+0.3	V	

7.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

ITEM	OPERATING		STORAGE		REMARK
	MIN.	MAX.	MIN.	MAX.	
Ambient Temperature(℃)	-20	70	-30	80	Note 1,2,3
Humidity(% RH)	-	90	-	90	Note 4

Note 1 : The response time will become lower when operated at low temperature.

Note 2 : Background color changes slightly depending on ambient temperature.

Note 3 : Operation Ta=70℃ & -20℃ ≦ 240Hrs.

Note 4 : Operation Ta=40℃ & RH=90% ≦ 240Hrs.

8.ELECTRICAL CHARACTERISTICS

8.1 ELECTRICAL CHARACTERISTICS OF LCD

Ta=25℃

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Power Voltage For LCD	VCC	3.0	3.3	3.6	V
	ICC	-	(200)	(250)	mA
TFT Device On Voltage	V_{GH}	15.3	16	16.7	V
TFT Device Off Voltage	V_{GL}	-7.7	-7.0	-6.3	V
Common Power Supply Voltage	VCOM	2.8	3.8	4.8	V
LED Driving Voltage	VDD	4.5	5	5.5	V
	IDD(VDD=5V)	-	(520)	(600)	mA
ADJ Input Voltage	V_{IH}	1.4	-	-	V
	V_{IL}	-	-	0.4	
ADJ Frequency	-	20	-	200	KHZ

Note 1：Test condition：VCC=3.3V；Test Pattern：Black

Note 2：Please adjust VCOM to make the flicker level be minimum.

9.OPTICAL CHARACTERISTICS

Ta=25℃

ITEM		SYMBOL	CONDITIONS	SPECIFICATIONS				REMARK
				MIN.	TYP.	MAX.	UNIT	
Contrast Ratio		CR	Viewing Normal Angle Θx=Θy=0°	400	500	-	-	Note (1)
Response Time		TR		-	10	20	ms	Note (2)
		TF		-	15	30	ms	
Chromaticity	White	XW		0.26	0.31	0.36	-	Note (4)
		YW		0.28	0.33	0.38	-	
Viewing Angle	Hor.	Θx+	Viewing Angle Θx=Θy=0° CR≧10	60	70	-	Deg.	Note (3)
		Θx-		60	70	-		
	Ver.	ΘY+		40	50	-		
		ΘY-		60	70	-		
NTSC		-	-	-	50	-	%	
Luminance		L	ADJ=3.3V	350	400	-	cd/m2	
Luminance Uniformity		YU		70	75	-	%	Note (5)

*Note (1) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

Contrast Ratio (CR) = L63 / L0

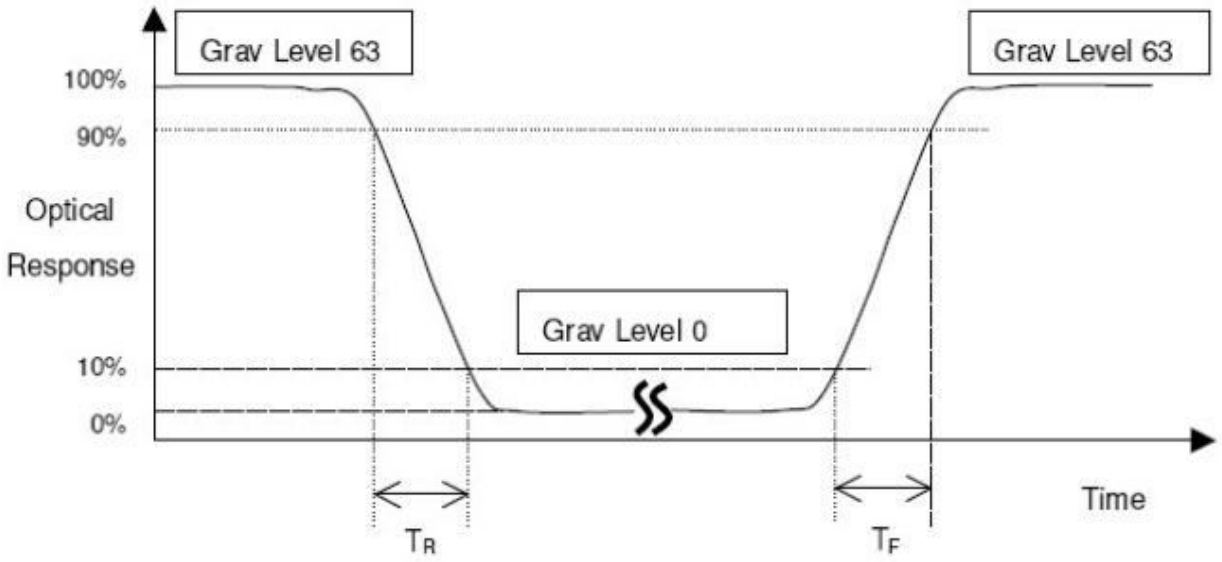
L63: Luminance of gray level 63

L 0: Luminance of gray level 0

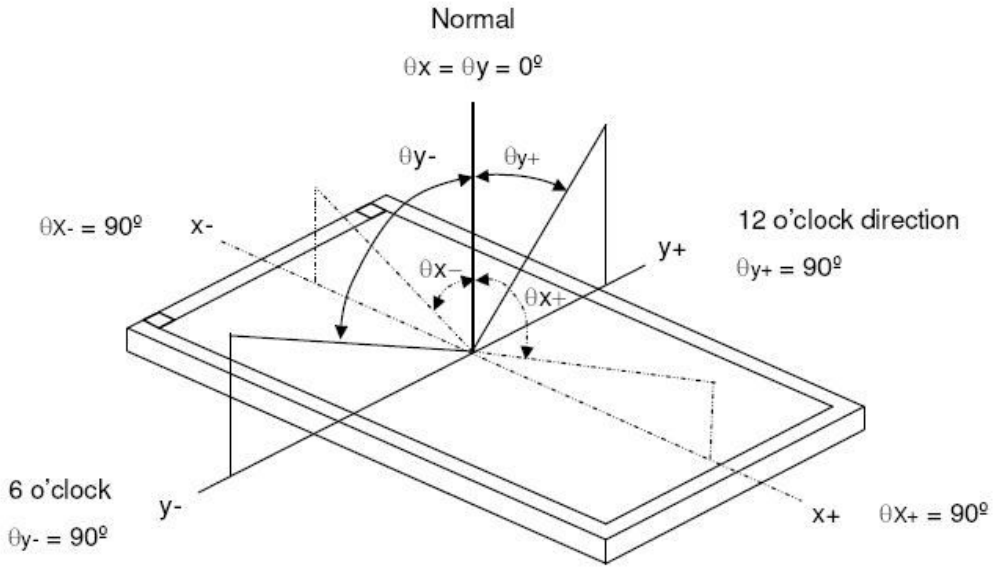
CR = CR (5)

CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (5).

*Note (2) Definition of Response Time (T_R, T_F):

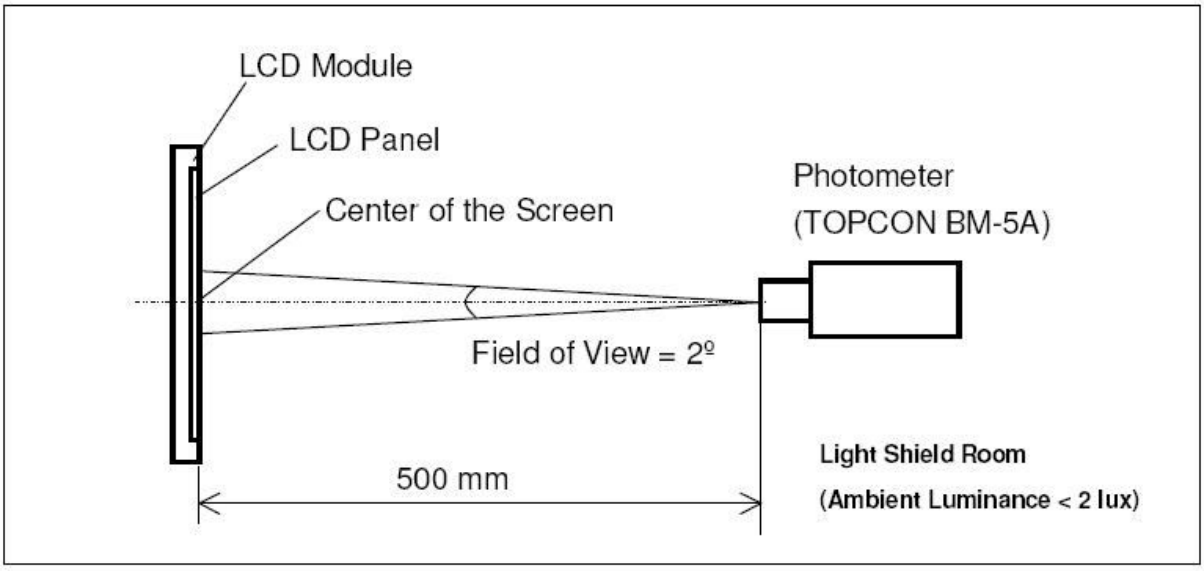


*Note(3) Definition of Viewing Angle

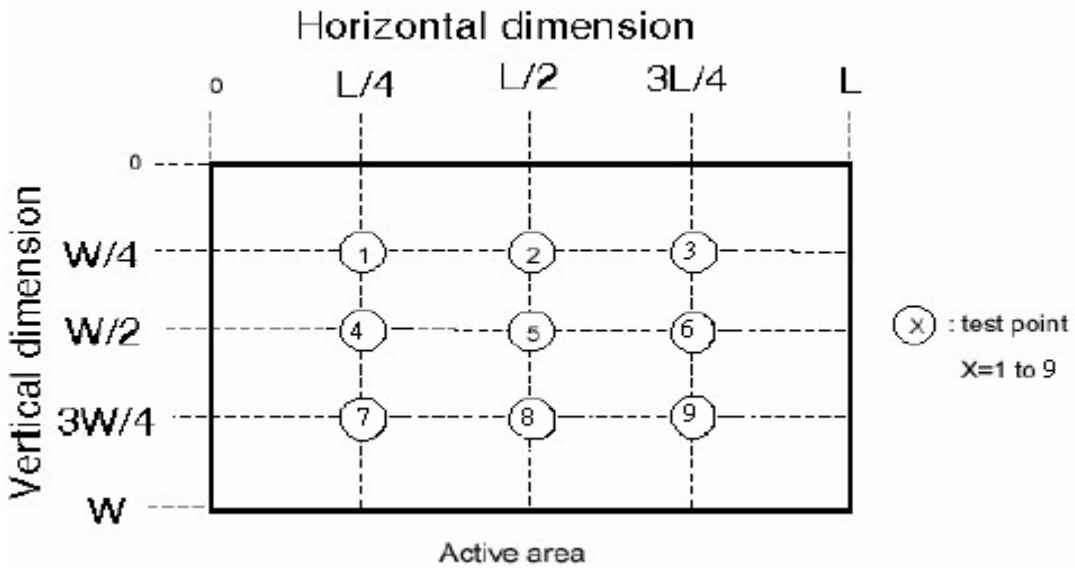


*Note (4) Measurement Set-Up:

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.



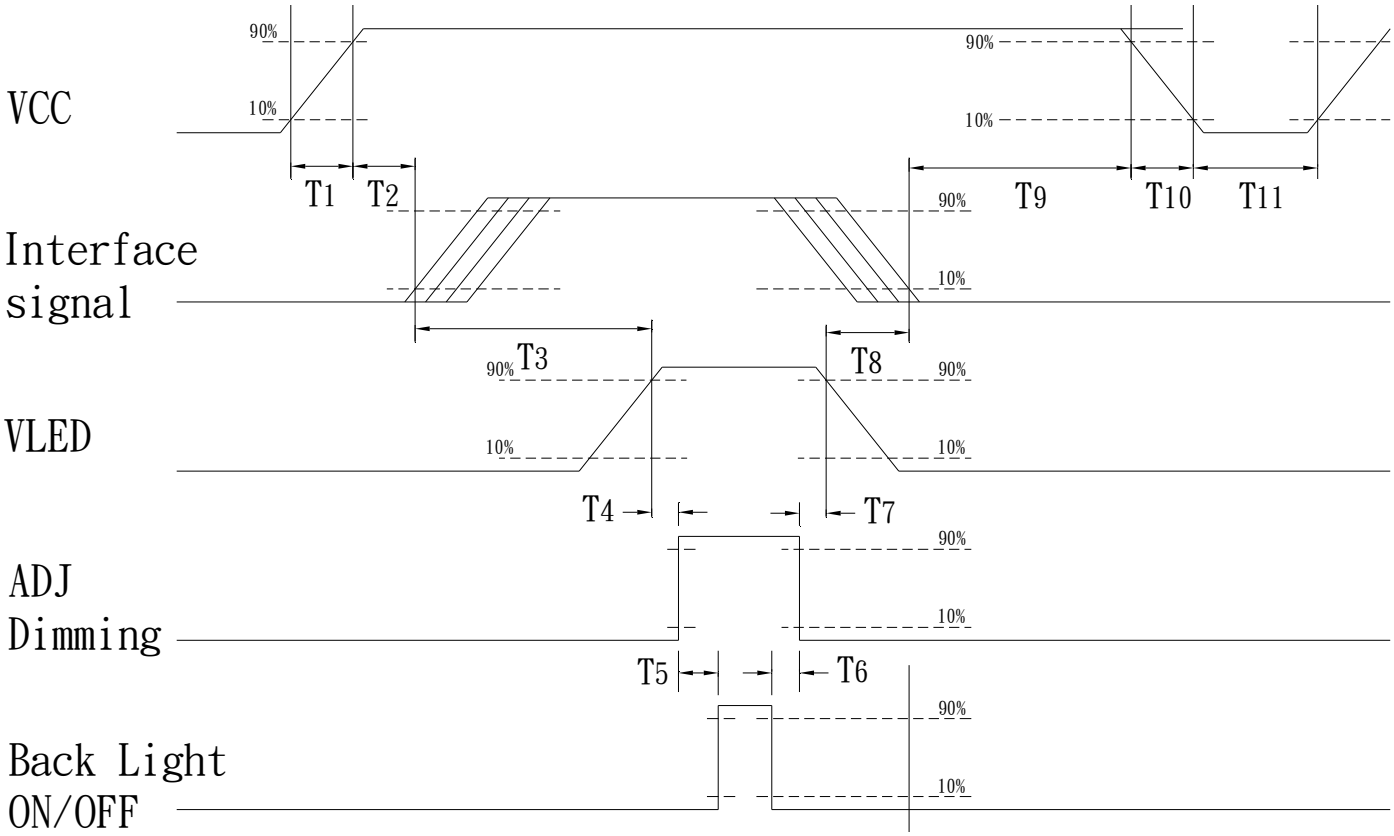
*Note (5)



$$\left(1-\frac{\text{MAX Luminance - Average Luminance}}{\text{Average Luminance}}\right) \times 100\% > 70\%$$

10. TIMING SPECIFICATIONS

10.1 POWER SIGNAL SEQUENCE

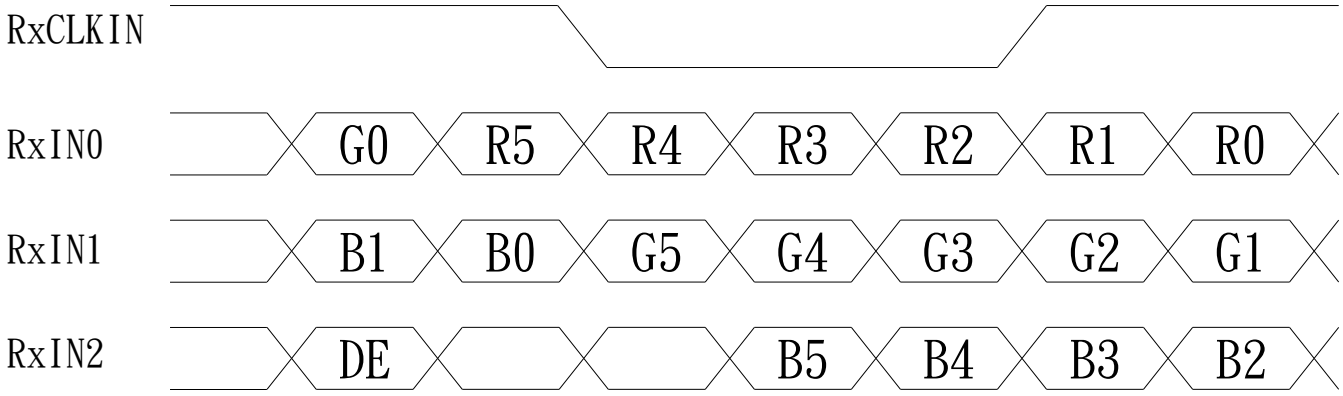


Power ON/OFF Sequence Timing

PARAMETER	SPECIFICATIONS			UNIT
	MIN.	TYP.	MAX.	
T1	0.5	-	10	ms
T2	0	-	50	ms
T3	200	-	-	ms
T4	10	-	-	ms
T5	10	-	-	ms
T6	0	-	-	ms
T7	10	-	-	ms
T8	100	-	-	ms
T9	0	16	50	ms
T10	-	-	10	ms
T11	1000	-	-	ms

The above on/off sequence should be applied to avoid abnormal function in the display. Please make sure to turn off the power when you plug the cable into the input connector or pull the cable out of the connector.

10.2 THE INPUT DATA FORMAT



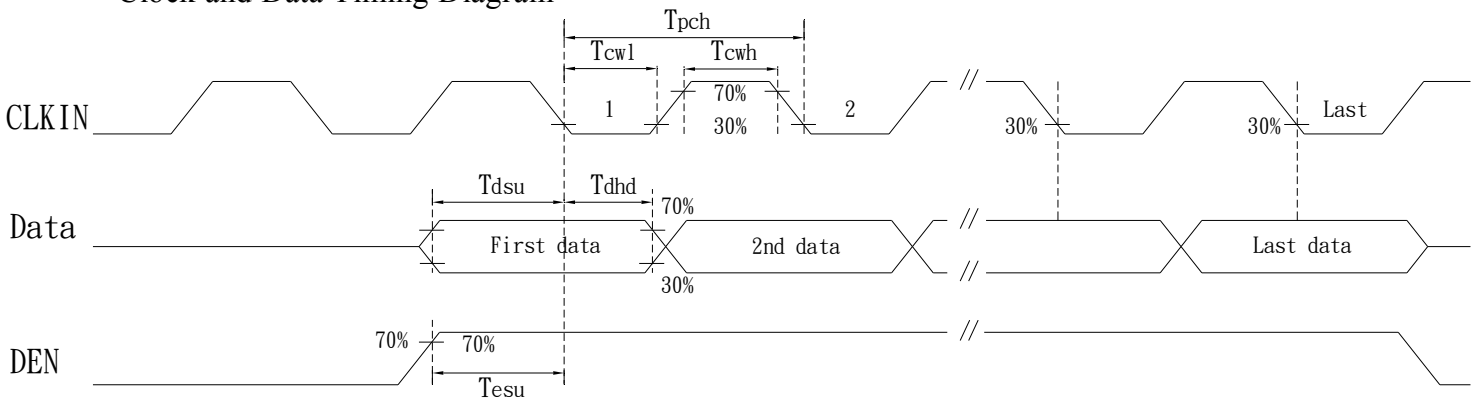
SIGNAL NAME	DESCRIPTION	REMARK
R5 R4 R3 R2 R1 R0	Red Data 5 Red Data 4 Red Data 3 Red Data 2 Red Data 1 Red Data 0	Red-pixel Data 6Bits LVDS input MSB：R5 ； LSB：R0
G5 G4 G3 G2 G1 G0	Green Data 5 Green Data 4 Green Data 3 Green Data 2 Green Data 1 Green Data 0	Green-pixel Data 6Bits LVDS input MSB：G5 ； LSB：G0
B5 B4 B3 B2 B1 B0	Blue Data 5 Blue Data 4 Blue Data 3 Blue Data 2 Blue Data 1 Blue Data 0	Blue-pixel Data 6Bits LVDS input MSB：B5 ； LSB：B0
RxCLKIN	LVDS Data Clock	
DE	Data Enable Signal	When the signal is high, the pixel data shall be valid to be displayed.

10.3 AC TIMING CHARATERISTICS

PARAMETER NOTE		SYMBOL	SPECIFICATIONS			UNIT	REMARK
			MIN.	TYP.	MAX.		
Clock	Frequency	1/Tc	31.95	33.26	34.6	MHz	Note 1
	Clk pulse duty	Tcwh	40	50	60	%	Note 1
	Clk cycle time	Tcph	25	-	-	ns	Note 1
Data	Setup time	Tdsu	5	-	-	ns	Note 1
	Hold time	Tdhd	5	-	-	ns	Note 1
ENAB signal	Setup time	Tesu	5	-	-	ns	Note 1
	Hold time	Tehd	5			ns	Note 1

Note 1：Frame rate is 60 Hz at 3.3V Vcc

Clock and Data Timing Diagram



11. RELIABILITY TEST

Ta = 25℃

ENVIRONMENTAL TEST				
NO.	ITEM	CONDITIONS	TIME PERIOD	REMARK
1	High Temperature Storage	80℃	240HRS	
2	Low Temperature Storage	-30±3℃	240HRS	
3	High Temperature Operation	70℃	240HRS	
4	Low Temperature Operation	-20℃	240HRS	
5	Temperature Cycle	-20℃←25℃→70℃ (30min) (5min) (30min)	100CYCLE	
6	High Temperature Humidity Operation	40℃ 90%RH	240HRS	

NOTE (1): a. THE MODULE SHOULD WORK PROPERLY.

b. BEFORE AND AFTER FUNCTION TEST, THE DIFFERENCE OF CONSUMPTIVE CURRENT.SHOULD BE WITHIN 10%

NOTE (2) : a. THE MODULE SHOULD WORK PROPERLY.

b. THE MODLUE WON'T BE DEFORMATIVE, COLOR CHANGEABLE OR BROKEN.

c. THE MODULES CAN'T BE APART.

12.PRECAUTIONS FOR USE

12.1 Safety

(1) Do not swallow any liquid crystal, even if there is no proof that liquid crystal is poisonous.
(2) If the LCD panel breaks, be careful not to get liquid crystal to touch your skin.
(3) If skin is exposed to liquid crystal, wash the area thoroughly with alcohol or soap.

12.2 Storage Conditions

(1) Store the panel or module in a dark place where the temperature is 23±5°C and the humidity is below 50±20%RH.
(2) Store in anti-static electricity container.
(3) Store in clean environment, free from dust, active gas, and solvent.
(4) Do not place the module near organics solvents or corrosive gases.
(5) Do not crush, shake, or jolt the module.

12.3 Handling Precautions

(1) Avoid static electricity which can damage the CMOS LSI.
(2) The polarizing plate of the display is very fragile. So, please handle it very carefully.
(3) Do not give external shock.
(4) Do not apply excessive force on the surface.
(5) Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the Surface of plate.
(6) Do not use ketonics solvent & Aromatic solvent, use with a soft cloth soaked with a cleaning naphtha solvent.
(7) Do not operate it above the absolute maximum rating.
(8) Do not remove the panel or frame from the module.
(9) When the module is assembled, it should be attached to the system firmly,Be careful not to twist and bend the module.
(10) Wipe off water droplets or oil immediately . If you leave the droplets for a long time,staining and discoloration may occur.
(11) If the liquid crystal material leaks from the panel,it should be kept away from the eyes or mouth.In case of contact with hands,legs or clothes, it must be washed away thoroughly with soap.

12.4 Warranty

(1)Acceptance inspection period

The period is within one month after the arrival of contracted commodity at the buyer's factory site.

(2) Applicable warrant period

The period is within 12 months since the date of shipping out under normal using and storage conditions.