HY-LINE®
COMPUTER COMPONENTS

TFT-Display Datasheet

ONation
Model:OT080FSDDDT-00

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
Brightness	320 cd/m²
LED Life Time	
Interface	TTL
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 11.8 (mm)
Operation Temperature	-20... +70 °C
Storage Temperature	-30... +80 °C
Surface Treatment	Anti-glare

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ONation Corporation

TFT COLOR LCD MODULE

MODEL: OT080FSDDDT-00

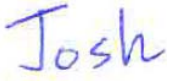
(Complied with RoHS)

SVGA

TTL interface

Version: P0.1

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

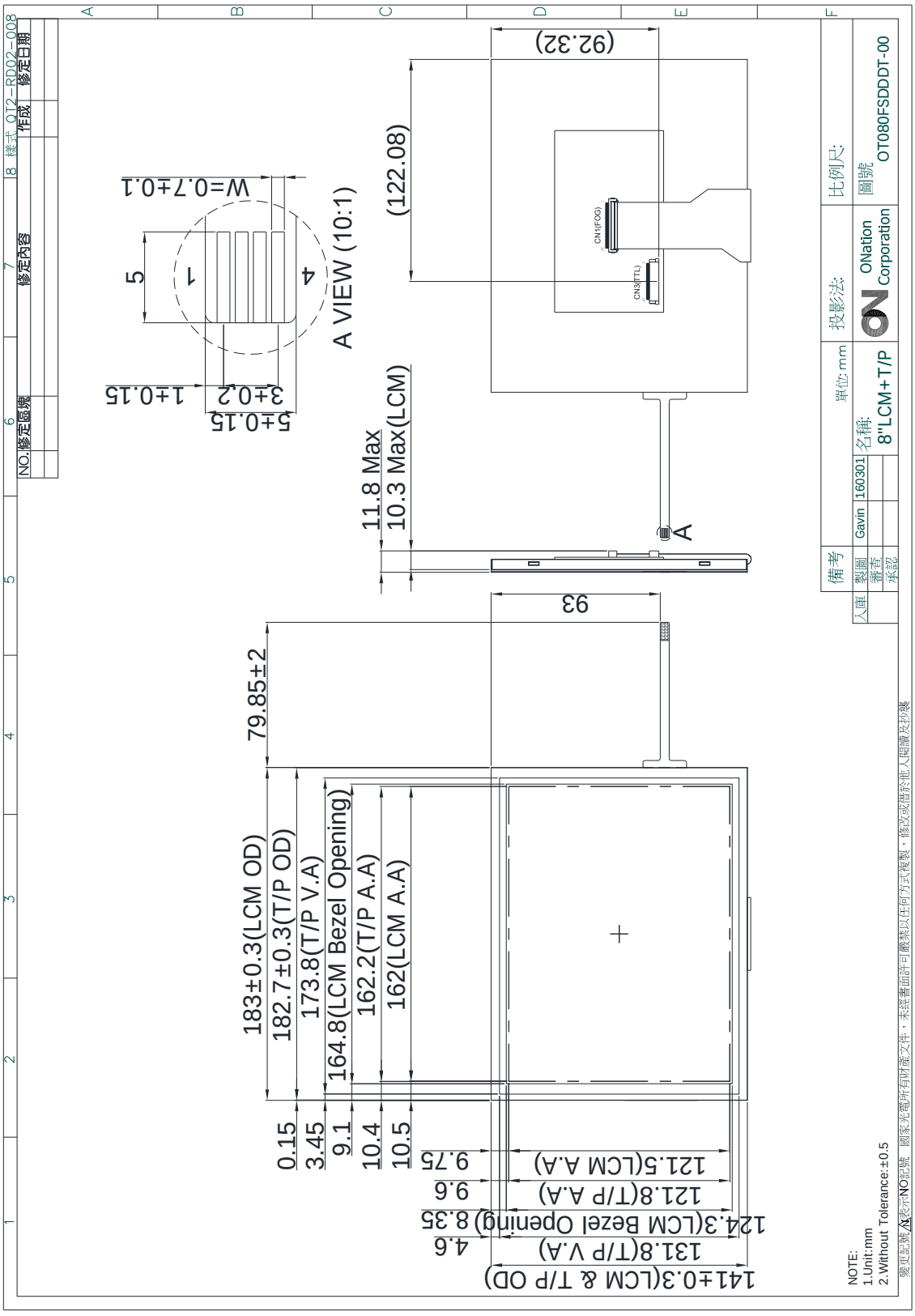
REV	DATE	PAGE	SUMMARY
0.1	2016.03.02	ALL	Preliminary specification was first issued

2.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 11.8(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)	Touch Panel Factory & Type	Four-Wire Analog Resistive,T/P Film Type：Anti-Glare
(7)	Backlight Color	White, LED
(8)	Viewing Direction = Gray Scale Inversion Direction	6 O'clock Horizontal：Right side 70°(typ.), Left side 70°(typ.) Vertical：Up side 50°(typ.), Down side 70°(typ.)
(9)	Electrical Interface	TTL Interface
(10)	Color Configuration	R.G.B Stripe
(11)	Module Weight(g)	(TBD)±5%

Note 1.(**)Module include PCB and component.

3. OUTLINE DIMENSIONS



4. INTERFACE PIN CONNECTION

4.1 LCM PANEL DRIVING SECTION

Connector：Hirose DF14A-20P-1.25H or Equivalent

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

PIN NO.	SIGNAL	FUNCTION
1	GND	GROUND
2	GND	GROUND
3	ADJ	Brightness Control For LED B/L
4	VLED	POWER SUPPLY FOR LED DRIVER CIRCUIT
5	VLED	POWER SUPPLY FOR LED DRIVER CIRCUIT
6	VLED	POWER SUPPLY FOR LED DRIVER CIRCUIT
7	VCC	POWER SUPPLY FOR DIGITAL CIRCUIT
8	VCC	POWER SUPPLY FOR DIGITAL CIRCUIT
9	DE	DATA ENABLE
10	GND	GROUND
11	GND	GROUND
12	GND	GROUND
13	B5	BLUE DATA SIGNAL(MSB)
14	B4	BLUE DATA SIGNAL
15	B3	BLUE DATA SIGNAL
16	GND	GROUND
17	B2	BLUE DATA SIGNAL
18	B1	BLUE DATA SIGNAL
19	B0	BLUE DATA SIGNAL(LSB)
20	GND	GROUND
21	G5	GREEN DATA SIGNAL(MSB)
22	G4	GREEN DATA SIGNAL
23	G3	GREEN DATA SIGNAL
24	GND	GROUND
25	G2	GREEN DATA SIGNAL
26	G1	GREEN DATA SIGNAL
27	G0	GREEN DATA SIGNAL(LSB)
28	GND	GROUND
29	R5	RED DATA SIGNA(MSB)
30	R4	RED DATA SIGNA
31	R3	RED DATA SIGNA
32	GND	GROUND
33	R2	RED DATA SIGNA

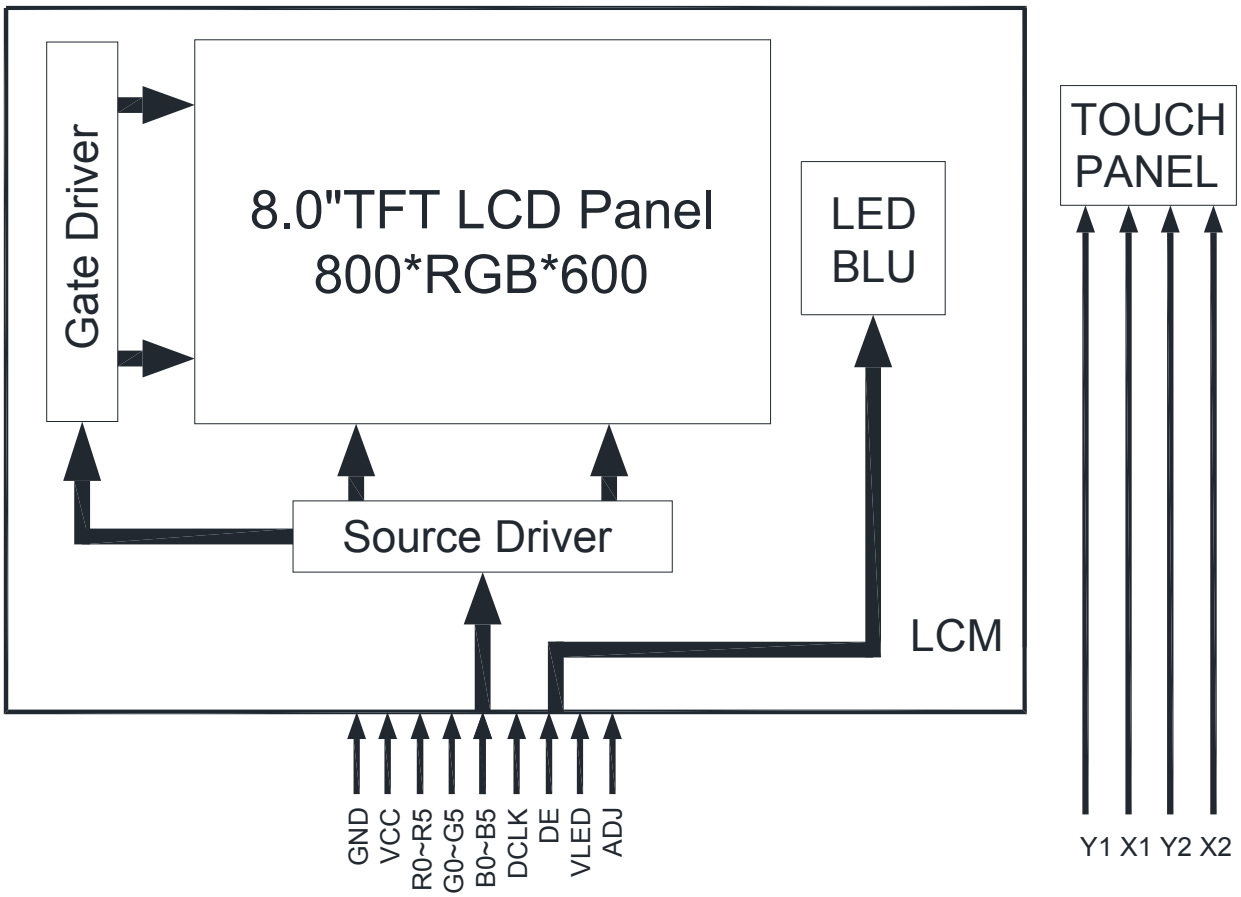
PIN NO.	SIGNAL	FUNCTION
34	R1	RED DATA SIGNA
35	R0	RED DATA SIGNA(LSB)
36	GND	GROUND
37	GND	GROUND
38	DCLK	CLOCK SIGNALS
39	GND	GROUND
40	GND	GROUND

4.2 TOUCH PANEL PIN

FPC,4Pin,Pitch=1.0mm

PIN NO.	SIGNAL	FUNCTION
1	Y1	Touch Panel Signal (Y-TOP)
2	X1	Touch Panel Signal (X-Right)
3	Y2	Touch Panel Signal (Y-Bottom)
4	X2	Touch Panel Signal (X-Left)

5. BLOCK DIAGRAM



6. ABSOLUTE MAXIMUM RATINGS

6.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	MAX.	UNIT	REMARK
Supply Voltage	VCC	-0.5	+5.0	V	
	VIN	-0.3	VCC+0.3	V	
	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 1,2,3
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 : Storage Ta=35℃ & RH=90% ≦ 240Hrs.

7. ELECTRICAL CHARACTERISTICS

7.1 ELECTRICAL CHARACTERISTICS OF LCD

Ta=25℃

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Power Voltage For LCD	VCC	3.0	3.3	3.6	V	
	ICC	-	200	250	mA	Note 1

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

7.2 BACKLIGHT UNITS

Ta=25℃

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
LED Driving Voltage	VLED	4.5	5.0	5.5	V
	ILED (VLED=5V)	-	(520)	(600)	mA
ADJ Input Voltage	VIH	1.4	-	-	V
	VIL		--	0.4	V
ADJ Frequency	-	20	-	200	KHz

8. OPTICAL CHARACTERISTICS

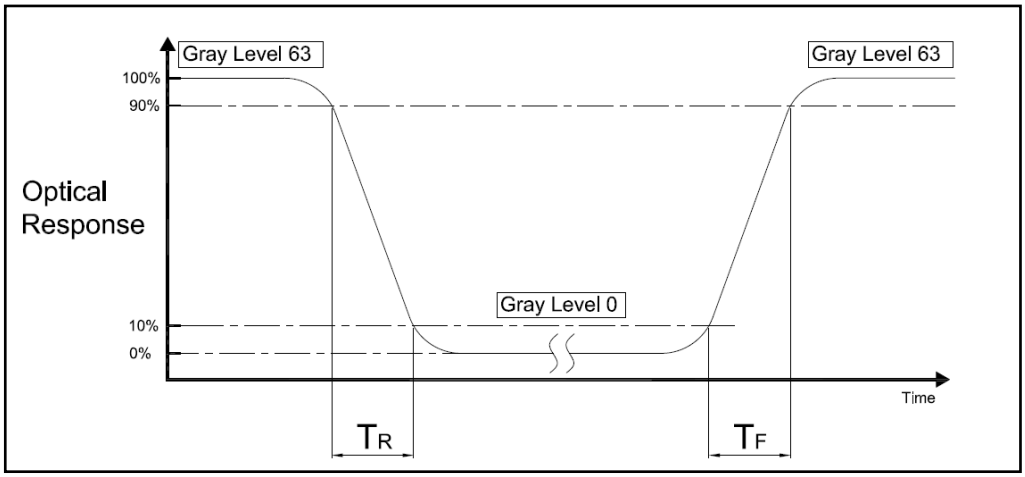
Ta=25℃

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		0.26	0.31	0.36	-	Note 4
		y		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	-		
Luminance		L	PWM=100%	280	320	-	cd/m2	
Luminance Uniformity		YU		70	75	-	%	Note 5

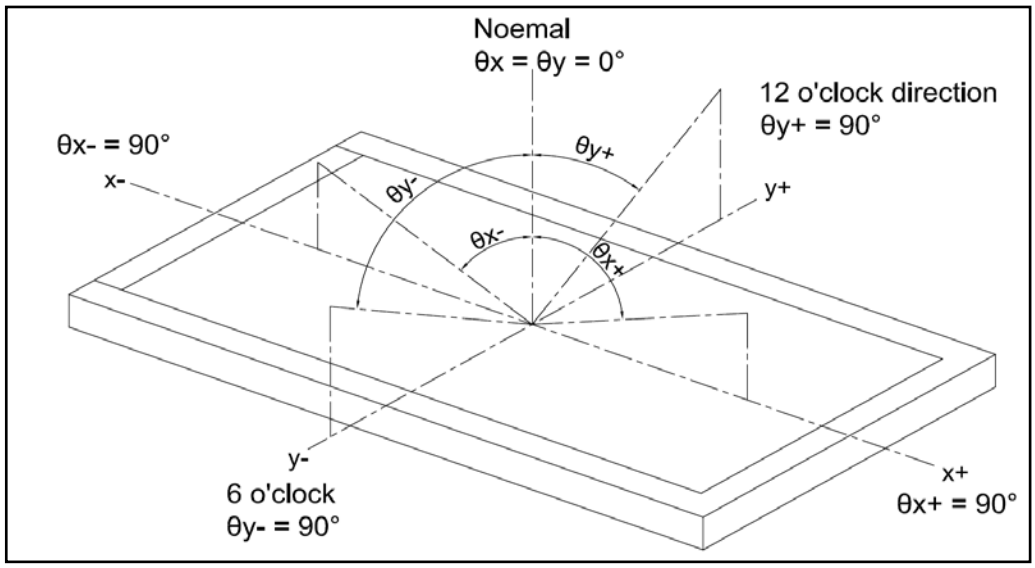
Note 1：Definition of Contrast Ratio (CR)：

The contrast ratio can be calculated by the following expression.
Contrast Ratio (CR) = L63/L0
L63：Luminance of gray level 63
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)

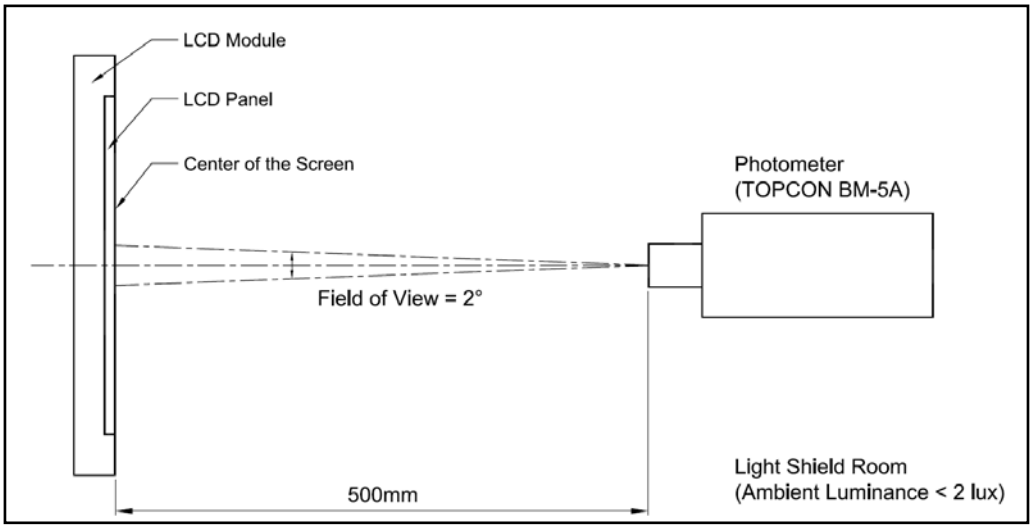


Note 3：Definition of Viewing Angle

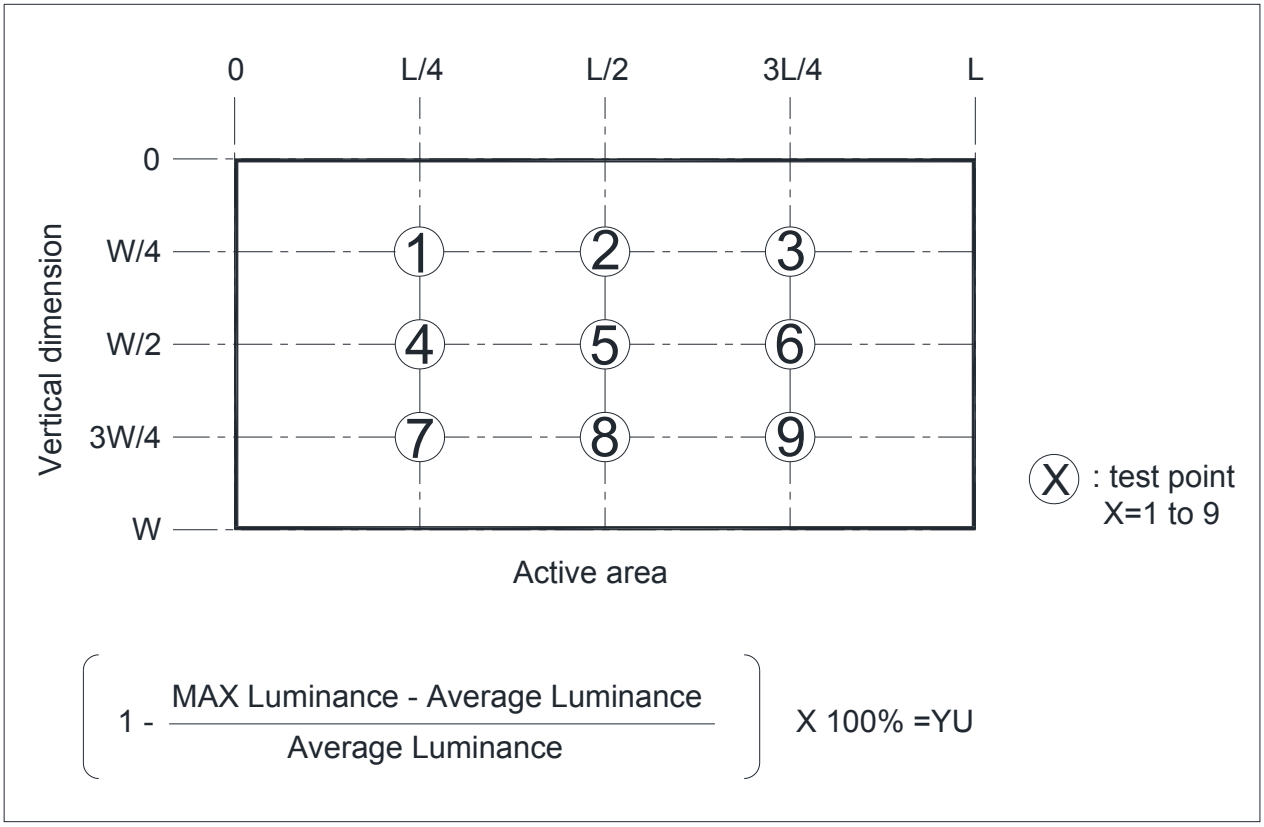


Note 4：Measurement Set-Up:

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.



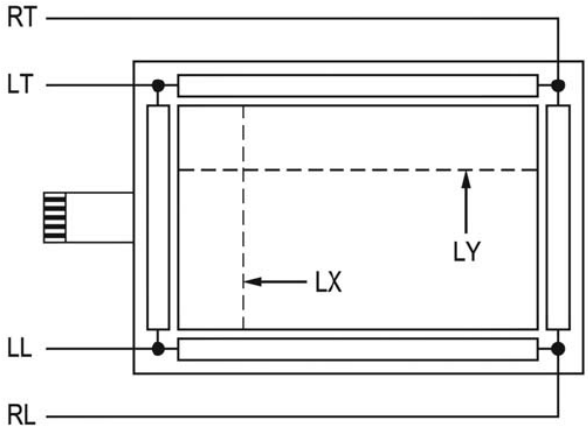
Note 5：


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% =YU

9. TOUCH PANEL SPECIFICATIONS

9.1 ELECTRICAL CHARACTERISTICS

ITEM		SPECIFICATIONS
(1)	Supply Voltage	DC 5V
(2)	Loop Resistance	X：200~900Ω, Y：200~900Ω
(3)	Linearity	X≦1.5%, Y≦1.5%
(4)	Response	≦10ms
(5)	Insulation	≧20MΩ/DC 25V
(6)	Endurance	No acting damage at DC 50V/60sec.



Circuit Resistance X= short RT and RL, short LT and LL, measure the resistance between RT and LT

Circuit Resistance Y= short RT and LT, short RL and LL, measure the resistance between RT and RL

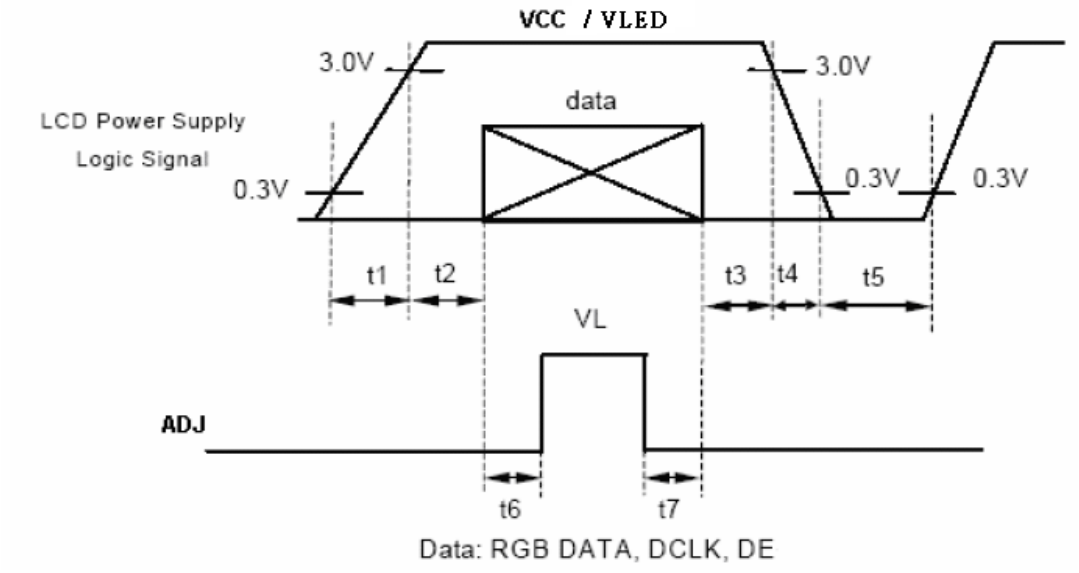
9.2 MECHANICAL CHARACTERISTICS

ITEM		SPECIFICATIONS	REMARK
(1)	Active Force	≦45g~110g	Stylus or Finger or Similar
(2)	Surface Hardness	≧3H	Meets pencil hardness 3H per ASTM

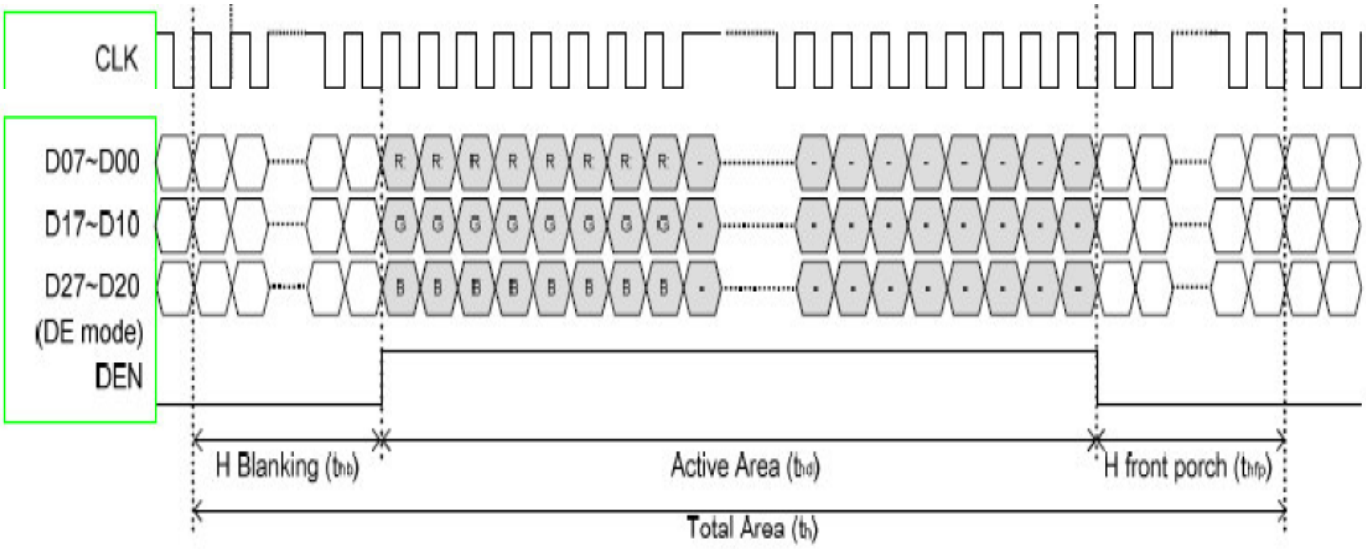
10. TIMING SPECIFICATIONS

10.1 POWER SUPPLY VOLTAGE SEQUENCE

Power Signal sequence:
t1 ≤10ms ; 1 sec≤ t5
200ms≤ t2 ; 200ms ≤t6
0<t3 ≤50ms ; 200ms≤ t7
0<t4 ≤10ms

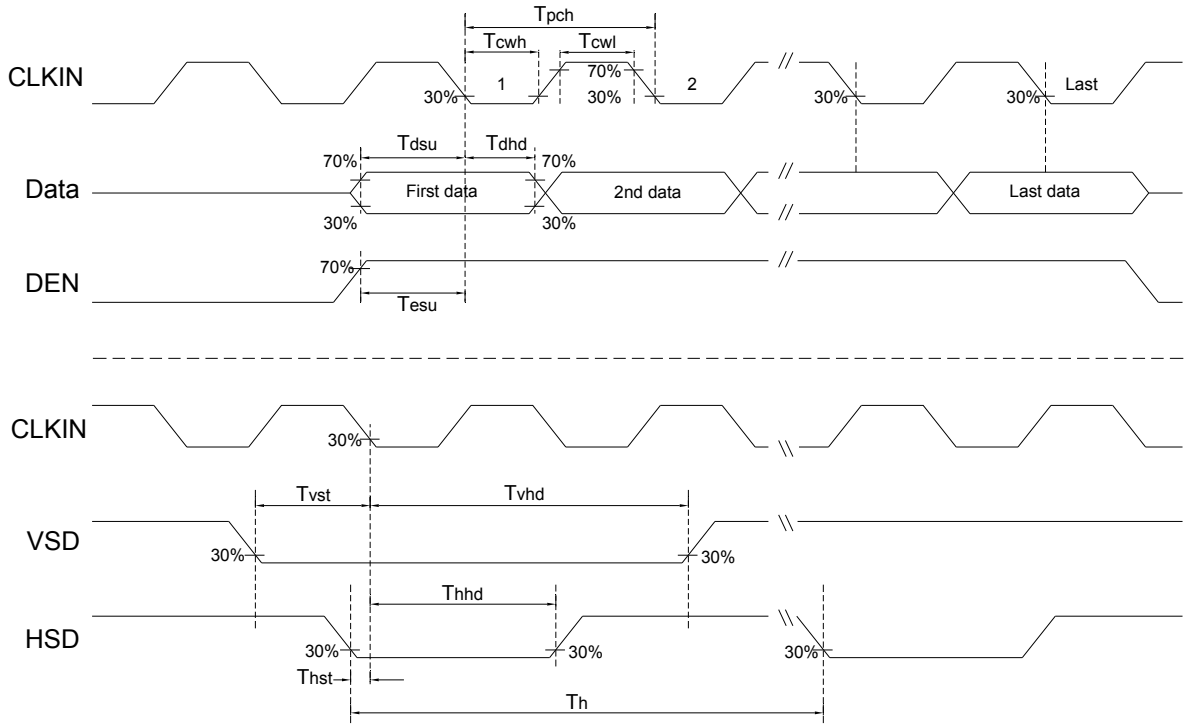


10.2 THE INPUT DATA FORMAT



10.3 AC TIMING CHARATERISTICS

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
HS setup time	Thst	8	-	-	ns	
HS hold time	Thhd	8	-	-	ns	
VS setup time	Tvst	8	-	-	ns	
VS hold time	Tvhd	8	-	-	ns	
Data setup time	Tdsu	8	-	-	ns	
Data hold time	Tdhd	8	-	-	ns	
DE setup time	Tesu	8	-	-	ns	
DE hold time	Tehd	8	-	-	ns	
VDD Power On Slew rate	TPOR	-	-	20	ms	
RSTB pulse width	TRst	10	-	-	us	
CLKIN cycle time	Tcoh	20	-	-	ns	
CLKIN pulse duty	Tcwh	40	50	60	%	
Output stable time	Tsst	-	-	6	us	



11. RELIABILITY TEST

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 Storage	35℃ 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 2 hours at room temperature.

12. LCM INSPECTION STANDARD

Inspection specifications refer ONation Corporation LCM INSPECTION STANDARD Document.
Document Number ：TBD

13. PACKAGE INFORMATION

LCM Model	LCM Qty. in the box	Inner Box Size (mm)	Weight	REMARK
OT080FSDDDT-00	TBD	TBD	TBD	

14.PRECAUTIONS FOR USE

14.1 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.

14.2 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.

14.3 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.

14.4 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.