EXAMINED BY : Justin Horng	EMERGING DISPLAY TECHNOLOGIES CORPORATION	FILE NO . CAS-0008325
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		VERSION : 1

CUSTOMER ACCEPTANCE SPECIFICATIONS

MODEL NO. :

E T M L 1 0 4 0 0 2 C D H U
(GP)

FOR MESSRS :

_____

CUSTOMER'S APPROVAL

DATE :

_____

BY :

_____

EMERGING DISPLAY TECHNOLOGIES CORPORATION	MODEL NO.	VERSION	PAGE
	ETML104002CDHU	1	0-1

RECORDS OF REVISION

DOC . FIRST ISSUE

JUL.26, 2016

DATE	REVISED PAGE NO.	SUMMARY

TABLE OF CONTENTS

1. GENERAL SPECIFICATIONS

1.1 DATA SHEET FOR CAPACITIVE TOUCH PANEL CONTROLLER/DRIVER

PLEASE REFER TO：

EETI EXC3132

1.2 MATERIAL SAFETY DESCRIPTION

ASSEMBLIES SHALL COMPLY WITH EDT GREEN PRODUCT (GP) REQUIREMENTS, INCLUDING PROHIBITED MATERIALS/COMPONENTS CONTAINING LEAD, MERCURY, CADMIUM, HEXAVALENT CHROMIUM, POLYBROMINATED BIPHENYLS (PBB), POLYBROMINATED
DIPHENYL ETHERS (PBDE), POLYCHLORINATED BIPHENYLS (PCB) CATEGORY, POLYCHLORINATED NAPHTHALENE (PCN) CATEGORY, POLYCHLORINATED TERPHENYLS (PCT) CATEGORY, CHLORINATED PARAFFINS (CP) CATEGORY, TRIBUTHYL TIN CATEGORY / TRIPHENYL TIN CATEGORY, ASBESTOS, SPECIFIC AZO COMPOUNDS, FORMALDEHYDE, POLYVINYL CHLORIDE (PVC) AND PVC BLENDS, OTHER BROMINATED ORGANIC COMPOUNDS AND OTHER CHLORINATED ORGANIC COMPOUNDS.

2. MECHANICAL SPECIFICATIONS

2.1 LCD MODULE MECHANICAL SPECIFICATIONS

(1) DIAGONALS	----------	10.4 inch
(2) NUMBER OF DOTS	----------	800W * (RGB) * 600H DOTS
(3) MODULE SIZE	----------	243W * 184H * 9.3D (MAX) mm (WITHOUT FPC)
(4) ACTIVE AREA	----------	211.2W * 158.4H mm
(5) DOT SIZE	----------	0.088W * 0.264H mm
(6) PIXEL SIZE	----------	0.264W * 0.264H mm
(7) LCD TYPE	----------	TFT , TRANSMISSIVE , ANTI-GLARE
(8) COLOR	----------	262K/16.2M
(9) VIEWING DIRECTION	----------	12 O'CLOCK , GRAY LEVEL INVERSION
(10) BACK LIGHT	----------	LED , COLOR : WHITE
(11) INTERFACE MODE	----------	LVDS MODE

2.2 CAPACITIVE TOUCH PANEL MECHANICAL SPECIFICATIONS

(1) TOUCH PANEL SIZE ---------- 10.4 inch

(2) OUTER DIMENSION ---------- 225W * 176.1H * 1.95D mm
(WITHOUT FPC)

(3) EFFECTIVE AREA ---------- 214.2W * 161.4H mm

(4) ACTIVE AREA ---------- 213.2W * 160.44H mm

(5) INPUT TYPE ---------- MULTI-TOUCH

(6) NUMBER OF TOUCH SENSOR ---------- 21 * 16 SENSORS

(7) RESOLUTION ---------- 1024 * 768

(8) INTERFACE MODE ---------- USB

3. ABSOLUTE MAXIMUM RATINGS

3.1 LCD MODULE ELECTRICAL ABSOLUTE MAXIMUM RATINGS.

ITEM	SYMBOL	MIN.	MAX.	UNIT	REMARK
POWER SUPPLY VOLTAGE	VCC	-0.3	7.0	V	
STATIC ELECTRICITY	—	—	—	V	NOTE (1)
CONVERTER VOLTAGE	V_i	-0.3	1.8	V	NOTE (2),(3)
ENABLE VOLTAGE	EN	—	5.5	V	
BACKLIGHT ADJUST	ADJ	—	5.5	V	

NOTE (1)：LCM SHOULD BE GROUNDED DURING HANDLING LCM.
NOTE (2)：PERMANENT DAMAGE TO THE DEVICE MAY OCCUR IF MAXIMUM VALUES ARE EXCEEDED. FUNCTION OPERATION SHOULD BE RESTRICTED TO THE CONDITIONS DESCRIBED UNDER NORMAL OPERATING CONDITIONS.
NOTE (3)：SPECIFIED VALUES ARE FOR LAMP.

3.2 CAPACITIVE TOUCH PANEL ELECTRICAL ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	MAX.	UNIT	REMARK
POWER SUPPLY FOR DRIVER	VDD1–VSS	-0.3	4	V	
POWER SUPPLY FOR INTERFACE	VDD–VSS	2	6.0	V	
INPUT I/O PIN VOLTAGE	VIN	VSS-0.3	VDD+0.3	V	
STATIC ELECTRICITY	—	—	100	V	NOTE (1)

NOTE (1)：TEST METHOD AND CONDITIONS：
CAPACITOR IS CHARGED UP TO 200 pF BY STATIC VOLTAGE, THEN CONNECT WITH DISPLAY MODULE INTERFACE PINS FOR DISCHARGE.

3.3 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)
HUMIDITY	NOTE (3)		NOTE (3)		WITHOUT CONDENSATION
VIBRATION	—	2.45 m/s^2 (0.25 G)	—	11.76 m/s^2 (1.2 G)	10~100 Hz XYZ DIRECTIONS 1 HR EACH
SHOCK	—	29.4 m/s^2 (3 G)	—	490.0 m/s^2 (50 G)	10 ms XYZ DIRECTIONS 1 TIMES EACH
CORROSIVE GAS	NOT ACCEPTABLE		NOT ACCEPTABLE		

NOTE (1)：Ta AT -30°C：WILL BE 48HRS MAX.
80°C：WILL BE 168HRS MAX.
NOTE (2)：BACKGROUND COLOR CHANGES SLIGHTLY DEPENDING ON AMBIENT TEMPERATURE THIS PHENOMENON IS REVERSIBLE.
NOTE (3)：Ta ≤ 60°C：90%RH MAX. (96HRS MAX).
Ta > 60°C：ABSOLUTE HUMIDITY MUST BE LOWER THAN THE HUMIDITY OF 90%RH AT 60°C (96HRS MAX).

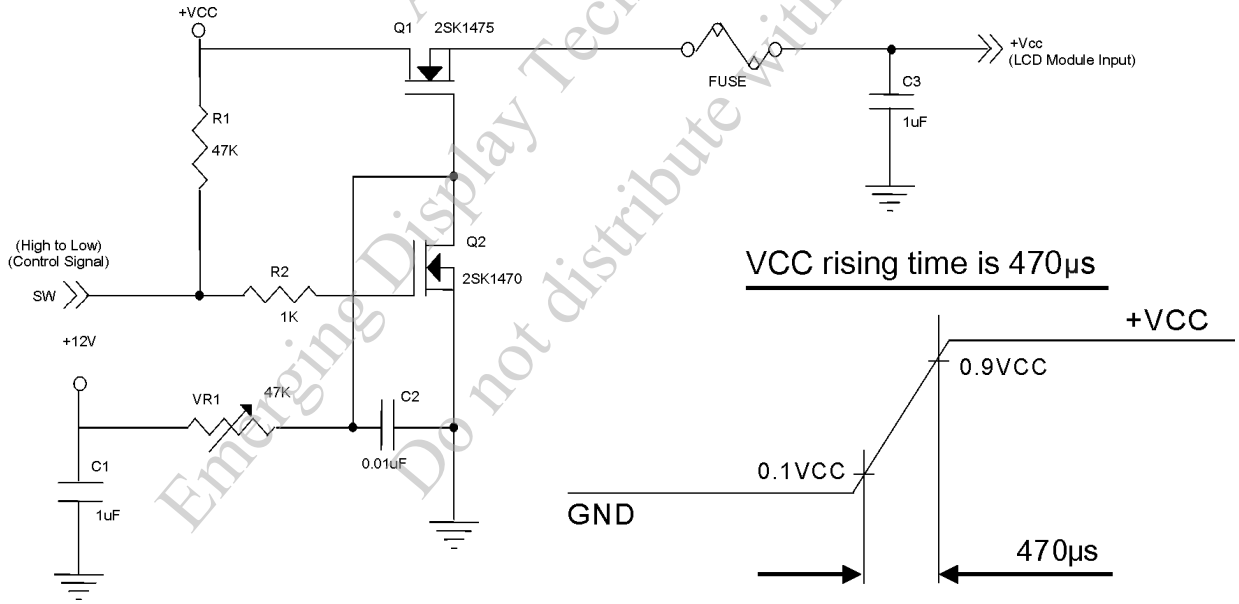
4. ELECTRICAL CHARACTERISTICS

4.1 LCD MODULE ELECTRICAL CHARACTERISTICS

Ta = 25 °C

ITEM		SYMBOL	MIN.	TYP.	MAX.	UNIT	NOTE
POWER SUPPLY VOLTAGE		VCC	3.0	3.3	3.6	V	(1) at VCC=3.3V
RUSH CURRENT		I_{RUSH}	—	—	4	A	(2)
POWER SUPPLY CURRENT	WHITE	—	—	410	490	mA	(3)a, VCC=3.3V
	BLACK		—	540	650	mA	(3)b, VCC=3.3V
POWER CONSUMPTION		P_L	—	2.0	—	W	
LVDS DIFFERENTIAL INPUT VOLTAGE		|VID|	100	—	600	mV	
LVDS COMMON INPUT VOLTAGE		VICM	0.7	—	1.6	V	
CONVERTER POWER SUPPLY VOLTAGE		V_i	7	12.0	17	V	
CONVERTER POWER SUPPLY CURRENT		I_i	—	0.25	0.3	A	@ Vi = 12V (Duty 100%)
LED POWER CONSUMPTION		P_{LED}	—	3.0	3.6	W	@ Vi = 12V (Duty 100%)
EN CONTROL LEVEL	BACKLIGHT ON	—	2.0	3.3	5.0	V	
	BACKLIGHT OFF		0	—	0.8	V	
PWM CONTROL LEVEL	PWM HIGH LEVEL	—	2.0	3.3	5.0	V	
	PWM LOW LEVEL		0	—	0.15	V	
PWM CONTROL DUTY RATIO			10	—	100	%	
PWM CONTROL FREQUENCY		f_{PWM}	190	200	20000	Hz	Recommend -ed 200Hz
LED LIFE TIME		L_L	30000	—	—	HRS	(2)

NOTE (1)：THE ASSEMBLY SHOULD BE ALWAYS OPERATED WITHIN ABOVE RANGES.
NOTE (2)：MEASUREMENT CONDITIONS:



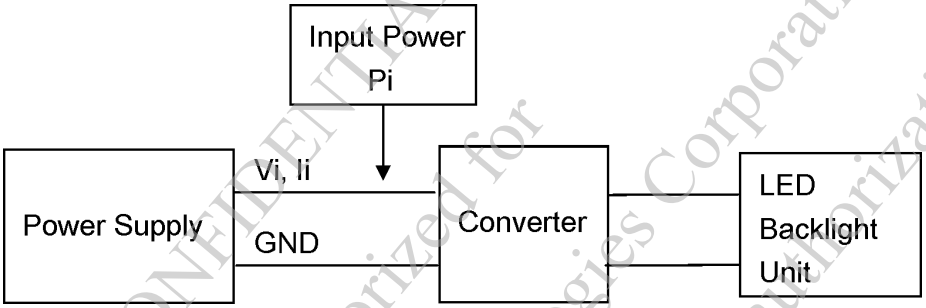
NOTE (3)：THE SPECIFIED POWER SUPPLY CURRENT IS UNDER THE CONDITIONS AT VCC = 3.3V, Ta = 25 °C, fv = 60 Hz, WHERE AS A POWER DISSIPATION CHECK PATTERN BELOW IS DISPLAYED.

a. White Pattern

Active Area

b. Black Pattern

Active Area



NOTE (4)：LED CURRENT IS MEASURED BY UTILIZING A HIGH FREQUENCY CURRENT METER AS SHOWN BELOW.

NOTE (5)：THE LIFETIME OF LED IS DEFINED AS THE TIME WHEN IT CONTINUES TO OPERATE UNDER THE CONDITIONS AT TA = 25 °C AND DUTY 100 % UNTIL THE BRIGHTNESS BECOMES ≤ 50 % OF ITS ORIGINAL VALUE. OPERATING LED UNDER HIGH TEMPERATURE ENVIRONMENT WILL REDUCE LIFE TIME AND LEAD TO COLOR SHIFT.

4.2 CAPACITIVE TOUCH PANEL ELECTRICAL CHARACTERISTICS

Ta=25°C

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR DRIVER	VDD1−VSS	—	3.0	3.3	3.6	V
POWER SUPPLY FOR INTERFACE	VDD−VSS	—	4.7	5	5.3	V
INPUT HIGH LEVEL VOLTAGE	VIH	—	VDD1-0.8	—	—	V
INPUT LOW LEVEL VOLTAGE	VIL	—	—	—	0.8	V
OUTPUT HIGH LEVEL VOLTAGE	VOH	I=2mA	VDD1−0.4	—	—	V
OUTPUT LOW LEVEL VOLTAGE	VOL	I=2mA	—	—	0.4	V
CURRENT CONSUMPTION FOR OPERATION	IDD	VDD−VSS=5V	—	80	120	mA

5. TIMING CHARACTERISTICS

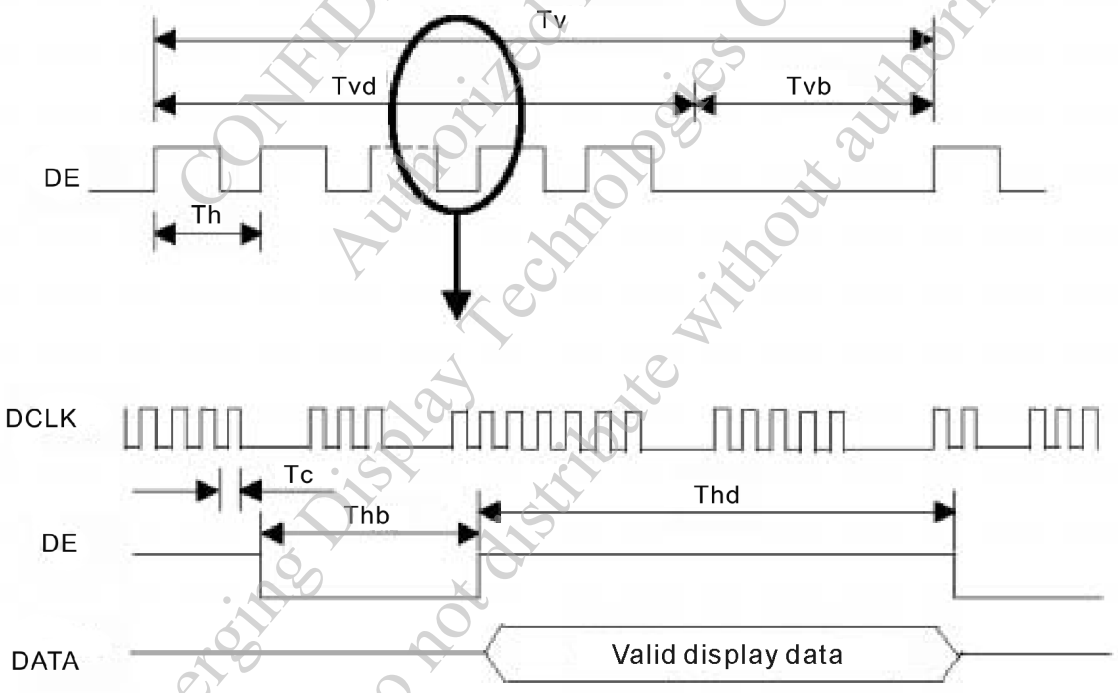
5.1 LCD MODULE FOR AC ELECTRICAL CHARACTERISTICS

SIGNAL	ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	NOTE
DCLK	FREQUENCY	Fc	35	40	45	MHz	
VERTICAL ACTIVE DISPLAY TERM	TOTAL	Tv	608	628	750	Th	Tv=Tvd+Tvb
	DISPLAY	Tvd	—	600	—	Th	
	BLANK	Tvb	8	28	150	Th	
HORIZONTAL ACTIVE DISPLAY TERM	TOTAL	Th	960	1056	1060	Tc	Th=Thd+Thb
	DISPLAY	Thd	—	800	—	Tc	
	BLANK	Thb	160	256	260	Tc	

NOTE (1)：SINCE THIS ASSEMBLY IS OPERATED IN DE ONLY MODE, HSYNC AND VSYNC INPUT SIGNALS SHOULD BE SET TO LOW LOGIC LEVEL. OTHERWISE, THIS ASSEMBLY WOULD OPERATE ABNORMALLY.

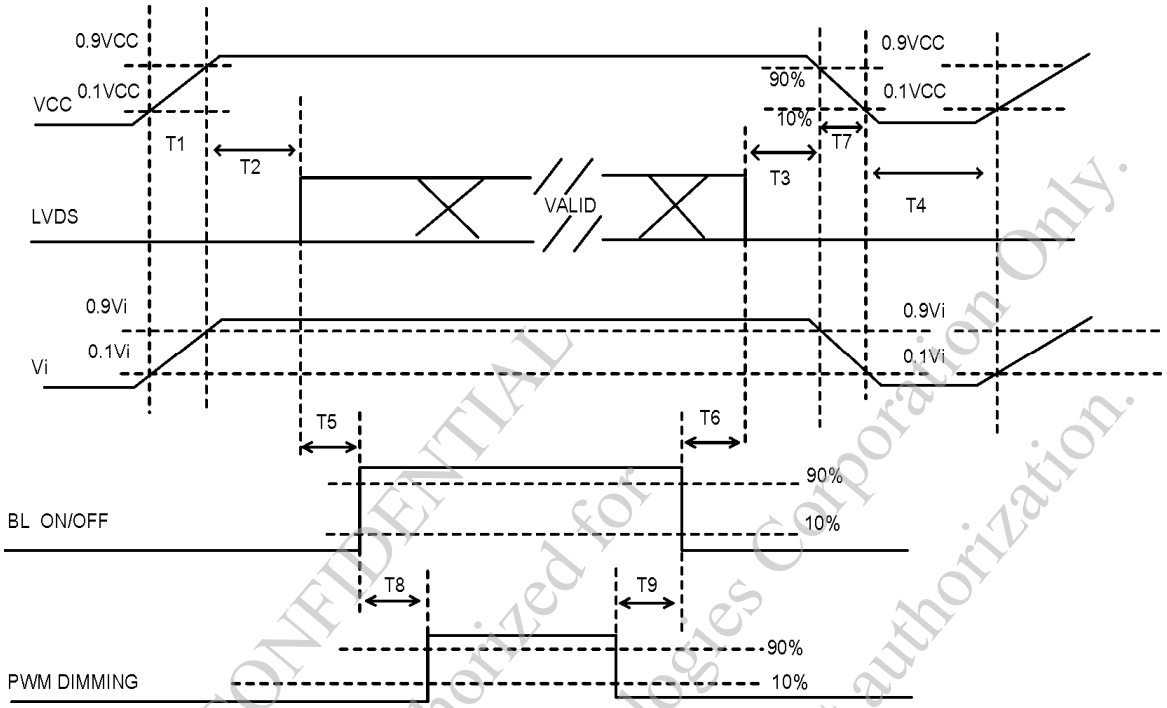
NOTE (2)：FRAME RATE IS 60Hz

INPUT SIGNAL TIMING DIAGRAM



5.2 POWER ON/OFF SEQUENCE

TO PREVENT A LATCH-UP OR DC OPERATION OF LCD ASSEMBLY, THE POWER ON/OFF SEQUENCE SHOULD BE AS THE DIAGRAM BELOW.



NOTE (1)：PLEASE AVOID FLOATING STATE OF INTERFACE SIGNAL AT INVALID PERIOD.

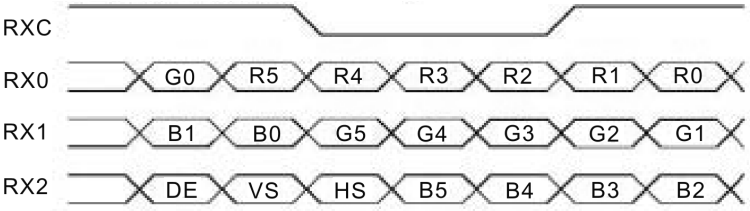
NOTE (2)：WHEN THE INTERFACE SIGNAL IS INVALID, BE SURE TO PULL DOWN THE POWER SUPPLY OF LCD VCC TO 0 V.

NOTE (3)：THE BACKLIGHT CONVERTER POWER MUST BE TURNED ON AFTER THE POWER SUPPLY FOR THE LOGIC AND THE INTERFACE SIGNAL IS VALID. THE BACKLIGHT CONVERTER POWER MUST BE TURNED OFF BEFORE THE POWER SUPPLY FOR THE LOGIC AND THE INTERFACE SIGNAL IS INVALID.

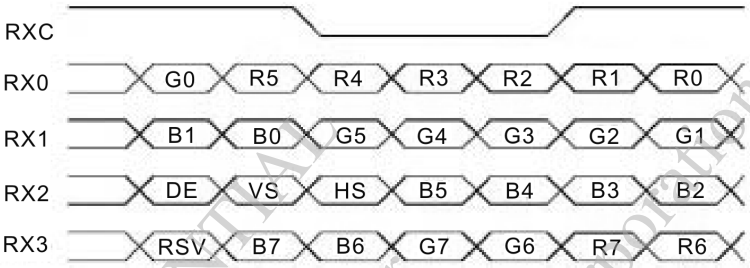
PARAMETER	VALUE			UNIT
	MIN.	TYP.	MAX.	
T1	0.5	—	10	ms
T2	0	—	50	ms
T3	0	—	50	ms
T4	500	—	—	ms
T5	200	—	—	ms
T6	200	—	—	ms
T7	5	—	300	ms
T8	10	—	—	ms
T9	10	—	—	ms

5.3 THE INPUT DATA FORMAT

SEL68="Low" or "NC" FOR 6 BITS LVDS INPUT



SEL68="High" FOR 8 BITS LVDS INPUT



NOTE (1)：R/G/B DATA 7：MSB, R/G/B DATA 0：LSB

NOTE (2)：PLEASE FOLLOW PSWG

SIGNAL NAME	DESCRIPTION	REMARK
R7 R6 R5 R4 R3 R2 R1 R0	RED DATA 7 (MSB) RED DATA 6 RED DATA 5 RED DATA 4 RED DATA 3 RED DATA 2 RED DATA 1 RED DATA 0 (LSB)	RED-PIXEL DATA EACH RED PIXEL'S BRIGHNESS DATA CONSISTS OF THESE B BITS PIXEL DATA.
G7 G6 G5 G4 G3 G2 G1 G0	GREEN DATA 7 (MSB) GREEN DATA 6 GREEN DATA 5 GREEN DATA 4 GREEN DATA 3 GREEN DATA 2 GREEN DATA 1 GREEN DATA 0 (LSB)	GREEN-PIXEL DATA EACH RED PIXEL'S BRIGHNESS DATA CONSISTS OF THESE B BITS PIXEL DATA.
B7 B6 B5 B4 B3 B2 B1 B0	BLUE DATA 7 (MSB) BLUE DATA 6 BLUE DATA 5 BLUE DATA 4 BLUE DATA 3 BLUE DATA 2 BLUE DATA 1 BLUE DATA 0 (LSB)	BLUE-PIXEL DATA EACH RED PIXEL'S BRIGHNESS DATA CONSISTS OF THESE B BITS PIXEL DATA.
RXCLKIN+ BXCLKIN–	LVDS CLOCK INPUT	
DE	DISPLAY ENABLE	
VS	VERTICAL SYNC	
HS	HORIZONTAL SUNC	

NOTE (3)：OUTPUT SIGNALS FROM ANY SYSTEM SHALL BE LOW OR HI-Z STATE WHEN VCC IS OFF.

5.4 SCANNING DIRECTION

THE FOLLOWING FIGURES SHOW THE IMAGE SEE FROM THE FRONT VIEW.
THE ARROW INDICATES THE DIRECTION OF SCAN.

Fig.1 Normal Scan

Fig.2 Reverse Scan

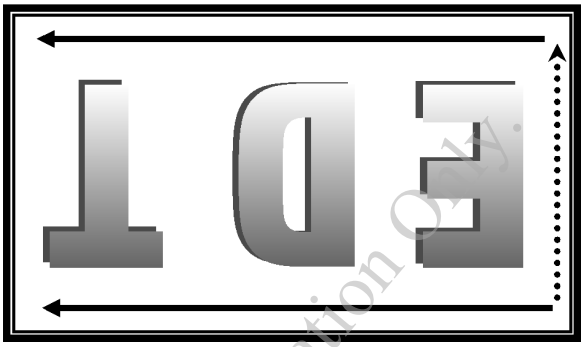
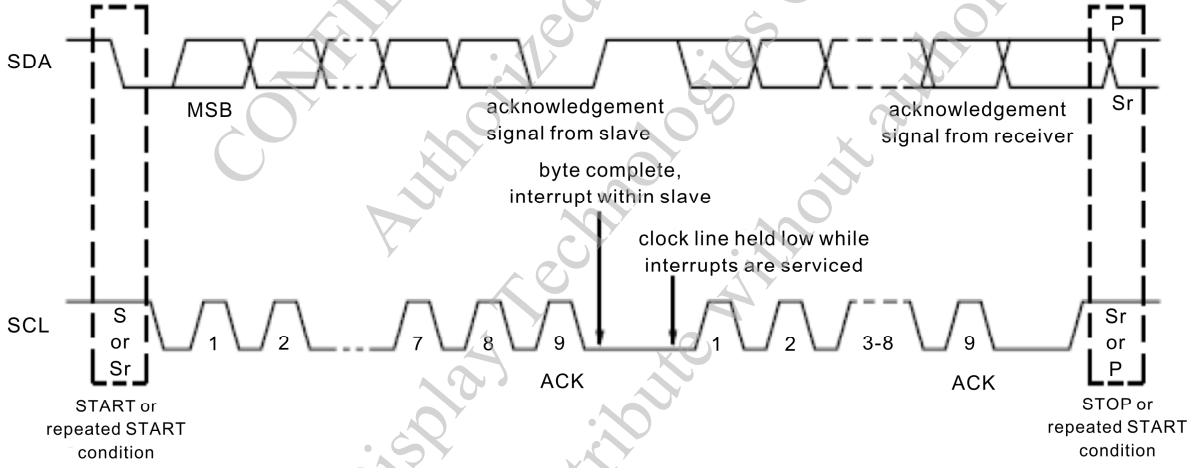


FIG. 1 NORMAL SCAN (PIN 4, DPS = HIGH)
FIG. 2 REVERSE SCAN (PIN 4, DPS = LOW OR NC)

5.5 I2C BUS TIMING



6. OPTICAL CHARACTERISTICS (NOTE 1)

6.1 TEST CONDITIONS

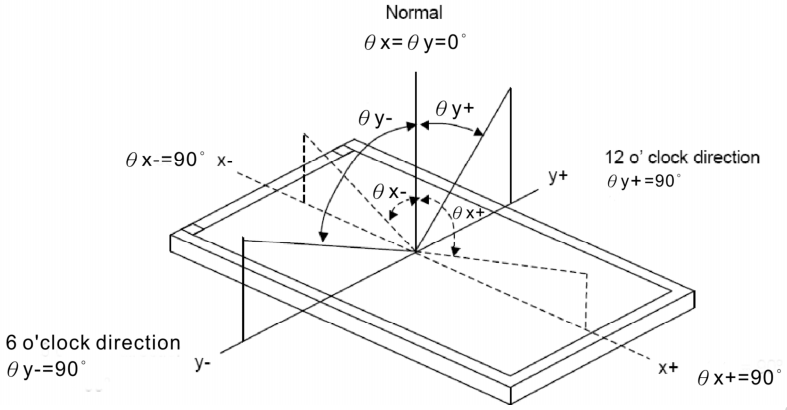
ITEM	SYMBOL	VALUE	UNIT
AMBIENT TEMPERATURE	Ta	25	°C
AMBIENT HUMIDITY	Ha	50±10	%RH
SUPPLY VOLTAGE	VCC	3.3	V
INPUT SIGNAL	ACCORDING TO TYPICAL VALUE IN "4. ELECTRICAL CHARACTERISTICS"		
CONVERTER VOLTAGE	Vin	12	V
CONVERTER DUTY		100 %	

6.2 OPTICAL SPECIFICATIONS

THE RELATIVE MEASUREMENT METHODS OF OPTICAL CHARACTERISTICS ARE SHOWN IN 6.2. THE FOLLOWING ITEMS SHOULD BE MEASURED UNDER THE TEST CONDITIONS DESCRIBED IN 6.1 AND STABLE ENVIRONMENT SHOWN IN NOTE (5).

ITEM		SYMBOL	CONDITION	VALUES MIN.	VALUES TYP.	VALUES MAX.	UNIT	REMARK
COLOR CHROMATICITY	RED	Rx	θx=0°,θY =0° BM-5A (NTSC:52%)	TYP-0.05	0.609	TYP+0.05	—	NOTE (1) NOTE (5)
		Ry			0.339			
	GREEN	Gx			0.333			
		Gy			0.590			
	BLUE	Bx			0.154			
		By			0.146			
	WHITE	Wx			0.292			
		Wy			0.334			
CENTER LUMINANCE OF WHITE		L_C		255	340	—	cd/m^2	NOTE (4) NOTE (5)
CONTRAST RATIO		CR		500	700	—	—	NOTE (2) NOTE (5)
RESPONSE TIME		T_R	θx=0°,θy =0°	—	5	10	ms	NOTE (3)
		T_F		—	11	16	ms	
WHITE VARIATION		δW	θx=0°,θy =0°	—	1.25	1.4		NOTE (5) NOTE (6)
VIEWING ANGLE		θx+	CR≥10	70	80	—	Deg.	NOTE (1) NOTE (5)
		θx–		70	80	—		
		θy+		60	70	—		
		θy–		60	70	—		

NOTE (1)：DEFINITION OF VIEWING ANGLE (θx, θy)：



NOTE (2)：DEFINITION OF CONTRAST RATIO (CR)：

THE CONTRAST RATIO CAN BE CALCULATED BY THE FOLLOWING EXPRESSION.

CONTRAST RATIO (CR) = L63 / L0

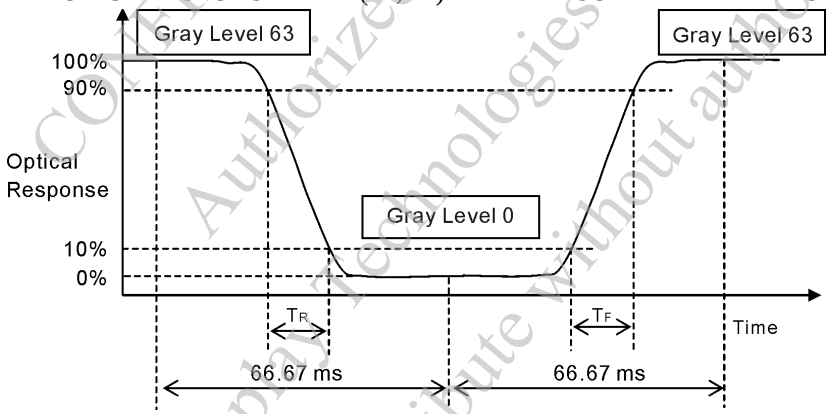
L63：LUMINANCE OF GRAY LEVEL 63

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 (6).

NOTE (3)：DEFINITION OF RESPONSE TIME (T_R, T_F) AND MEASUREMENT METHOD:



NOTE (4)：DEFINITION OF LUMINANCE OF WHITE (L_C)

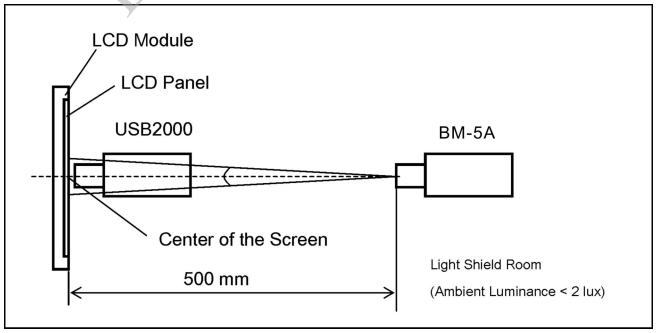
MEASURE THE LUMINANCE OF GRAY LEVEL 63 AT CENTER POINT

L_C = L (5)

L (X) IS CORRESPONDING TO THE LUMINANCE OF THE POINT X AT FIGURE IN NOTE (6).

NOTE (5)：MEASUREMENT SETUP

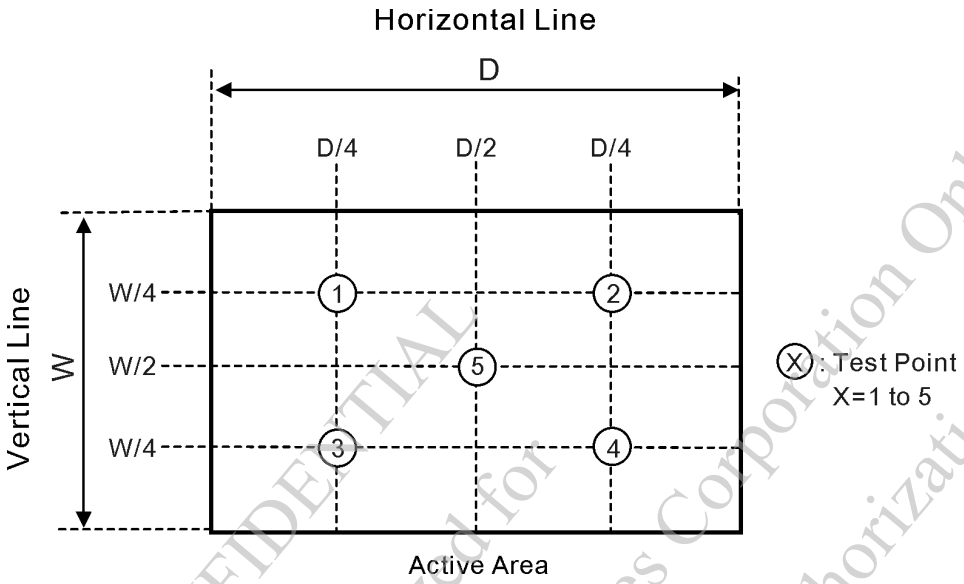
THE LCD MODULE SHOULD BE STABILIZED AT GIVEN TEMPERATURE FOR 20 MINUTES TO AVOID ABRUPT TEMPERATURE CHANGE DURING MEASURING. IN ORDER TO STABILIZE THE LUMINANCE, THE MEASUREMENT SHOULD BE EXECUTED AFTER LIGHTING BACKLIGHT FOR 20 MINUTES IN A WINDLESS ROOM.



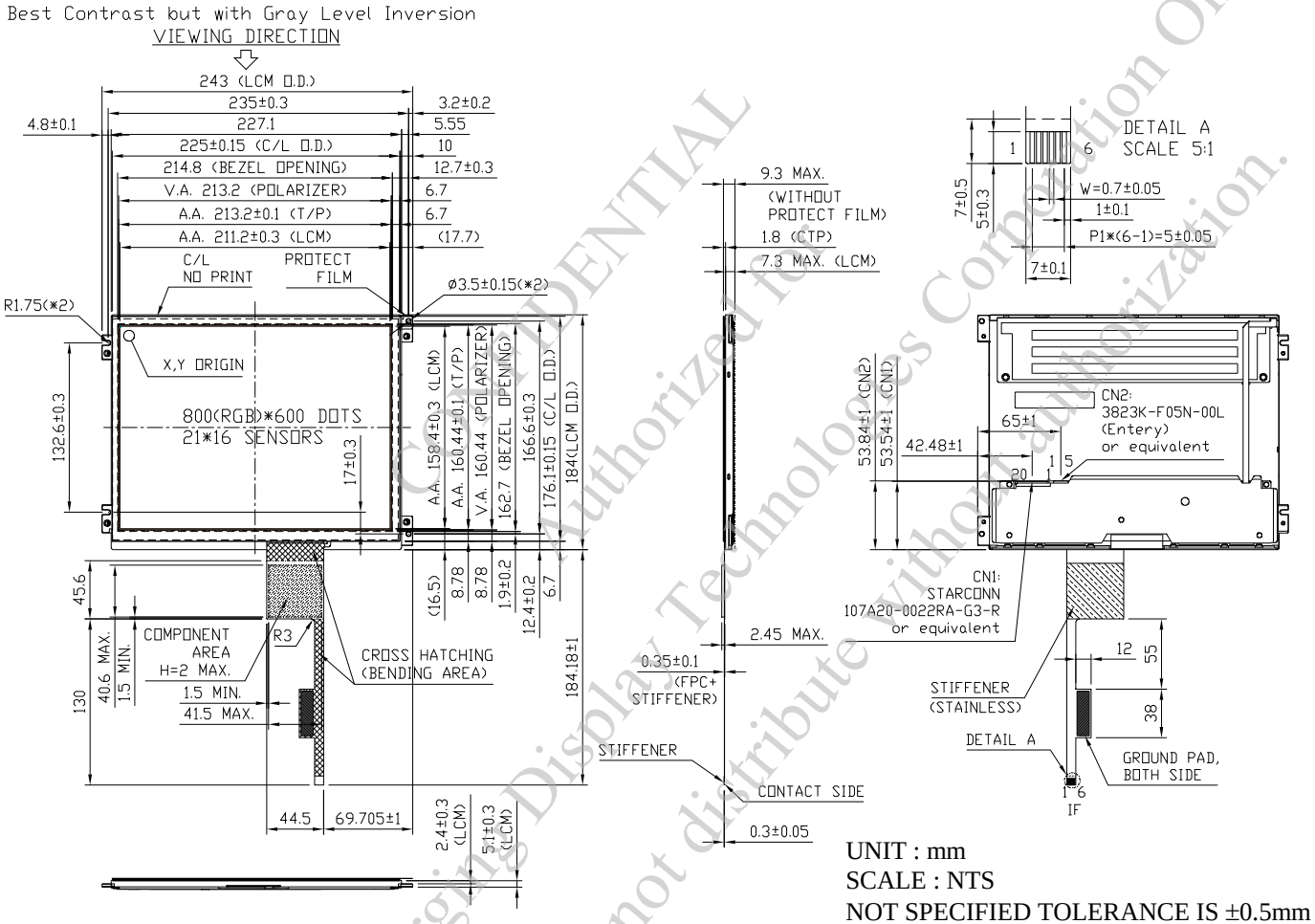
NOTE (6)：DEFINITION OF WHITE VARIATION (δW)

MEASURE THE LUMINANCE OF GRAY LEVEL 63 AT 5 POINTS

$$\delta W = \frac{\text{Maximum [L (1), L (2), L (3), L (4), L (5)]}}{\text{Minimum [L (1), L (2), L (3), L (4), L (5)]}}$$



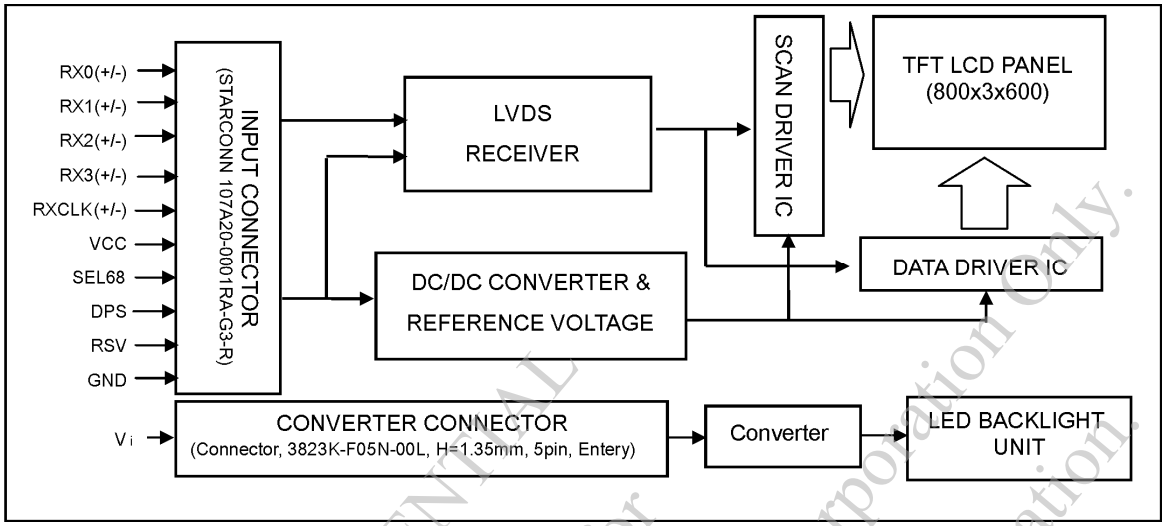
7. OUTLINE DIMENSIONS



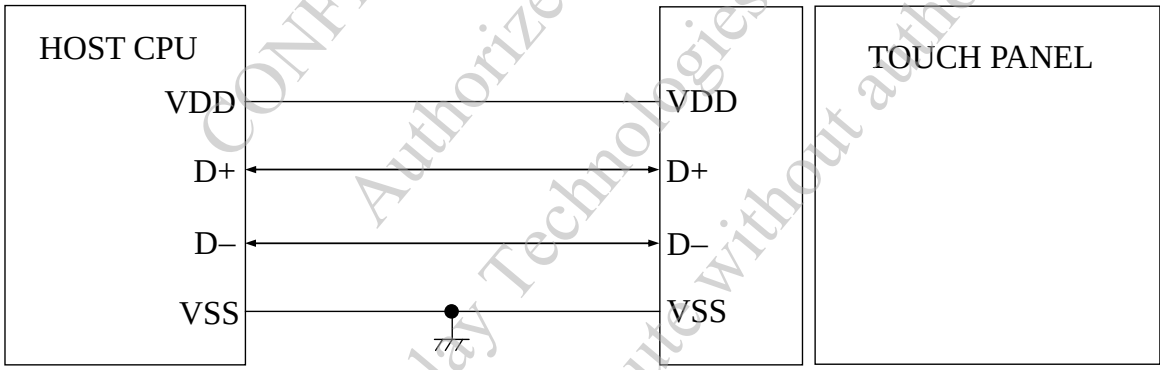
UNIT : mm
SCALE : NTS
NOT SPECIFIED TOLERANCE IS ±0.5mm
NOTE :
RECOMMEND MATCH CONNECTOR: KYOCERA 08 6224 006 SERIES

8. BLOCK DIAGRAM

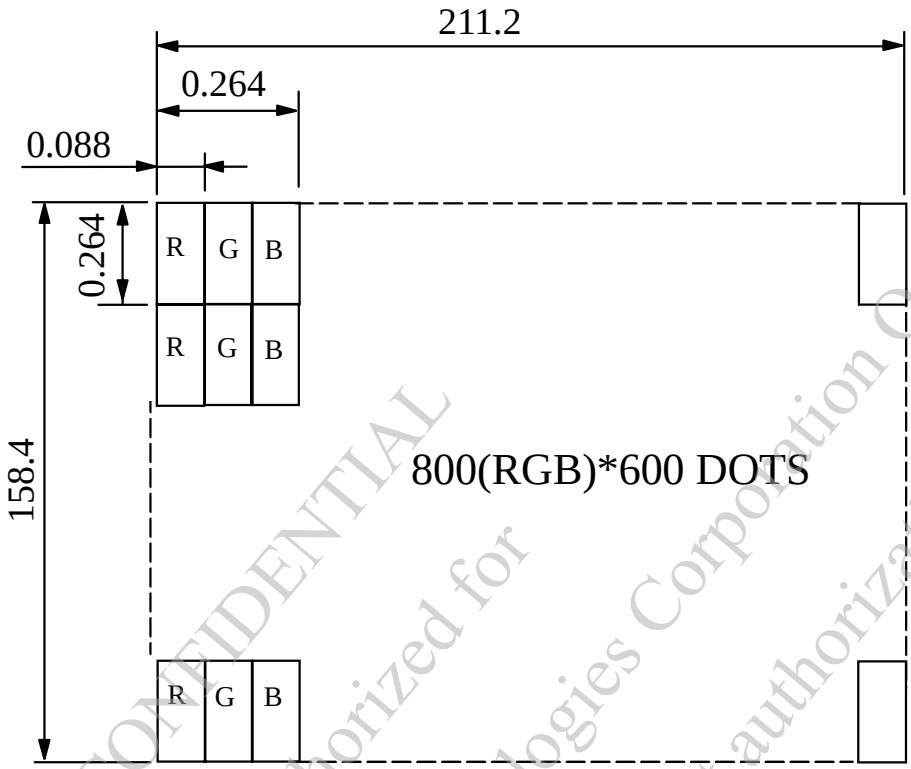
(TFT LCD MODULE)



(CTP)



9. DETAIL DRAWING OF DOT MATRIX



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

10. INTERFACE SIGNALS

10.1 TFT LCD MODULE INTERFACE

PIN NO.	SYMBOL	FUNCTION	REMARK
1	VCC	POWER SUPPLY	
2	VCC	POWER SUPPLY	
3	GND	GROUND	
4	DPS	REVERSE SCAN FUNCTION [HIGH：DISABLE，LOW：ENABLE]	NOTE(3)
5	RX0-	DIFFERENTIAL DATA INPUT，CH0 (NEGATIVE)	
6	RX0+	DIFFERENTIAL DATA INPUT，CH0 (POSITIVE)	
7	GND	GROUND	
8	RX1-	DIFFERENTIAL DATA INPUT，CH1 (NEGATIVE)	
9	RX1+	DIFFERENTIAL DATA INPUT，CH1 (POSITIVE)	
10	GND	GROUND	
11	RX2-	DIFFERENTIAL DATA INPUT，CH2 (NEGATIVE)	
12	RX2+	DIFFERENTIAL DATA INPUT，CH2 (POSITIVE)	
13	GND	GROUND	
14	RXC-	DIFFERENTIAL DATA INPUT (NEGATIVE)	
15	RXC+	DIFFERENTIAL DATA INPUT (POSITIVE)	
16	GND	GROUND	
17	RX3-	DIFFERENTIAL DATA INPUT，CH3 (NEGATIVE)	
18	RX3+	DIFFERENTIAL DATA INPUT，CH3 (POSITIVE)	
19	RSV	RESERVED	
20	SEL68	LVDS 6/8 BIT SELECT FUNCTION CONTROL, LOW OR NC → 6 BIT INPUT MODE HIGH → 8BIT INPUT MODE	NOTE(3)

NOTE (1)：CONNECTOR PART NO.: STARCONN 107A20-0022RA-G3-R OR EQUIVALENT.

NOTE (2)：USER'S CONNECTOR PART NO.: STARCONN 093A20-010010-T4, HRS DF19G-20S-1C(05), STM P24013P20 OR EQUIVALENT.

NOTE (3)："LOW" STANDS FOR 0V. "HIGH" STANDS FOR 3.3V. "NC" STANDS FOR "NO CONNECTED".

10.2 BACKLIGHT UNIT (CONVERTER CONNECTOR PIN)

PIN NO.	SYMBOL	FUNCTION	REMARK
1	V_i	CONVERTER INPUT VOLTAGE	12V
2	V_{GND}	CONVERTER GROUND	GROUND
3	EN	ENABLE PIN	3.3V
4	ADJ	BACKLIGHT ADJUST	PWM DIMMING (HI:3.3V_{DC}, LO:0V_{DC})
5	NC	NOT CONNECT	GROUND

NOTE (1)：CONNECTOR PART NO.：3823K-F05N-00L (ENTERY) OR EQUIVALENT.

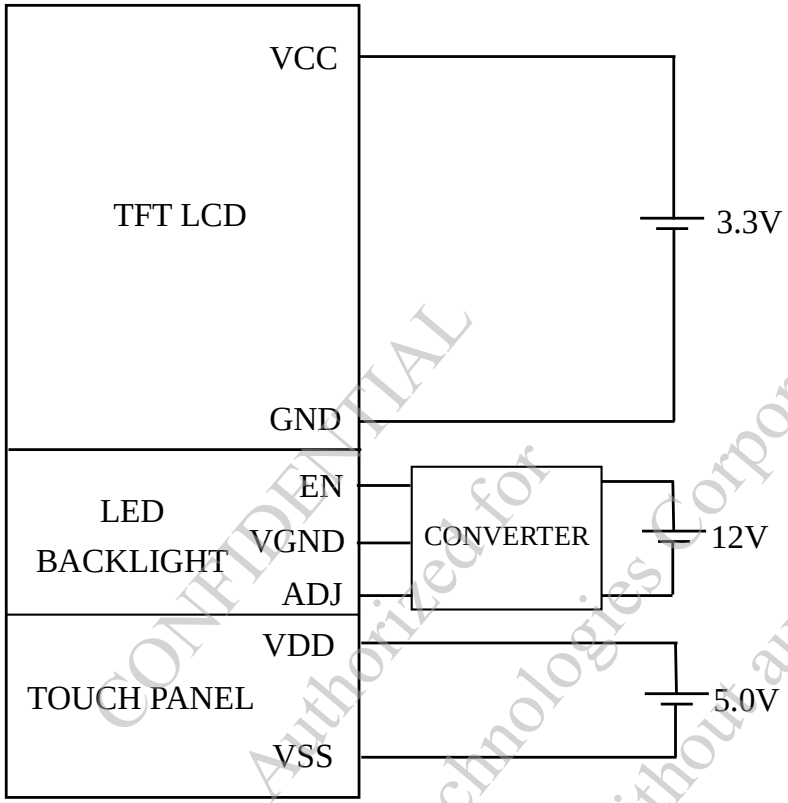
NOTE (2)：USER'S CONNECTOR PART NO.：H208K-P05N-02B (ENTERY) OR EQUIVALENT.

10.3 CTP SIGNAL INTERFACES

PIN NO.	SYMBOL	FUNCTION
1	VSS	GROUND
2	NC	NON CONNECTION
3	D+	USB D+
4	D-	USB D-
5	NC	NON CONNECTION
6	VDD	POWER SUPPLY VOLTAGE (+5.0V)

11. POWER SUPPLY

11.1 POWER SUPPLY FOR LCM

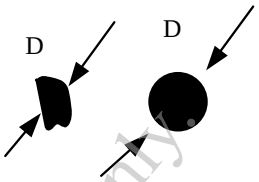
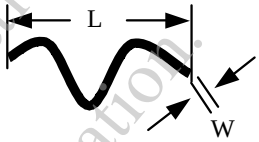
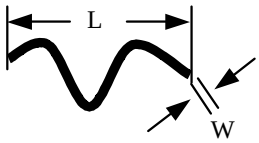
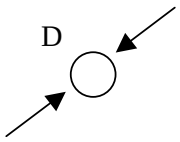
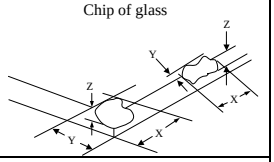


12. CAPACITIVE TOUCH PANEL SPECIFICATION

12.1 HARDNESS

ITEM	DESCRIPTION
SURFACE HARDNESS	7H (MIN.)

12.2 INSPECTION STANDARDS

<table>
<tr><th>INSPECTION ITEMS</th><th>CRITERIA</th><th>REMARK</th></tr>
<tr><td>BLACK/WHITE SPOT</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≤0.15mm</td><td>IGNORE</td></tr>
<tr><td>0.15mm<D≤0.3mm</td><td>5</td></tr>
<tr><td>0.3mm<D≤0.5mm</td><td>5</td></tr>
<tr><td>D>0.5mm</td><td>0</td></tr>
</table>
NOTE (1) : THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.</td><td> 
</td></tr>
<tr><td>SCRATCH</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≤0.05mm</td><td>IGNORE</td></tr>
<tr><td>0.05mm<W≤0.08mm, L≤8mm</td><td>3</td></tr>
<tr><td>0.08mm<W≤0.1mm, L≤5mm</td><td>2</td></tr>
<tr><td>W>0.1mm</td><td>0</td></tr>
</table>
NOTE (1) : THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.</td><td> 
</td></tr>
<tr><td>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≤0.05mm</td><td>IGNORE</td></tr>
<tr><td>0.05mm<W≤0.08mm, L≤8mm</td><td>3</td></tr>
<tr><td>0.08mm≤W≤0.1mm, L≤5mm</td><td>2</td></tr>
<tr><td>W>0.1mm</td><td>0</td></tr>
</table>
NOTE (1) : THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.</td><td> 
</td></tr>
<tr><td>BUBBLE / DENT</td><td>BUBBLES WITHIN VIEWING AREA. AVERAGE DIAMETER：D (mm)
<table>
<tr><th>SIZE D</th><th>PERMISSIBLE NO.</th></tr>
<tr><td>D≤0.2mm</td><td>IGNORE</td></tr>
<tr><td>0.2mm<D≤0.3mm</td><td>3</td></tr>
<tr><td>0.3mm<D≤0.5mm</td><td>1</td></tr>
<tr><td>D>0.5mm</td><td>0</td></tr>
</table>
NOTE (1) : THE DISTANCE BETWEEN DEFECTS SHOULD BE MORE THAN 10mm APART.</td><td> 
</td></tr>
<tr><td>CHIP DAMAGE ON GLASS</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><td>Chip of glass
  </td></tr>
<tr><td>CRACK</td><td colspan="2">NOT ACCEPTABLE</td></tr>
</table>

NOTE：

1. FOR ANY SPOTS OR LINES WHICH ARE NOT OBSERVED UNDER APPROPRIATE PANEL OPERATING CONDITION, ARE DEEMED ACCEPTABLE.
2. THE FOREIGN MATERIALS THAT CAN BE BLOWN OUT BY AIR AND REMOVED BY WET CLEANING ARE NOT REGARDED AS DEFECTS.

13. INSPECTION CRITERION

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

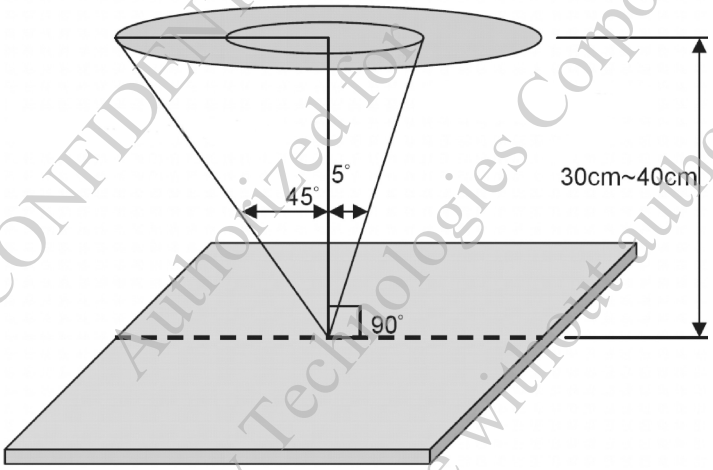
(2)VIEW ANGLE：

NON-OPERATION CONDITION： ±5°

(PERPENDICULAR TO LCD PANEL SURFACE)

OPERATION CONDITION：±45°

(PERPENDICULAR TO LCD PANEL SURFACE)



13.2.2 ENVIRONMENT CONDITIONS：

AMBIENT TEMPERATURE		25±5°C
AMBIENT HUMIDITY		65±20%RH
AMBIENT ILLUMINATION	COSMETIC INSPECTION	More than 600Lux
	FUNCTIONAL INSPECTION	300~500 Lux

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：

MIL-STD-105E

NORMAL INSPECTION, SINGLE SAMPLING

LEVEL Ⅱ

(b)AQL：MAJOR DEFECT：AQL 0.65

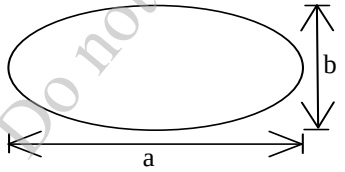
MINOR DEFECT：AQL 1.0

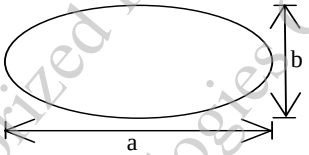
13.3 INSPECTION STANDARDS

13.3.1 VISUAL DEFECTS CLASSIFICATION

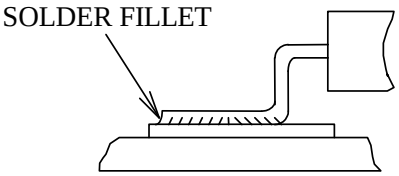
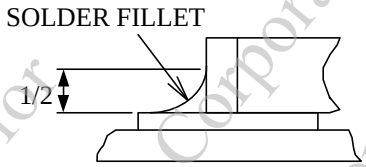
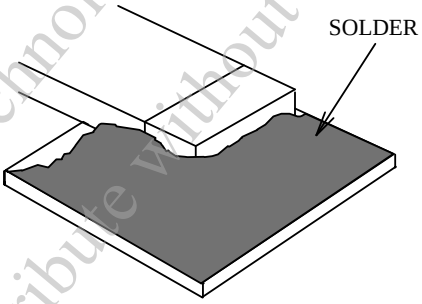
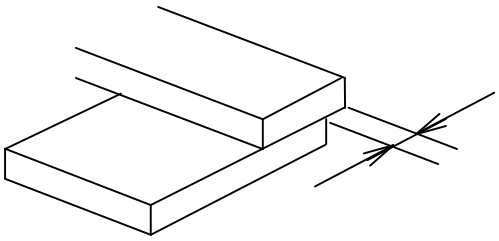
TYPE OF DEFECT	INSPECTION ITEM	DEFECT FEATURE	AQL
MAJOR DEFECT	1.DISPLAY ON	• DEFECT TO MISS SPECIFIED DISPLAY FUNCTION, FOR ALL AND SPECIFIED DOTS EX: DISCONNECTION, SHORT CIRCUIT ETC	0.65
	2.BACKLIGHT	• NO LIGHT • FLICKERING AND OTHER ABNORMAL ILLUMINATION	
	3.DIMENSIONS	• SUBJECT TO INDIVIDUAL ACCEPTANCE SPECIFICATIONS	
MINOR DEFECT	1.DISPLAY ZONE	• BLACK/WHITE SPOT • BUBBLES ON POLARIZER • NEWTON RING • BLACK/WHITE LINE • SCRATCH • CONTAMINATION • LEVER 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	

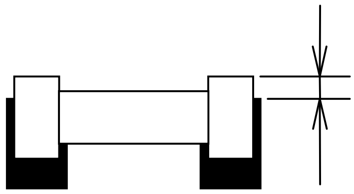
13.3.2 MODULE DEFECTS CLASSIFICATION

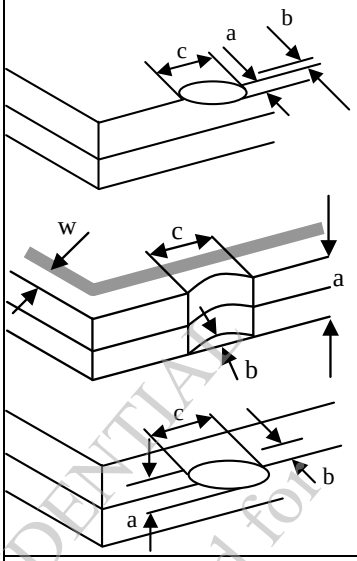
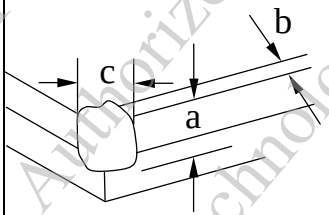
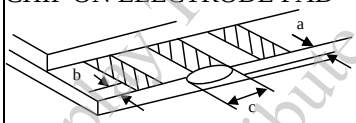
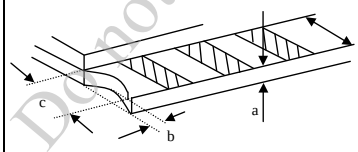
<table>
<tr><th>NO.</th><th>ITEM</th><th>CRITERIA</th></tr>
<tr><td>1.</td><td>DISPLAY ON INSPECTION</td><td>(1)INCORRECT PATTERN
(2)MISSING SEGMENT
(3)DIM SEGMENT
(4)OPERATING VOLTAGE BEYOND SPEC</td></tr>
<tr><td>2.</td><td>OVERALL DIMENSIONS</td><td>(1)OVERALL DIMENSION BEYOND SPEC</td></tr>
<tr><td>3.</td><td>DOT DEFECT</td><td>(1)INSPECTION PATTERN: FULL WHITE, FULL BLACK, RED, GREEN AND BLUE SCREENS.
(2)
<table>
<tr><th>ITEMS</th><th>ACCEPTABLE COUNT</th></tr>
<tr><td>BRIGHT DOT</td><td>N ≤ 5</td></tr>
<tr><td>DARK DOT</td><td>N ≤ 7</td></tr>
<tr><td>TOTAL BRIGHT AND DARK DOTS</td><td>N ≤ 7</td></tr>
</table>
NOTE：
1. THE DEFINITION OF DOT：
THE SIZE OF A DEFECTIVE DOT OVER 1/2 OF WHOLE DOT IS REGARDED AS ONE DEFECTIVE DOT.
2. BRIGHT DOT：
DOTS APPEAR BRIGHT AND UNCHANGED IN SIZE IN WHICH LCD PANEL IS DISPLAYING UNDER BLACK PATTERN.
3. DARK DOT：
DOTS APPEAR DARK AND UNCHANGED IN SIZE IN WHICH LCD PANEL IS DISPLAYING UNDER PURE RED, GREEN, BLUE PICTURE.</td></tr>
<tr><td>4.</td><td>FOREIGN BLACK/WHITE/ BRIGHT LINE/ SCRATCH OF VIEWING AREA</td><td>
<table>
<tr><th>LENGTH：L</th><th>WIDTH：W</th><th>PERMISSIBLE NO.</th></tr>
<tr><td>L ≤ 0.5</td><td>W ≤ 0.05</td><td>IGNORE</td></tr>
<tr><td>0.5 < L ≤ 5.0</td><td>0.05 < W ≤ 0.1</td><td>4</td></tr>
<tr><td>5.0 < L</td><td>0.1 < W</td><td>NONE</td></tr>
</table>
WIDTH：W mm, LENGH： L mm</td></tr>
<tr><td>5.</td><td>FOREIGN MATTER \ BLACK SPOTS \ WHITE SPOTS \ DENT (INCLUDING LIGHT LEAKAGE DUE TO POLARIZING PLATES PINHOLES, ETC.)</td><td>
<table>
<tr><th>AVERAGE DIAMETER (mm): D</th><th>NUMBER OF PIECES PERMITTED</th></tr>
<tr><td>D ≤ 0.15</td><td>IGNORE</td></tr>
<tr><td>0.15 < D ≤ 0.5</td><td>4</td></tr>
<tr><td>0.5 < D</td><td>NONE</td></tr>
</table>
NOTE ：DIAMETER D=(a+b)/2
 
</td></tr>
</table>

<table>
<tr><th>NO.</th><th>ITEM</th><th>CRITERIA</th></tr>
<tr><td>6.</td><td>BUBBLES OF POLARIZER /DIRT/CF FAIL /SURFACE STAINS</td><td>
<table>
<tr><th></th><th>AVERAGE DIAMETER (mm)：D</th><th>NUMBER OF PIECES PERMITTED</th></tr>
<tr><td rowspan="3">BUBBLE ON THE POLARIZER</td><td>D ≤ 0.25</td><td>IGNORE</td></tr>
<tr><td>0.25 < D ≤ 0.5</td><td>N ≤ 5</td></tr>
<tr><td>0.5 < D</td><td>NONE</td></tr>
<tr><td rowspan="2">SURFACE STAINS</td><td>D < 0.1</td><td>IGNORE</td></tr>
<tr><td>0.1 < D ≤ 0.5</td><td>N ≤ 6</td></tr>
<tr><td rowspan="2">CF FAIL / SPOT</td><td>D < 0.1</td><td>IGNORE</td></tr>
<tr><td>0.1 < D ≤ 0.5</td><td>N ≤ 4</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>
<tr><td>7.</td><td>LINE DEFECT ON DISPLAY</td><td>OBVIOUS VERTICAL OR HORIZONTAL LINE DEFECT IS NOT ALLOWED</td></tr>
<tr><td>8.</td><td>MURA ON DISPLAY</td><td>IT’S OK IF MURA IS SLIGHT VISIBLE THROUGH 3% ND FILTER</td></tr>
<tr><td>9.</td><td>UNEVEN COLOR SPREAD, COLORATION</td><td>(1)TO BE DETERMINED BASED UPON THE STANDARD SAMPLE.</td></tr>
<tr><td>10.</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>
<tr><td>11</td><td>PCB</td><td>(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 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.</td></tr>
</table>

NO.	ITEM	CRITERIA
12.	SOLDERING	(1)NO SOLDERING FOUND ON THE SPECIFIED PLACE (2)INSUFFICENT 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 ALIGMENT (a)LSI, IC LEAD WIDTH IS MORE THAN 50% BEYOND PAD OUTLINE 

NO.	ITEM	CRITERIA
12.	SOLDERING	(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.
13.	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.
14.	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 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.

<table>
<tr><th>NO.</th><th>ITEM</th><th>CRITERIA</th></tr>
<tr><td rowspan="4">15.</td><td rowspan="4">CRACKED GLASS</td><td colspan="2">THE LCD WITH EXTENSIVE CRACK IS NOT ACCEPTABLE</td></tr>
<tr><td>GENERAL GLASS CHIP：
 
</td><td>
<table>
<tr><th>a</th><th>b</th><th>c</th></tr>
<tr><td>≤ t/2</td><td>< VIEWING AREA</td><td>≤ 1/8X</td></tr>
<tr><td>t/2 > , ≤ 2t</td><td>≤ W/2</td><td>≤ 1/8X</td></tr>
</table>
*W=DISTANCE BETWEEN SEALANT AREA AND LCD PANEL EDGE
X = LCD SIDE LENGTH
t = GLASS THICKNESS
</td></tr>
<tr><td>CORNER PART：
 
</td><td>
<table>
<tr><th>a</th><th>b</th><th>c</th></tr>
<tr><td>≤ t/2</td><td>< VIEWING AREA</td><td>≤ 1/8X</td></tr>
<tr><td>> t/2 , ≤ 2t</td><td>≤ W/2</td><td>≤ 1/8X</td></tr>
</table>
*W=DISTANCE BETWEEN SEALANT AREA AND LCD PANEL EDGE
X = LCD SIDE LENGTH
t = GLASS THICKNESS
</td></tr>
<tr><td>CHIP ON ELECTRODE PAD
 
</td><td>
<table>
<tr><th>a</th><th>b</th><th>c</th></tr>
<tr><td>≤ t</td><td>≤ 0.5mm</td><td>≤ 1/8X</td></tr>
</table>
* X=LCD SIDE WIDTH
t =GLASS THICKNESS
</td></tr>
<tr><td></td><td> 
</td><td>
<table>
<tr><th>a</th><th>b</th><th>c</th></tr>
<tr><td>≤ t</td><td>≤ 1/8X</td><td>≤ L</td></tr>
</table>
*X=LCD SIDE WIDTH
t = GLASS THICKNESS
L=ELECTRODE PAD LENGTH
①IF GLASS CHIPPING THE ITO TERMINAL, OVER 2/3 OF THE ITO MUST REMAIN AND BE, INSPECTED ACCORDING TO ELECTRODE TERMINAL SPECIFICATIONS
②IF THE PRODUCT WILL BE HEAT SEALED BY THE CUSTOMER, THE ALIGNMENT MARK MUST NOT BE DEMAGED
</td></tr>
</table>

13.4 RELIABILITY TEST

13.4.1 STANDARD SPECIFICATIONS FOR RELIABILITY OF LCD MODULE

NO.	ITEM	DESCRIPTION
1	HIGH TEMPERATURE OPERATION	THE SAMPLE SHOULD BE ALLOWED TO STAND AT +70°C FOR 240 HRS
2	LOW TEMPERATURE OPERATION	THE SAMPLE SHOULD BE ALLOWED TO STAND AT -20°C FOR 240 HRS
3	HIGH TEMPERATURE STORAGE	THE SAMPLE SHOULD BE ALLOWED TO STAND AT +80°C FOR 240 HRS
4	LOW TEMPERATURE STORAGE	THE SAMPLE SHOULD BE ALLOWED TO STAND AT -30°C FOR 240 HRS
5	HIGH TEMPERATURE / HUMIDITY TEST (STORAGE)	THE SAMPLE SHOULD BE ALLOWED TO STAND AT 60°C, 90% RH 120 HRS
6	THERMAL SHOCK (NOT OPERATED)	THE SAMPLE SHOULD BE ALLOWED TO STAND THE FOLLOWING 10 CYCLES OF OPERATION: -20°C FOR 30 MINUTES ~ +70°C FOR 30 MINUTES
7	ESD (ELECTROSTATIC DISCHARGE) (NOT OPERATED)	AIR DISCHARGE ± 12KV CONTACT DISCHARGE ± 8KV

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.

13.5 TESTING CONDITIONS AND INSPECTION CRITERIA

FOR THE FINAL TEST THE TESTING SAMPLE MUST BE STORED AT ROOM TEMPERATURE FOR 24 HOURS, AFTER THE TESTS LISTED IN TABLE 13.5, STANDARD SPECIFICATIONS FOR RELIABILITY HAVE BEEN EXECUTED IN ORDER TO ENSURE STABILITY.

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

13.6 OPERATION

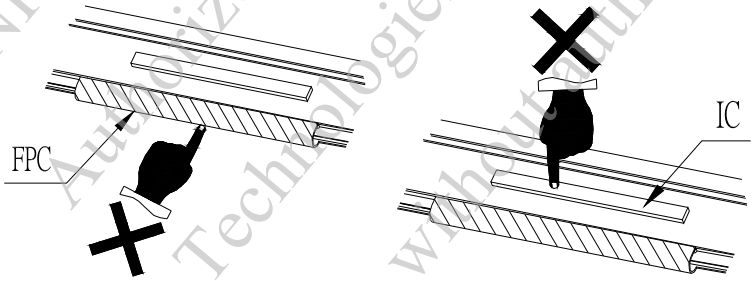
13.6.1 DO NOT CONNECT OR DISCONNECT MODULES TO OR FROM THE MAIN SYSTEM WHILE POWER IS BEING SUPPLIED .

13.6.2 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 .

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

13.6.4 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 .

13.6.5 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!



13.7 NOTICE

13.7.1 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 .

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

13.7.3 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.

13.7.4 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 .

13.7.5 DON'T GIVE EXTERNAL SHOCK.

13.7.6 DON'T APPLY EXCESSIVE FORCE ON THE SURFACE.

13.7.7 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.

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

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

13.7.10 STORE WITHOUT ANY PHYSICAL LOAD.

13.7.11 REWIRING: NO MORE THAN 3 TIMES.