HY-LINE®
COMPUTER COMPONENTS

TFT-Display Datasheet

ONation
Model:OT080FSDDLV-H0

Brief spec.:

Main Feature	LandscapeType
	Transmissive

Active Screen Area	162 x 121.5 (mm)
Diagonal | Format	8 " | 4:3
Resolution	800 X 600
Colors	(6 Bit)
Backlight	LED White
Brightness	1000 cd/m²
LED Life Time	50K (h)
Interface	LVDS
Viewing Angle	70/70 L/R 50/70 up/down
Touchscreen	no
Power Supply	3.3 V (Typ.)
Module Outline	183.0 x 141.0x 10.3(mm)
Operation Temperature	-20... +70 °C
Storage Temperature	-30... +80 °C
Surface Treatment	Anti-glare

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

TFT COLOR LCD MODULE

MODEL: OT080FSDDLV-H0
(Complied with RoHS)

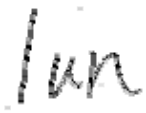
SVGA
LVDS interface (1port)

Version: P0.4

Customer : _____

Approved By : _____

Date: _____

ONATION		
APPROVAL	**CHECKER**	**PREPARE**
		

All information is subject to change without notice.
Please confirm the sales representative before starting to design your system

C O N T E N T S

1.RECORD OF REVISION

REV	DATE	PAGE	SUMMARY
0.1	2015.12.10	ALL	Preliminary specification was first issued.
0.2	2016.02.26	12	Modify 9.3 AC TIMING CHARATERISTICS
0.3	2016.05.04	2	Modify 3. OUTLINE DIMENSIONS
		6	Modify 7.2 BACKLIGHT UNIT
		7	Modify 8. OPTICAL CHARACTERISTICS
0.4	2016.08.08	2	Modify 3. OUTLINE DIMENSIONS

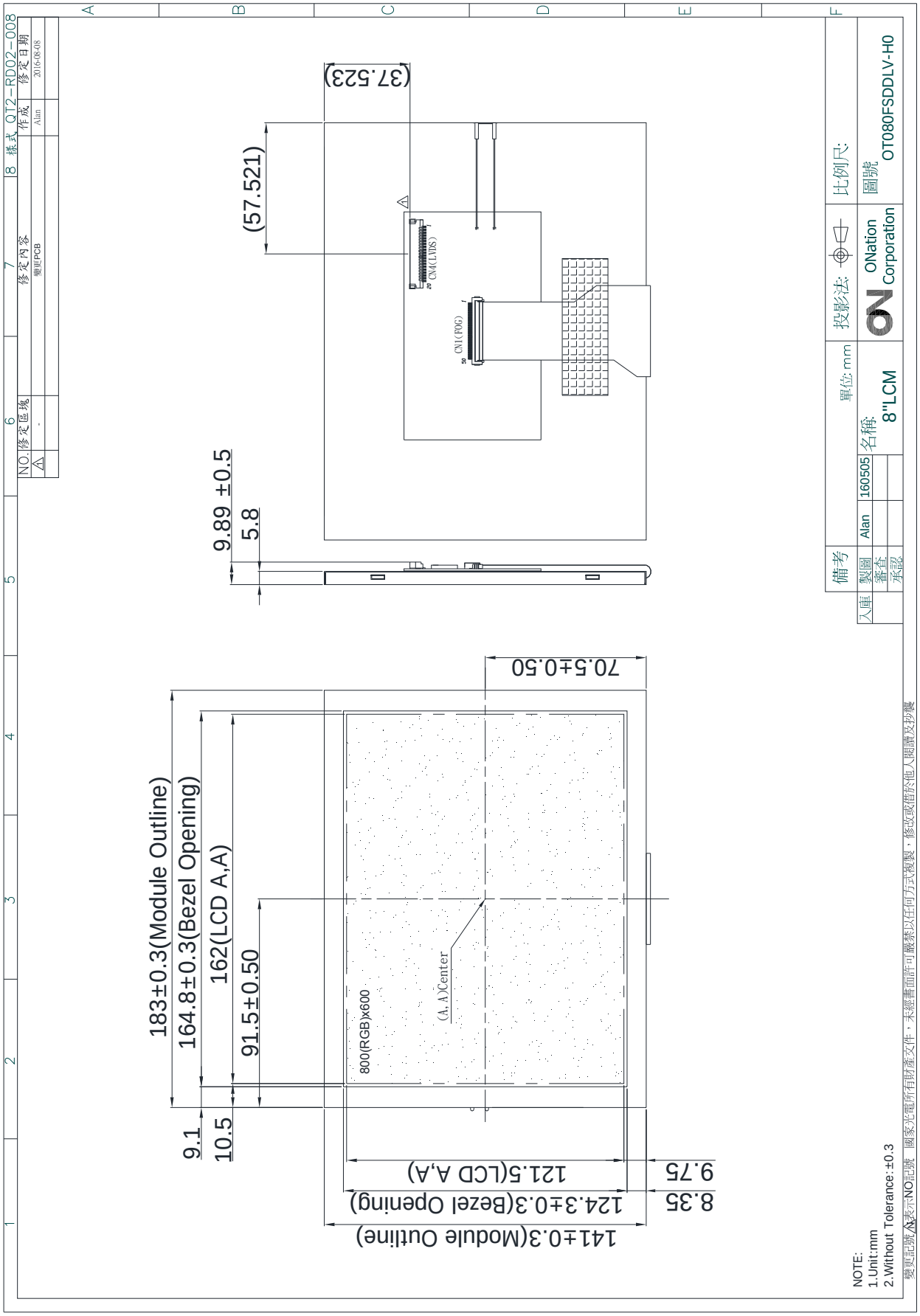
2.MECHANICAL SPECIFICATIONS

(1)	Number Of Dots (Dots)	800(R.G.B) X 600
(2)	Module Size(mm)	183.0(H) X 141.0(V) X 9.89(D)(Note 1)
(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 Horizontal：Right side 70°(typ.), Left side 70°(typ.) Vertical：Up side 50°(typ.), Down side 70°(typ.)
(8)	Gray Scale Inversion Direction	6 O'clock
(9)	Electrical Interface	LVDS Interface
(10)	Color Configuration	R.G.B Stripe
(11)	Module Weight(g)	(263±5%)

Note 1:Module include PCB and component.

Note 2:Viewing direction for best image quality is different from TFT definition, there is the 180 degrees shift.

3. OUTLINE DIMENSIONS



4. INTERFACE PIN CONNECTION

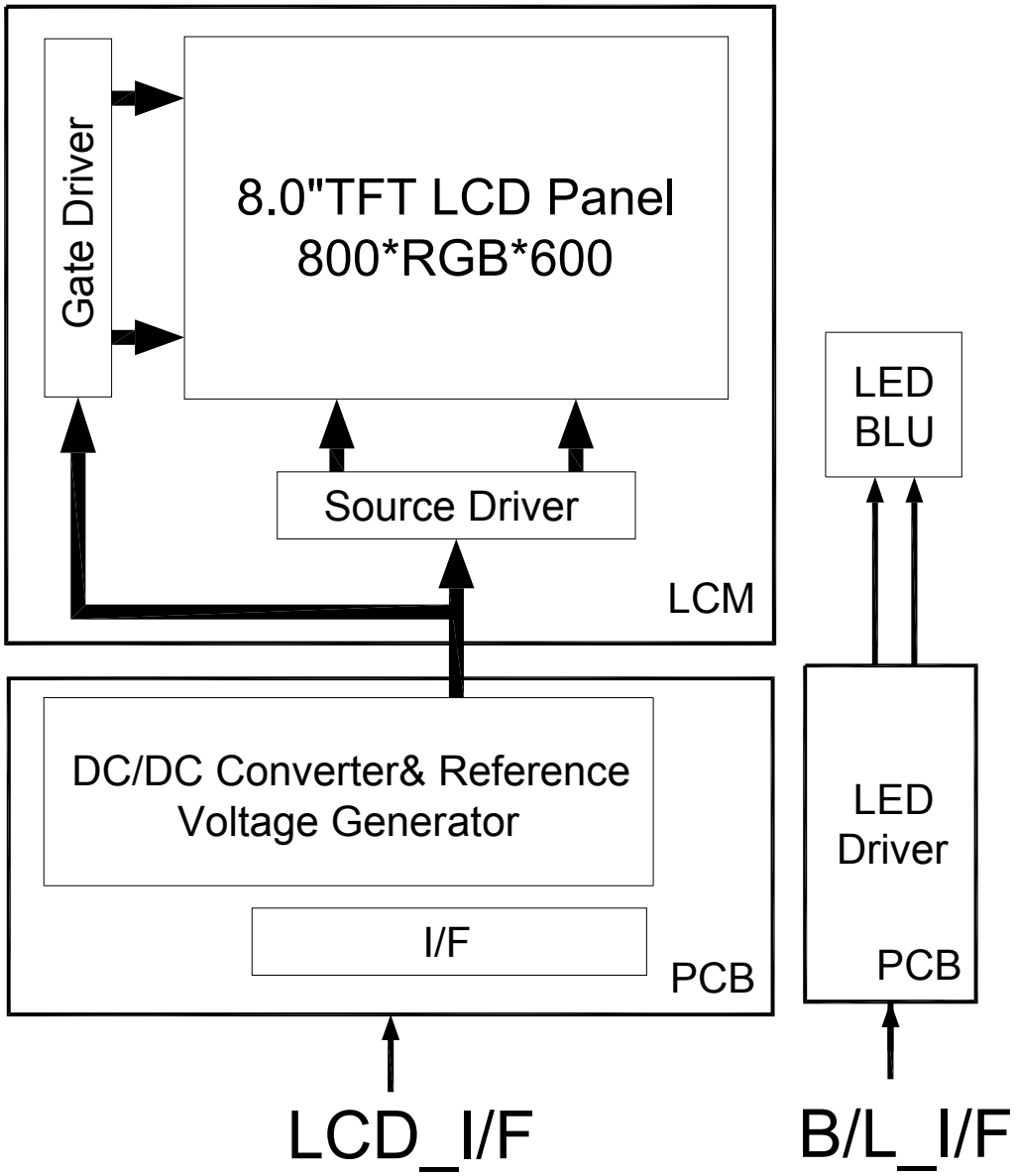
4.1 LCM PANEL DRIVING SECTION

CN4 Connector：Hirose DF14A-20P-1.25H(25) or Equivalen

Mating Connector：Hirose DF14-20S-1.25C or Equivalen

PIN NO.	SIGNAL	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	VLED	Power supply for LED circuit	
18	VLED	Power supply for LED circuit	
19	GND	Ground	
20	ADJ	Brightness control for LED B/L	

5. BLOCK DIAGRAM



6. ABSOLUTE MAXIMUM RATINGS

6.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	MAX.	UNIT	REMARK
Digital Supply Voltage	VCC	-0.5	+5.0	V	
Logic Input Voltage	VIN	-0.3	VCC+0.3	V	
Logic Output Voltage	VOUT	-0.3	VCC+0.3	V	

Note: The absolute maximum rating values of this product not allowed to be exceeded at any times. Should be module be used with any of absolute maximum ratings exceeded. The characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

6.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

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

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=40℃ & RH=90% ≦ 240Hrs.

7. ELECTRICAL CHARACTERISTICS

7.1 ELECTRICAL CHARACTERISTICS OF LCD AND B/L

Ta=25℃

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Power Voltage For LCD	VCC	3.0	3.3	3.6	V
	ICC	-	(200)	(250)	mA

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

7.2 BACKLIGHT UNIT

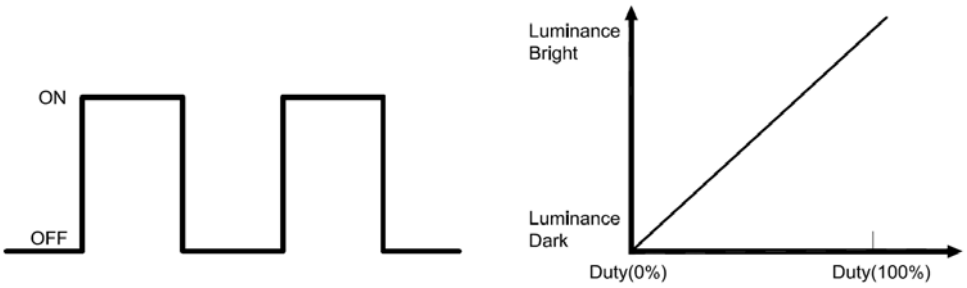
Ta=25℃

ITEM		SYMBOL	MIN.	TYP.	MAX.	UNIT
LED Driving Voltage		VLED	8.0	12.0	15.0	V
		ILED (VLED=12.0V)	-	680	820	mA
PWM Control Level	PWM High Level	-	3.0	3.3	3.6	V
	PWM Low Level	-	0	-	1.0	V
PWM Control Duty Ratio		-	0	-	100	%
PWM Control Frequency		f_{PWM}	100	-	2000	Hz
LED Life Time (For Reference Only)		Ta=25℃ 60-70%RH (Note 1)	-	(50000)	-	Hr

Note 1: The lifetime of LED is defined as the time when it continues to operate under the conditions at Ta= 25 ±2℃ and PWM=100% (LED forward current) until the brightness becomes ≦50% of its original value.

Note 2: ADJ signal Vp-p =3.0 ~ 3.6 V, operation frequency: 100Hz ~ 2000Hz:

PWM DIMMING DUTY



8. OPTICAL CHARACTERISTICS

Ta=25℃

ITEM		SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT	REMARK
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	x		(0.25)	(0.30)	(0.35)	-	Note 4
		y		(0.23)	(0.28)	(0.33)	-	
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	-		
Luminance		L	PWM=100%	900	1000	-	cd/m2	-
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

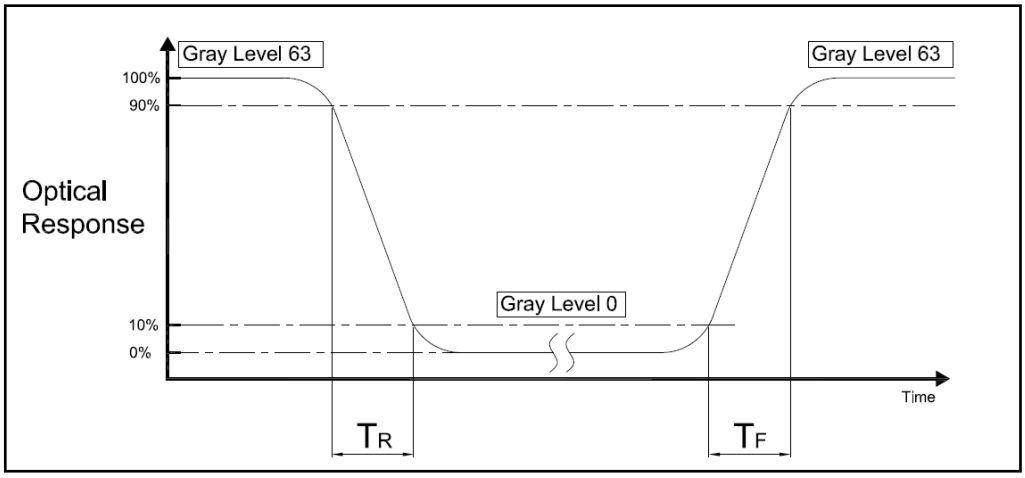
L63：Luminance of gray level 63

L0：Luminance of gray level 0

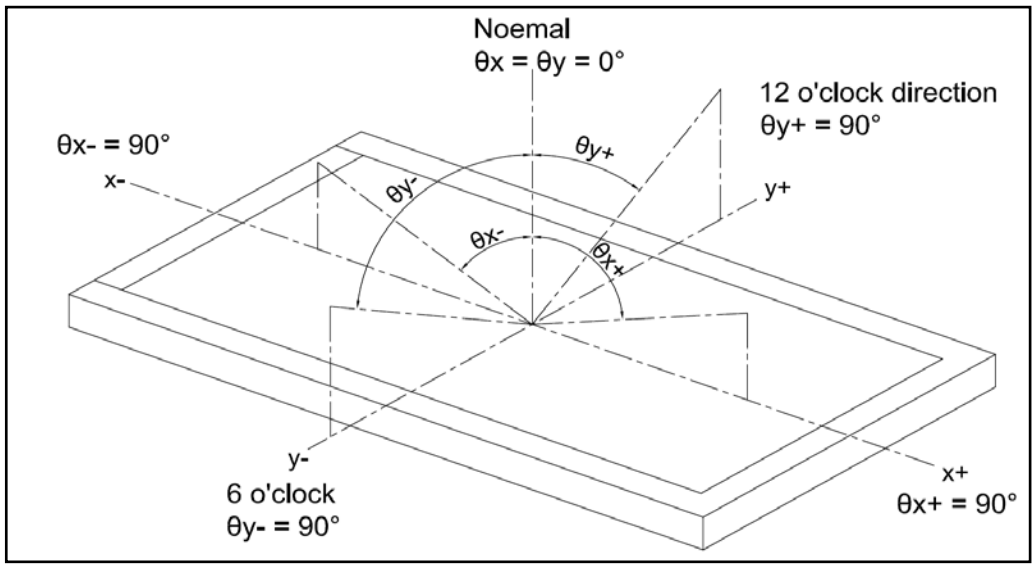
CR = CR(5)

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

Note 2：Definition of Response Time (TR.TF)

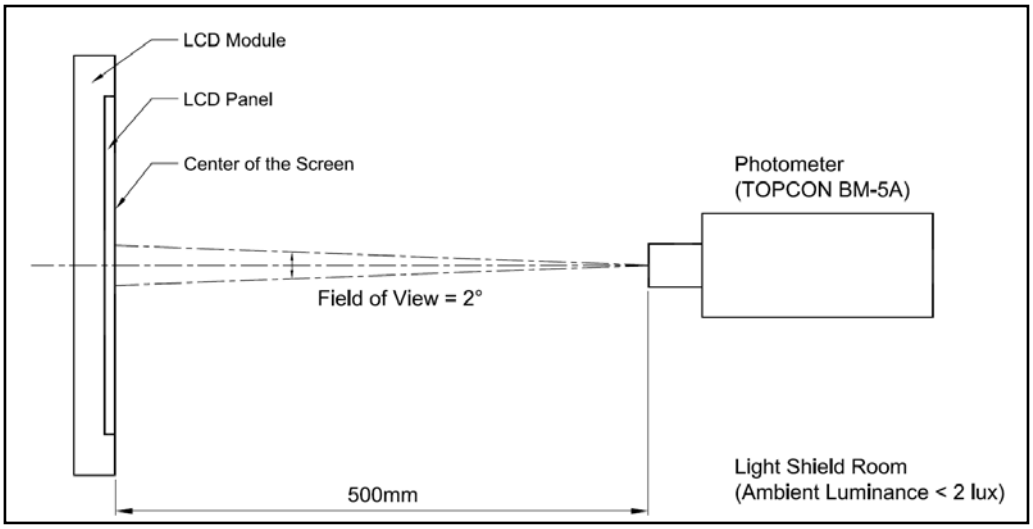


Note 3：Definition of Viewing Angle

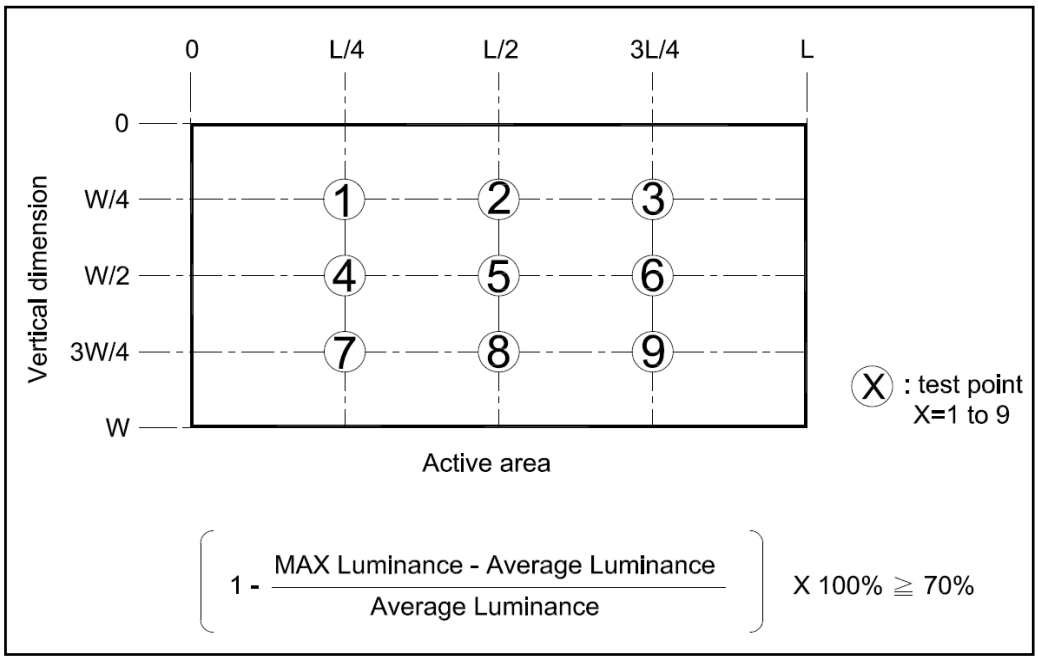


Note 4：Measurement Set-Up:

The LCD module should be stabilized at a given temperature for 20 minutes to avoid abrupt temperature change during measuring. In order stabilize the luminance, the measurement should be executed after lighting Backlight for 20 minutes in a windless room.

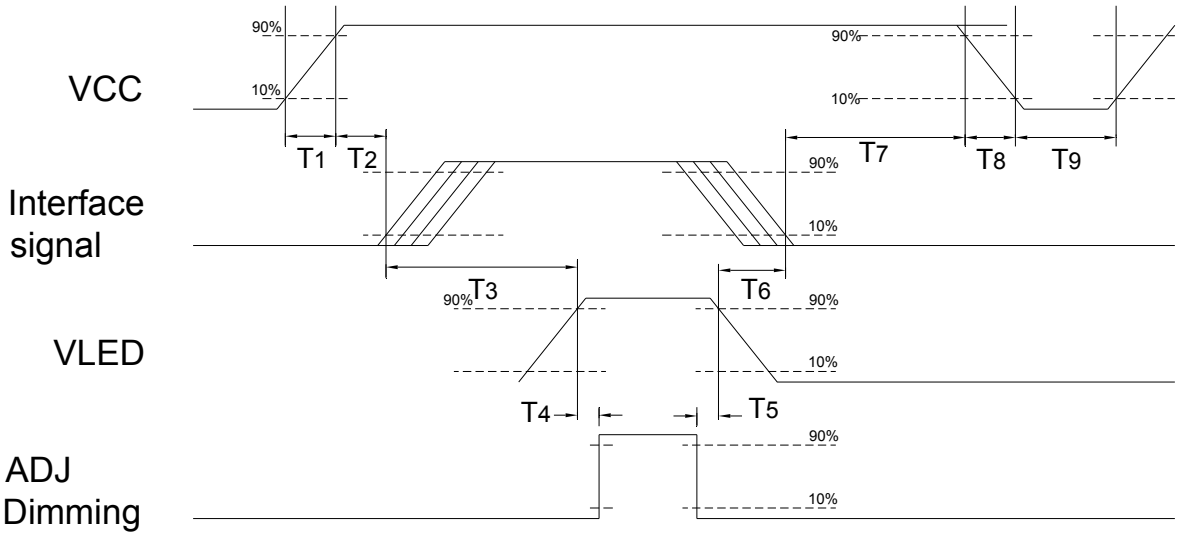


Note 5：


0
L/4
L/2
3L/4
L
0
W/4
W/2
3W/4
W
Vertical dimension
1
2
3
4
5
6
7
8
9
Active area
X : test point
X=1 to 9
1 - MAX Luminance - Average Luminance / Average Luminance
X 100% ≧ 70%

9. TIMING SPECIFICATIONS

9.1 POWER SIGNAL SEQUENCE

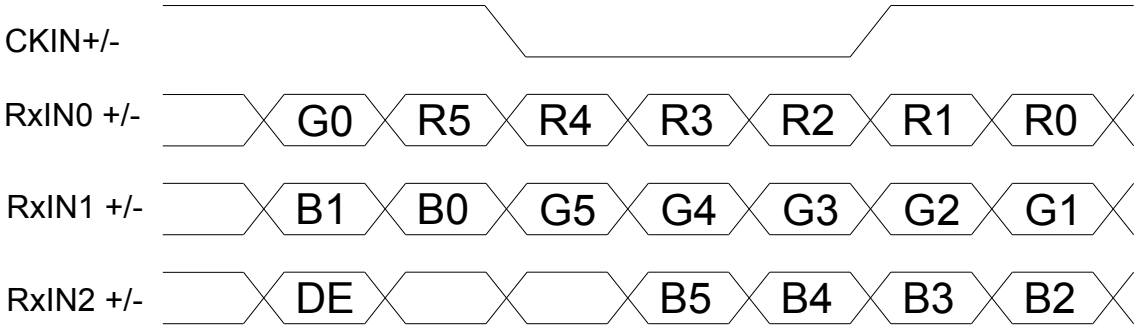


Power ON/OFF Sequence Timing

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

9.2 THE INPUT DATA FORMAT

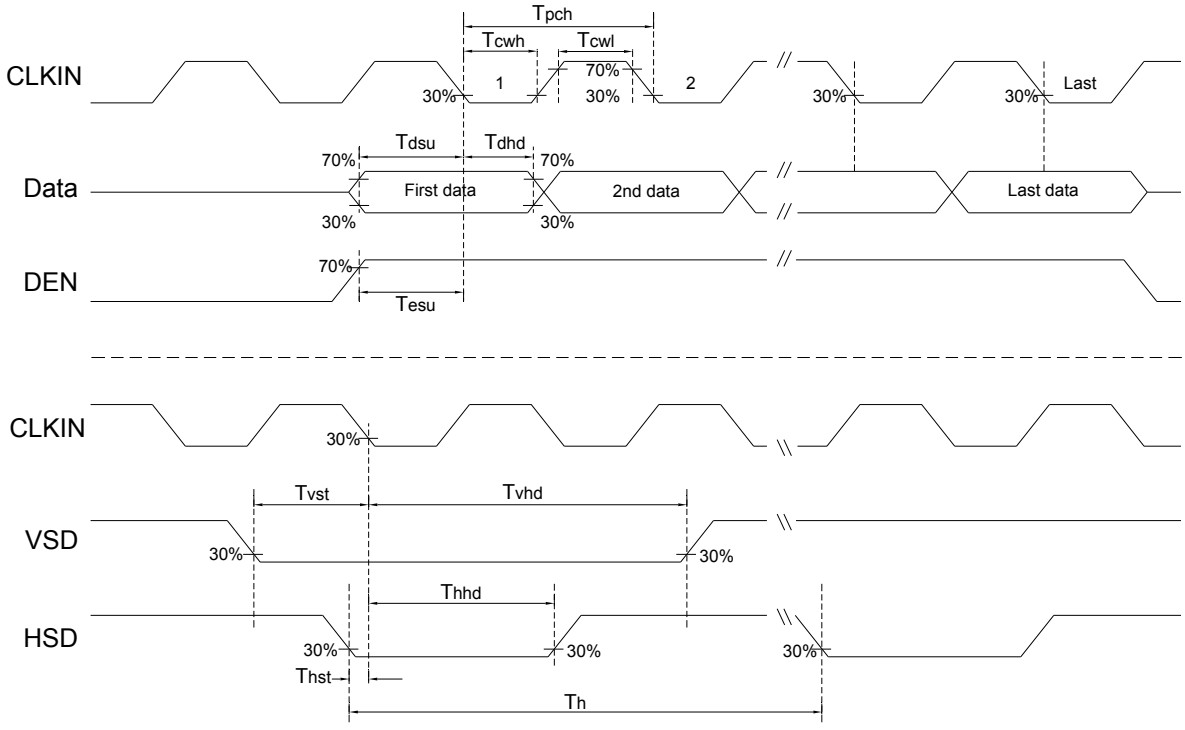


SIGNAL NAME	DESCRIPTION	REMARK
R5 R4 R3 R2 R1 R0	Red Data 5 Red Data 4 Red Data 3 Red Data 2 Red Data 1 Red Data 0	Red-pixel Data 6Bits LVDS input MSB：R5 ； LSB：R0
G5 G4 G3 G2 G1 G0	Green Data 5 Green Data 4 Green Data 3 Green Data 2 Green Data 1 Green Data 0	Green-pixel Data 6Bits LVDS input MSB：G5 ；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

9.3 AC TIMING CHARATERISTICS

PARAMETER	SYMBOL	SPECIFICATIONS			UNIT
		MIN.	TYP.	MAX.	
Horizontal Display Area	thd	-	800	-	DCLK
CLK Frequency	fclk	-	40	50	MHz
One Horizontal Line	th	862	1056	1200	DCLK
HS pulse width	thpw	1	-	40	DCLK
HS Back Porch(Blanking)	thb		46		DCLK
HS Front Porch	thfp	16	210	354	DCLK

PARAMETER	SYMBOL	SPECIFICATIONS			UNIT
		MIN.	TYP.	MAX.	
Vertical Display Area	tvd	-	600	-	TH
VS period time	tv	624	635	700	TH
VS pulse width	tvpw	1	-	20	TH
VS Back Porch(Blanking)	tvb	23	23	23	TH
VS Front Porch	tvfp	1	12	77	TH



10. RELIABILITY TEST

ENVIRONMENTAL TEST				
NO.	ITEM	CONDITIONS	TIME PERIOD	REMARK
1	High Temperature Storage	80℃	240HRS	
2	Low Temperature Storage	-30℃	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 (No condensation)	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.

Note 3: a. Before cosmetic and function test, The product must have enough recovery time, At least 24 hours at room temperature.

11. LCM INSPECTION STANDARD

Inspection specifications refer ONation Corporation LCM INSPECTION STANDARD Document.
Document Number ：QT3-QC-A-I003

12. PACKAGE INFORMATION

LCM MODEL	LCM QTY. IN THE BOX	INNER BOX SIZE (mm)	WEIGHT	REMARK
OT080FSDDLV-H0	50PCS/Box	530*430*220	TBD	

13.PRECAUTIONS FOR USE

13.1 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.

13.2 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.

13.3 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.

13.4 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.