EXAMINED BY： Jacky-Kuo	EMERGING DISPLAY TECHNOLOGIES CORPORATION	FILE NO. CAS-0009729
		ISSUE ：OCT.11, 2024
APPROVED BY: Justin Horng		TOTAL PAGE：27
		VERSION：1

CUSTOMER ACCEPTANCE SPECIFICATIONS

MODEL NO. :

EIML123022DYA

(RoHS)

FOR MESSRS :

CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

CUSTOMER'S APPROVAL

DATE：

_____

BY：

_____

EMERGING DISPLAY TECHNOLOGIES CORPORATION	MODEL NO.	VERSION	PAGE
	EIML123022DYA	1	0-1

RECORDS OF REVISION

DOC. FIRST ISSUE

OCT.11, 2024

DATE	REVISED PAGE NO.	SUMMARY

CONFIDENTIAL
Authorized for
Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

TABLE OF CONTENTS

CONFIDENTIAL
Authorized for
Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

1. GENERAL SPECIFICATIONS

1.1 DATA SHEETS FOR CONTROLLER / DRIVER PLEASE REFER TO：

HIMAX HX83192-C OR EQUIVALENT

1.2 MATERIAL SAFETY DESCRIPTION

ASSEMBLIES SHALL COMPLY WITH EUROPEAN ROHS REQUIREMENTS, INCLUDING PROHIBITED MATERIALS/COMPONENTS CONTAINING LEAD, MERCURY, CADMIUM, HEXAVALENT CHROMIUM, POLYBROMINATED BIPHENYLS (PBB) AND POLYBROMINATED
DIPHENYL ETHERS (PBDE), BIS(2-ETHYLHEXYL) PHTHALATE (DEHP), BUTYL BENZYL PHTHALATE (BBP), DIBUTYL PHTHALATE (DBP), DIISOBUTYL PHTHALATE (DIBP).

2. MECHANICAL SPECIFICATIONS

2.1 TFT LCD MODULE MECHANICAL SPECIFICATIONS

(1) DISPLAY SIZE	----------	12.3 inch
(2) NUMBER OF DOTS	----------	1920(RGB)W * 720H DOTS
(3) MODULE SIZE	----------	318.03W * 138.51H * 14.2D(MAX.) mm (WITHOUT FPC)
(4) ACTIVE AREA	----------	292.032W * 109.512H mm
(5) DOT SIZE	----------	0.0507W * 0.1521H mm
(6) PIXEL SIZE	----------	0.1521W * 0.1521H mm
(7) LCD TYPE	----------	TFT, IPS, TRANSMISSIVE, NORMALLY BALCK
(8) COLOR	----------	16.7M
(9) VIEWING DIRECTION	----------	SUPER WIDE VIEW
(10) BACKLIGHT	----------	LED , COLOR : WHITE
(11) INTERFACE MODE	----------	LVDS(VESA)
(12) WEIGHT	----------	TBD

CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

2.2 CAPACITIVE TOUCH PANEL MECHANICAL SPECIFICATIONS

(1)	TOUCH PANEL SIZE	12.3 inch
(2)	OUTER DIMENSION	318.03W * 138.51H mm (WITHOUT FPC)
(3)	ACTIVE AREA	292.032W * 109.512H mm
(4)	INPUT TYPE	MULTI TOUCH
(5)	NUMBER OF TOUCH SENSOR	56*21 SENSORS
(6)	RESOULTION	1920 * 720
(7)	INTERFACE MODE	I2C
(8)	THE MATERIAL OF COVER LENS	GLASS

CONFIDENTIAL
Authorized for
Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

3. ABSOLUTE MAXIMUM RATINGS

3.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	MAX.	UNIT	REMARK
POWER SUPPLY VOLTAGE	VDD-VSS	-0.3	3.6	V	—
	AVDD-VSS	-0.3	7	V	—
	AVEE-VSS	-7.3	0.3	V	—
STATIC ELECTRICITY	—	—	—	V	NOTE (1)

NOTE (1)：LCM SHOULD BE GROUND DURING LCM HANDLING.

NOTE (2)：THE ABSOLUTE MAXIMUM RATING VALUES OF THIS PRODUCT ARE NOT ALLOWED TO BE EXCEEDED AT ANY TIMES. SHOULD A MODULE BE USED WITH ANY OF THE ABSOLUTE MAXIMUM RATINGS EXCEEDED, THE CHARACTERISTICS OF THE MODULE MAY NOT BE RECOVERED, OR IN AN EXTREME CASE, THE MODULE MAY BE PERMANENTLY DESTROYED.

3.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

ITEM	OPERATING		STORAGE		REMARK
	MIN.	MAX.	MIN.	MAX.	
AMBIENT TEMPERATURE	(-20°C)	(70°C)	(-30°C)	(80°C)	NOTE (1),(2),(3)
HUMIDITY	NOTE (3)		NOTE (3)		WITHOUT CONDENSATION
CORROSIVE GAS	NOT ACCEPTABLE		NOT ACCEPTABLE		

NOTE (1)：THE ABSOLUTE MAXIMUM RATINGS OF THIS PRODUCT SHOULD NOT BE EXCEEDED AT ANY TIME. IF THESE RATINGS ARE EXCEEDED, THE PRODUCT'S PERFORMANCE IS NOT GUARANTEED AND THE PRODUCT MAY EXPERIENCE PERMANENT DAMAGE.

NOTE (2)：BACKGROUND COLOR CHANGES SLIGHTLY DEPENDING ON AMBIENT TEMPERATURE THIS PHENOMENON IS REVERSIBLE.

NOTE (3)：Ta ≤ 60°C：90%RH MAX.

Ta > 60°C：ABSOLUTE HUMIDITY MUST BE LOWER THAN THE HUMIDITY OF 90%RH AT 60°C.

CONFIDENTIAL
Emerging Display Technologies Corporation Only
Do not distribute without authorization.

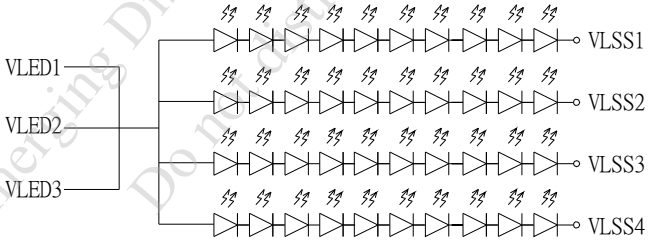
4. ELECTRICAL CHARACTERISTICS

Ta = 25 °C

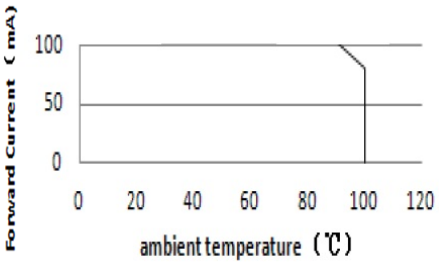
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	REMARK
POWER SUPPLY VOLTAGE	VDD-VSS	—	(3.0)	(3.3)	(3.6)	V	
POWER SUPPLY VOLTAGE FOR LED DRIVER	VBL+-VBL-	—	—	(12)	—	V	
POWER SUPPLY VOLTAGE FOR CIRCUITS	AVDD -VSS	—	(6.0)	(6.5)	(7.0)	V	
	AVEE -VSS	—	(-7.0)	(-6.5)	(-6.0)	V	
INPUT HIGH LEVEL VOLATGE	VIH	ALL INPUT PAD WITH VDD	0.7VDD	—	VDD	V	
INPUT LOW LEVEL VOLTAGE	VIL		0	—	0.3VDD	V	
POWER SUPPLY CURRENT	IDD	VDD-VSS=(3.30)V	—	(116)	TBD	mA	NOTE (1)
POWER SUPPLY CURRENT FOR CIRCUITS	IAVDD	AVDD-VSS=(6.5)V	—	(71)	TBD		
	IAVEE	AVEE-VSS=(-6.5)V	—	(76)	TBD		
POWER SUPPLY CURRENT FOR LED DRIVER	IBL+	VBL+-VBL-=12V LED B/L=ON PWM=100%	—	(1200)	—	mA	
POWER SUPPLY VOLTAGE FOR LED DRIVER	BL_EN	VIH	(1.6)	—	—	V	
		VIL	—	—	(0.8)	V	
	BL_PWM	VIH	(1.6)	—	—	V	
		VIL	—	—	(0.8)	V	
LED LIFE TIME	—	(IF=100mA) (PER LED)	(50K)	—	—	HRS	NOTE (4) NOTE (5)

NOTE (1)：THE DISPLAY PATTERN IS ALL “WHITE”.

NOTE (2)：INTERNAL CIRCUIT DIAGRAM OF BACKLIGHT



NOTE (3)：AMBIENT TEMP. VS. ALLOWABLE FORWARD CURRENT.(PER LED)



NOTE (4)：CONDITIONS; Ta=25 °C, CONTINUOUS LIGHTING.

NOTE (5)：DEFINITIONS OF LIFE TIME
LCD LUMINANCE BECOMES HALF OF THE INITIAL VALUE.

CONFIDENTIAL Authorized for Emerging Display Technologies Corporation Only Do not distribute without authorization

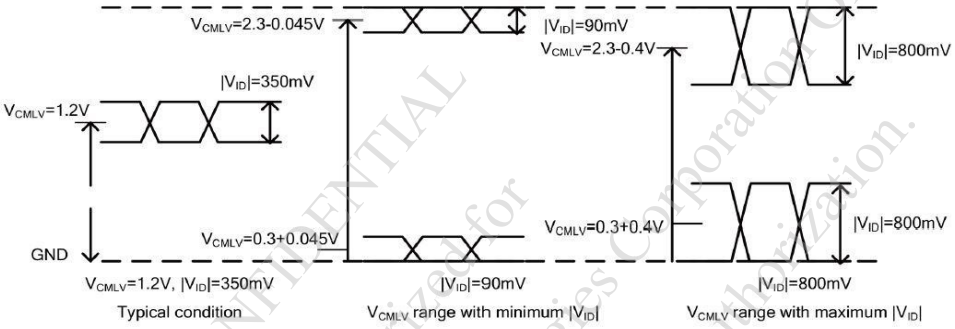
5. TIMING CHARACTERISTICS

5.1 SIGNAL ELECTRICAL CHARACTERISTICS

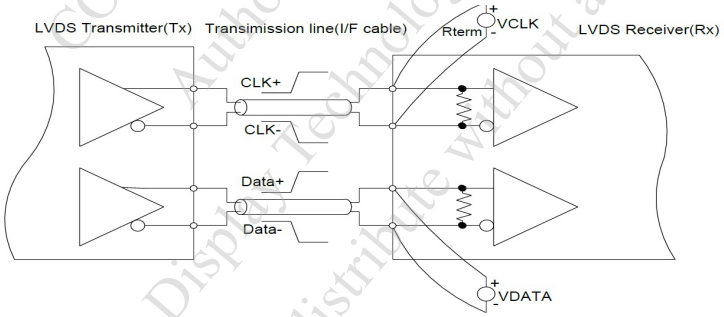
5.1.1 SIGNAL ELECTRICAL CHARACTERISTICS FOR LVDS RECEIVER

ITEM	SYMBOL	SPEC.			
		MIN.	TYP.	MAX.	UNIT
POSITIVE-GOING INPUT THRESHOLD VOLTAGE	V_{TH}	—	—	90	mV
NEGATIVE-GOING INPUT THRESHOLD VOLTAGE	V_{TL}	-90	—	—	mV
LVDS DIFFERENTIAL VOLTAGE	$\lvert V_{ID} \rvert$	90	350	800	mV
LVDS INPUT COMMON MODE VOLTAGE	V_{CMLV}	03+$\lvert V_{ID} \rvert$/2	—	2.3-$\lvert V_{ID} \rvert$/2	V

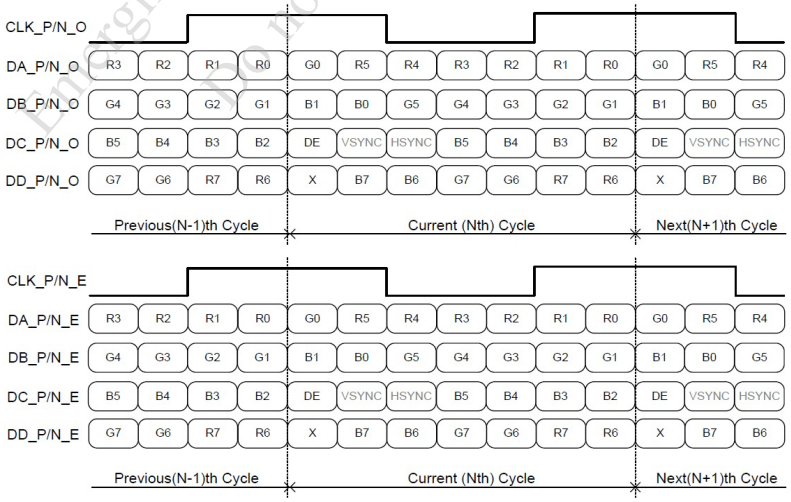
NOTE:(1)REQUIREMENT OF TERMINATION RESISTANCE(Ω)：80(MIN.)/100(TYP.)/120(MAX).
(2)TEST CONDITIONS: VCMLV=1.2V, VDD1=2.7V~3.6V.
(3)TEST CONDITION: TEST POINT IS IC PAD.



LVDS RECEIVER INPUT SIGNAL LEVELS



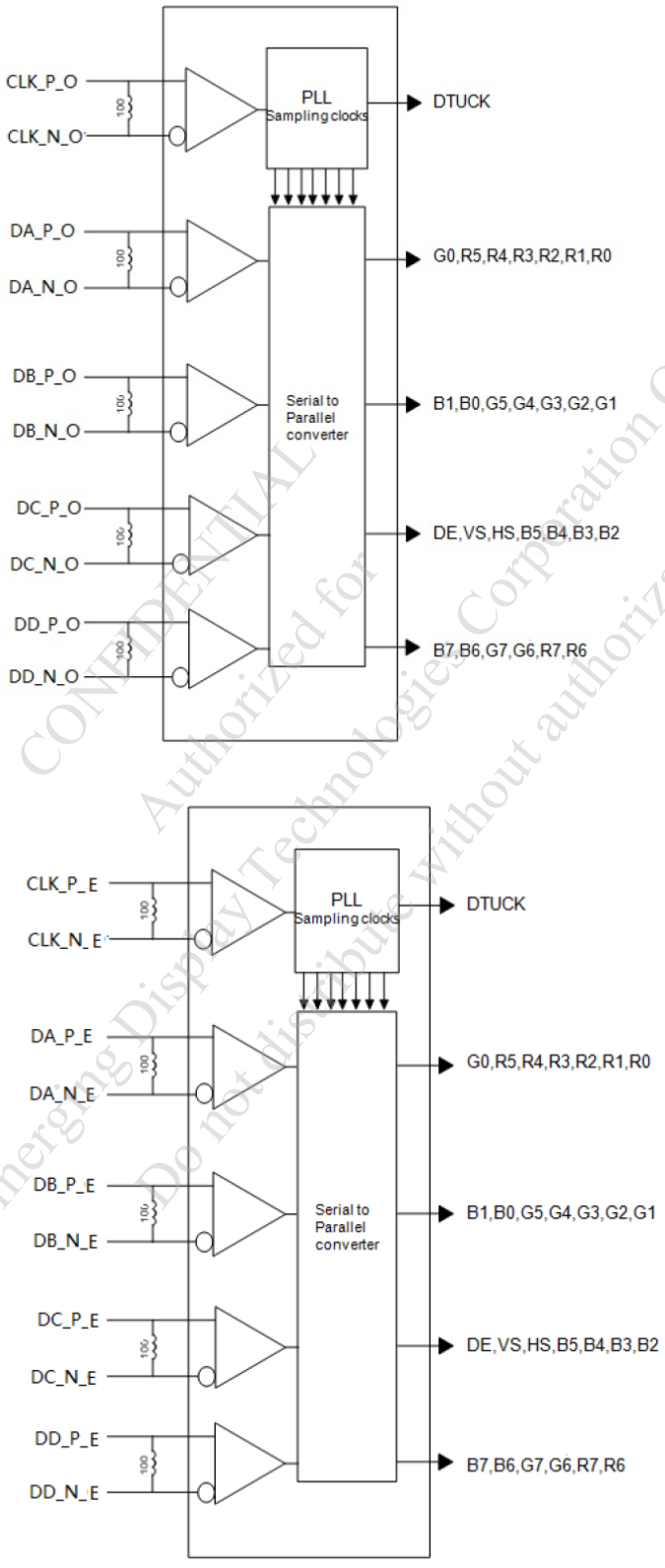
MEASUREMENT SYSTEM



DATA MAPPING

CONFIDENTIAL Authorized for Emerging Display Technologies Corporation Only. Do not distribute without authorization.

5.1.2 LVDS RECEIVER INTERNAL CIRCUIT



CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

5.1.3 LVDS INTERFACE TIMING

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
H TOTAL TIME	HT	1992	2038	2112	CLOCKS
H ACTIVE TIME	HA		1920		CLOCKS
H FRONT PORCH	THFP	20	56	110	CLOCKS
H SYNC PULSE WIDTH	HSPW	32	32	32	CLOCKS
H BACK PORCH	THBP	20	30	50	CLOCKS
V TOTAL TIME	VT	850	850	850	LINES
V ACTIVE TIME	VA		720		LINES
V FRONT PORCH	TVFP	120	120	120	LINES
V SYNC PULSE WIDTH	VSPW	2	2	2	LINES
V BACK PORCH	TVBP	8	8	8	LINES
FRAME RATE	VSYNC		60		Hz
PIXEL CLOCK FREQUENCY	FCLK	(101.59)	(103.94)	(107.71)	MHz

NOTE(1): HT*VT*FV<107.71 MHz

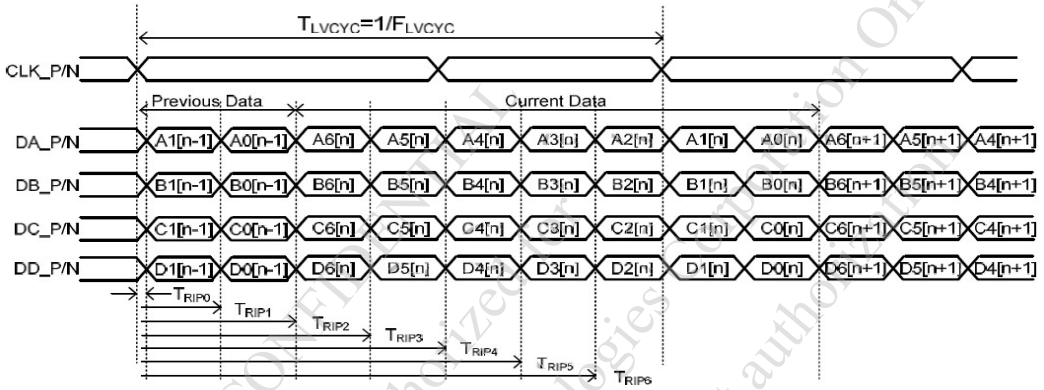
NOTE(2): ALL RELIABILITIES ARE SPECIFIED FOR TIMING SPECIFICATION BASED ON REFRESH RATE OF 60HZ. A1233H R2-P IS SECURED ONLY FOR FUNCTION UNDER LOWER REFRESH RATE;

CONFIDENTIAL
Authorized for
Emerging Display Technologies Corporation Only.
Do not distribute without authorization!

5.2 AC CHARACTERISTICS

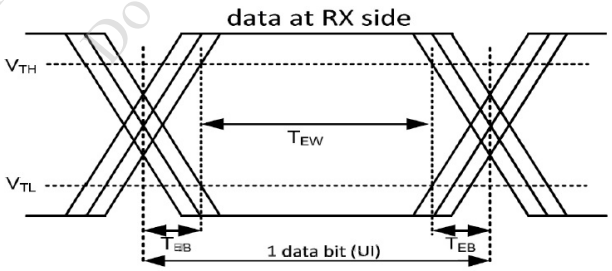
5.2.1 AC CHARACTERISTICS-1

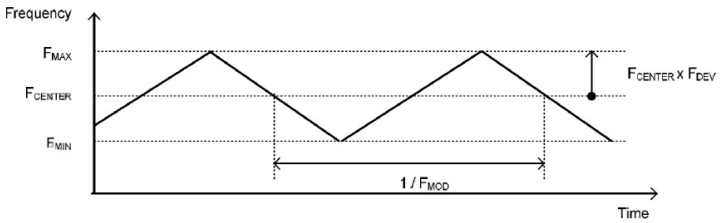
ITEM	SYMBOL	SPEC.			UNIT
CLOCK FREQUENCY	F_{LVCYC}	MIN.	TYP.	MAX.	
CLOCK PERIOD	T_{LVCYC}	—	—	140	MHZ
1 DATA BIT TIME	UI	7.14	—	—	ns
INPUT DATA POSITION FOR BIT0	T_{RIP0}	—	1/7	—	T_{LVCYC}
INPUT DATA POSITION FOR BIT1	T_{RIP1}	$-T_{EB}$	0	$+T_{EB}$	UI
INPUT DATA POSITION FOR BIT2	T_{RIP2}	$1-T_{EB}$	1	$1+T_{EB}$	UI
INPUT DATA POSITION FOR BIT3	T_{RIP3}	$2-T_{EB}$	2	$2+T_{EB}$	UI
INPUT DATA POSITION FOR BIT4	T_{RIP4}	$3-T_{EB}$	3	$3+T_{EB}$	UI
INPUT DATA POSITION FOR BIT5	T_{RIP5}	$4-T_{EB}$	4	4+TEB	UI
INPUT DATA POSITION FOR BIT6	T_{RIP6}	$5-T_{EB}$	5	$5+T_{EB}$	UI



5.2.2 AC CHARACTERISTICS-2

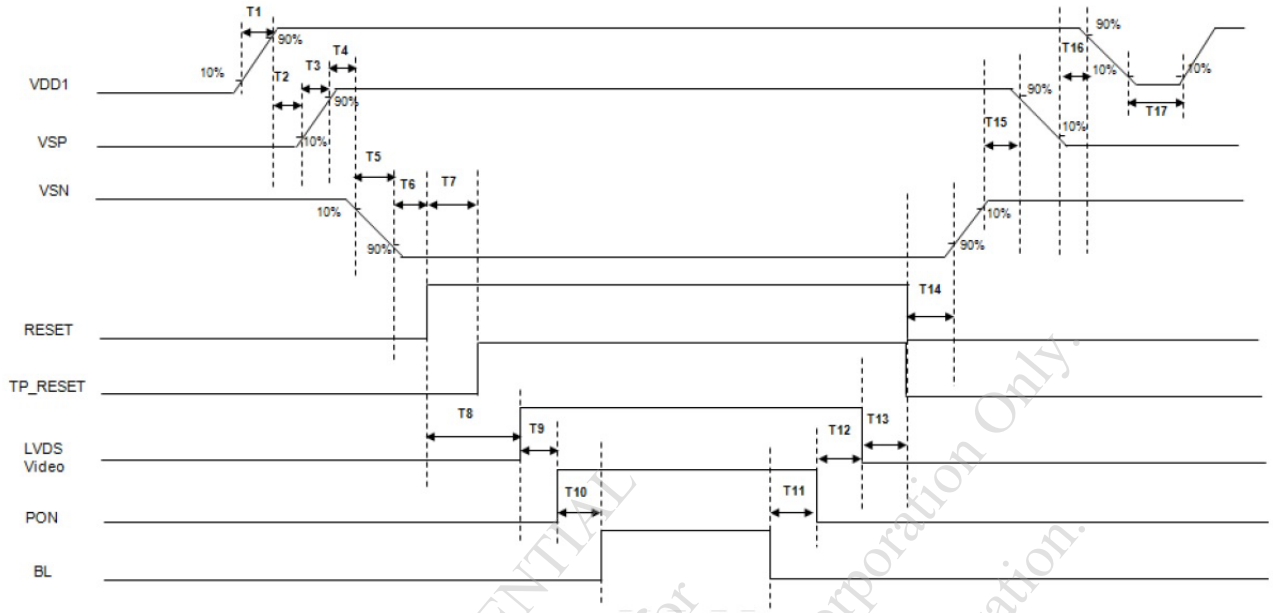
ITEM	SYMBOL	SPEC.			UNIT
		MIN.	TYP.	MAX.	
INPUT EYE BORDER(LVDS＜100MHZ)	T_{EB}	—	—	0.25	UI
INPUT EYE BORDER(LVDS≥100MHZ)	T_{EB}	—	—	0.2	UI
INPUT EYE WIDTH(LVDS＜100MHZ)	T_{EW}	0.5	—	—	UI
INPUT EYE WIDTH(LVDS≥100MHZ)	T_{EW}	0.6	—	—	UI
MAXIMUM DEVIATION OF INPUT CLOCK FREQUENCY DURING SSC	F_{DEW}	—	—	±3(1)	%
MAX./MIN. MODULATION FREQUENCY OF INPUT CLOCK DURING SSC	F_{MOD}	15	—	200	KHZ





CONFIDENTIAL
Authorized Emerging Display Technologies Corporation Only
Do not distribute without authorization

5.3 POWER ON/OFF SEQUENCE



POWER SEQUENCING REQUIREMENTS

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
VDD1 RISE TIME	T1	0.1	—	5	ms
VDD1 TO VSP	T2	1	—	—	ms
VSP RISE TIME	T3	0.1	—	10	ms
VSP TO VSN	T4	0	—	—	ms
VSN RISE TIME	T5	0.1	—	10	ms
VSN VALID TO RESET VALID	T6	5	—	—	ms
RESET VALID TO TP RESET VALID	T7	0	—	—	ms
RESET VALID TO SIGNAL VALID	T8	0	—	—	ms
SIGNAL VALID TO PON VALID	T9	16	—	—	ms
PON VALID TO BACKLIGHT ON	T10	200	—	—	ms
BACKLIGHT OFF TO PON DISABLE	T11	200	—	—	ms
PON DISABLE TO SIGNAL DISABLE	T12	6	—	—	FRAME
SIGNAL DISABLE TO RESET DISABLE	T13	0	—	—	ms
RESET DISABLE TO VSN DOWN	T14	0	-	-	ms
VSN DOWN TO VSP DOWN	T15	0	-	-	ms
VSP DOWN TO VDD1 DOWN	T16	0	-	-	ms
VDD1 NORMAL POWER OFF TO NORMAL POWER ON	T17	100	-	-	ms

CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

6. OPTICAL CHARACTERISTICS

6.1 OPTICAL CHARACTERISTICS (NOTE 1)

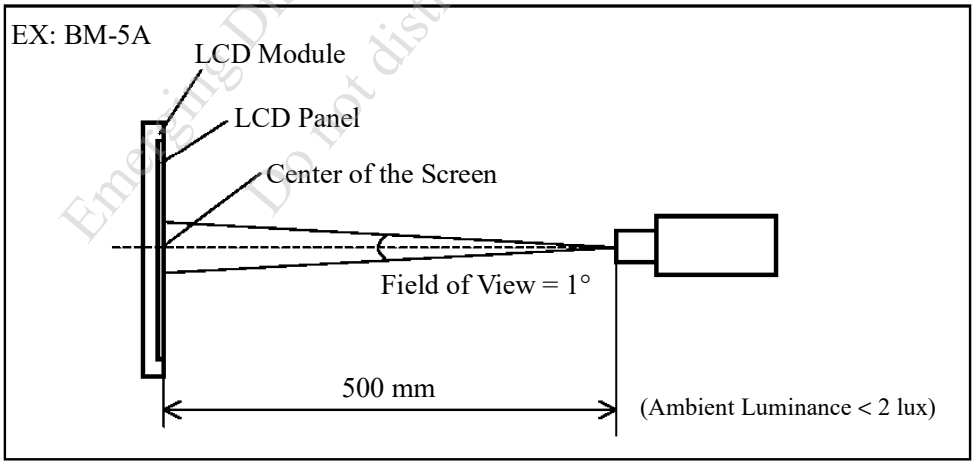
Ta=25±2°C

ITEM		SYMBOL	CONDITION		MIN.	TYP.	MAX.	UNIT	REMARK
VIEWING ANGLE		θ_{y+}	CR ≥ 10	θ_x=0°	(80)	(85)	—	deg.	NOTE (2) NOTE (3)
		θ_{y-}			(80)	(85)	—		
		θ_{x+}		θ_y=0°	(80)	(85)	—		
		θ_{x-}			(80)	(85)	—		
CONTRAST RATIO(CENTER)		CR	θx=0° , θy=0°		(1100)	—	—	—	NOTE (3)
RESPONSE TIME		Tr + Tf	θx=0° , θy=0°		—	25	30	msec	NOTE (4)
COLOR CHROMATICITY (CENTER)	WHITE	Wx	LED B/L=ON PWM=100% VBL+-VBL-=(12V)		(0.25)	(0.30)	(0.35)	—	NOTE (5)
		Wy			(0.28)	(0.33)	(0.38)		
	RED	Rx			(0.59)	(0.64)	(0.69)	—	
		RY			(0.27)	(0.32)	(0.37)		
	GREEN	Gx			(0.23)	(0.28)	(0.33)	—	
		Gy			(0.55)	(0.60)	(0.65)		
	BLUE	Bx			(0.09)	(0.14)	(0.19)	—	
		By			(0.05)	(0.10)	(0.15)		
THE BRIGHTNESS OF MODULE (CENTER)		B			(900)	(1000)	—	cd/m^2	NOTE (6)
THE UNIFORMITY OF MODULE		—			(70)	—	—	%	NOTE (7)

NOTE (1)：TEST CONDITION：

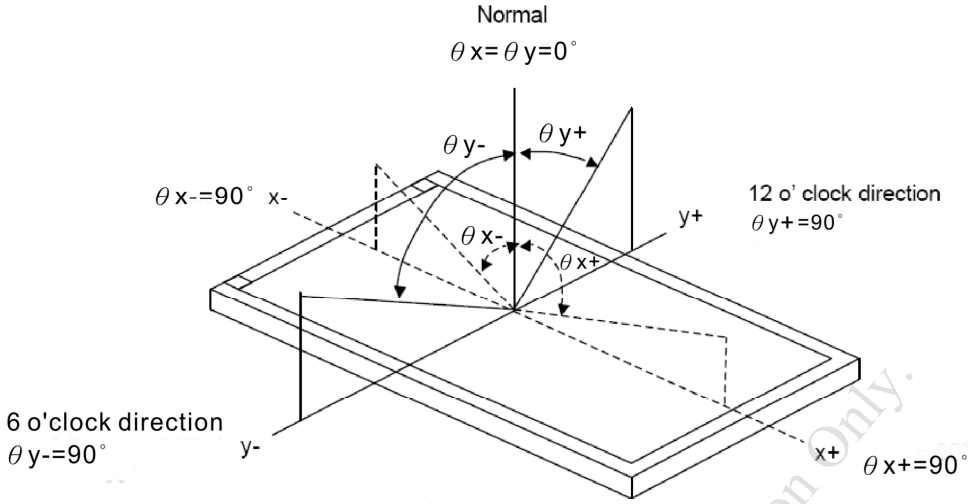
AFTER STABILIZING AND LEAVING THE PANEL ALONE AT A GIVEN TEMPERATURE FOR 30 MINUTES. MEASUREMENT SHOULD BE EXECUTED IN A STABLE, WINDLESS, AND DARK ROOM.

THE MEASUREMENT CRITERIA AND CONDITION FOR EITHER BM-5A OR CA-210 OR EQUIVALENT LUMINANCE METER IS BASED ON THE EQUIPMENT'S MANUAL.



CONFIDENTIAL
Authorized for Emerging Display Technologies Corp. only
Do not distribute without authorization.

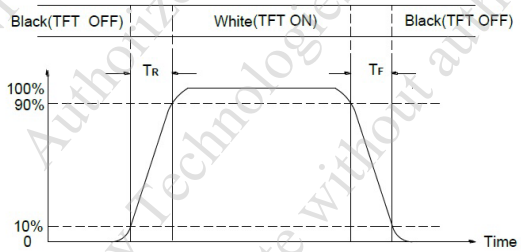
NOTE (2)：DEFINITION OF VIEWING ANGLE：



NOTE (3)：DEFINITION OF CONTRAST RATIO (CR) :
MEASURED AT THE CENTER POINT OF MODULE

$$\text{CONTRAST RATIO(CR)} = \frac{\text{BRIGHTNESS MEASURED WHEN LCD IS AT "WHITE STATE"}}{\text{BRIGHTNESS MEASURED WHEN LCD IS AT "BLACK STATE"}}$$

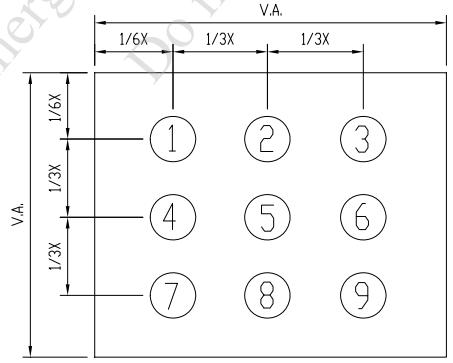
NOTE (4)：DEFINITION OF RESPONSE TIME : T_R AND T_F
THE FIGURE BELOW IS THE OUTPUT SIGNAL OF THE PHOTO DETECTOR.



NOTE (5)：DEFINITION OF COLOR CHROMATICITY
(a)100% RGB PIXEL DATA TRANSMISSION WHEN ALL THE INPUT TERMINALS OF MODULE ARE ELECTRICALLY POWERED ON.
(b)MEASURED AT THE CENTER POINT OF MODULE

NOTE (6)：MEASURED THE BRIGHTNESS OF WHITE STATE AT CENTER POINT.

NOTE (7)：(a)DEFINITION OF BRIGHTNESS UNIFORMITY



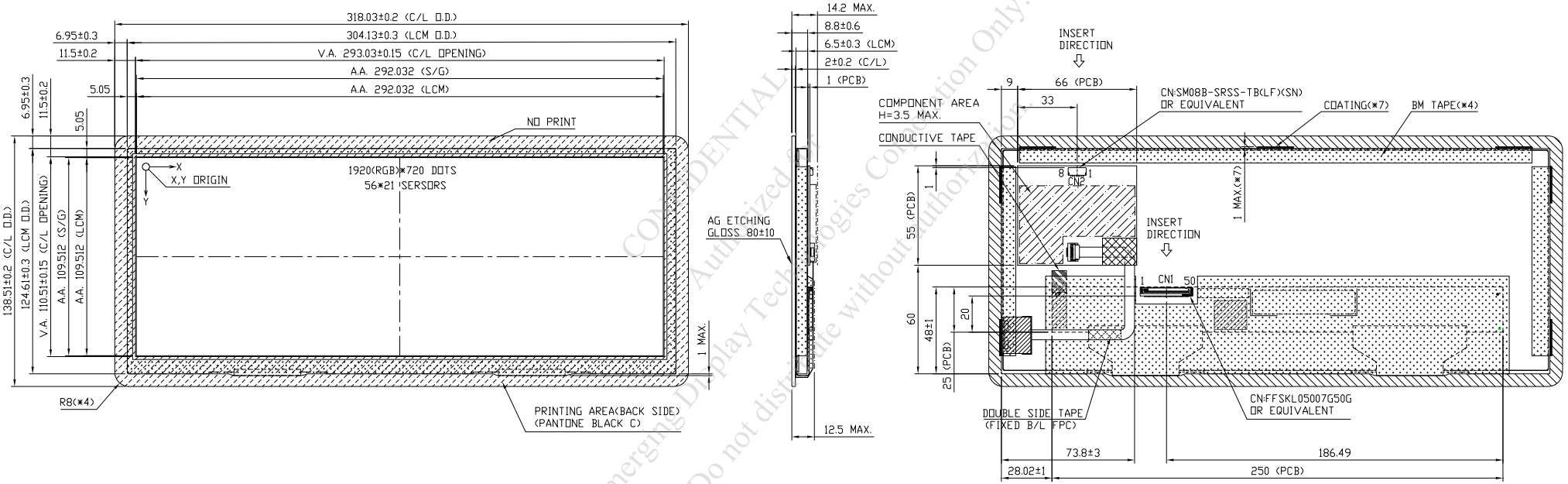
UNIT：mm

(b)THE BRIGHTNESS UNIFORMITY CALCULATING METHOD

$$\text{UNIFORMITY}：\frac{\text{MINIMUM BRIGHTNESS}}{\text{MAXIMUM BRIGHTNESS}} * 100\%$$

CONFIDENTIAL
Emerging Display Technologies Corporation.
Authorized for Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

7. OUTLINE DIMENSIONS

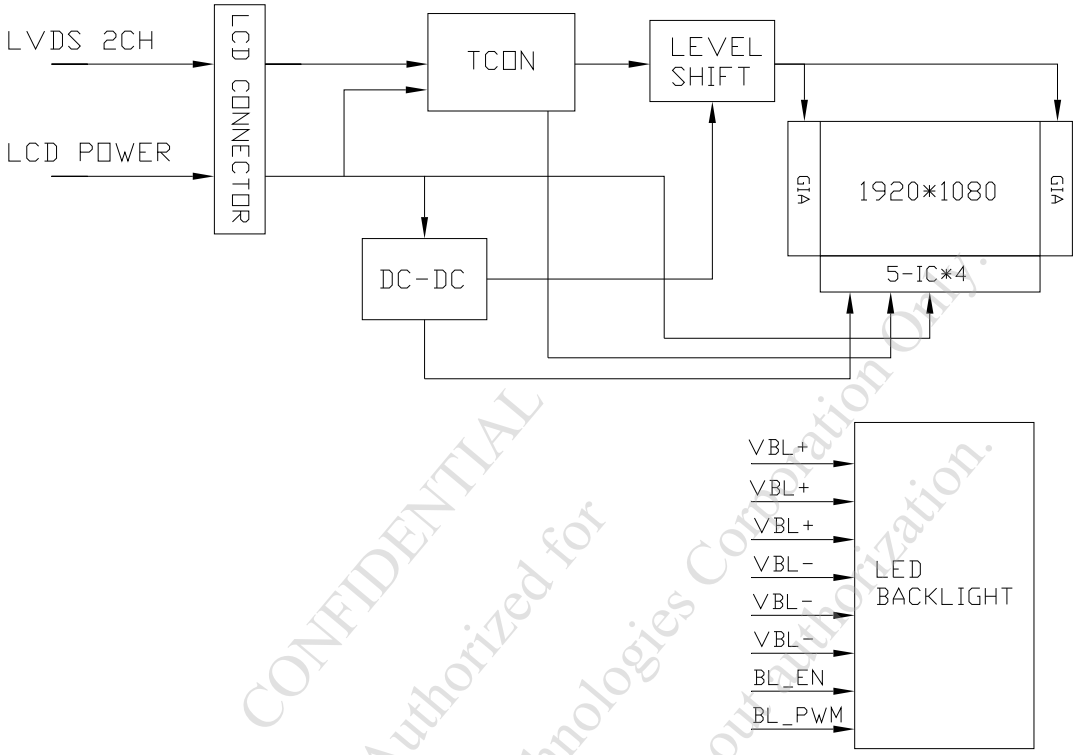


CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

UNIT : mm
SCALE : NTS
THIRD ANGLE PROJECTION
NOT SPECIFIED TOLERANCE IS ± 0.5 mm
NOTE:
1. C/L GLASS : SODA-LIME, CHAMFERED EDGES.
2. SUPPORTS ALL ANGLE VIEWABILITY WITH POLARIZED SUNGLASSES.

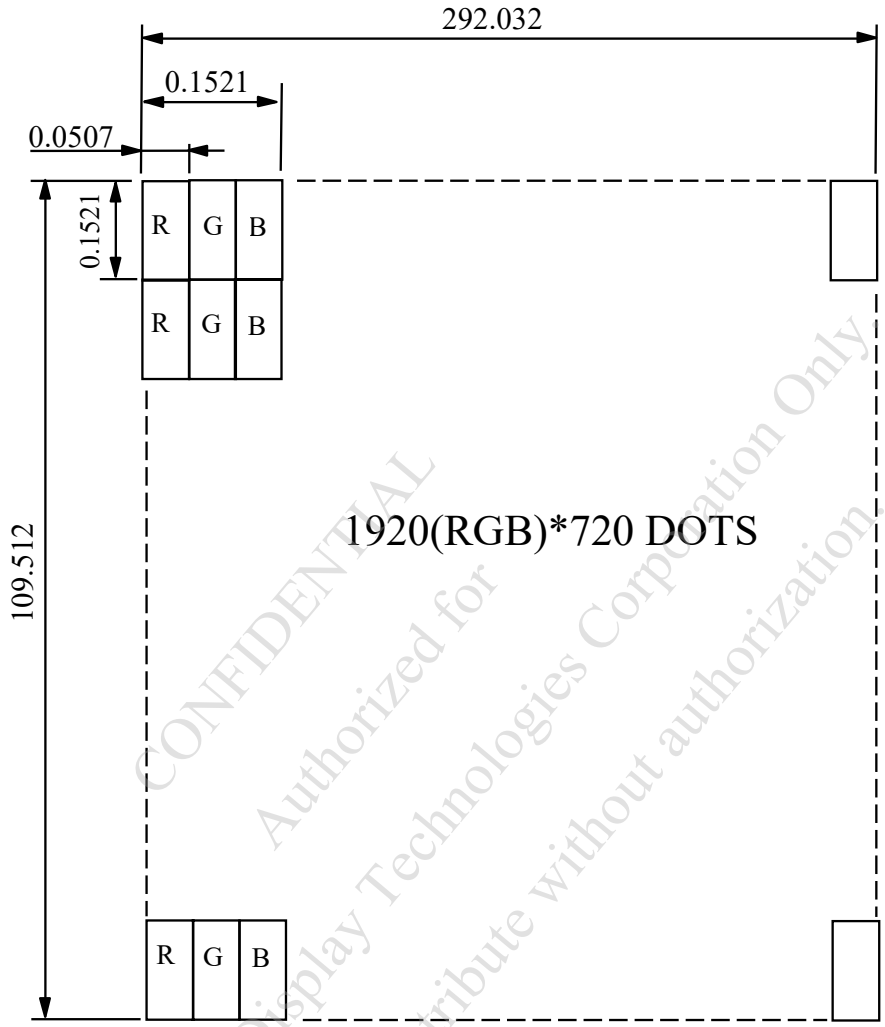
8. BLOCK DIAGRAM

8.1 TFT AND CTP MODULE



CONFIDENTIAL
Authorized for
Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

9. DETAIL DRAWING OF DOT MATRIX



UNIT : mm
SCALE : NTS
NOT SPECIFIED TOLERANCE IS ± 0.1
DOTS MATRIX TOLERANCE IS ± 0.01

CONFIDENTIAL
Authorized for
Emerging Display Technologies Corporation Only
Do not distribute without authorization

10. INTERFACE SIGNALS

IF1

PIN NO.	SYMBOL	FUNCTION
1	NC	EDT INTERNAL USE ONLY(EXT POWER SUPPLY FOR OTP CIRCUIT 7.25V)
2	VSS	DIGITAL GROUND
3	DA_P_O	LVDS INPUT
4	DA_N_O	LVDS INPUT
5	VSS	DIGITAL GROUND
6	DB_P_O	LVDS INPUT
7	DB_N_O	LVDS INPUT
8	VSS	DIGITAL GROUND
9	DC_P_O	LVDS INPUT
10	DC_N_O	LVDS INPUT
11	VSS	DIGITAL GROUND
12	CLK_P_O	LVDS INPUT
13	CLK_N_O	LVDS INPUT
14	VSS	DIGITAL GROUND
15	DD_P_O	LVDS INPUT
16	DD_N_O	LVDS INPUT
17	VSS	DIGITAL GROUND
18	DA_P_E	LVDS INPUT
19	DA_N_E	LVDS INPUT
20	VSS	DIGITAL GROUND
21	DB_P_E	LVDS INPUT
22	DB_N_E	LVDS INPUT
23	VSS	DIGITAL GROUND
24	DC_P_E	LVDS INPUT
25	DC_N_E	LVDS INPUT
26	VSS	DIGITAL GROUND
27	CLK_P_E	LVDS INPUT
28	CLK_N_E	LVDS INPUT
29	VSS	DIGITAL GROUND
30	DD_P_E	LVDS INPUT
31	DD_N_E	LVDS INPUT
32	VSS	DIGITAL GROUND
33	VDD	DIGITAL POWER,3.3V
34	VDD	DIGITAL POWER,3.3V
35	AVDD	DIGITAL POWER,6.5V
36	NC	NC
37	AVEE	DIGITAL POWER,-6.5V
38	VSS	DIGITAL GROUND
39	TP_I2C_SDA	I2C INTERFACE DATA SIGNAL FOR TOUCH
40	TP_I2C_SCL	I2C INTERFACE CLOCK SIGNAL FOR TOUCH
41	TP_I2C_INT	TOUCH SCREEN INTERRUPT LINE
42	TP_EXT_RSTN	TP EXTERNAL RESET SIGNAL
43	BIST_EN	ENABLE BIST FUNCTION
44	TP_GPIO[0]	USED FOR LOW POWER WAKE UP GESTURE FUNCTION
45	PON	SLPIN/SLPOUT HARDWARE CONTROL SIGNAL
46	TP_GPIO[1]	OUTPUT TOUCH FAIL DETECTION
47	RESX	RESET PIN，D-IC IS INITIALIZED WHEN THIS PIN IS LOW
48	DD_SDI_SDA	I2C INTERFACE DATA SIGNAL FOR OTP
49	DD_SCL	I2C INTERFACE CLOCK SIGNAL FOR OTP
50	FAIL_DET	FAIL DETECTION SIGNAL OUTPUT

CONFIDENTIAL. Issued for Emerging Display Technologies Corporation Only. Do not distribute without authorization.

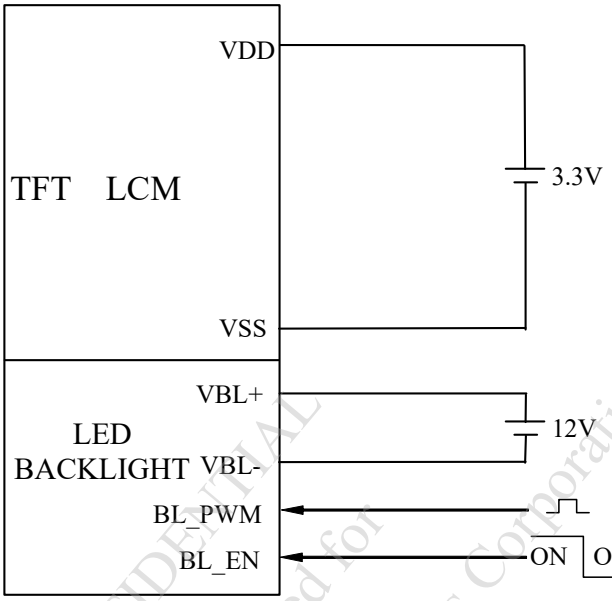
CN2

PIN NO.	SYMBOL	FUNCTION
1	VBL+	POWER SUPPLY VOLTAGE FOR LED DRIVER(+)
2	VBL+	POWER SUPPLY VOLTAGE FOR LED DRIVER(+)
3	VBL+	POWER SUPPLY VOLTAGE FOR LED DRIVER(+)
4	VBL-	POWER SUPPLY VOLTAGE FOR LED DRIVER(-)
5	VBL-	POWER SUPPLY VOLTAGE FOR LED DRIVER(-)
6	VBL-	POWER SUPPLY VOLTAGE FOR LED DRIVER(-)
7	BL_EN	BACKLIGHT LED ON/OFF CONTROL
8	BL_PWM	BACKLIGHT LED BRIGHTNESS CONTROL

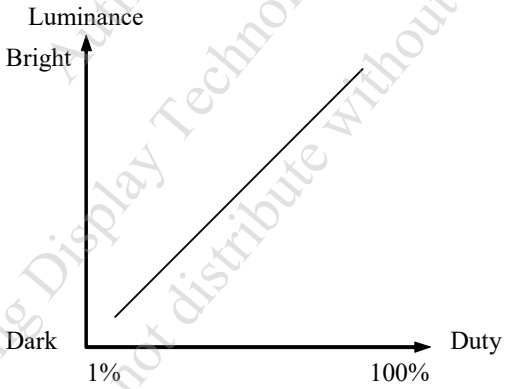
CONFIDENTIAL
Authorized for
Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

11. POWER SUPPLY

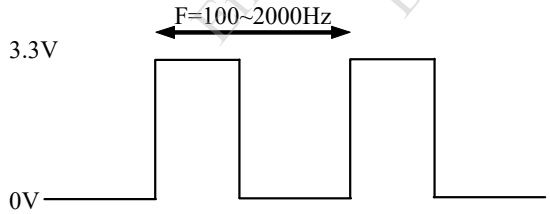
11.1 POWER SUPPLY FOR LCM



NOTE (1)：ADJUST THE PWM SIGNAL IN ORDER TO CONTROL LED BACKLIGHT'S BRIGHTNESS. THE HIGHER THE DUTY CYCLE, THE HIGHER THE BRIGHTNESS



NOTE (2)：PWM SIGNAL OPERATION FREQUENCY IS 100~2000 Hz AND DIMMING DUTY.



PWM Dimming Frequency[Hz]	Dimming Duty	
	Min[%]	Max[%]
$100 < F_{DIM} < 2K$	1	100

CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

12. CAPACITIVE TOUCH PANEL SPECIFICATION

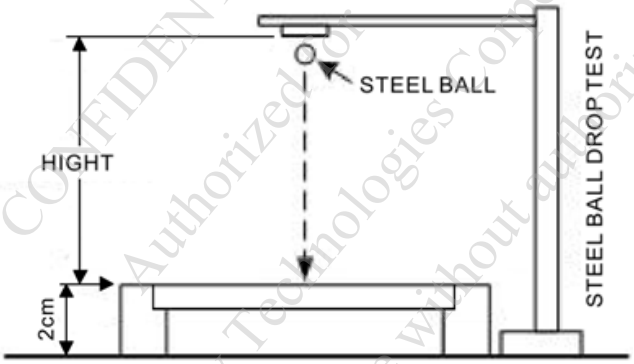
12.1 HARDNESS

ITEM	DESCRIPTION
SURFACE HARDNESS	(7)H (MIN.)

12.2 DURABILITY

USING STEEL BALL AND FALLING ON TOUCH PANEL SURFACE, FROM THE HEIGHT MUST PASS BELOW CONDITIONS：

ITEM	CONDITION	INSPECTION METHOD	DESCRIPTION
STEEL BALL DROP TEST	WEIGHT：67g HEIGHT OF FALL：30 cm	VISUAL INSPECTION	SIGN OF FRACTURE OR DAMAGE IS NOT ACCEPTABLE 3 TIME/ 1 POINTS, 25°C (CENTER POINT)



CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation only.
Do not distribute without authorization.

13 INSPECTION CRITERIA

13.1 APPLICATION

THIS INSPECTION STANDARD IS TO BE APPLIED TO THE LCD MODULE DELIVERED FROM EMERGING DISPLAY TECHNOLOGIES CORP.(E.D.T) TO CUSTOMERS

13.2 INSPECTION CONDITIONS

13.2.1 (1)OBSERVATION DISTANCE：35±5cm

(2)VIEWING ANGLE：±45°

±45° (FOR SECTION WITHIN VIEWING AREA), REFER TO FIG.A

90° (FOR SECTION OUTSIDE OF VIEWING AREA), REF TO FIG.B

PERPENDICULAR TO MODULE SURFACE

VIEWING ANGLE SHOULD BE SMALLER THAN 45°

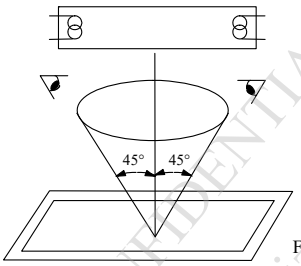


FIG.A

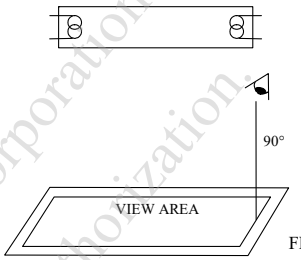


FIG.B

THE INSPECTION CRITERIA IS ACCORDING TO LINE OF SIGHT. INSPECTION SHALL BE MADE WITHIN THE HALF SECTION OF THE VIEWING CONE GENERATED BY LINE SEGMENT OF 45° WITH RESPECT TO THE VERTICAL AXIS FROM CENTER VERTEX OF LCD, THE FLUORESCENT LAMP AND THE CONE AXIS MUST BE PERPENDICULAR TO THE LCD SURFACE.

IF THE DEFECTS ARE OUTSIDE OF VIEWING AREA, IT SHALL BE INSPECTED BY 90° WITH RESPECT TO THE VERTICAL AXIS FROM EDGE OF VIEWING AREA.

13.2.2 ENVIRONMENT CONDITIONS：

AMBIENT TEMPERATURE		20±5°C
AMBIENT HUMIDITY		55 ± 20%RH
AMBIENT ILLUMINATION	COSMETIC INSPECTION	1000~1200lux
	FUNCTIONAL INSPECTION	100~150 lux
INSPECTION TIME		15 secs

13.2.3 INSPECTION LOT

QUANTITY PER DELIVERY LOT FOR EACH MODEL

13.2.4 INSPECTION METHOD

A SAMPLING INSPECTION SHALL BE MADE ACCORDING TO THE FOLLOWING PROVISIONS TO JUDGE THE ACCEPTABILITY

(a)APPLICABLE STANDARD：

ANSI/ ASQ Z1.4 NORMAL INSPECTION LEVEL II

(b)AQL : MAJOR DEFECT：AQL 0.65

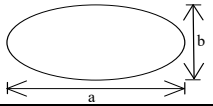
MINOR DEFECT：AQL 1.0

CONFIDENTIAL
Emerging Display Technologies Corporation Only.
Not to be distributed without authorization.

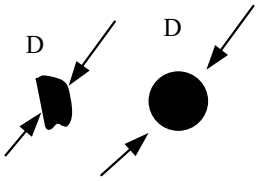
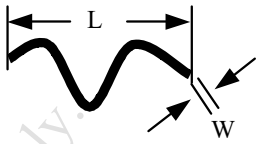
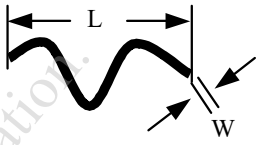
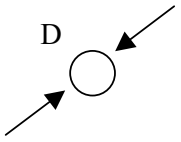
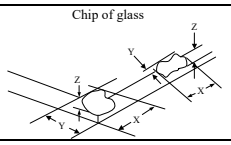
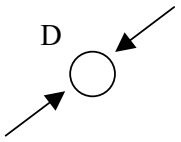
13.3 DEFECTS CLASSIFICATION

TYPE OF DEFECT	INSPECTION ITEM	DEFECT FEATURE	AQL
MAJOR DEFECT	1.DISPLAY ON	• DEFECT TO MISS SPECIFIED DISPLAY FUNCTION, FOR ALL AND SPECIFIED DOTS EX: DISCONNECTION, SHORT CIRCUIT ETC	0.65
	2.CTP FUNCTION	• NO FUNCTION • BROKEN LINE • FALSE TOUCH	
	3.BACKLIGHT	• NO LIGHT • FLICKERING AND OTHER ABNORMAL ILLUMINATION	
	4.DIMENSIONS	• SUBJECT TO INDIVIDUAL ACCEPTANCE SPECIFICATIONS	
MINOR DEFECT	1.DISPLAY ZONE	• BLACK/WHITE SPOT • BUBBLES ON POLARIZER • NEWTON RING • BLACK/WHITE LINE • SCRATCH • CONTAMINATION • UNEVEN COLOR SPREAD	1.0
	2.BEZEL ZONE	• STAINS • SCRATCHES • FOREIGN MATTER	
	3.SOLDERING	• INSUFFICIENT SOLDER • SOLDERED IN INCORRECT POSITION • CONVEX SOLDERING SPOT • SOLDER BALLS • SOLDER SCRAPS	
	4.DISPLAY ON (ALL ON)	• LIGHT LINE	

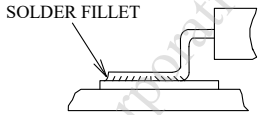
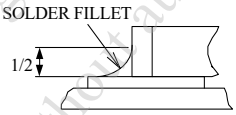
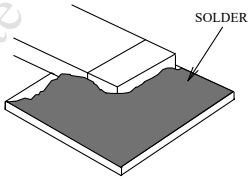
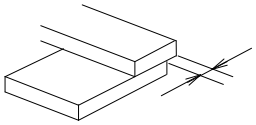
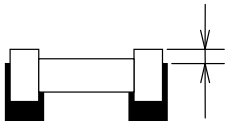
CONFIDENTIAL
Authorized for Emerging Display Technologies Customer Use Only.
Do not distribute without authorization.

<table>
<tr><th>NO.</th><th>ITEM</th><th>CRITERIA</th></tr>
<tr><td>1</td><td>DISPLAY ON INSPECTION</td><td>INCORRECT PATTERN
MISSING SEGMENT
DIM SEGMENT
OPERATING VOLTAGE BEYOND SPEC</td></tr>
<tr><td>2</td><td>OVERALL DIMENSIONS</td><td>OVERALL DIMENSION BEYOND SPEC</td></tr>
<tr><td>3</td><td>DOT DEFECT</td><td>INSPECTION PATTERN: FULL WHITE, FULL BLACK, RED, GREEN AND BLUE SCREENS.
<table>
<tr><th colspan="3">ITEM</th><th>STANDARDA
Z</th></tr>
<tr><td rowspan="3">BRIGHT DOT</td><td colspan="2">RANDOM</td><td>N≤2</td></tr>
<tr><td colspan="2">2 DOTS ADJACENT (PAIR)</td><td>N=0</td></tr>
<tr><td colspan="2">3 DOTS ADJACENT OR MORE</td><td>N=0</td></tr>
<tr><td rowspan="3">DARK DOT</td><td colspan="2">RANDOM</td><td>N≤4</td></tr>
<tr><td colspan="2">2 DOTS ADJACENT (PAIR)</td><td>N=0</td></tr>
<tr><td colspan="2">3 DOTS ADJACENT OR MORE</td><td>N=0</td></tr>
<tr><td rowspan="2">DISTANCE</td><td colspan="2">MINIMUM DISTANCE BETWEEN BRIGHT DOTS</td><td>—</td></tr>
<tr><td colspan="2">MINIMUM DISTANCE BETWEEN DARK DOTS</td><td>L≥10mm</td></tr>
<tr><td colspan="3">TOTAL BRIGHT AND DARK DOT</td><td>N≤4</td></tr>
<tr><td rowspan="2">SMALL BRIGHT DOT</td><td colspan="2">DOT GATHERING</td><td>N≤3 DISTANCE≤20mm</td></tr>
<tr><td colspan="2">DOT SCATTERING</td><td>N≤4</td></tr>
<tr><td colspan="3">MICRO BRIGHT DOT(ND 8% NOT OBSERVED)</td><td>N=0</td></tr>
<tr><td colspan="3">DISPLAY FAILURE (V-LINE/H-LINE/CROSS LINE ETC.)</td><td>NOT ALLOWABLE</td></tr>
<tr><td>MURA</td><td colspan="2">JUDGE BY LIMIT SAMPLE OR NOT VISIBLE THROUGH ND FILTER</td><td>ND 5%</td></tr>
</table>
NOTE：
(1)THE DEFINITION OF DOT: DOTS THAT CAN BE SEEN THROUGH A 8% ND FILTER,AND THE SIZE OF A DEFECTIVE DOT OVER IS 1/2 OF WHOLE DOT.
(2)BRIGHT DOT: DOTS THAT CAN BE SEEN THROUGH A 8% ND FILTER, AND THE SIZE OF A DEFECTIVE DOT IS THE WHOLE DOT.
(3)DARK DOT: DOTS APPEAR DARK AND UNCHANGED IN SIZE IN WHICH LCD PANEL IS DISPLAYING UNDER PURE RED, GREEN, BLUE PICTURE.
(4)MICRO BRIGHT DOT: DOTS THAT CANNOT BE SEEN THROUGH A 8% ND FILTER, AND THE SIZE OF A DEFECTIVE DOT IS THE WHOLE DOT.
(5)SMALL BRIGHT DOT: THE SIZE OF A DEFECTIVE DOT IS LESS THAN 1/2 OF WHOLE DOT.
(6)2 DOT ADJACENT=1PAIR=2DOTS.
 
</td></tr>
<tr><td>4</td><td>BUBBLES ON POLARIZER /SURFACE STAINS /DIRT/CF FAIL/SPOT</td><td>
<table>
<tr><th></th><th>AVERAGE DIAMETER (mm)：D</th><th>NUMBER OF PIECES PERMITTED</th></tr>
<tr><td rowspan="3">BUBBLE/DENT ON THE POLARIZER</td><td>D ≤ 0.3</td><td>IGNORE</td></tr>
<tr><td>0.3 < D ≤ 0.5</td><td>5</td></tr>
<tr><td>D > 0.5</td><td>0</td></tr>
<tr><td>POLARIZER SCRATCH /FOREIGN LINT</td><td colspan="2">0.05 < W ≤ 0.2, L ≤ 5,DISTANCE>5</td></tr>
<tr><td rowspan="3">CF FAIL / SPOT</td><td>D < 0.25, DISTANCE≤10</td><td>IGNORE</td></tr>
<tr><td>0.25 < D ≤ 0.5</td><td>4</td></tr>
<tr><td>0.05 < W ≤ 0.2,
L ≤ 5,DISTANCE>5</td><td>3</td></tr>
</table>
NOTE : (1)POLARIZER BUBBLE IS DEFINED AS THE BUBBLE APPEARS ON ACTIVE DISPLAY AREA. THE DEFECT OF POLARIZER BUBBLE SHALL BE IGNORED IF THE POLARIZER BUBBLE APPEARS ON THE OUTSIDE OF ACTIVE DISPLAY AREA.
(2)THE EXTRANEOUS SUBSTANCE IS DEFINED AS IT CAN BE OBSERVED WHEN THE MODULE IS POWER ON.
(3)THE DEFINITION OF AVERAGE DIAMETER, D IS DEFINED AS FOLLOWING.
AVERAGE DIAMETER (D)=(a+b)/2
 
</td></tr>
</table>

CONFIDENTIAL
Emerging Display Technologies Corporation Only.
Do not distribute without authorization

<table>
<tr><th>NO.</th><th>ITEM</th><th>CRITERIA</th></tr>
<tr><td>5</td><td>BLACK/WHITE SPOT CIRCULAR TYPE</td><td>THE FOLLOWING BLACK/WHITE SPOT ARE WITHIN THE VIEWING AREA. AVERAGE DIAMETER：D (mm)
<table>
<tr><th>SIZE D</th><th>PERMISSIBLE NO.</th></tr>
<tr><td>D≤0.6</td><td>IGNORE</td></tr>
<tr><td>D>0.6</td><td>0</td></tr>
</table>
NOTE (1)：THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.

</td></tr>
<tr><td>6</td><td>SCRATCH</td><td>THE FOLLOWING SCRATCH IS WITHIN THE VIEWING AREA. WIDTH：W (mm) , LENGTH : L (mm)
<table>
<tr><th>SIZE W & L</th><th>PERMISSIBLE NO.</th></tr>
<tr><td>W≤0.3</td><td>IGNORE</td></tr>
<tr><td>0.3<W≤0.5, L≤5</td><td>9</td></tr>
<tr><td>W>0.5</td><td>0</td></tr>
</table>
NOTE (1)：THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.

</td></tr>
<tr><td>7</td><td>BLACK / WHITE LINE LINEAR TYPE / FOREIGN FIBER</td><td>THE FOLLOWING BLACK LINE, WHITE LINE IS WITHIN THE VIEWING AREA. WIDTH：W (mm) , LENGTH : L (mm)
<table>
<tr><th>SIZE W & L</th><th>PERMISSIBLE NO.</th></tr>
<tr><td>W≤0.3</td><td>IGNORE</td></tr>
<tr><td>0.3<W≤0.5, L≤5</td><td>7</td></tr>
<tr><td>W>0.5</td><td>0</td></tr>
</table>
NOTE (1)：THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.

</td></tr>
<tr><td>8</td><td>BUBBLE / DENT FOR OPTICAL BONDING</td><td>BUBBLES WITHIN VIEWING AREA.
AVERAGE DIAMETER：D (mm)
<table>
<tr><th>SIZE D</th><th>PERMISSIBLE NO.</th></tr>
<tr><td>D≤0.2</td><td>IGNORE</td></tr>
<tr><td>0.2<D≤0.3</td><td>3</td></tr>
<tr><td>0.3<D≤0.5</td><td>4</td></tr>
<tr><td>D>0.5</td><td>0</td></tr>
</table>
NOTE (1)：THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.

</td></tr>
<tr><td>9</td><td>CHIPPING</td><td>
<table>
<tr><td>CORNER</td><td>X ≤ 3mm、Y ≤ 3mm、Z ≤ t
(t : THICKNESS)</td></tr>
<tr><td>EDGE</td><td>X ≤ 6mm , Y ≤ 1mm , Z < t
(t : THICKNESS)</td></tr>
</table>

</td></tr>
<tr><td>10</td><td>CRACKED GLASS</td><td>NOT ACCEPTABLE</td></tr>
<tr><td>11</td><td>PIN HOLE / IMPURITIES ON PRINTING</td><td>AVERAGE DIAMETER：D (mm)
<table>
<tr><th>SIZE D</th><th>PERMISSIBLE NO.</th></tr>
<tr><td>D≤0.1</td><td>IGNORE</td></tr>
<tr><td>0.1<D≤0.2</td><td>5</td></tr>
<tr><td>0.2<D≤0.3</td><td>1</td></tr>
<tr><td>D>0.3</td><td>0</td></tr>
</table>
NOTE (1)：THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.
NOTE (2)：REFILL INK IS ACCEPTABLE, BUT LOGO AND ICON PIN HOLE ARE NOT ALLOWED.

</td></tr>
<tr><td>12</td><td>LINE DEFECT ON DISPLAY</td><td>OBVIOUS VERTICAL OR HORIZONTAL LINE DEFECT IS NOT ALLOWED.</td></tr>
<tr><td>13</td><td>MURA ON DISPLAY</td><td>IT’S ACCEPTABLE, IF MURA IS SLIGHT VISIBLE THROUGH 5% ND FILTER.</td></tr>
<tr><td>14</td><td>UNEVEN COLOR SPREAD, COLORATION</td><td>TO BE DETERMINED BASED UPON THE LIMITED SAMPLE.</td></tr>
<tr><td>15</td><td>BEZEL APPEARANCE</td><td>1. BEZEL MAY NOT HAVE RUST, BE DEFORMED OR HAVE FINGER PRINTS STAINS OF OTHER CONTAMINATION.
2. BEZEL MUST COMPLY WITH JOB SPECIFICATIONS.</td></tr>
</table>

CONFIDENTIAL
Emerging Display Technologies Corporation
Do not distribute without authorization.
Approved for Customer Only.

NO.	ITEM	CRITERIA
16	PCB	1. THERE MAY NOT BE MORE THAN 2mm OF SEALANT OUTSIDE THE SEAL AREA ON THE PCB, AND THERE SHOULD BE NO MORE THAN THREE PLACES. 2. NO OXIDATION OR CONTAMINATION ON PCB TERMINALS. 3. PARTS ON PCB MUST BE THE SAME AS ON THE PRODUCTION CHARACTERISTIC CHART. THERE SHOULD BE NO WRONG PARTS, MISSING PARTS OR EXCESS PARTS. 4. THE JUMPER ON THE PCB SHOULD CONFORM TO THE PRODUCT CHARACTERISTIC CHART. 5. IF SOLDER GETS ON BEZEL TAB PADS, LED PAD, ZEBRA PAD OR SCREW HOLD PAD; MAKE SURE IT IS SMOOTHED DOWN.
17	SOLDERING	1. NO SOLDERING FOUND ON THE SPECIFIED PLACE 2. INSUFFICIENT SOLDER (a)LSI, IC A POOR WETTING OF SOLDER IS BETWEEN LOWER BEND OR "HEEL" OF LEAD AND PAD  (b)CHIP COMPONENT · SOLDER IS LESS THAN 50% OF SIDES AND FRONT FACE WETTING  · SOLDER WETS 3 SIDES OF TERMINAL, BUT LESS THAN 25% OF SIDES AND FRONT SURFACE AREA ARE COVERED  3. PARTS ALIGNMENT (a)LSI, IC LEAD WIDTH IS MORE THAN 50% BEYOND PAD OUTLINE  (b)CHIP COMPONENT COMPONENT IS OFF CENTER, AND MORE THAN 50% OF THE LEADS IS OFF THE PAD OUTLINE  4. NO UNMELTED SOLDER PASTE MAY BE PRESENT ON THE PCB. 5. NO COLD SOLDER JOINTS, MISSING SOLDER CONNECTIONS, OXIDATION OR ICICLE. 6. NO RESIDUE OR SOLDER BALLS ON PCB. 7. NO SHORT CIRCUITS IN COMPONENTS ON PCB.

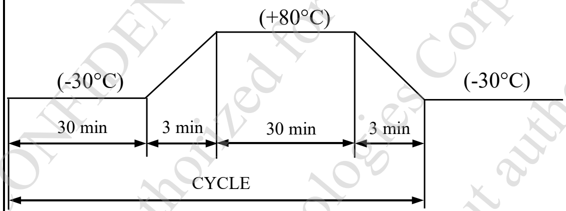
CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation Only
Do not distribute without authorization.

NO.	ITEM	CRITERIA
18	BACKLIGHT	1. NO LIGHT 2. FLICKERING AND OTHER ABNORMAL ILLUMINATION 3. SPOTS OR SCRATCHES THAT APPEAR WHEN LIT MUST BE JUDGED USING LCD SPOT, LINES AND CONTAMINATION STANDARDS. 4. BACKLIGHT DOESN'T LIGHT OR COLOR IS WRONG.
19	GENERAL APPEARANCE	1. NO OXIDATION, CONTAMINATION, CURVES OR, BENDS ON INTERFACE PIN (OLB) OF TCP. 2. NO CRACKS ON INTERFACE PIN (OLB) OF TCP. 3. NO CONTAMINATION, SOLDER RESIDUE OR SOLDER BALLS ON PRODUCT. 4. THE IC ON THE TCP MAY NOT BE DAMAGED, CIRCUITS. 5. THE UPPERMOST EDGE OF THE PROTECTIVE STRIP ON THE INTERFACE PIN MUST BE PRESENT OR LOOK AS IF IT CAUSE THE INTERFACE PIN TO SEVER. 6. THE RESIDUAL ROSIN OR TIN OIL OF SOLDERING (COMPONENT OR CHIP COMPONENT) IS NOT BURNED INTO BROWN OR BLACK COLOR. 7. SEALANT ON TOP OF THE ITO CIRCUIT HAS NOT HARDENED. 8. PIN TYPE MUST MATCH TYPE IN SPECIFICATION SHEET. 9. LCD PIN LOOSE OR MISSING PINS. 10. PRODUCT PACKAGING MUST BE THE SAME AS SPECIFIED ON PACKAGING SPECIFICATION SHEET. 11. PRODUCT DIMENSION AND STRUCTURE MUST CONFORM TO PRODUCT SPECIFICATION SHEET. 12. THE APPEARANCE OF HEAT SEAL SHOULD NOT ADMIT ANY DIRT AND BREAK.

COPYRIGHT © Emerging Display Technologies Corporation
Authorized Use Only
Emerging Display Technologies Corporation Only
Do not distribute without authorization

14 RELIABILITY TEST

14.1 STANDARD SPECIFICATIONS FOR RELIABILITY OF LCD MODULE

NO.	ITEM	DESCRIPTION
1	HIGH TEMPERATURE TEST (OPERATION)	THE SAMPLE SHOULD BE ALLOWED TO STAND AT (+70°C) FOR 240 HRS
2	LOW TEMPERATURE TEST (OPERATION)	THE SAMPLE SHOULD BE ALLOWED TO STAND AT (-20°C) FOR 240 HRS
3	HIGH TEMPERATURE TEST (STORAGE)	THE SAMPLE SHOULD BE ALLOWED TO STAND AT (+80°C) FOR 240 HRS
4	LOW TEMPERATURE TEST (STORAGE)	THE SAMPLE SHOULD BE ALLOWED TO STAND AT (-30°C) FOR 240 HRS
5	HIGH TEMPERATURE / HUMIDITY TEST (OPERATION)	THE SAMPLE SHOULD BE ALLOWED TO STAND AT 60°C, 90% RH 240 HRS
6	THERMAL SHOCK TEST (NOT OPERATED)	THE SAMPLE SHOULD BE ALLOWED TO STAND THE FOLLOWING 10 CYCLES OF OPERATION： 
7	VIBRATION (NOT OPERATED)	11.76 m/s^2(1.2G), 10~100 Hz XYZ DIRECTIONS, 1 HR EACH
8	SHOCK (NOT OPERATED)	490.0 m/s^2(50G), 10 ms XYZ DIRECTIONS, 1 TIME EACH
9	ESD (ELECTROSTATIC DISCHARGE) (NOT OPERATED)	AIR DISCHARGE ± 12KV CONTACT DISCHARGE ± 8KV (ACCORDING TO IEC-61000-4-2)

NOTE (1)：THE TEST SAMPLES HAVE RECOVERY TIME FOR 2 HOURS AT ROOM TEMPERATURE BEFORE THE FUNCTION CHECK. IN THE STANDARD CONDITIONS, THERE IS NO DISPLAY FUNCTION NG ISSUE OCCURRED.

NOTE (2)：WHEN THE LCD MODULE IS OPERATED AT A HIGHER AMBIENT TEMPERATURE THAN 60°C, THE PWM DUTY CYCLE OF THE LED BACKLIGHT SHOULD BE ADJUSTED TO BE LESS THAN TBD%. IF THE MODULE IS OPERATED AT A HIGHER DUTY CYCLE THAN TBD, THEN THERE IS A POSSIBILITY OF DISTORTION AND IRREGULARITY OF THE PICTURE DUE TO LIQUID CRYSTAL BEHAVIOR.

NOTE (3)：TESTING CONDITIONS AND INSPECTION CRITERIA

NO.	ITEM	TEST MODEL	INSPECTION CRITERIA
1	CURRENT CONSUMPTION	REFER TO SPECIFICATION	THE CURRENT CONSUMPTION SHOULD CONFORM TO THE PRODUCT SPECIFICATION.
2	CONTRAST	REFER TO SPECIFICATION	AFTER THE TESTS HAVE BEEN EXECUTED, THE CONTRAST MUST BE LARGER THAN HALF OF ITS INITIAL VALUE PRIOR TO THE TESTS.
3	APPEARANCE	VISUAL INSPECTION	DEFECT FREE

CONFIDENTIAL
Authorized for: Emerging Display Technologies Corporation Only.
Do not distribute without authorization.

15. CAUTION

15.1 OPERATION

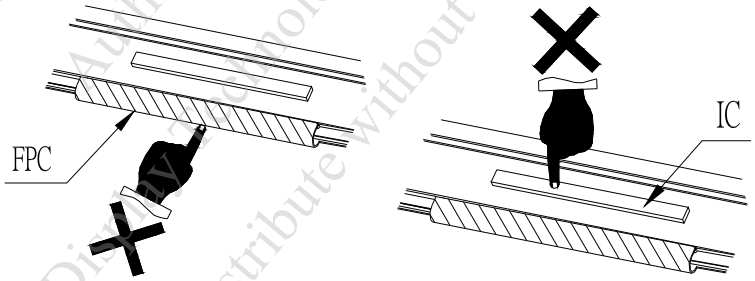
15.1.1 DO NOT CONNECT OR DISCONNECT MODULES TO OR FROM THEMAIN SYSTEM WHILE POWER IS BEING SUPPLIED .

15.1.2 USE THE MODULE WITHIN SPECIFIED TEMPERATURE ; LOWER TEMPERATURE CAUSES THE RETARDATION OF BLINKING SPEED OF THE DISPLAY ; HIGHER TEMPERATURE MAKES OVERALL DISPLAY DISCOLOR.
WHEN THE TEMPERATURE RETURNS TO NORMALITY, THE DISPLAY WILL OPERATE NORMALLY .

15.1.3 ADJUST THE LC DRIVING VOLTAGE TO OBTAIN THE OPTIMUM CONTRAST.

15.1.4 POWER ON SEQUENCE INPUT SIGNALS SHOULD NOT BE SUPPLIED TO LCD MODULE BEFORE POWER SUPPLY VOLTAGE IS APPLIED AND REACHES THE SPECIFIED VALUE .
IF ABOVE SEQUENCE IS NOT FOLLOWED , CMOS LSIS OF LCD MODULES MAY BE DAMAGED DUE TO LATCH - UP PROBLEM .

15.1.5 NOT ALLOWED TO INFLICT ANY EXTERNAL STRESS AND TO CAUSE ANY MECHANICAL INTERFERENCE ON THE BENDING AREA OF FPC DURING THE TAIL BENDING BACKWARDS!
DO NOT STRESS FPC AND IC ON THE MODULE!



CONFIDENTIAL
Authorized for Emerging Display Technologies Corporation Only.
Do not distribute without permission.

15.2 STORAGE

15.2.1 STORE THE MODULE IN A DARK ROOM OR KEEP IN ORIGINAL PACKAGE WHERE MUST KEEP AT 25±10℃ AND 65%RH OR LESS.

15.2.2 DO NOT STORE THE MODULE IN SURROUNDINGS CONTAINING ORGANIC SOLVENT OR CORROSIVE GAS.

15.2.3 STORE THE MODULE IN AN ANTI-ELECTROSTATIC CONTAINER OR BAG.

15.3 NOTICE

15.3.1 USE A GROUNDED SOLDERING IRON WHEN SOLDERING CONNECTOR I/O TERMINALS . FOR SOLDERING OR REPAIRING, TAKE PRECAUTION AGAINST THE TEMPERATURE OF THE SOLDERING IRON AND THE SOLDERING TIME TO PREVENT PEELING OFF THE THROUGH-HOLE-PAD .

15.3.2 DO NOT DISASSEMBLE . EDT SHALL NOT BE HELD RESPONSIBLE IF THE MODULE IS DISASSEMBLED AND UPON THE REASSEMBLY THE MODULE FAILED .

15.3.3 DO NOT CHARGE STATIC ELECTRICITY , AS THE CIRCUIT OF THIS MODULE CONTAINS CMOS LSIS. A WORKMAN'S BODY SHOULD ALWAYS BE STATIC-PROTECTED BY USE OF AN ESD STRAP. WORKING CLOTHES FOR SUCH PERSONNEL SHOULD BE OF STATIC-PROTECTED MATERIAL.

15.3.4 ALWAYS GROUND THE ELECTRICALLY-POWERED DRIVER BEFORE USING IT TO INSTALL THE LCD MODULE. WHILE CLEANING THE WORK STATION BY VACUUM CLEANER, DO NOT BRING THE SUCKING MOUTH NEAR THE MODULE ; STATIC ELECTRICITY OF THE ELECTRICALLY-POWERED DRIVER OR THE VACUUM CLEANER MAY DESTROY THE MODULE .

15.3.5 DON'T GIVE EXTERNAL SHOCK.

15.3.6 DON'T APPLY EXCESSIVE FORCE ON THE SURFACE.

15.3.7 LIQUID IN LCD IS HAZARDOUS SUBSTANCE. MUST NOT LICK AND SWALLOW.
WHEN THE LIQUID IS ATTACH TO YOUR, SKIN, CLOTH ETC.
WASH IT OUT THOROUGHLY AND IMMEDIATELY.

15.3.8 DON'T OPERATE IT ABOVE THE ABSOLUTE MAXIMUM RATING.

15.3.9 STORAGE IN A CLEAN ENVIRONMENT, FREE FROM DUST, ACTIVE GAS AND SOLVENT.

15.3.10 STORE WITHOUT ANY PHYSICAL LOAD.

15.3.11 REWIRING: NO MORE THAN 3 TIMES.

COPY DENIED
Authorized for Emerging Display Technologies Corporation Only
Do not distribute without authorization