CONFIDENTIAL(B)

SPECIFICATION

OF

LIQUID CRYSTAL DISPLAY MODULE

UNITED RADIANT TECHNOLOGY CORP. 光聯科技 Oct-04-2023 品管部 QC DEPT.

CUSTOMER : URT-STD

Model No. : UMOH-9316MD-3T(REV1)

Model version : 0

Document Revision : 4

CUSTOMER APPROVED SIGNATURE			

This specification need to be signed by purchaser or customer as a specification of products production and delivery from URT. Without signature of this specification , any purchase order for this model no. will be treated and considered that this specification is automatically acknowledged and accepted by purchaser or customer.

U.R.T. UNITED RADIANT TECHNOLOGY CORPORATION

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This document has been signed by Digital Signature Approval System

Revision record

Document Revision	Model No. Version No.	Description	Revision by
0	UMOH-9316MD-T Version No. 0	4.3” TFT LCD, 480*800.	C.K.T Chen Y.C. Lin 11-May-2018
1	UMOH-9316MD-1T Version No. 0	1. Change to landscape orientation. 2. Modify the module number from UMOH-9316MD-T to UMOH-9316MD-1T.	Micky Kao Y.C. Lin 27-Sep-2018
2	UMOH-9316MD-1T Version No. 1	Change CTP controller to FT5436.	Micky Kao Y.C. Lin 16-Oct-2018
3	UMOH-9316MD-3T Version No. 0	1. Remove the capacitive touch panel. 2. Modify the module number from UMOH-9316MD-1T to UMOH-9316MD-3T.	Micky Kao Y.C. Lin 28-Jan-2019
4	UMOH-9316MD-3T(REV1) Version No. 0	1. Change the TFT LCD driver IC. 2. Modify the operating and storage temperature range. 3. Modify power supply current. 4. Modify the timing characteristics. 5. Modify the module number from UMOH-9316MD-3T to UMOH-9316MD-3T(REV1).	Hugh Ko Y.C. Lin 04-Oct-2023

CONTENTS:

No.	Item	Page
1	**BASIC SPECIFICATION** 1.1 Mechanical Specification 1.2 Display Specification 1.3 Outline Dimension 1.4 Block Diagram 1.5 Interface Pin	 4 4 5 6 7
2	**ELECTRICAL CHARACTERISTICS** 2.1 Absolute Maximum Ratings 2.2 DC Characteristics 2.3 Back-light only Specification 2.4 Power ON/OFF Sequence 2.5 Data Input Format 2.6 Timing Characteristics 2.7 AC Characteristics	 8 9 10 11 12 13 14~17
3	**OPTICAL CHARACTERISTICS** 3.1 Characteristics 3.2 Definition of Optical Characteristics	 18 19~20
4	**RELIABILITY**	21
5	**PRODUCT HANDING AND APPLICATION**	22
6	**DATECODE**	23
7	**LOT NO**	24
8	**INSPECTION STANDARD**	25~28

1. BASIC SPECIFICATION

1.1 Mechanical specifications

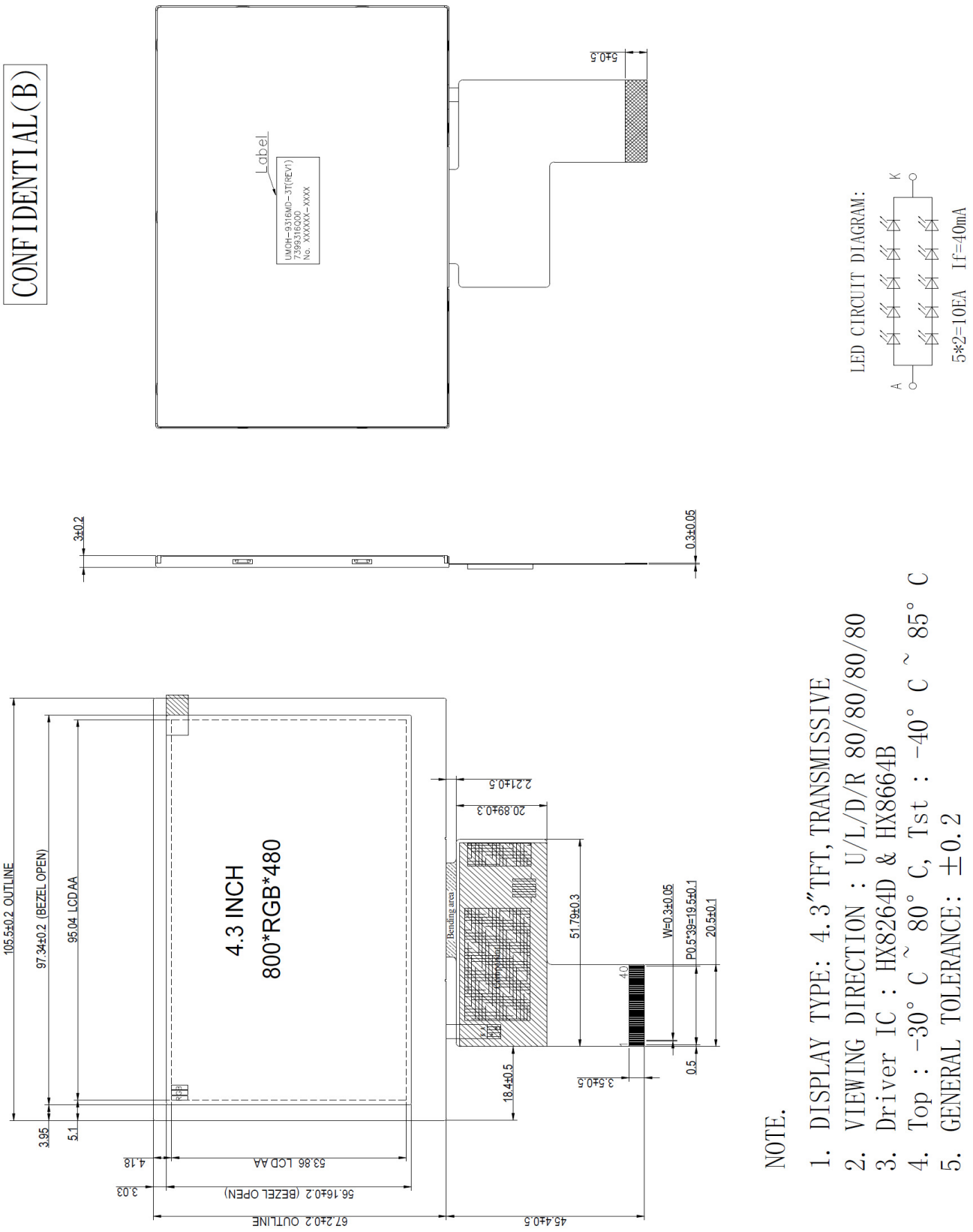
Items	Nominal Dimension	Unit
Active screen size	4.3” diagonal	--
Dot Matrix	800x RGB x480	Pixel
Module Size (W x H x T)	105.5 x 67.2 x 3.0	mm.
Active Area (W x H)	95.04 x 53.86	mm.
Pixel Size (W×H)	0.1188 x 0.1122	mm.
Color depth	16.7M	color
Interface	24-bit parallel RGB interface	--
Driving IC	HX8264D+HX8664B	--
Module weight	TBD	g

1.2 Display specification

LCM

Display	Descriptions	Note
LCD Type	IPS	--
LCD Mode	Normal Black	--
Polarizer Mode	Transmissive	--
Color filter array	RGB vertical stripe	--
Backlight Type	10 White LEDS	--
Viewing Direction	ALL	--

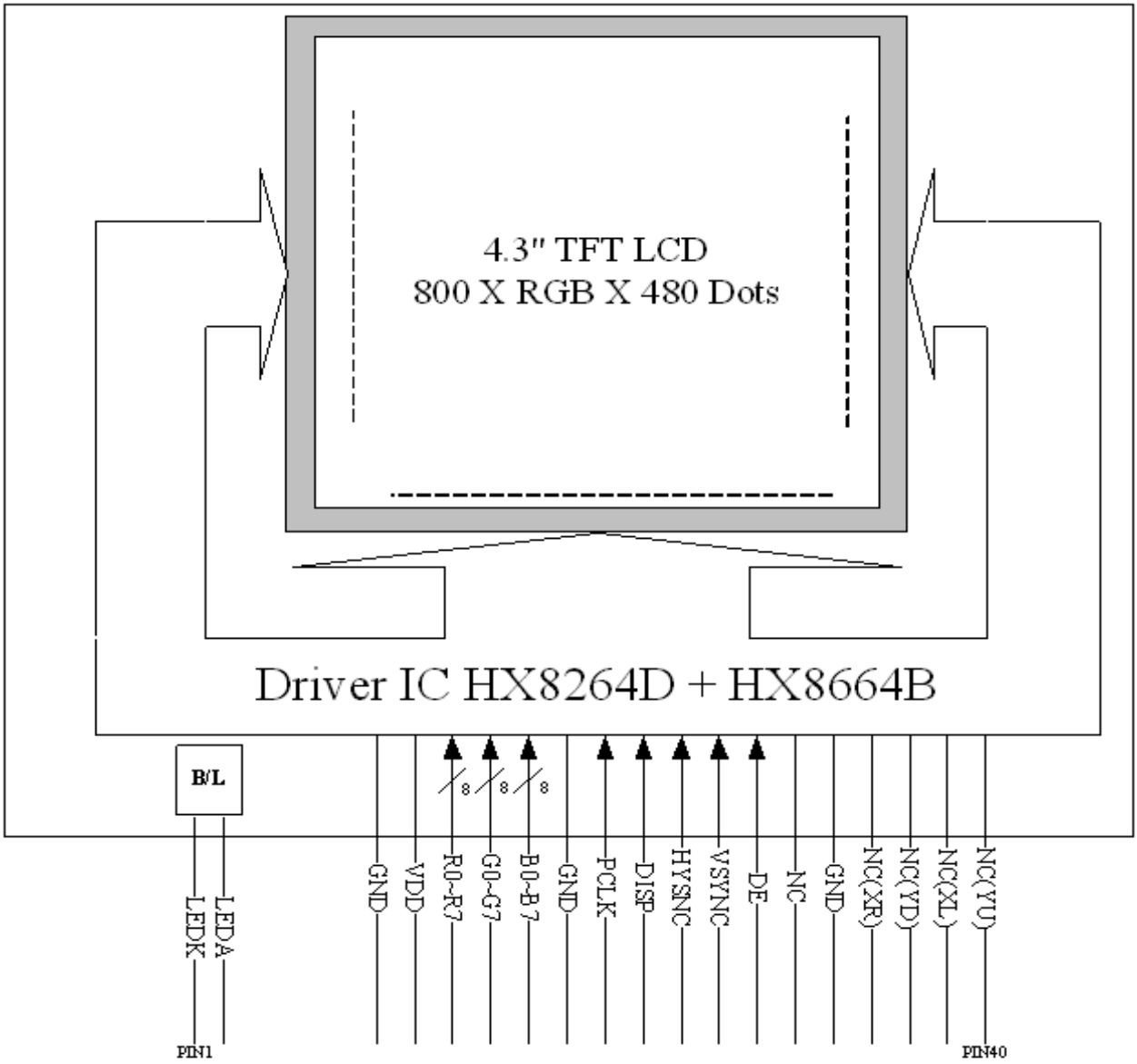
1.3 Outline dimension



NOTE.

1. DISPLAY TYPE: 4.3"TFT, TRANSMISSIVE
2. VIEWING DIRECTION : U/L/D/R 80/80/80/80
3. Driver IC : HX8264D & HX8664B
4. Top : -30° C ~ 80° C, Tst : -40° C ~ 85° C
5. GENERAL TOLERANCE: ±0.2

1.4 Block diagram:



1.5 Interface Pin Connection:

Pin No.	Pin Symbol	I/O	Description
1	LEDK	P	Ground pin for backlight.(Cathode)
2	LEDA	P	Power supply input pin for backlight.(Anode)
3	GND	P	Ground.
4	VDD	P	Power supply.
5~12	R0-R7	I	Red data input pin.
13~20	G0-G7	I	Green data input pin.
21~28	B0-B7	I	Blue data input pin.
29	GND	P	Ground.
30	PCLK	I	Pixel clock input pin.
31	DISP	I	Display ON/OFF.
32	HSYNC	I	Horizontal sync signal.
33	VSYNC	I	Vertical sync signal.
34	DE	I	Data enable input pin. Active high to enable the input data bus.
35	NC	-	No connection.
36	GND	P	Power ground.
37	NC(XR)	-	No connection.
38	NC(YD)	-	No connection.
39	NC(XL)	-	No connection.
40	NC(YU)	-	No connection.

2. ELECTRICAL CHARACTERISTICS

2.1 Absolute Maximum Ratings

Items	Symbol	Min.	Max.	Unit
Power supply voltage	VDD	-0.3	4.6	V
Logic Input voltage	Vin	GND	VDD	V
Operate temperature range	TOP	-30	80	℃
Storage temperature range	TST	-40	85	℃
Storage humidity	HD	20	90	%RH

*Note1 :

The operating temperature is for product's functionality, please pay attention to human injury when using the product under extreme temperature.

2.2 DC Characteristics

T_a= 25℃

Items	Symbol	Min.	Typ.	Max.	Unit	Condition
Power supply voltage	VDD	2.5	3.3	3.6	V	-
Logic Input Voltage	V_{IL}(LCM)	GND	-	0.3VDD	V	L level
	V_{IH}(LCM)	0.7VDD	-	VDD	V	H level
Current consumption	I_{VDD}(LCM)	-	130	260	mA	Note 1

*Note1 :

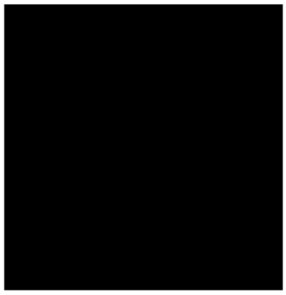
Measuring Condition:

Standard Value Max.

Ta = 25°C

VDD -GND = 3.3V

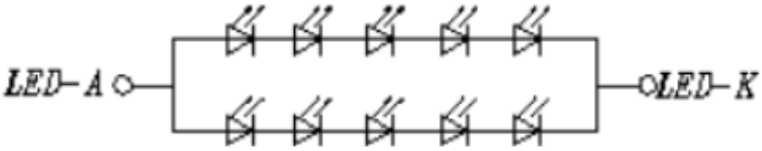
Display Pattern



0 gray black pattern

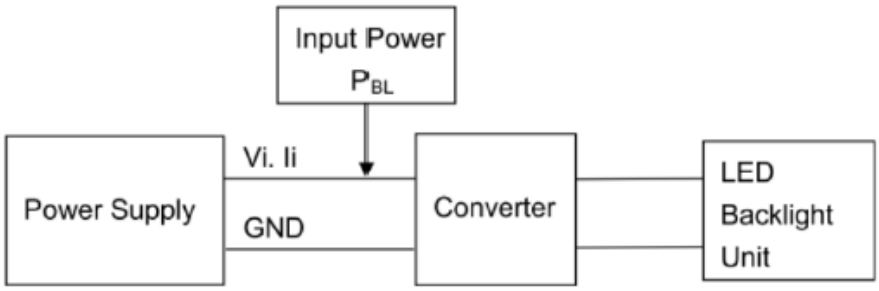
2.3 Back-light only Specification :

ITEMS	SYMBOL	MIN	TYP	MAX	unit	Test Condition	NOTE
Supply Current	If	-	40	-	mA	Ta=25℃	Note2
Supply Voltage	Vf	14	16	18	V	Ta=25℃，If=20mA	Note1
Half-Life Time	Lf	-	20000	-	hrs	Ta=25℃，If=20mA	Note3,4



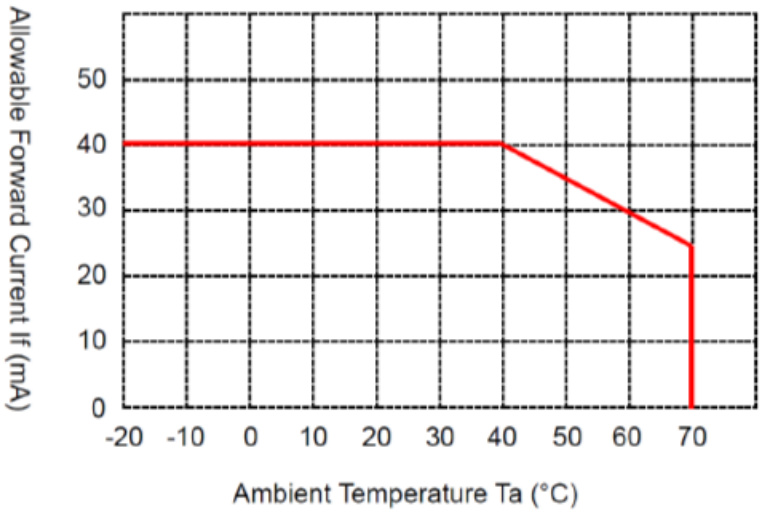
Note 1: The LED Supply Voltage is defined by the number of LED at Ta=25℃ and If =40mA.

Note 2: LED current is measured by utilizing a high frequency current meter as shown below:



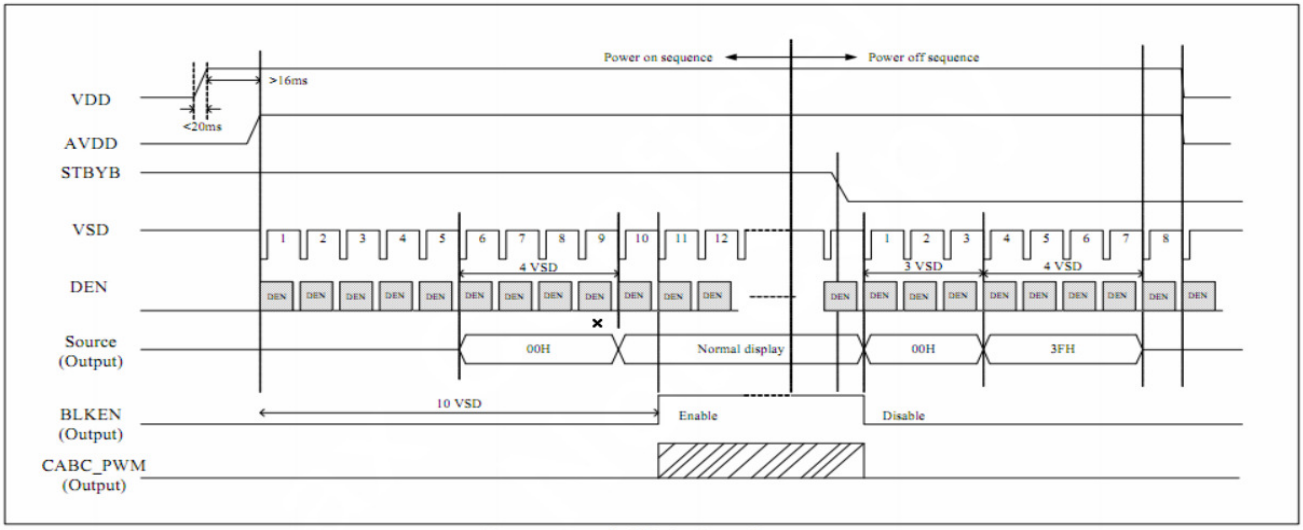
Note 3: The "LED life time" is defined as the module brightness decrease to 50% original brightness at Ta=25℃ and If =40mA. The LED lifetime could be decreased if operating If is larger than 40mA.

Note 4: LED light bar circuit:



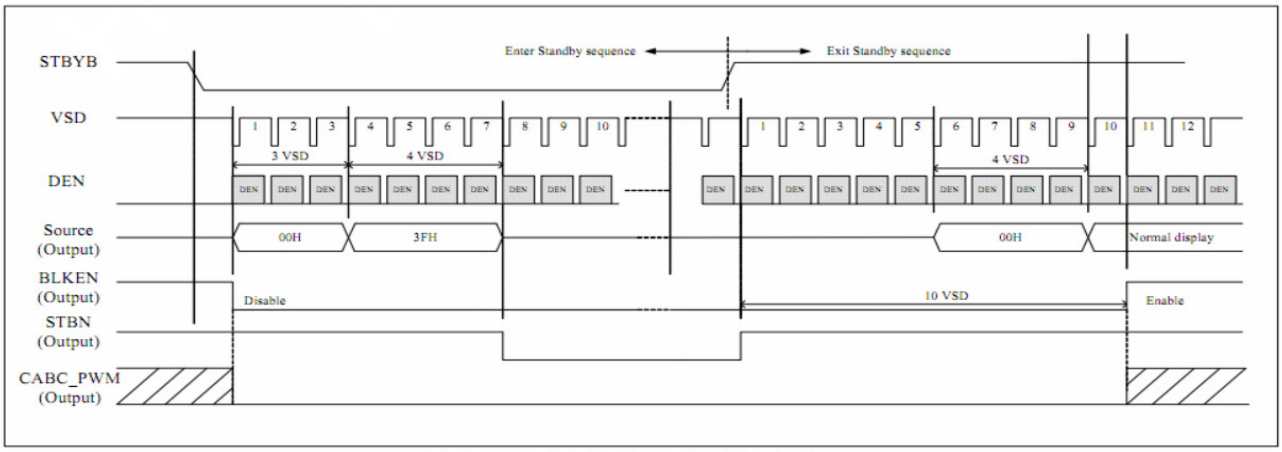
2.4 Power ON/OFF Sequence

HX8264-D has a power on/off sequence control function. In order to prevent IC from power on reset fail, the rising time (TPOR) of the digital power supply VDD should be maintained within the given specifications. Please refer to "AC Characteristics" for more detail on timing.



Power on/off Timing Sequence

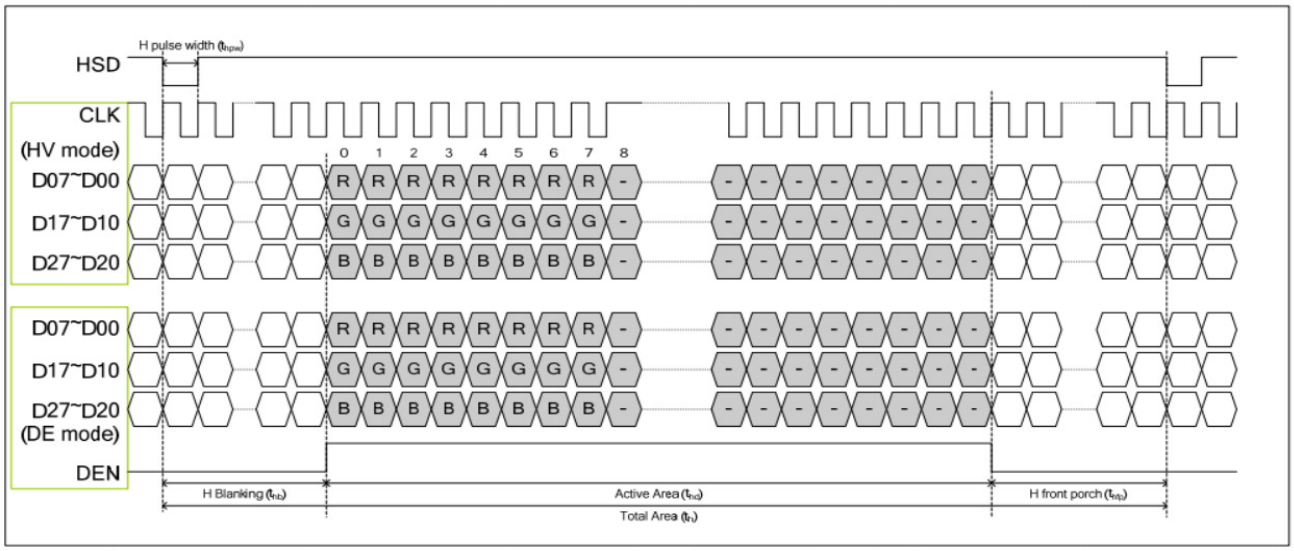
Enter and exit standby mode sequence



Enter and Exit Standby Mode Sequence

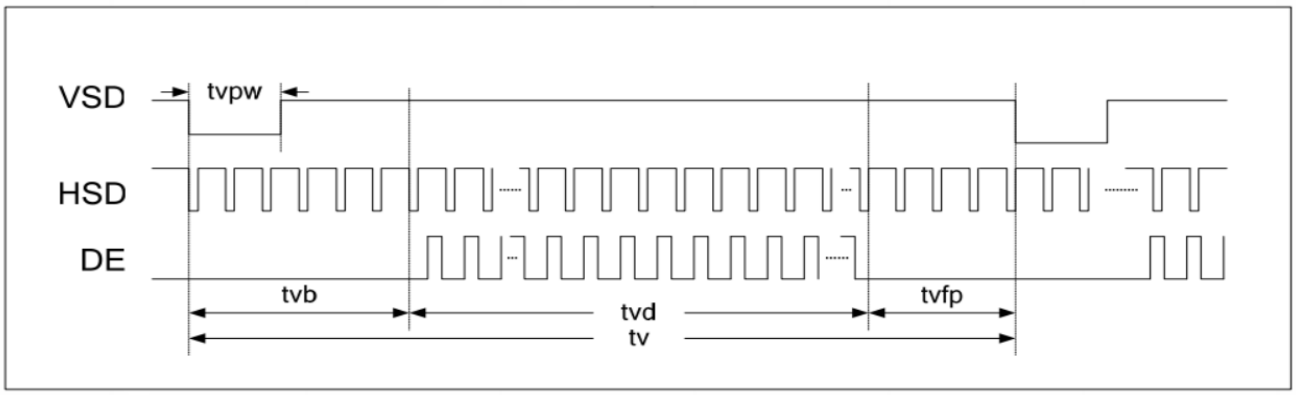
2.5 Data Input Format

Horizontal timing



Horizontal Input Timing Diagram

Vertical timing



Vertical Input Timing Diagram

2.6 Timing Characteristics

Horizontal timing

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
Horizontal Display Area	thd		800		DCLK
DCLK frequency	fclk	-	30	50	MHz
One Horizontal Line	th	889	928	1143	DCLK
HS pulse width	thpw	1	48	255	DCLK
HS Back Porch (Blanking)	thb		88		DCLK
HS Front Porch	thfp	1	40	255	DCLK
DE mode Blanking	th-thd	85	128	512	DCLK

Vertical timing

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
Vertical Display Area	tvd		480		T_H
VS period time	tv	513	525	767	T_H
VS pulse width	tvpw	3	3	255	T_H
VS Back Porch (Blanking)	tvb		32		T_H
VS Front Porch	tvfp	1	13	255	T_H
DE mode Blanking	tv-tvd	4	45	255	T_H

2.7 AC Characteristics

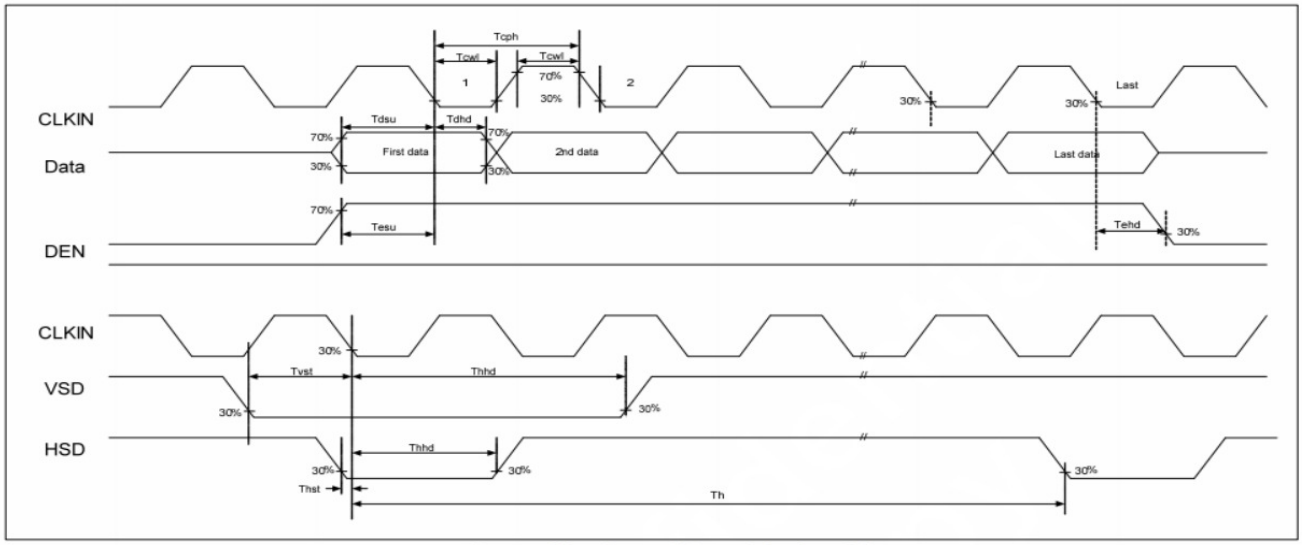
Timing waveform table

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
CLKIN Frequency	Fclk	-	40	50	MHz	VDD=3.0V~3.6V
CLKIN Cycle Time	Tclk	20	25	-	ns	-
CLKIN Pulse Duty	Tcwh	40	50	60	%	Tclk
Time from HSD to Source Output	Thso		64		CLKIN	-
Time from HSD to LD	Thld		64		CLKIN	-
Time from HSD to STV	Thstv		2		CLKIN	-
Time from HSD to CKV	Thckv		20		CLKIN	-
Time from HSD to OEV	Thoev		4		CLKIN	-
LD Pulse Width	Twld		10		CLKIN	-
CKV Pulse Width	Twckv		66		CLKIN	-
OEV Pulse Width	Twoev		74		CLKIN	-

Parallel 24-bit RGB mode

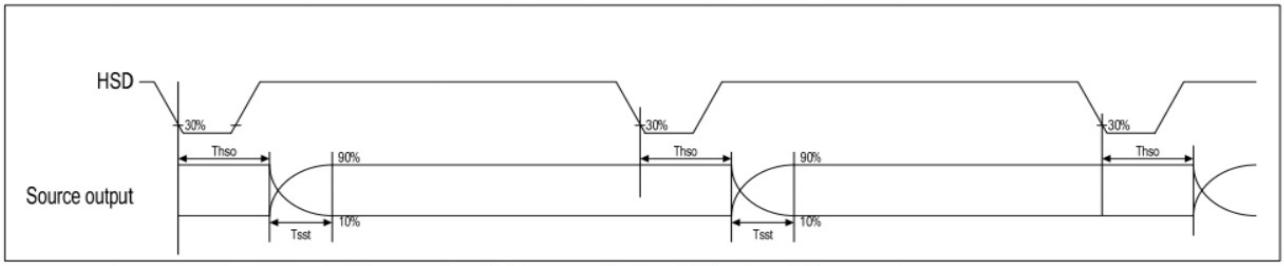
2.7.1 Timing Waveform

Input clock and data timing waveform

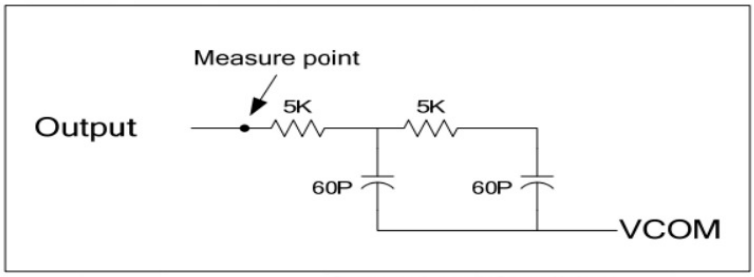


Input Clock and Data Timing Diagram

Source output timing waveform (Cascade)

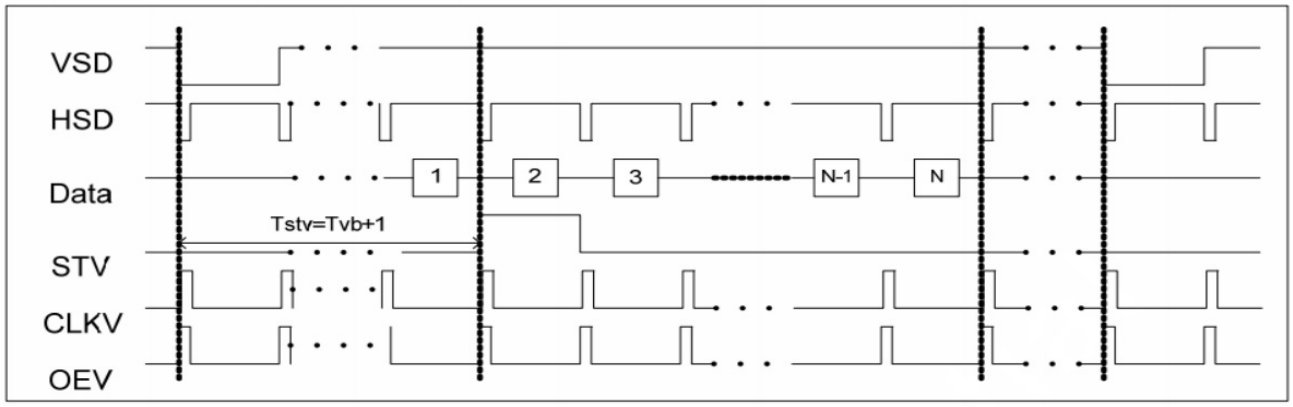


Source Output Timing Diagram



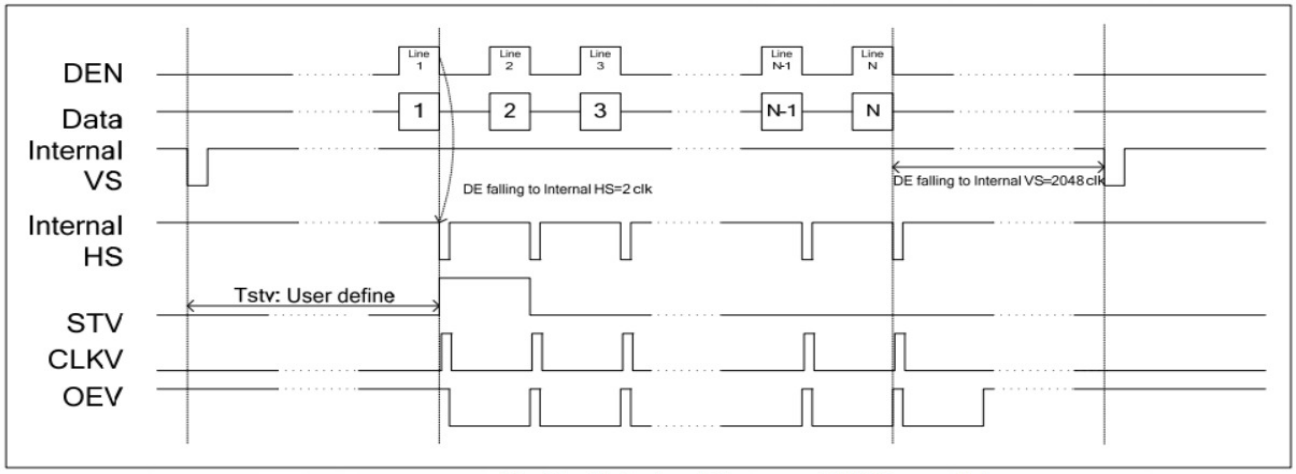
Output Load Condition

Vertical timing diagram HV (Cascade)



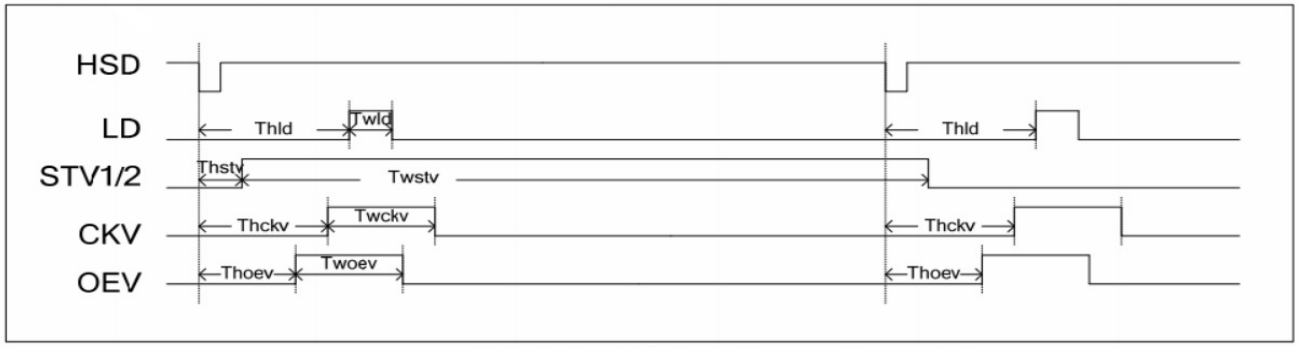
Vertical Timing Diagram HV (Cascade)

Vertical timing diagram DE (Cascade)



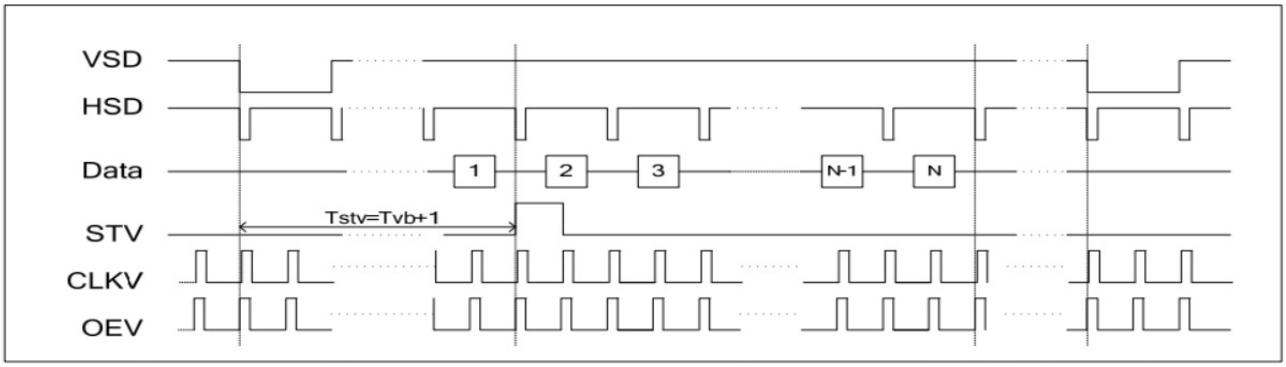
Vertical Timing Diagram DE (Cascade)

Gate output timing diagram (Cascade)



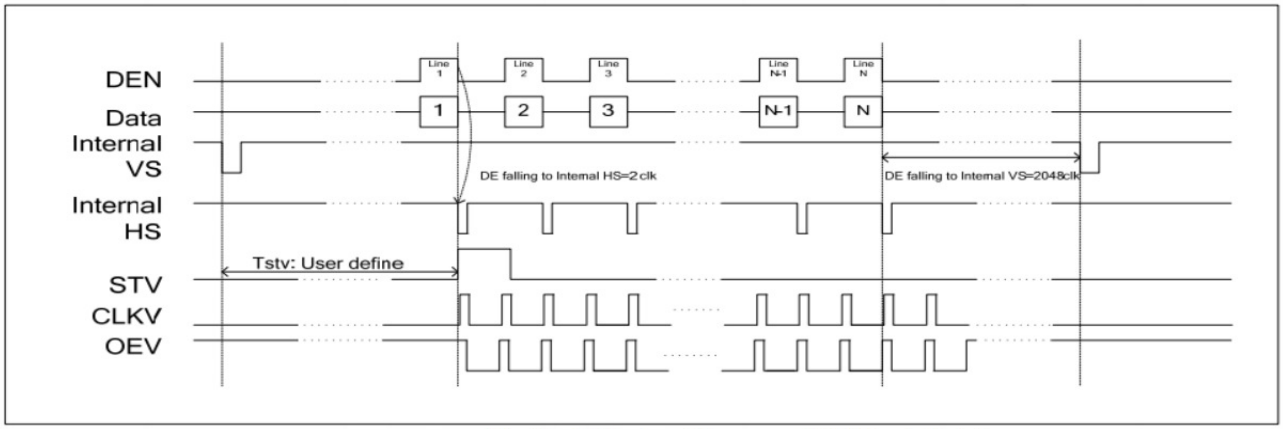
Gate Output Timing Diagram (Cascade)

Vertical timing diagram HV (Dual gate)



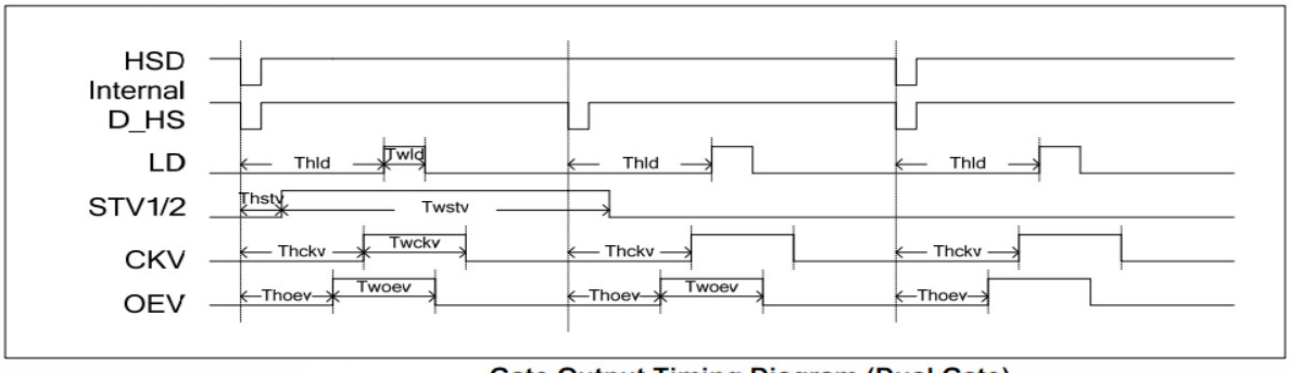
Vertical Timing Diagram HV (Dual Gate)

Vertical timing diagram DE (Dual gate)



Vertical Timing Diagram DE (Dual Gate)

Gate output timing diagram (Dual gate)



Gate Output Timing Diagram (Dual Gate)

3. OPTICAL CHARACTERISTICS

3.1 Characteristics

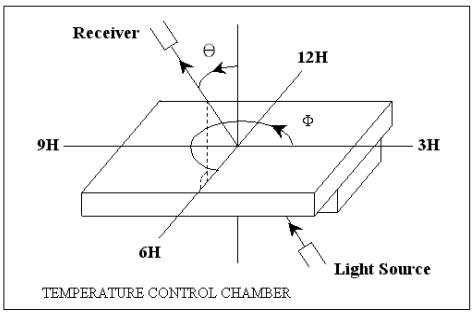
Electrical and Optical Characteristics

No.	Item			symbol / temp.		Min.	Typ.	Max.	Unit	Note
1	Response Time			Tr+Tf	θ=Φ=0°	-	30	40	ms	2
2	Viewing Angle	Hor.	Cr＞10	θ_{2+}	Φ=180°	-	80	-	degree	3
				θ_{2-}	Φ=0°	-	80	-		
		Ver.		θ_{1+}	Φ= 90°	-	80	-		
				θ_{1-}	Φ= 270°	-	80	-		
3	Contrast Ratio			Cr	25 ℃	600	800	-	-	4
4	Red x-code			Rx	25 ℃	0.533	0.583	0.633		
	Red y-code			Ry		0.307	0.357	0.407		
	Green x-code			Gx		0.314	0.364	0.414		
	Green y-code			Gy		0.535	0.585	0.635		
	Blue x-code			Bx		0.089	0.139	0.189		
	Blue y-code			By		0.065	0.115	0.165		
	White x-code			Wx		0.275	0.325	0.375		
	White y-code			Wy		0.332	0.382	0.432		
	Brightness			Y		400	500	-	cd/m^2	
5	Brightness Uniformity				25 ℃	80	-	-	%	6

3.2 Definition of optical characteristics

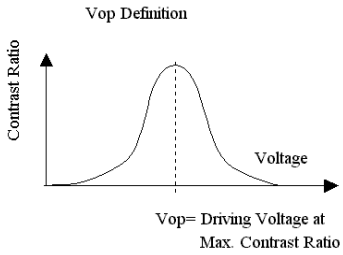
Measurement condition :

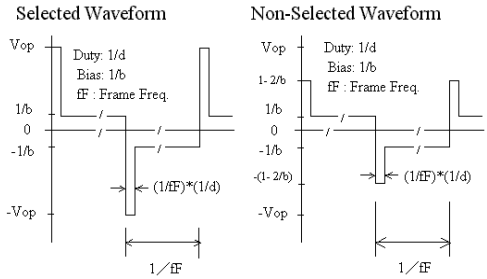
Transmissive and Transflective type



PHOTAL LCD-5000

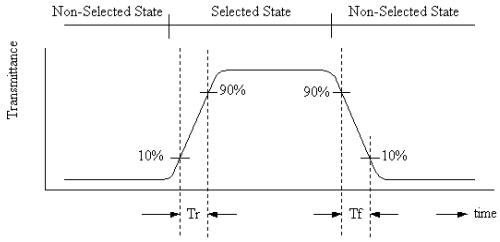
[Note 1] Definition of LCD Driving Vop and Waveform :



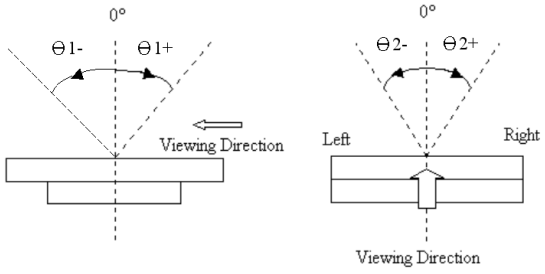


[Note 2] Definition of Response Time

for Negative type :

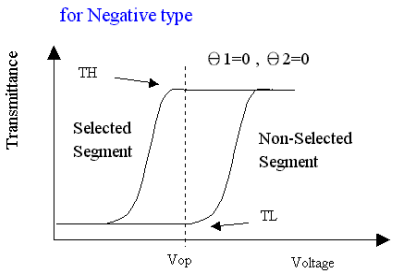


[Note 3] Definition of Viewing Angle :



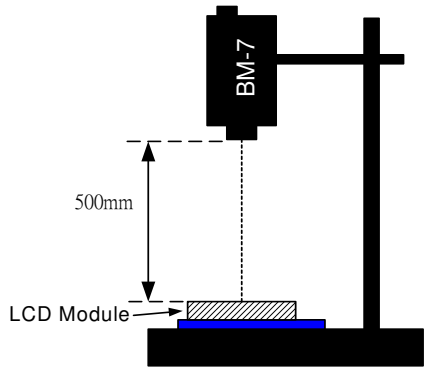
[Note 4] Definition of Contrast Ratio :

for Negative type

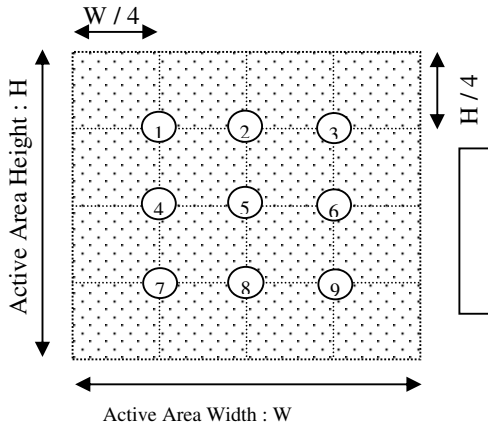


$$\text{Contrast Ratio} = \frac{TH}{TL}$$

[Note 5] Definition of measurement of Color Chromaticity and Brightness

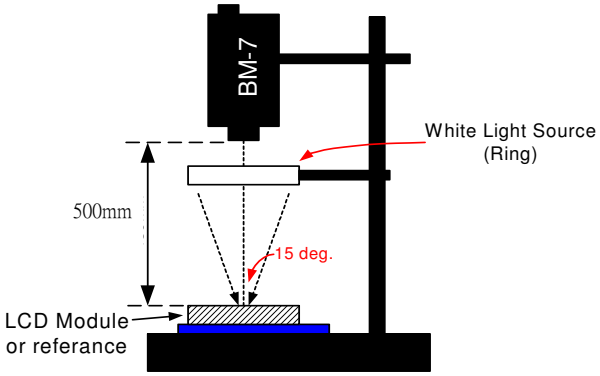


[Note 6] Definition of Brightness Uniformity



$$\text{Brightness Uniformity} = \frac{\text{Minimum Brightness of Point 1~9}}{\text{Maximum Brightness of Point 1~9}}$$

[Note 7] Definition of Measurement of Reflectance



4. RELIABILITY :

Item No	Items	Condition	Note
1	High temperature operating	80 ℃ , 96 hours	Inspection after 2~4hours storage at room temperature, the samples should be free from defects: 1, Air bubble in the LCD. 2, Seal leak. 3, Non-display. 4, Missing segments. 5, Glass crack. 6, Current IDD is twice higher than initial value. 7, The surface shall be free from damage. 8, The electric characteristic requirements shall be satisfied.
2	Low temperature operating	-30 ℃ , 96 hours	
3	High temperature storage	85 ℃ , 96 hours	
4	Low temperature storage	-40 ℃ , 96 hours	
5	High temperature & humidity storage	50℃, 90%RH, 96 hours	
6	Thermal Shock storage	-30℃, 30min.<=> 80℃, 30min. 10 Cycles	
7	Vibration test	10 => 55 =>10 => 55 => 10 Hz , within 1 minute Amplitude : 1.5mm. 15 minutes for each Direction (X,Y,Z)	
8	ESD	Voltage：±8KV, R：330Ω, C：150PF, Air Mode, 10times	
9	Drooping Test	Drop to the ground from 1M height one time, every side of carton. (packing condition test will be tested by a carton)	

1. The Test samples should be applied to only one test item.
2. For Damp Proof Test, Pure water(Resistance＞10MΩ)should be used.
3. In case of malfunction defect caused by ESD damage, if it would be recovered to normal state after resetting, it would be judge as a good part.
4. EL evaluation should be accepted from reliability test with humidity and temperature: Some defects such as black spot/blemish can happen by natural chemical reaction with humidity and Fluorescence EL has.
5. Failure Judgment Criterion: Basic Specification Electrical Characteristic, Mechanical Characteristic, Optical Characteristic.

5. PRODUCT HANDLING AND APPLICATION

5.1 PRECAUTION FOR HANDLING LCM

- The LCD module contains a C-MOS LSI. People who operate the LCM should wear ESD protection eguipement to prevent ESD hurt on products.
- Do not input any signal before power is turned on.
- Do not take LCM from its packaging bag until it is assembled.
- Peel off the LCM protective film slowly since static electricity may be generated.
- Use a non-leak iron for soldering LCM, soldering Temperature at iron tip :350℃±20℃.
- Do not touch the display surface or connection terminals area with bare hands.Smudges on the display surface reduce the insulation between terminals.
- Do not twist or bend the modules and also avoid any inappropriate external force on display surface during assembly.
- Do not expose LCM to organic solvent. IF clean the surface , wipe it gently with soft cloth dampened by alcohol.
- Do not attempt to wiped off the contact pads.
- Keep LCM panels away from direct sunlight or fluorescent light, , also avoid them in high-temperature & high humidity environment for a long period.
- It is an indispensable condition to drive LCD's within the specified voltage limit since the higher voltage then the limit cause the shorter LCD life.
- Do not drive LCM by DC voltage & avoid displaying at certain pattern for a long time otherwise it might cause image sticking.
- Response time will be extremely delayed at lower temperature then the operating temperature range and on the other hand at higher temperature LCD's how dark color in them. However those phenomena do not mean malfunction or out of order with LCD's, which will come back in the specified operation temperature.
- If the display area is pushed hard during operation, some font will be abnormally displayed but it resumes normal condition after turning off once.
- Never use the LCD , LCM under 45 Hz , the liquid crystal will decomposition and cause permently damage on display !!
- Liquid in LCM is hazardous substance. In case a contact with liquid crystal material is occured, be sure to immediately wash such material away by soap and water.
- The polarizer is easily damaged and should be handle with special care. Don't press or rub it with hard objects.

5.2 PRECAUTION FOR STORING

- Store the module in a dark room where must keep at 25±10℃ and 65%RH or less.
- Do not store the module in surroundings containing organic solvent or corrosive gas
- Store the module in an anti-electrostatic container or bag.

5.3 USING ON MEDICAL CARE , SAFETY OR HAZARDOUS APPLICATION OR SYSTEM

- For the application in medical care, safety and hazardous prodcuts or systems, an authorization from URT is required. URT will not responsible for any damage or loss which caused by the products without any authorization given by URT.
- This product is not allowed to be designed and used for military application and/or purpose.
- The delivery of this product to the countries and/or regions where the embargoes are imposed by U.N. is prohibited.
- The application and delivery of this product must comply with Startegic High-Tech Commodities (SHTC) export control and the sales to the embargoed and/or sanctioned countries or regions are strictly prohibited.

6. DATE CODE OF PRODUCTS

- Date code will be shown on each product :

- **YY MM DD - XXXX**

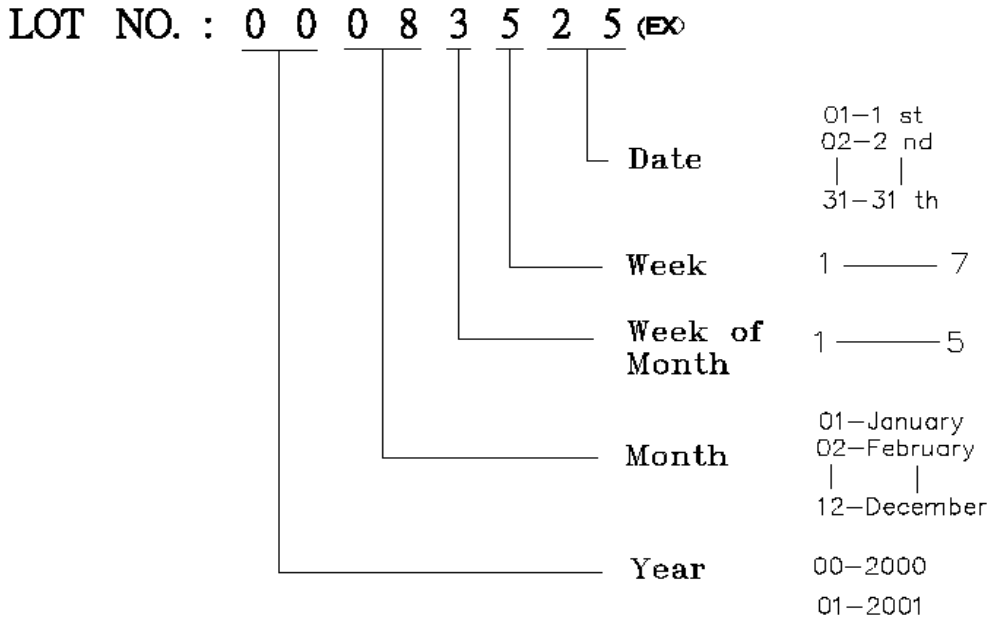
  Year Month Day - Production lots

- Example: 121108 - 0003 ==> Year 2012, November,8th , Batch no.0003

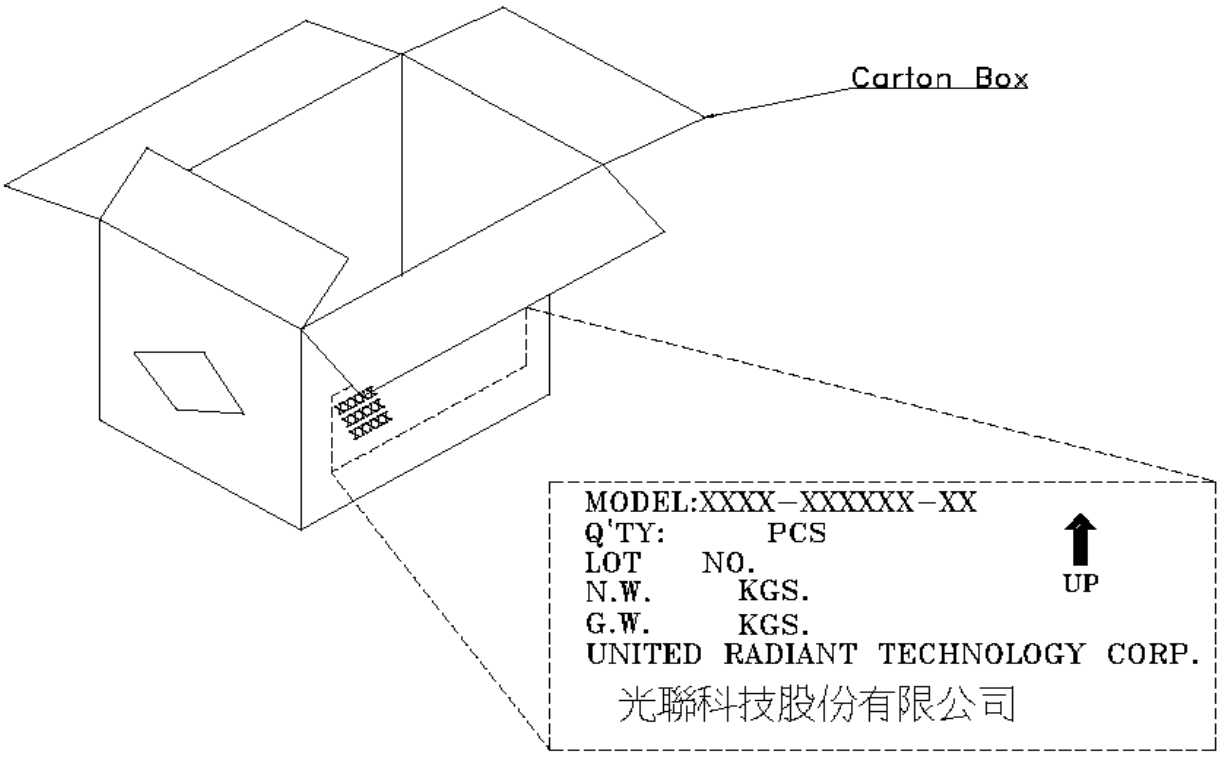
Note ： The lot no. attached on the packing box will be used for tracking once the part is too small to print the date code.

7. LOT NO

Instruction of lot number:



Lable of carton:



8. INSPECTION STANDARD

8.1. QUALITY :

THE QUALITY OF GOODS SUPPLIED TO PURCHASER SHALL COME UP TO THE FOLLOWING STANDARD.

8.1.1. THE METHOD OF PRESERVING GOODS

AFTER DELIVERY OF GOODS FROM U.R.T. TO PURCHASER. PURCHASER SHALL CONTROL THE LCM AT -10 ℃ ～ 40 ℃ ,AND IT MIGHT BE DESIRABLE TO KEEP AT THE NORMAL ROOM TEMPERATURE AND HUMIDITY UNTIL INCOMING INSPECTION OR THROWING INTO PROCESS LINE.

8.1.2. INCOMING INSPECTION

(A) THE METHOD OF INSPECTION

IF PURCHASER MAKE AN INCOMING INSPECTION , A SAMPLING PLAN SHALL BE APPLIED ON THE CONDITION THAT QUALITY OF ONE DELIVERY SHALL BE REGARDED AS ONE LOT.

(B) THE STANDARD OF QUALITY

ISO-2859-1 (SAME AS MIL-STD-105E) , LEVEL Ⅱ SINGLE PLAN.

CLASS	AQL(%)
MAJOR	0.65 %
MINOR	1.5 %

EVERY ITEM SHALL BE INSPECTED ACCORDING TO THE CLASS.

(C) MEASURE

IF AS THE RESULT OF ABOVE RECEIVING INSPECTION , A LOT OUT IS DISCOVERED. PURCHASER SHALL BE INFORM SELLER OF IT WITHIN SEVEN DAYS. BUT FIRST SHIPMENT WITHIN FOURTEEN DAYS.

8.1.3. WARRANTY POLICY

U.R.T. WILL PROVIDE ONE-YEAR WARRANTY FOR THE PRODUCTS ONLY IF UNDER SPECIFICATION OPERATING CONDITIONS. U.R.T. WILL REPLACE NEW PRODUCTS FOR THESE DEFECT PRODUCTS WHICH UNDER WARRANTY PERIOD AND BELONG TO THE RESPONSIBILITY OF U.R.T.

8.2. CHECKING CONDITION

8.2.1. INSPECTION ANGLE：THE VISION OF INSPECTOR OR SHOULD BE PERPENDICULAR TO THE SURFACE OF THE MODULE.

8.2.2. ENVIRONMENT ILLUMINATION: 300 ~ 700 LUX.

8.2.3. INSPECTION TIME：PERCEPTIBILITY TEST TIME : 20 SECONDS MAX.

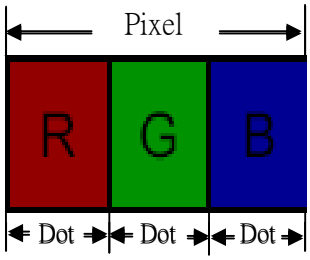
8.2.4. ENVIRONMENT： ROOM TEMPERATURE： 25±5°C；HUMIDITY： 65±5% RH.

8.2.5. Inspection Distance: 35±5 cm.

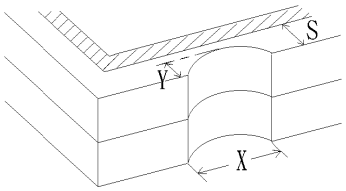
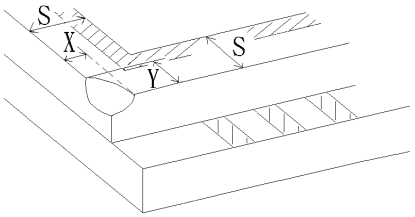
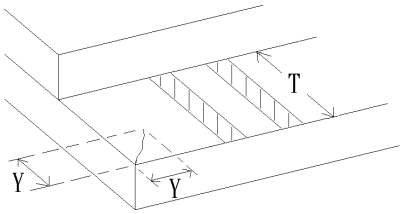
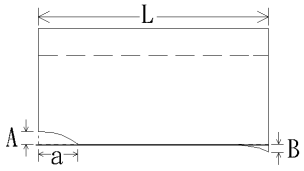
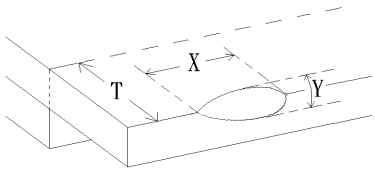
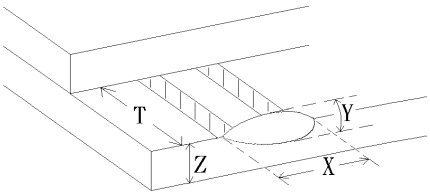
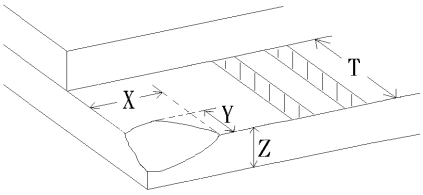
8.3. INSPECTION PLAN :

CLASS	ITEM	JUDGEMENT	CLASS
PACKING & INDICATE	1. OUTSIDE AND INSIDE PACKAGE	"MODEL NO." , "LOT NO." AND "QUANTITY" SHOULD INDICATE ON THE PACKAGE.	Minor
	2. MODEL MIXED AND QUANTITY	OTHER MODEL MIXED.....REJECTED QUANTITY SHORT OR OVER.....REJECTED	Major
	3. PRODUCT INDICATION	"MODEL NO." SHOULD INDICATE ON THE PRODUCT	Major
ASSEMBLY	4. DIMENSION, LCD GLASS SCRATCH AND SCRIBE DEFECT.	ACCORDING TO SPECIFICATION OR DRAWING.	Major
APPEARANCE	5. VIEWING AREA	POLARIZER EDGE OR LCD'S SEALING LINE IS VISABLE IN THE VIEWING AREA ……..REJECTED	Minor
	6. CANNOT BE REMOVED, BLEMISH BLACK SPOTS, WHITE SPOTS, ON THE LCD AND LCD GLASS CRACKS.	ACCORDING TO STANDARD OF VISUAL INSPECTION (INSIDE VIEWING AREA)	Minor
	7. BLEMISH、BLACK SPOT WHITE SPOT AND SCRATCH ON THE POLARIZER	ACCORDING TO STANDARD OF VISUAL INSPECTION (INSIDE VIEWING AREA)	Minor
	8. BUBBLE IN POLARIZER	ACCORDING TO STANDARD OF VISUAL INSPECTION (INSIDE VIEWING AREA)	Minor
	9. LCD'S RAINBOW COLOR	STRONG DEVIATION COLOR (OR NEWTON RING) OF LCD.....REJECTED. OR ACCORDING TO LIMITED SAMPLE (IF NEEDED, AND INSIDE VIEWING AREA)	Minor
ELECTRICAL	10. ELECTRICAL AND OPTICAL CHARACTERISTICS (CONTRAST、VOP、 CHROMATICITY … ETC)	ACCORDING TO SPECIFICATION OR DRAWING . (INSIDE VIEWING AREA)	Major
	11.MISSING LINE	MISSING DOT、LINE、CHARACTER ....REJECTED	Major
	12.SHORT CIRCUIT、 WRONG PATTERN DISPLAY	NON DISPLAY、WRONG PATTERN DISPLAY、CURRENT CONSUMPTION OUT OF SPECIFICATION..... REJECTED	Major
	13. PIN HOLE、PATTERN DEFORMITY	ACCORDING TO STANDARD OF VISUAL INSPECTION	Minor

8.4. STANDARD OF VISUAL INSPECTION

<table>
<tr><th>NO.</th><th>CLASS</th><th>ITEM</th><th>JUDGEMENT</th></tr>
<tr><td>8.4.1</td><td>MINOR</td><td>BLACK AND WHITE SPOT
FOREIGN MATERIEL
DUST IN THE CELL
BLEMISH
SCRATCH
(IN THE VIEWING AREA)</td><td>(A) ROUND TYPE: unit : mm.
<table>
<tr><th>DIAMETER (mm.)</th><th>ACCEPTABLE Q'TY</th></tr>
<tr><td>Φ ≦ 0.20</td><td>DISREGARD</td></tr>
<tr><td>0.20 < Φ ≦ 0.25</td><td>2(Distance>5mm)</td></tr>
<tr><td>0.25 < Φ</td><td>0</td></tr>
</table>
NOTE: Φ=(LENGTH+WIDTH)/2
(B) LINEAR TYPE: unit : mm.
<table>
<tr><th>LENGTH</th><th>WIDTH</th><th>ACCEPTABLE Q'TY</th></tr>
<tr><td>------</td><td>W ≦0.03</td><td>DISREGARD</td></tr>
<tr><td>L ≦ 5.0</td><td>0.03 < W ≦0.07</td><td>2(Distance>5mm)</td></tr>
<tr><td>------</td><td>0.07 < W</td><td>FOLLOW ROUND TYPE</td></tr>
</table></td></tr>
<tr><td>8.4.2</td><td>MINOR</td><td>BUBBLE IN POLARIZER
DENT ON POLARIZER
(IN THE VIEWING AREA)</td><td>unit : mm.
<table>
<tr><th>DIAMETER</th><th>ACCEPTABLE Q'TY</th></tr>
<tr><td>Φ ≦0.2</td><td>DISREGARD</td></tr>
<tr><td>0.2 < Φ ≦ 0.5</td><td>2 (Distance>5mm)</td></tr>
<tr><td>0.5 < Φ</td><td>0</td></tr>
</table></td></tr>
<tr><td>8.4.3</td><td>MINOR</td><td>Dot Defect</td><td>
<table>
<tr><th>Items</th><th>ACC. Q'TY</th></tr>
<tr><td>Bright dot</td><td>N≦ 2</td></tr>
<tr><td>Dark dot</td><td>N≦ 2</td></tr>
<tr><td>Total dot</td><td>N≦ 3</td></tr>
</table>
Pixel Define :
 

Note1: The definition of dot: The size of a defective dot over 1/2 of whole dot is regarded as one defective dot.
Note 2: Bright dot: Dots appear bright and unchanged in size in which LCD panel is displaying under black pattern.
Note 3: The bright dot defect must be visible through 2% ND filter.
Note 4: Dark dot: Dots appear dark and unchanged in size in which LCD panel is displaying under pure red, green, blue pattern.</td></tr>
</table>

NO.	CLASS	ITEM	JUDGEMENT
8.4.4	MINOR	LCD GLASS CHIPPING	 Y > S Reject
8.4.5	MINOR	LCD GLASS CHIPPING	 X or Y > S Reject
8.4.6	MAJOR	LCD GLASS GLASS CRACK	 Y > (1/2) T Reject
8.4.7	MAJOR	LCD GLASS SCRIBE DEFECT	 1. a> L/3 , A>1.5mm. Reject 2. B : ACCORDING TO DIMENSION
8.4.8	MINOR	LCD GLASS CHIPPING (ON THE TERMINAL AREA)	 Φ= (x+y)/2 > 3.0 mm Reject
8.4.9	MINOR	LCD GLASS CHIPPING (ON THE TERMINAL SURFACE)	 Y > (1/3) T Reject
8.4.10	MINOR	LCD GLASS CHIPPING	 Y > T Reject