Chimei-Innolux Corporation

BT140GW01 V.6 LCD MODULE SPECIFICATION

(●) Preliminary Specification
( ) Final Specification

Customer	Checked & Approved by
Acer	

Approved by	Checked by	Prepared by
MKT	PD	PM
		Monica Huang

Date: 2010/04/30

Chimei-Innolux Corporation

No.160 Kesyue Rd., Chu-Nan Site, Hsinchu Science Park,

Chu-Nan 350, Miao-Li County, Taiwan

Tel: 886-37-586000 Fax: 886-37-586060

INNOLUX General

版權屬於群創所有, 禁止任何未經授權的使用

The copyright belongs to INNOLUX. Any unauthorized use is prohibited.

Version: 4

Chimei-Innolux copyright
All rights reserved,
Copying forbidden.

Record of Revision

Version	Revise Date	Page	Content
0	2010/03/26	All	First Edition issued
1	2010/04/06	5	Pin Assignment
		13	Timing Table
		23~26	Drawing
2	2010/04/15	8	Typical Operating Condition
3	2010/04/22	21~22	Label
4	2010/04/30	5	Pin Assignment
		11	Power sequence timing table
		14	Backlight driving conditions

INNOLUX General

版權屬於群創所有, 禁止任何未經授權的使用
The copyright belongs to INNOLUX. Any unauthorized use is prohibited.

Contents:	Page
1. General Specifications	2
2. Electrical Specifications 2-1 Pin Assignment 2-2 Absolute Maximum Ratings 2-3 Electrical Characteristics	 3 5 6
3. Optical Specifications	14
4. Reliability Test Items	17
5. Safety	18
6. Display Quality	18
7. Handling Precaution	18
8. Label Definition	19
9. Packing Form	21
10. Mechanical Drawings	22
11. System Cover Design Notice	24
Appendix	25

INNOLUX General

版權屬於群創所有，禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

1. General Specifications

NO.	Item	Specification	Unit
1	Display resolution (pixel)	1366(H) X 768(V), HD resolution	
2	Active area	309.40(H) X 173.95(V)	mm
3	Screen size	14.0 inches diagonal	Inches
4	Pixel pitch	0.2265(H) X 0.2265(V)	mm
5	Color configuration	Stripe	
6	Overall dimension	324(W) X 192.5(H) X 5.2(D) (max)	mm
7	Weight	350Max.	Grams
8	Surface treatment	Glare, 3H	
9	Input color signal	6 bit LVDS	
10	Display colors	262K (6 bit)	
11	Optimum viewing direction	6 o'clock	
12	Backlight	W-LED	
13	Glass thickness	0.5	mm
14	LED life time with LCM	12,000 (min.), T = 25°C	Hours
15	RoHS	RoHS compliance	

版權屬於群創所有, 禁止任何未經授權的使用
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

2. Electrical Specifications

2-1 Pin Assignment

a. Panel connector

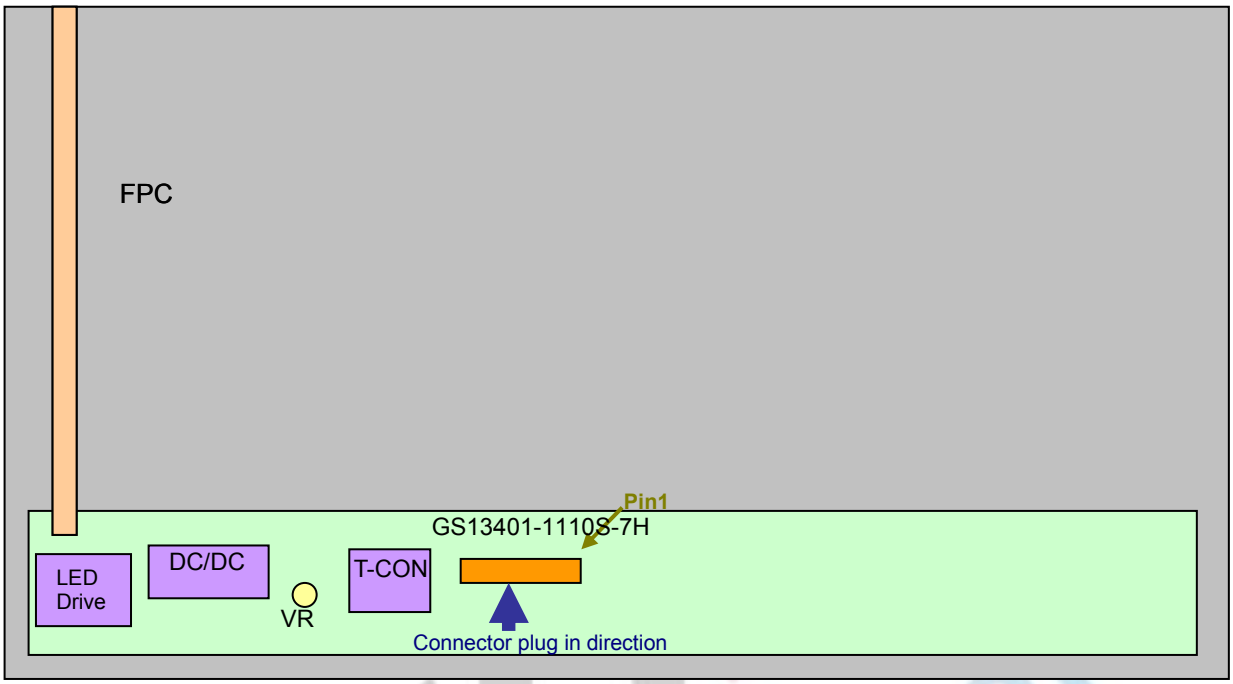
Connector Part No: GS13401-1110S-7H (Foxconn)

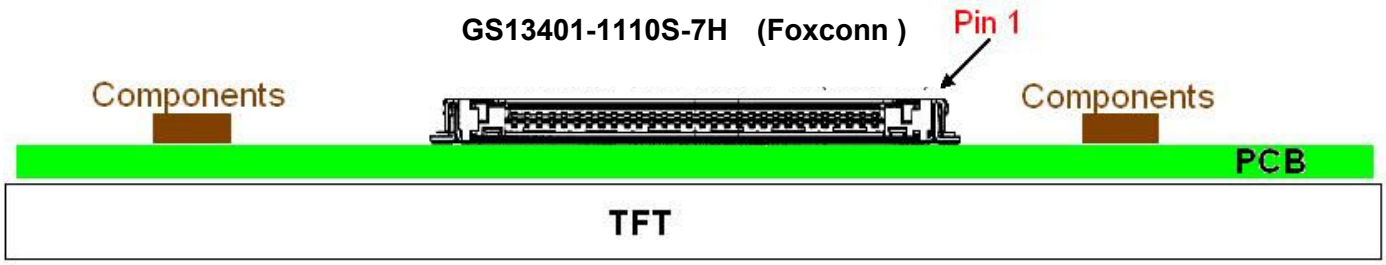
User's connector Part No: 20453-040T-12(I-PEX) or equivalent

Pin No	Symbol	Description	Remark
1	NC	No connection (Reserve)	
2	V_{CC}	Power Supply (+3.3V)	
3	V_{CC}	Power Supply (+3.3V)	
4	V_{EDID}	DDC Power +3.3V	
5	NC	No connection (Reserve)	
6	Clk_{EDID}	DDC Clock	
7	$DATA_{EDID}$	DDC Data	
8	Rxin0-	Differential Data Input	R0~R5,G0
9	Rxin0+	Differential Data Input	
10	GND	Ground	
11	Rxin1-	Differential Data Input	G1~G5,B0,B1
12	Rxin1+	Differential Data Input	
13	GND	Ground	
14	Rxin2-	Differential Data Input	B2~B5,DE,Hsync,Vsync
15	Rxin2+	Differential Data Input	
16	GND	Ground	
17	CLK-	Differential Clock Input	
18	CLK+	Differential Clock Input	
19	GND	Ground	
20	NC	No connection (Reserve)	
21	NC	No connection (Reserve)	
22	GND	Ground	
23	NC	No connection (Reserve)	
24	NC	No connection (Reserve)	
25	GND	Ground	
26	NC	No connection (Reserve)	
27	NC	No connection (Reserve)	
28	GND	Ground	
29	NC	No connection (Reserve)	
30	NC	No connection (Reserve)	
31	LED_GND	LED Ground	
32	LED_GND	LED Ground	
33	LED_GND	LED Ground	
34	NC	No connection (Reserve)	
35	LED_PWM	PWM dimming signal input	
36	LED_EN	LED enable pin (3.3V)	
37	NC	No connection (Reserve)	
38	V_LED	LED power supply 6V~21V	
39	V_LED	LED power supply 6V~21V	
40	V_LED	LED power supply 6V~21V	

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

b. General block diagram （Rear-side）





版權屬於群創所有，禁止任何未經授權的使用

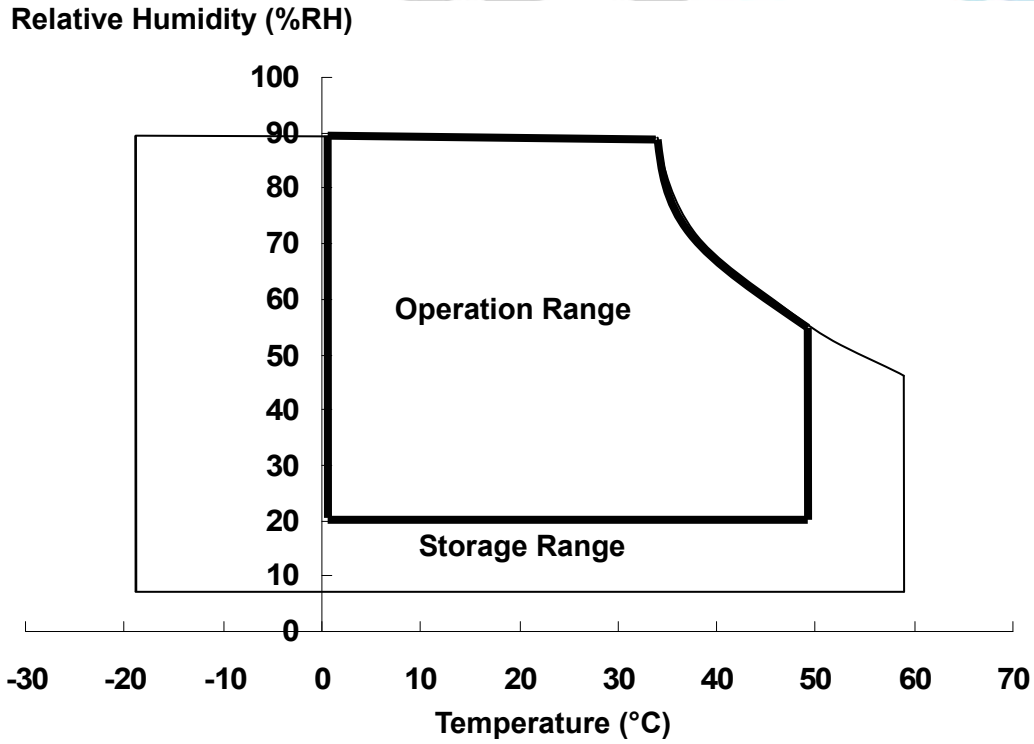
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

2-2. Absolute Maximum Ratings

Parameter	Symbol	Values		Unit	Remark
		Min.	Max.		
Power input voltage	V_{CC}	- 0.3	4.0	V	At 25℃
Signal input voltage	V_{IN}	- 0.3	4.0	V	At 25℃
LED input voltage	V_{LED}	- 0.3	30	V	At 25℃
Operating temperature	T_{OP}	0	50	℃	Note 1
Storage temperature	T_{ST}	- 20	60	℃	Note 2
Re-screw		-	5	Times	
Assured torque at side mount		-	2	kgf.cm	

Note 1: The relative humidity must not exceed 90%, non-condensing at temperatures of 40℃ or less. At temperatures greater than 40℃, the wet bulb temperature must not exceed 39℃.

Note 2: The unit should not be exposed to corrosive chemicals.



版權屬於群創所有, 禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

2-3. Electrical Characteristics

a. Typical operating conditions

Item		Symbol	Min.	Typ.	Max.	Unit	Remark
Power input voltage		V_{CC}	3	3.3	3.6	V	
Permissive power input ripple		V_{RF}	-	-	0.1	V	
Power input current		I_{CC}	-	300	330	mA	Note 1
Power consumption		P_{logic}	-	-	1	Watts	Note 1
		$P_{logic-g}$	-	-	0.9	Watts	Note 2
		P_{total}	-	-	4	Watts	Note 1
		$P_{total-g}$	-	-	2.2	Watts	Note 3
LVDS interface	Differential input high threshold voltage	V_{LVTH}	-	-	+100	mV	V_{LVC}=1.2V, Note 4
	Differential input low threshold voltage	V_{LVTL}	-100	-	-	mV	V_{LVC}=1.2V, Note 4
	Common input voltage	V_{LVC}	1.0	1.2	1.4	V	Note 4
	Terminating resistor	R_T	90	100	110	ohm	
Initial inrush current		I_{inrush}	-	-	1.5	A	Note 5
Stable rush current		$I_{st-rush}$	-	-	0.0025	A^2sec	
LED initial inrush current		$I_{LED-inrush}$	-	-	3.0	A	Note 6
LED stable rush current		$I_{LED-st-rush}$	-	-	0.0075	A^2sec	

Note 1: The specified input current and power consumption are under the V_{cc} =3.3 V, 25˚C, f_V=60Hz (frame frequency) condition whereas mosaic pattern is displayed.

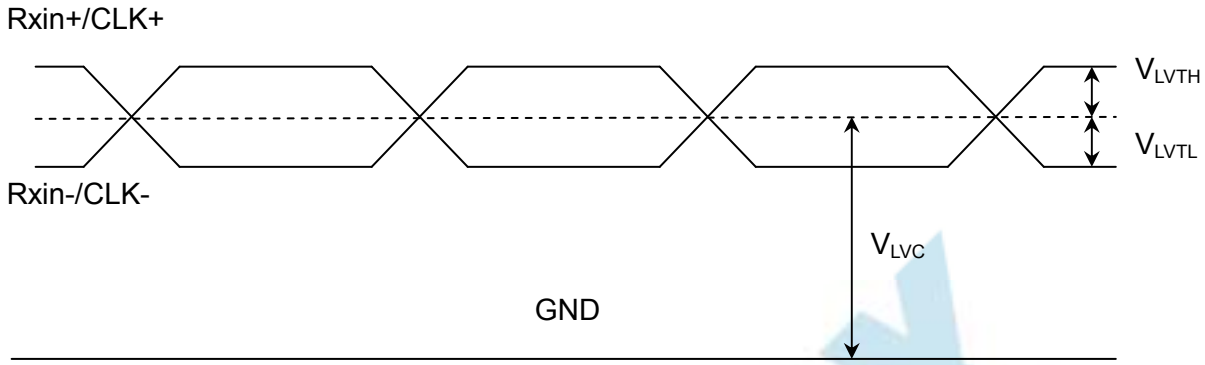
Note 2: The logic power consumption @100 nits with full white pattern under the V_{cc} =3.3 V, 25˚C, f_V=60Hz (frame frequency) condition

Note 3: The logic power consumption & BL power consumption @100 nits with full white pattern under the V_{cc} =3.3 V, 25 ˚C, f_V=60Hz (frame frequency) condition

版權屬於群創所有, 禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

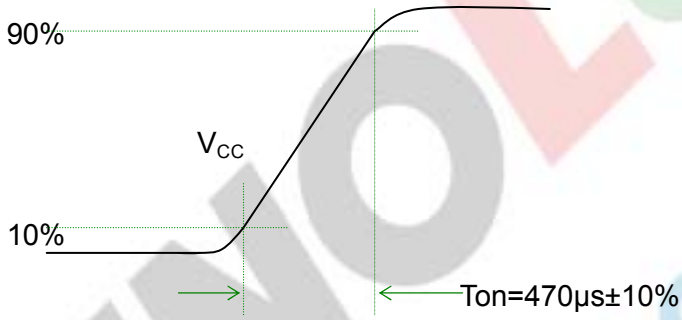
Note 4: LVDS waveform diagram



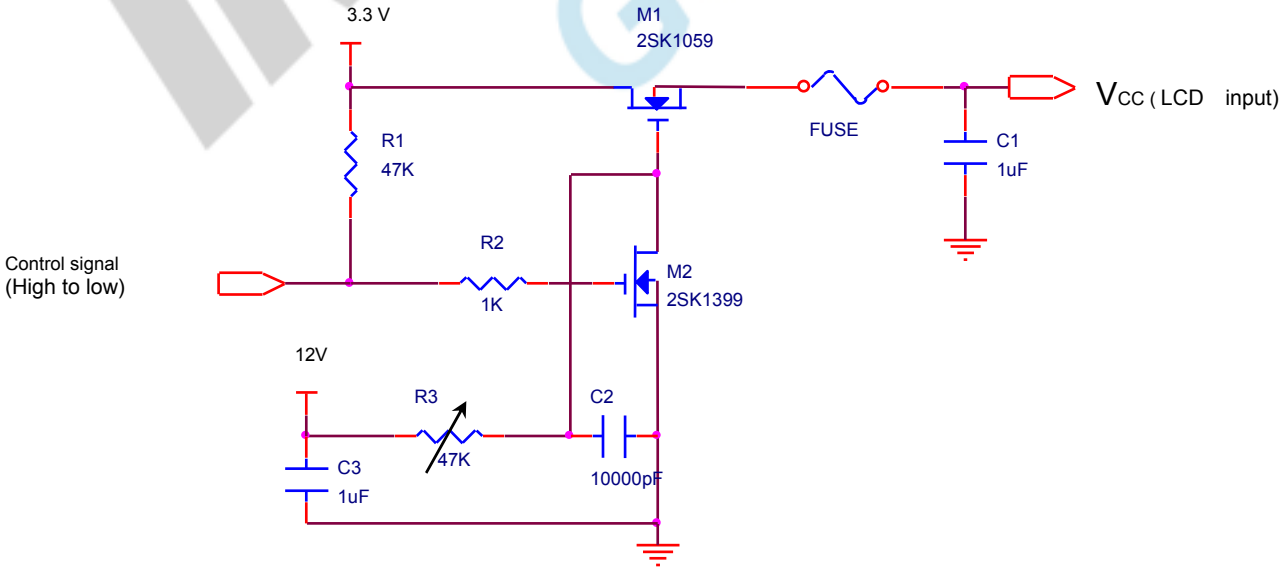
Note 5: Test condition

(1) Pattern: Black pattern

(2) V_{CC} = 3.3 V, V_{CC} rising time = 470 μs ± 10%



(3) Test circuit

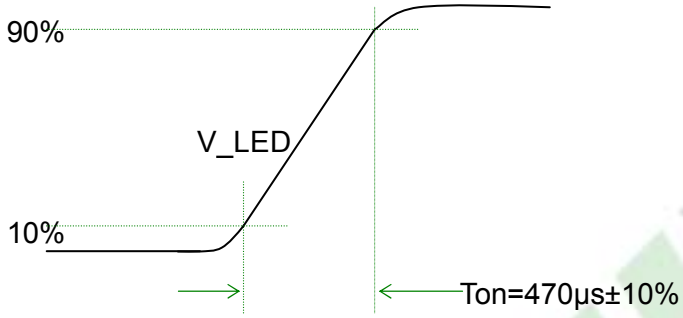


ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

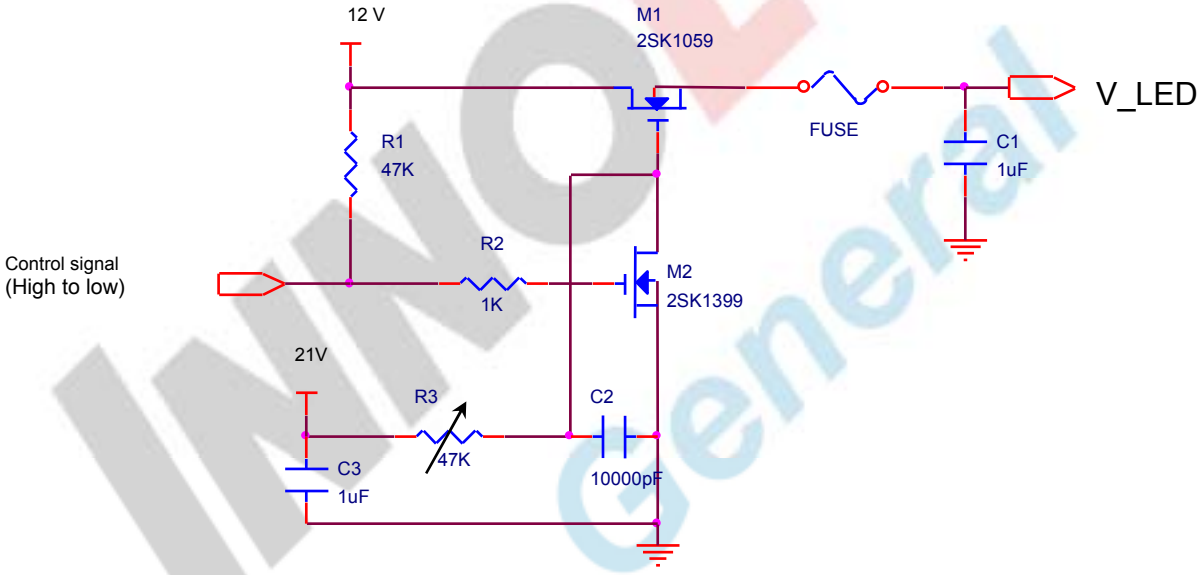
Note 6: Test condition

(1) LED duty 100%

(2) V_LED = 12.0V, V_LED rising time = 470 μs ± 10%



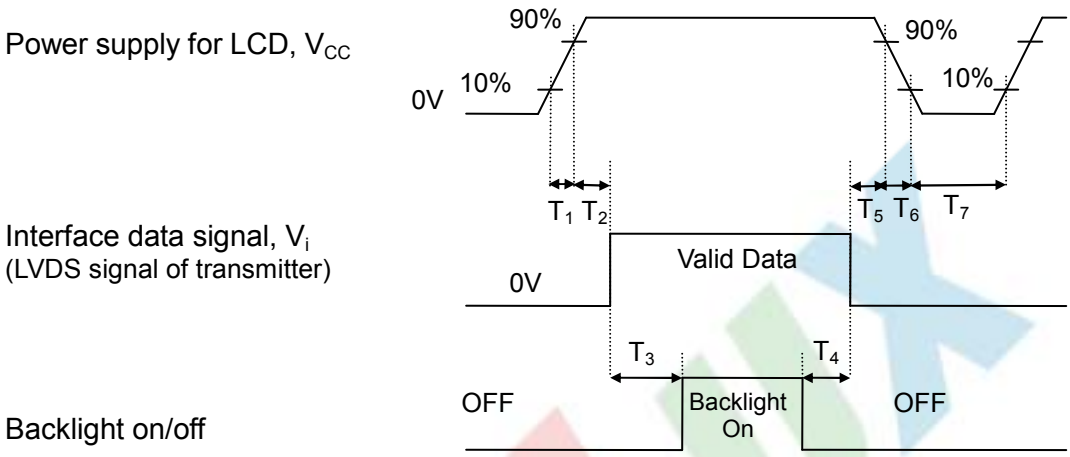
(3) Test circuit



版權屬於群創所有，禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

b. Power sequence



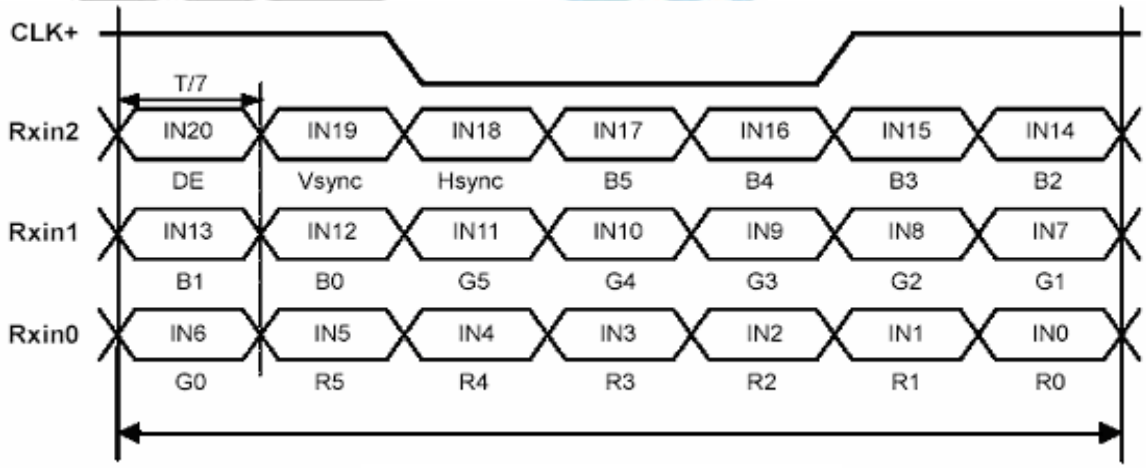
Power sequence timing table

Parameter	Value			Units
	Min.	Typ.	Max.	
T_1	0.5	-	10	ms
T_2	0	-	50	ms
T_3	200	-	-	ms
T_4	200	-	-	ms
T_5	0	-	50	ms
T_6	0.5	-	10	ms
T_7	400	-	-	ms

版權屬於群創所有, 禁止任何未經授權的使用
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

c. Display color vs. input data signals

Signal Name	Description	Remark
R5	Red Data 5 (MSB)	Red-pixel data. Each red pixel's brightness data consists of these 6 bits pixel data.
R4	Red Data 4	
R3	Red Data 3	
R2	Red Data 2	
R1	Red Data 1	
R0	Red Data 0 (LSB)	
	Red-pixel Data	
G5	Green Data 5 (MSB)	Green-pixel data. Each green pixel's brightness data consists of these 6 bits pixel data.
G4	Green Data 4	
G3	Green Data 3	
G2	Green Data 2	
G1	Green Data 1	
G0	Green Data 0 (LSB)	
	Green-pixel Data	
B5	Blue Data 5 (MSB)	Blue-pixel data. Each blue pixel's brightness data consists of these 6 bits pixel data.
B4	Blue Data 4	
B3	Blue Data 3	
B2	Blue Data 2	
B1	Blue Data 1	
B0	Blue Data 0 (LSB)	
	Blue-pixel Data	



Signal for 1 DCLK cycle (t_{CLK})

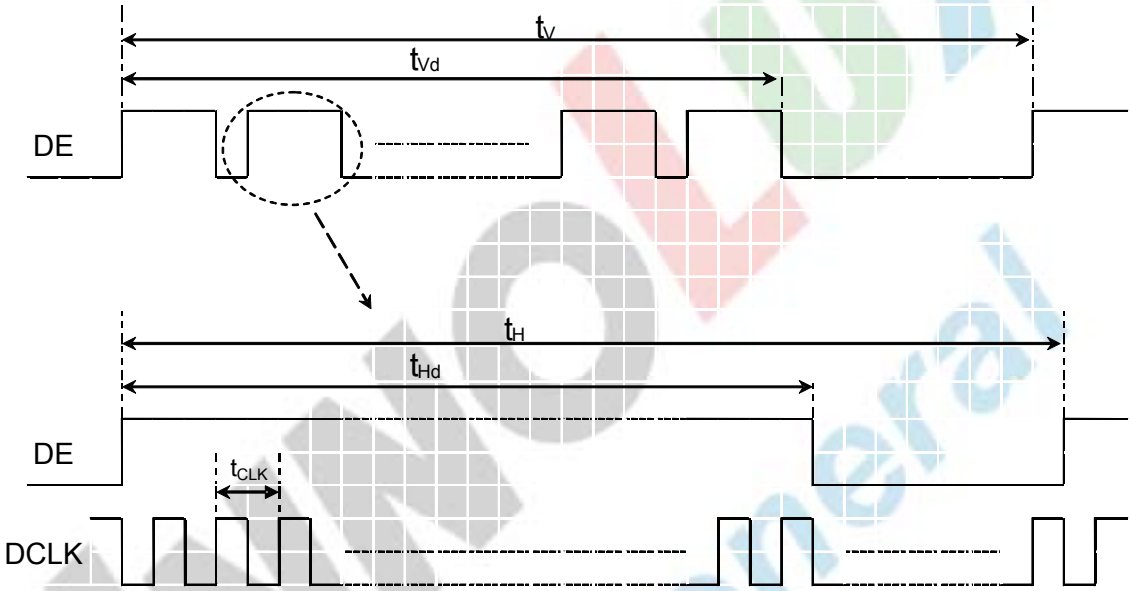
版權屬於群創所有, 禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

d. Input signal timing

Timing table

Description	Symbol	Min	Typ	Max	Unit
Frame rate	--	40	60	--	Hz
Clock freq.	$1/t_{CLK}$	45	71	85	MHz
Line cycle time	t_H	1400	1498	1800	t_{CLK}
Line width-active	t_{Hd}	1366	1366	1366	t_{CLK}
Frame cycle time	t_V	780	790	900	t_H
V width-active	t_{Vd}	768	768	768	t_H



e. Display position

D(1, 1)	D(2, 1)	……	D(683, 1)	……	D(1365, 1)	D(1366, 1)
D(1, 2)	D(2, 2)	……	D(683, 2)	……	D(1365, 2)	D(1366, 2)
⋮		……	⋮	……	⋮	⋮
D(1, 384)	D(2, 384)	……	D(683, 384)	……	D(1365, 384)	D(1366, 384)
⋮		……	⋮	……	⋮	⋮
D(1, 767)	D(2, 767)	……	D(683, 767)	……	D(1365, 767)	D(1366, 767)
D(1, 768)	D(2, 768)	……	D(683, 768)	……	D(1365, 768)	D(1366, 768)

版權屬於群創所有, 禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

f. Backlight driving conditions

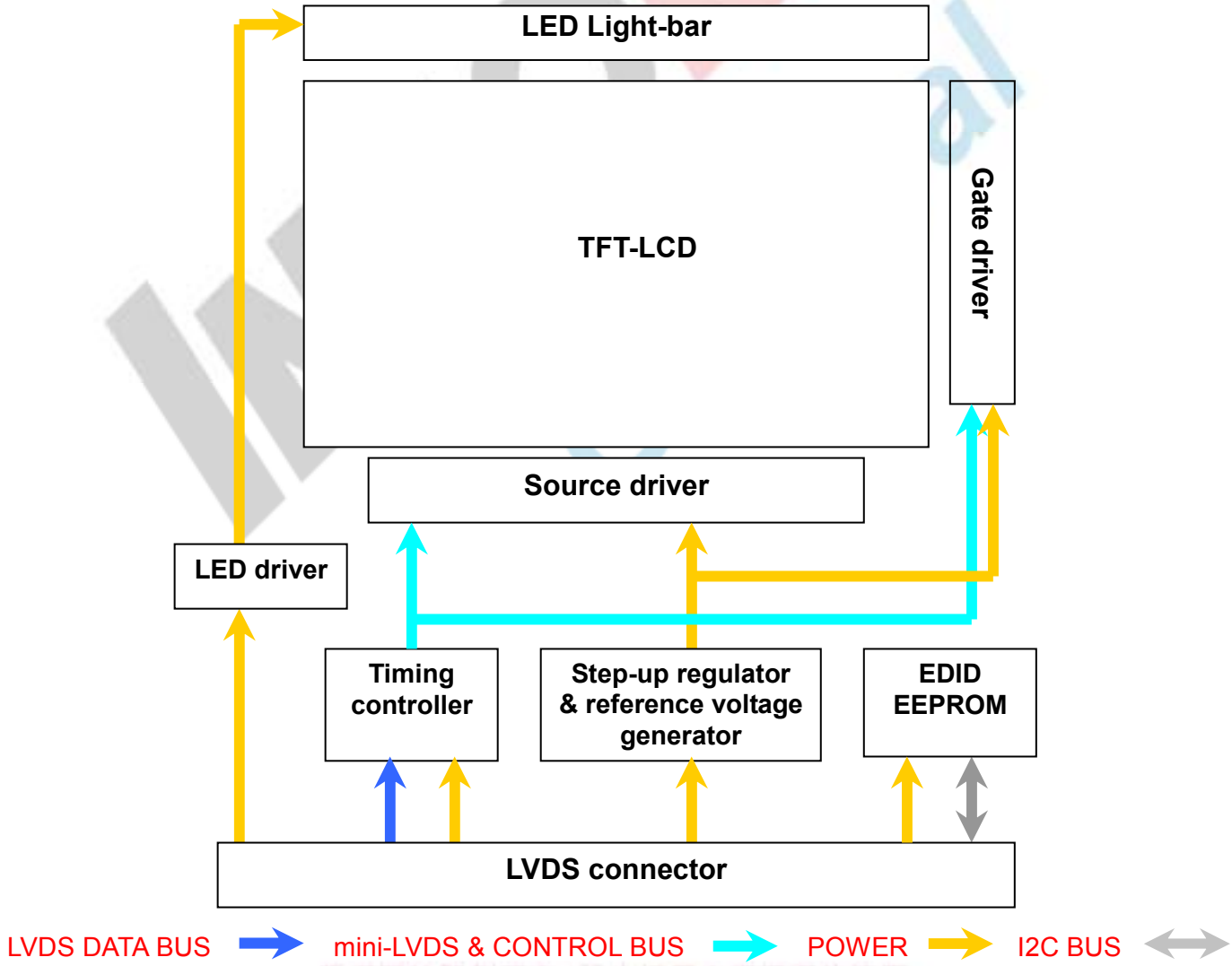
Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
LED forward voltage	V_F	3	3.2	3.4	V_{rms}	T = 25°C
LED forward current	I_F		20		mA_{rms}	T = 25°C
LED power consumption	P_{LED}		2.8	3	W	T = 25°C
	P_{LED-G}			1.2	W	Note 1
Input PWM frequency	F_{PWM}	190	1000	2000	Hz	T = 25°C
Duty ratio	-	5		100	%	Note 2
LED life time (LED only)	-	15,000			Hr	T = 25°C , Note 3

Note 1: The BL power consumption @100 nits with full white pattern under the V_{cc} =3.3 V, 25 ° C, f_V=60Hz (frame frequency) condition

Note 2: PWM duty ratio linearity guarantees 10~100%.

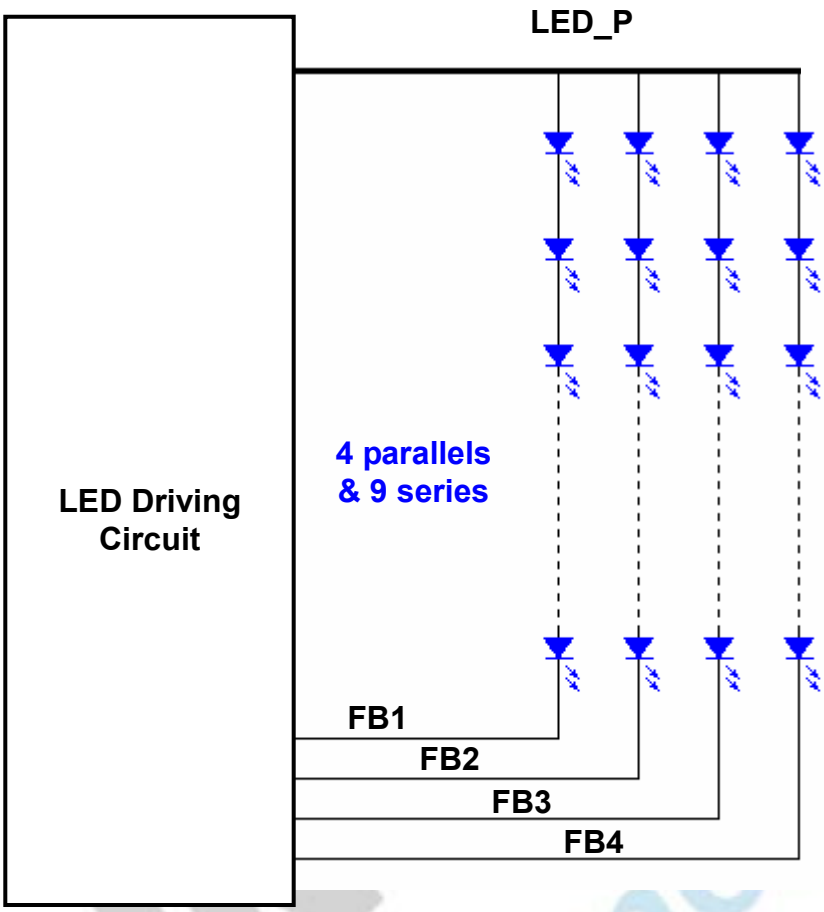
Note 3: LED life time definition is brightness decrease to 50% of initial or abnormal lighting.

g. Module function block



ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

h. LED circuit block



版權屬於群創所有, 禁止任何未經授權的使用
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

3. Optical specifications

Ambient temperature = 25℃

Item	Symbol	Condition	Specification			Unit	Remark
			Min.	Typ.	Max.		
Response time	Tr+Tf	θ= 0°		8	15	ms	Note 3
Contrast ratio	CR	θ= 0°	500	600			Note 2,4
Viewing angle	Top	CR≧10	15			deg	Note 2,4,6
	Bottom		30				
	Left		40				
	Right		40				
	Top	CR≧100	6				
	Bottom		11				
	Left		25				
	Right		25				
Brightness (5 points average)	Y_L		200	220		nit	Note 2,5
Color chromaticity (CIE)	W_x	θ= 0°	-0.03	0.313	+0.03		Note 2
	W_y			0.329			
	R_x			0.58			
	R_y			0.34			
	G_x			0.31			
	G_y			0.55			
	B_x			0.155			
	B_y			0.155			
Color gamut	NTSC	CIE1931		45		%	-
White uniformity	$\delta_{W(5)}$				1.25		Note 2,7
	$\delta_{W(13)}$				1.5		
Cross talk	Ct				2%		Note 8

版權屬於群創所有, 禁止任何未經授權的使用

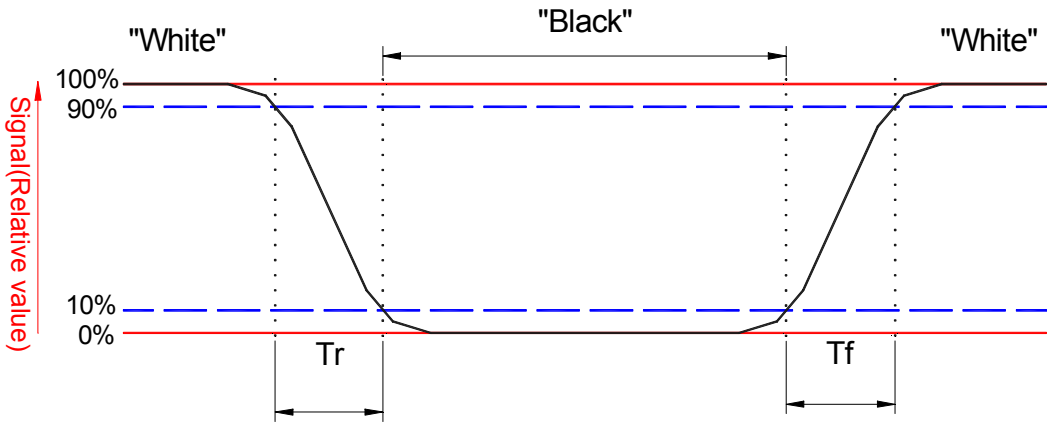
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

Note 1: To be measured in dark room.

Note 2: To be measured with a viewing cone of 2°by Topcon luminance meter BM-5A.

Note 3: Definition of response time:

The output signals of BM-7 are measured when the input pattern are changed from “Black” to “White” (falling time) and from “White” to “Black” (rising time), respectively. The response time interval is between 10% and 90% of amplitudes. Refer to figure as below.



Note 4: Definition of contrast ratio:

Contrast ratio is calculated with the following formula:

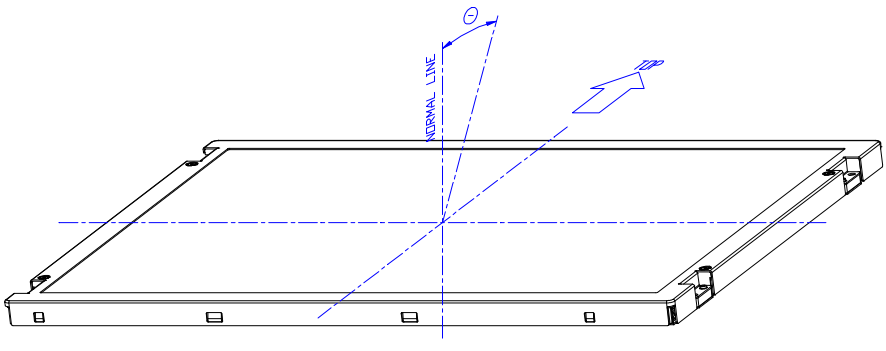
$$\text{Contrast ratio (Avg of 5pts)} = \frac{L_{\text{white (Avg of 5pts.)}}}{L_{\text{Black (Avg of 5pts.)}}}$$

Note 5: Driving current for LED should be 20 mA.

Luminance is measured at the following thirteen points (1~13):

$Y_L = (Y5 + Y10 + Y11 + Y12 + Y13) / 5$

Note 6: Definition of viewing angle



版權屬於群創所有, 禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

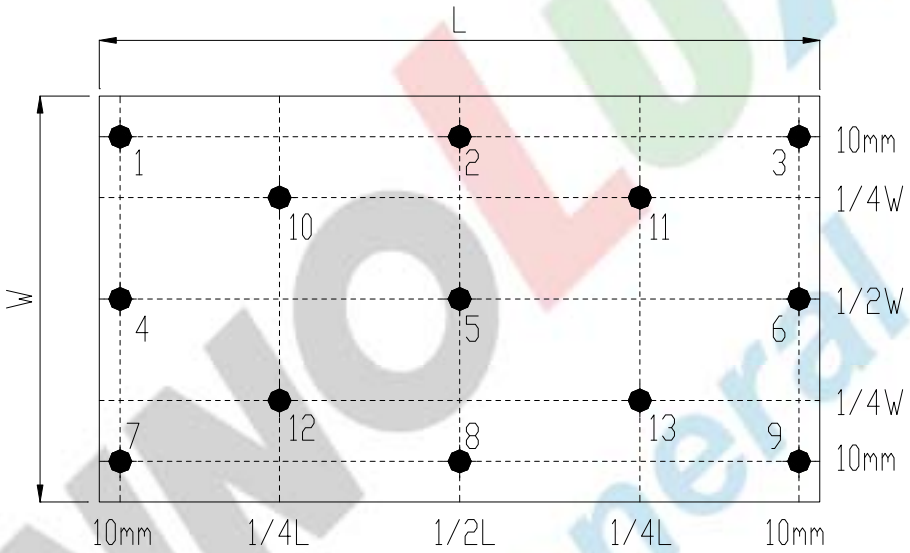
Note 7: Definition white uniformity

Luminance is measured at the following thirteen points (1~13):

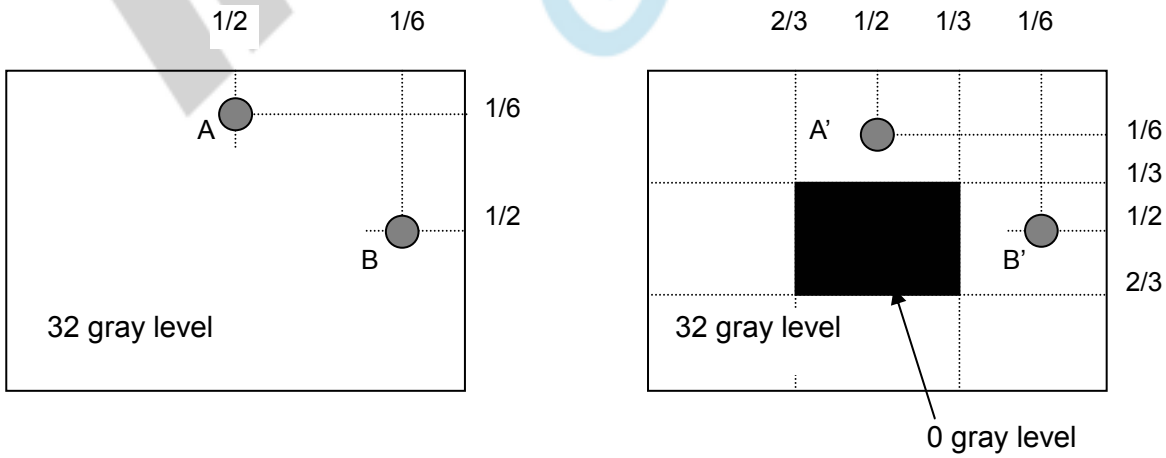
$$\delta_{W(13)} = \frac{\text{Maximum brightness of thirteen points}}{\text{Minimum brightness of thirteen points}}$$

$$\delta_{W(5)} = \frac{\text{Maximum brightness of five points}}{\text{Minimum brightness of five points}}$$

13 point measuring locations refer to the point 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13.
5 point measuring locations refer to the point 5, 10, 11, 12 and 13.



Note 8:



Unit: percentage of dimension of display area

I L_A-$L_{A'}$ I / L_A x 100%= 2% max., L_A and $L_{A'}$ are brightness at location A and A'

I L_B-$L_{B'}$ I / L_B x 100%= 2% max., $L_{B'}$ and $L_{B'}$ are brightness at location B and B'

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

4. Reliability test items

Test Item	Test Condition	Judgment	Remark
High temperature storage	60℃, 240 hours	Note 1	Note 2
Low temperature storage	-20℃, 240 hours	Note 1	Note 2
High temperature & high humidity operation	40℃, 90% RH, 240 hours (No condensation)	Note 1	Note 2
High temperature operation	50℃, 240 hours	Note 1	Note 2
Low temperature operation	0℃, 240 hours	Note 1	Note 2
Thermal shock (Non-operation)	-25℃ / 30 mins ~ 65℃ / 30 mins 100 cycles	Note 1	Note 2
Electrostatic discharge (ESD)	150 pF, 330Ω, Contact: ±8kV, Air: ±15kV	Note 1	
Vibration (Non-operation)	1.5G, 10 to 500 Hz random; 0.5hr in each perpendicular axes (X, Y, Z).	Note 1	Note 2
Mechanical shock (Non-operation)	220G/2ms, Half sine wave, ±X, ±Y, ±Z one time for each direction	Note 1	Note 2

Note 1: Pass: Normal display image with no obvious non-uniformity and no line defect.
Fail: No display image, obvious non-uniformity, or line defects.
Partial transformation of the module parts should be ignored.

Note 2: Evaluation should be tested after storage at room temperature more than one hour.

版權屬於群創所有, 禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

5. Safety

5-1. Sharp edge requirements

There will be no sharp edges or corners on the display assembly that could cause injury.

5-2. Materials

a. Toxicity

There will be no carcinogenic materials used anywhere in the display module. If toxic materials are used, they will be reviewed and approved by the responsible InnoLux Toxicologist.

b. Flammability

All components including electrical components that do not meet the flammability grade UL94-V0 in the module will complete the flammability rating exception approval process. The printed circuit board will be made from material rated 94-V0 or better. The actual UL flammability rating will be printed on the printed circuit board.

c. Capacitors

If any polarized capacitors are used in the display assembly, provisions will be made to keep them from being inserted backwards.

6. Display quality

The display quality of the color TFT-LCD module should be in compliance with the InnoLux incoming inspection standard.

7. Handling precaution

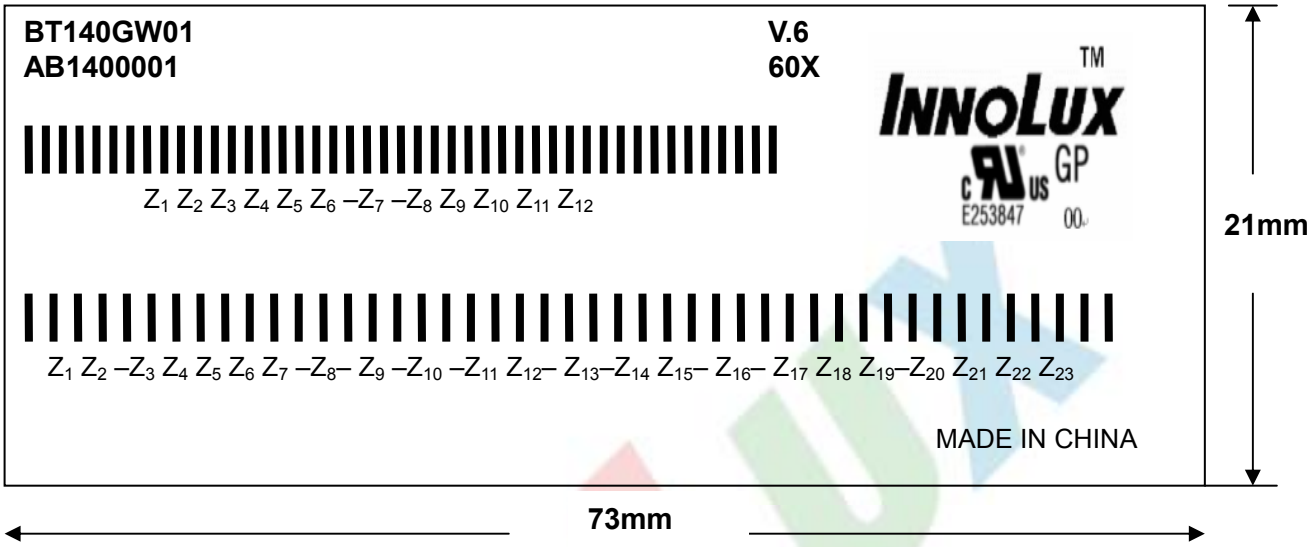
(1) Do not apply rough force such as bending or twisting to the module during assembly.
(2) To assemble or install module into user's system can be only in clean working areas. The dust and oil may cause electrical short or worsen the polarizer.
(3) It's not permitted to have pressure or impulse on the module because the LCD panel and backlight will be damaged.
(4) Always follow the correct power sequence when LCD module is connecting and operating.
(5) Do not pull the I/F connector in or out while the module is operating.
(6) Do not disassemble the module.
(7) Use a soft dry cloth without chemicals for cleaning, because the surface of polarizer is very soft and easily scratched.
(8) It is dangerous that moisture come into or contacted the LCD module, because moisture may damage LCD module when it is operating.
(9) High temperature or humidity may reduce the performance of module. Please store LCD module within the specified storage conditions.

版權屬於群創所有, 禁止任何未經授權的使用

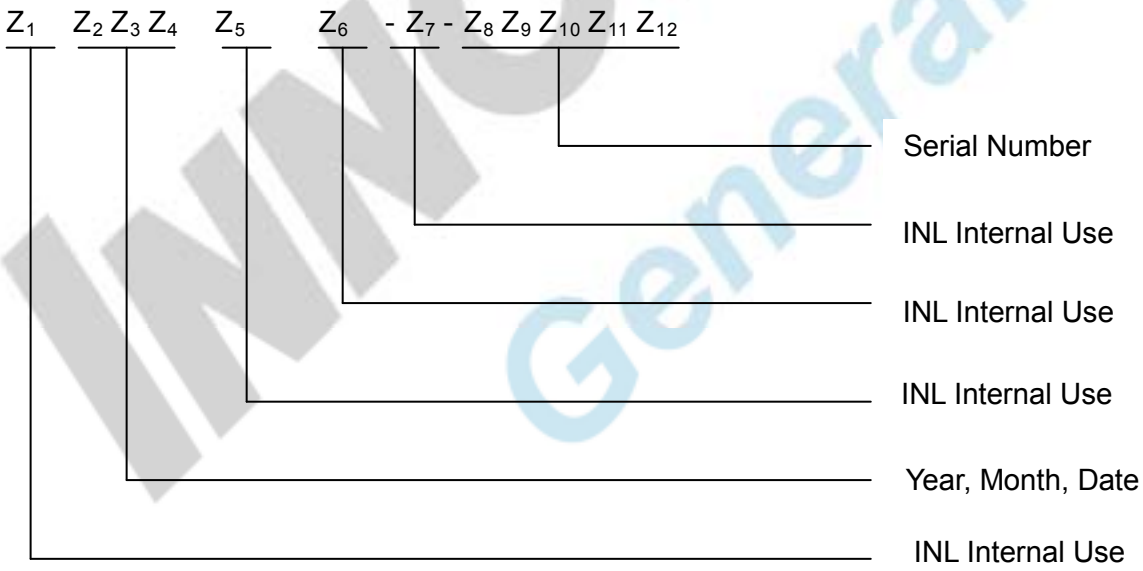
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

8. Label Definition

8-1. Module label



(a) Model Number: BT140GW01 V.6
(b) Product Number: AB140000160X
(c) Serial ID (INL Internal Use):

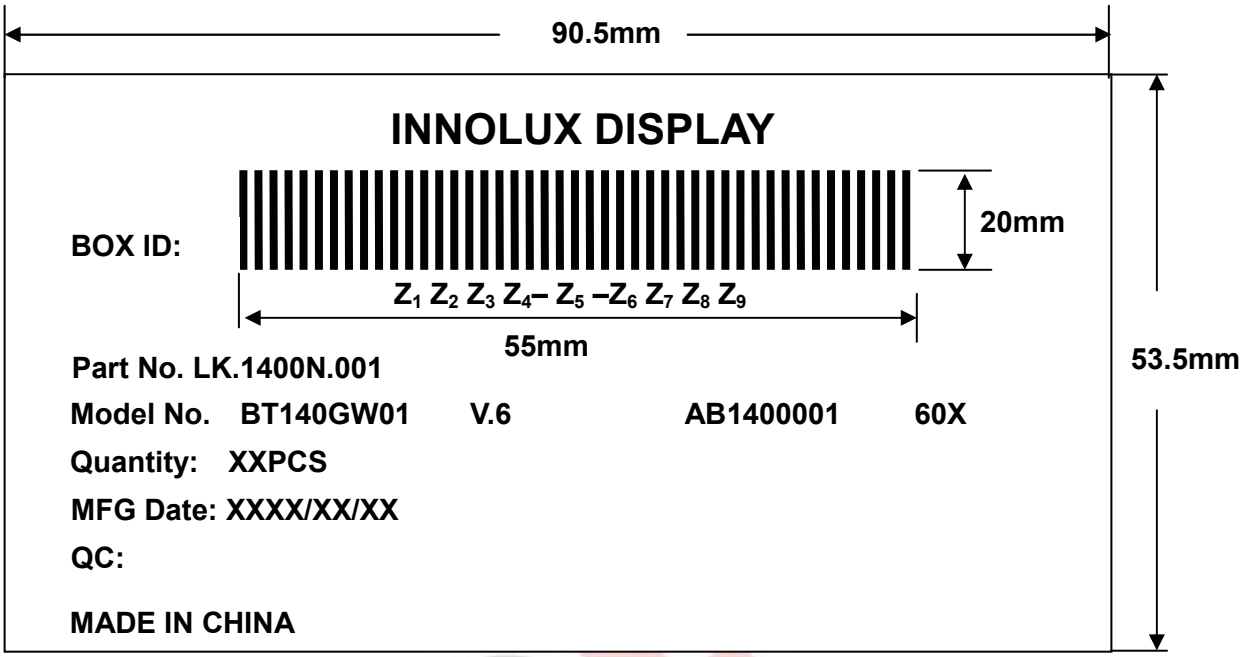


Serial ID includes the information as below:
→Manufactured Date:
Year: 0~9, for 2000~2009;
Month: 1~9 & A~C for Jan.~Dec.;
Date: 1~9 & A~V (exclude I, O, Q, U) for 1st~31st.
→Serial Number: Module packing sequence number

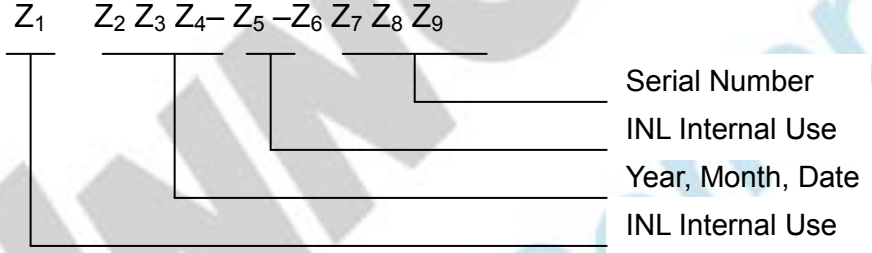
(d) Serial ID II (INL Internal Use):
Z1 Z2 –Z3 Z4 Z5 Z6 Z7 –Z8– Z9 –Z10 –Z11 Z12– Z13–Z14 Z15– Z16– Z17 Z18 Z19–Z20 Z21 Z22 Z23

版權屬於群創所有，禁止任何未經授權的使用
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

8-2. Carton label



(a) Model No. : BT140GW01 V.6
(b) Package Quantity: XXPCS
(c) Serial ID:



Serial ID includes the information as below:
→Manufactured Date:
Year: 0~9, for 2000~2009;
Month: 1~9 & A~C for Jan.~Dec.;
Date: 1~9 & A~V (exclude I, O, Q, U) for 1st~31st.
→Serial Number: Module packing sequence number

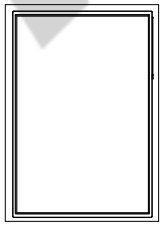
版權屬於群創所有, 禁止任何未經授權的使用
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

9. Packing Form

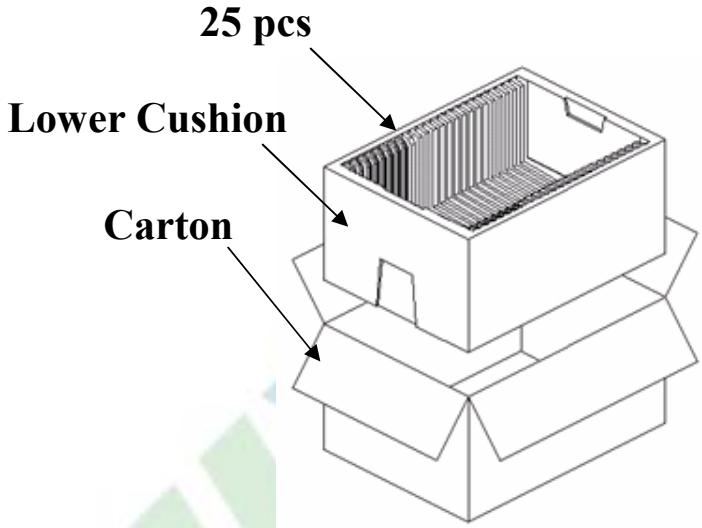
⇩ Step A
Put LCM into A/S bag

⇩ Step B
Turn back A/S bag

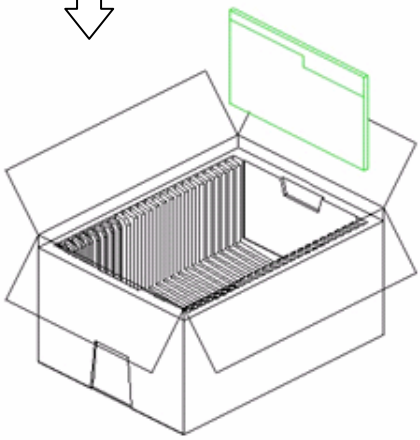
⇩ Step C



↳ Step D
Put LCM with A/S bag into

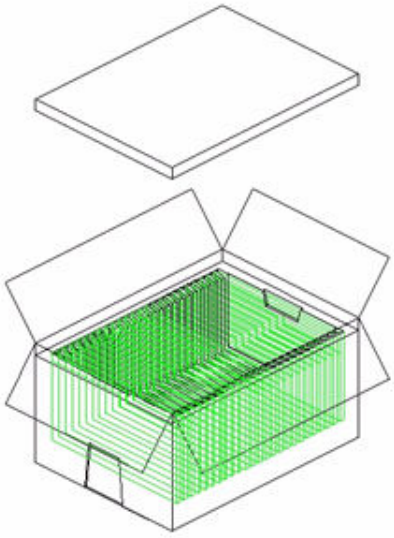


Step E ⇩



Step F ⇩

Upper Cushion

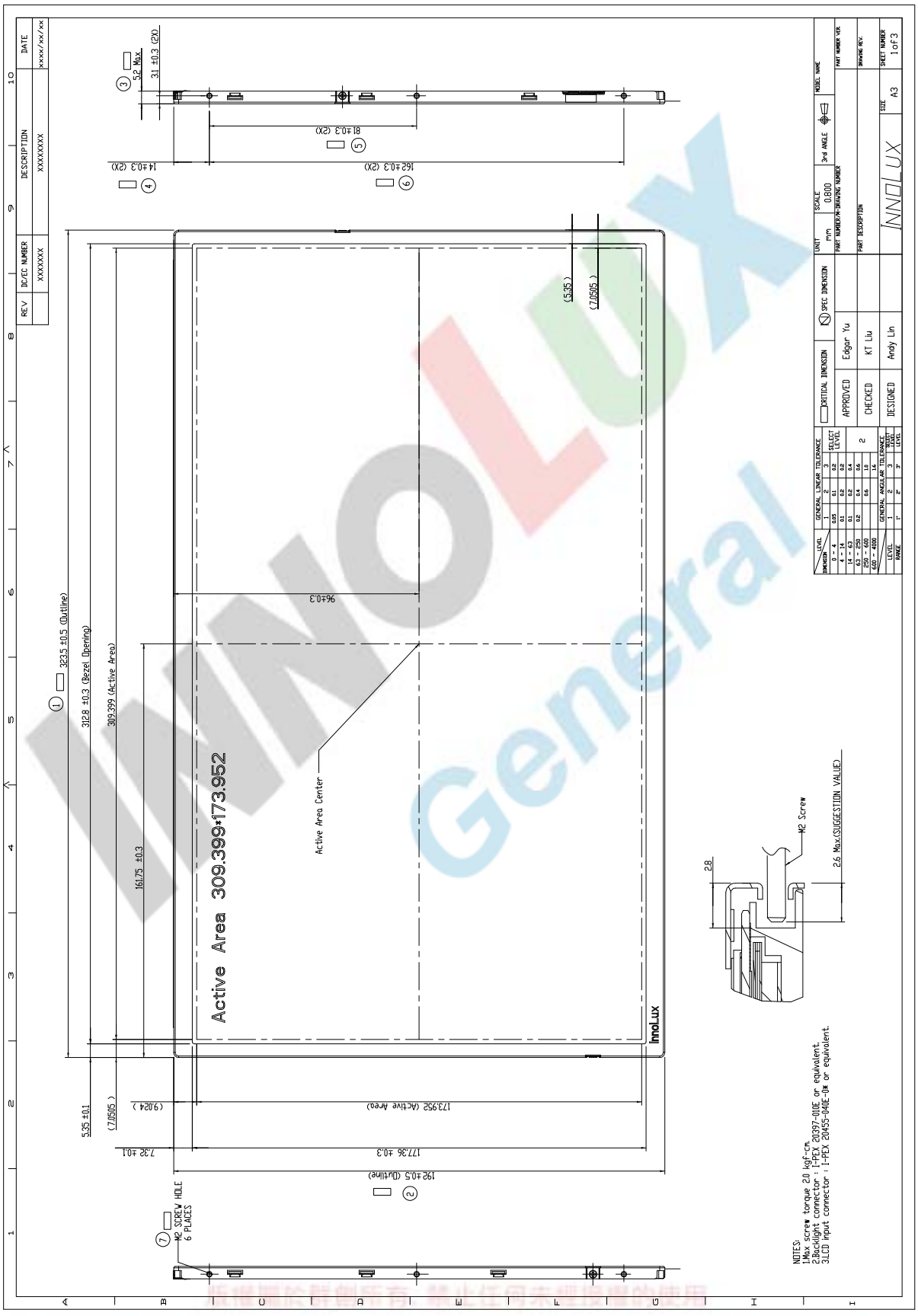


版權屬於群創所有, 禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

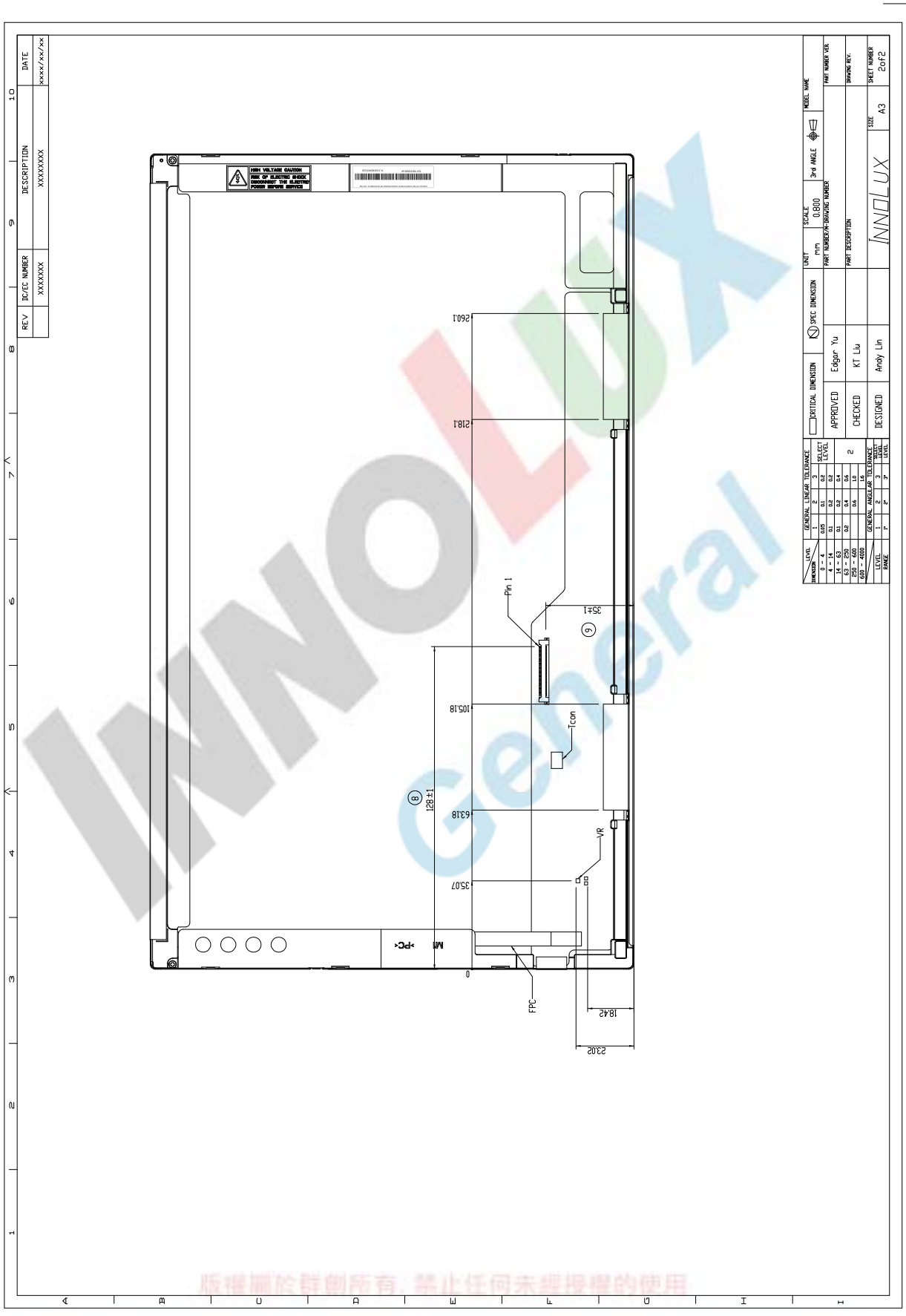
10. Mechanical Drawings

10-1. Front side

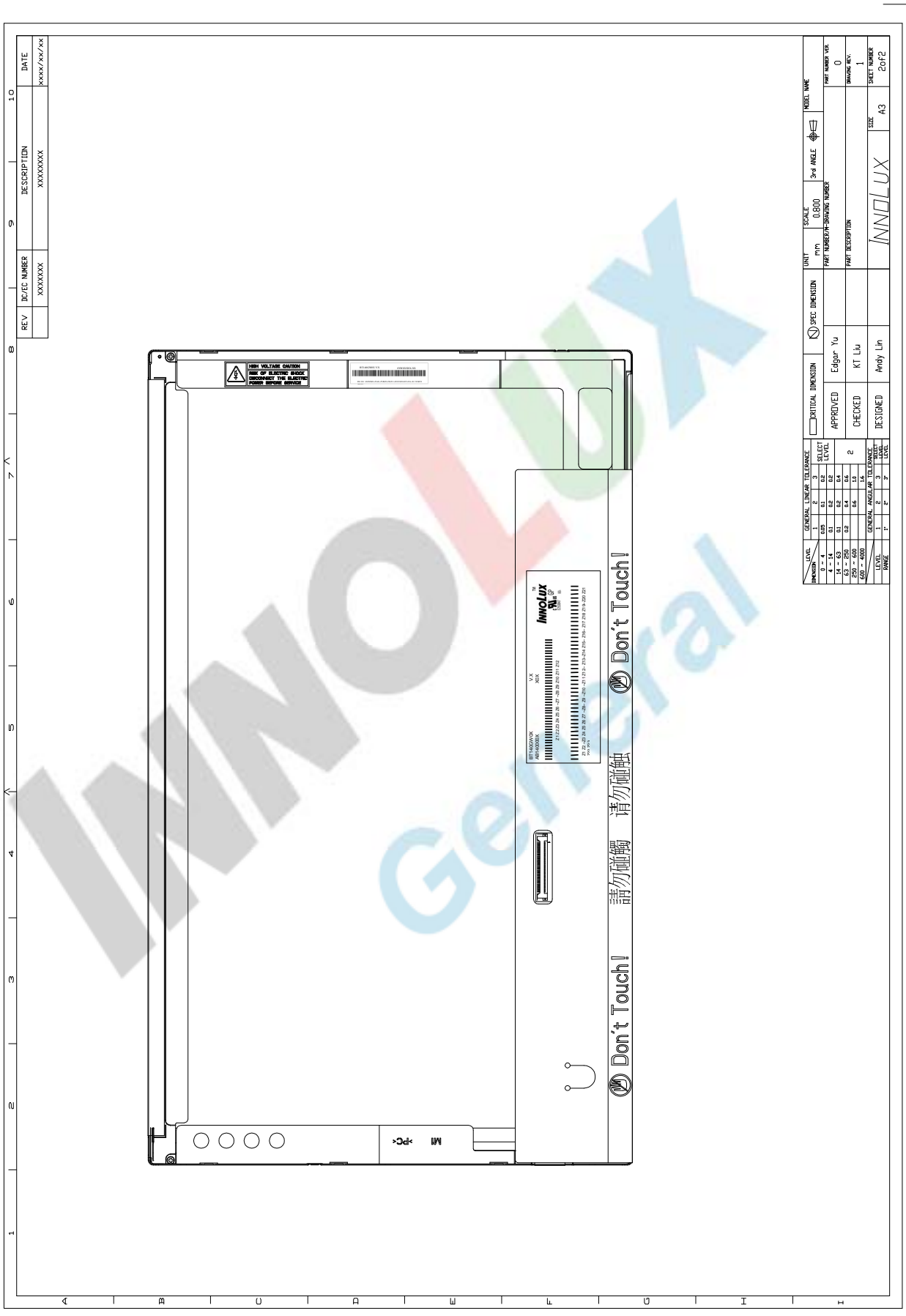


ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

10-2 Rear side



ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux



ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

11. System Cover Design Notice

11-1. Interference examination (TCON / VR / COF IC vs cable or wire)

Definition:

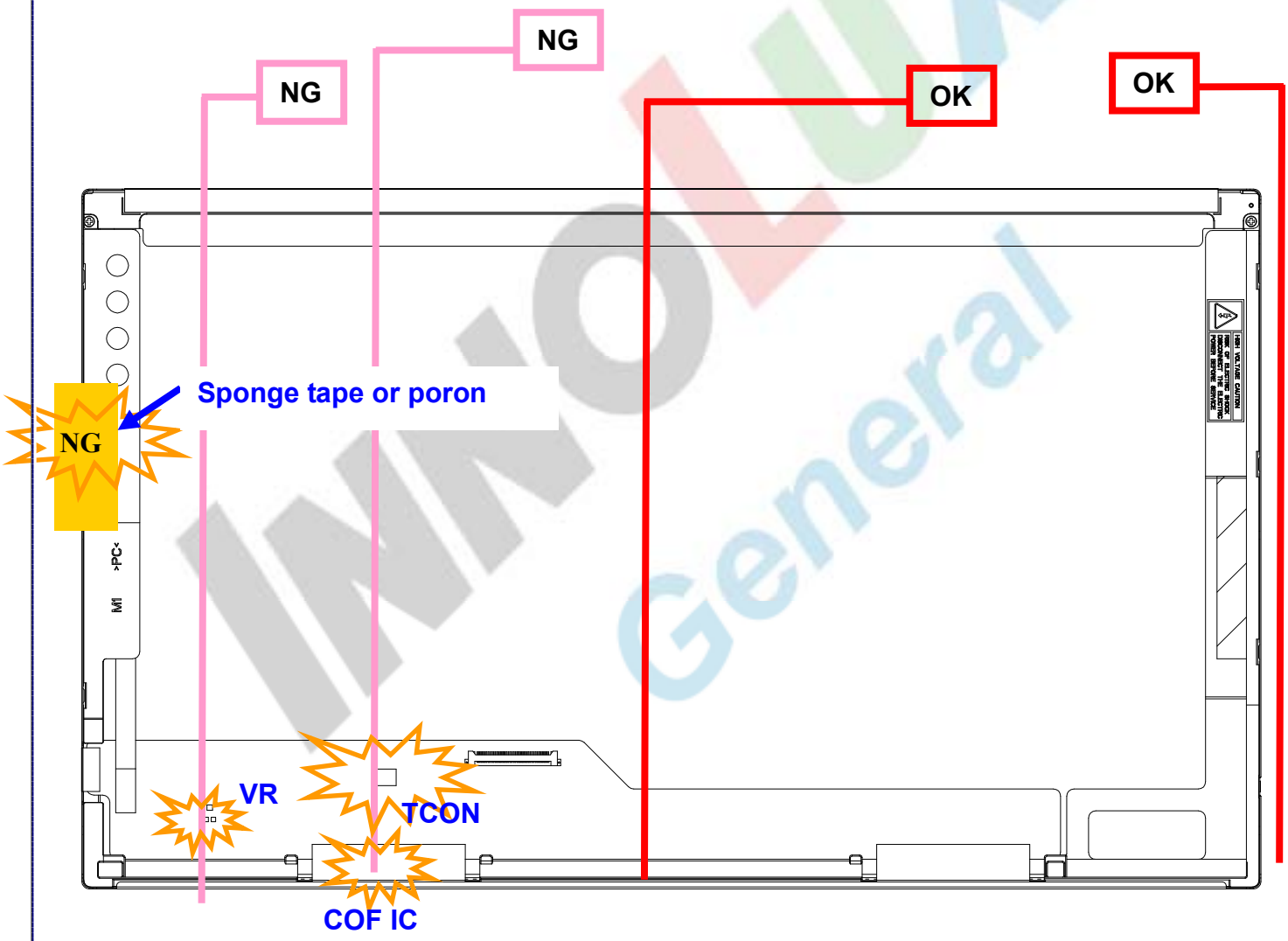
a) Cable or wire overlap with TCON, VR, COF IC is forbidden for preventing from abnormal display after backpack test, hinge test, twist test or pogo test.

b) Cable or wire bypass TCON, VR, COF IC is recommended.

11-2. System inner surface examination

Definition:

a) Sponge tape or poron stick on PCBA or frame is forbidden for preventing from abnormal display after backpack test, hinge test, twist test or pogo test.



版權屬於群創所有，禁止任何未經授權的使用

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

Appendix: EDID Code

	Byte (hex)	Field Name and Comments	Value (hex)	Value (binary)
Header	0	Header	00	00000000
	1	Header	FF	11111111
	2	Header	FF	11111111
	3	Header	FF	11111111
	4	Header	FF	11111111
	5	Header	FF	11111111
	6	Header	FF	11111111
	7	Header	00	00000000
Vendor / Product EDID Version	8	EISA manufacture code = 3 Character ID	25	00100101
	9	EISA manufacture code (Compressed ASCII)	CC	11001100
	0A	Panel Supplier Reserved – Product Code	16	00010110
	0B	Panel Supplier Reserved – Product Code	00	00000000
	0C	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0D	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0E	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0F	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	10	Week of manufacture-->--	00	00000000
	11	Year of manufacture – 1990 (ex. 2005-1990=15) -->**2010**	14	00010100
	12	EDID structure version # = 1	01	00000001
	13	EDID revision # = 3	03	00000011
Display Parameters	14	Video I/P definition = Digital I/P (80h)	80	10000000
	15	Max H image size = 31 cm	1F	00011111
	16	Max V image size = 18 cm	12	00010010
	17	Display gamma = (gamma ×100)-100 = Example: (2.2×100) – 100 = 120	78	01111000
	18	Feature support (no DPMS, Active off, RGB, timing BLK 1)	0A	00001010
Panel Color Coordinates	19	Red/Green Low bit (RxRy/GxGy)	87	10000111
	1A	Blue/White Low bit (BxBy/WxWy)	F5	11110101
	1B	Red x Rx=0.58	94	10010100
	1C	Red y Ry=0.34	57	01010111
	1D	Green x Gx=0.31	4F	01001111
	1E	Green y Gy=0.55	8C	10001100
	1F	Blue x Bx=0.155	27	00100111
	20	Blue y By=0.155	27	00100111
	21	White X Wx=0.313	50	01010000
	22	White Y Wy=0.329	54	01010100
Established Timings	23	Established timings 1 (00h if not used)	00	00000000
	24	Established timings 2 (00h if not used)	00	00000000

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

	25	Manufacturer's timings (00h if not used)	00	00000000
Standard Timing ID	26	Standard timing ID1 (01h if not used)	01	00000001
	27	Standard timing ID1 (01h if not used)	01	00000001
	28	Standard timing ID2 (01h if not used)	01	00000001
	29	Standard timing ID2 (01h if not used)	01	00000001
	2A	Standard timing ID3 (01h if not used)	01	00000001
	2B	Standard timing ID3 (01h if not used)	01	00000001
	2C	Standard timing ID4 (01h if not used)	01	00000001
	2D	Standard timing ID4 (01h if not used)	01	00000001
	2E	Standard timing ID5 (01h if not used)	01	00000001
	2F	Standard timing ID5 (01h if not used)	01	00000001
	30	Standard timing ID6 (01h if not used)	01	00000001
	31	Standard timing ID6 (01h if not used)	01	00000001
	32	Standard timing ID7 (01h if not used)	01	00000001
	33	Standard timing ID7 (01h if not used)	01	00000001
	34	Standard timing ID8 (01h if not used)	01	00000001
	35	Standard timing ID8 (01h if not used)	01	00000001
Timing Descripter #1	36	Pixel Clock/10,000 (Pixel Clock=71MHz) (LSB)	**BC**	10111100
	37	Pixel Clock/10,000 (Pixel Clock=71MHz) (MSB)	**1B**	00011011
	38	Horizontal Active = 1366 pixels (lower 8 bits)	56	01010110
	39	Horizontal Blanking (Thbp) = 132 pixels (lower 8 bits)	**84**	10000100
	3A	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	50	01010000
	3B	Vertical Active = 768 lines	00	00000000
	3C	Vertical Blanking (Tvbp) = 22 lines (DE Blanking typ. for DE only panels)	**16**	00010110
	3D	Vertical Active : Vertical Blanking (Tvbp) (upper4:4 bits)	30	00110000
	3E	Horizontal Sync, Offset (Thfp) = 48 pixels	**30**	00110000
	3F	Horizontal Sync, Pulse Width = 32 pixels	**20**	00100000
	40	Vertical Sync, Offset (Tvfp) = 1 lines Sync Width = 4 lines	**14**	00010100
	41	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000
	42	Horizontal Image Size =309 mm	35	00110101
	43	Vertical image Size = 174 mm	AE	10101110
	44	Horizontal Image Size / Vertical image size	10	00010000
	45	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000
	46	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000
	47	Signal (non-intr , norm , no stero , sep sync , neq pol)	18	00011000
Timing Descripter #2	48	Detailed timing / monitor	**00**	00000000
	49	descriptor #2	**00**	00000000
	4A		00	00000000
	4B		**00**	00000000
	4C		00	00000000
	4D		00	00000000

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

	4E		00	00000000
	4F		00	00000000
	50		00	00000000
	51		00	00000000
	52		00	00000000
	53		00	00000000
	54		00	00000000
	55		00	00000000
	56		00	00000000
	57		00	00000000
	58		00	00000000
	59		**00**	00000000
Timing Descripter #3 Dell specific information	5A	Detailed timing / monitor	00	00000000
	5B	descriptor #3	00	00000000
	5C	Flag	00	00000000
	5D	Dummy Descriptor	FE	11111110
	5E	Flag	00	00000000
	5F	Vender P/N 1 Character " I"	**49**	01001001
	60	Vender P/N 2 Character " N"	**4E**	01001110
	61	Vender P/N 3 Character " L"	**4C**	01001100
	62		**0A**	00001010
	63		**20**	00100000
	64		**20**	00100000
	65		**20**	00100000
	66		**20**	00100000
	67		**20**	00100000
	68		**20**	00100000
	69		**20**	00100000
	6A		**20**	00100000
	6B		**20**	00100000
Timing Descripter #4	6C	Detailed timing / monitor	00	00000000
	6D	descriptor #4	00	00000000
	6E	Flag	00	00000000
	6F	Data Type Tag:	FE	11111100
	70	Flag	00	00000000
	71	Manufacture P/N "B"	42	01000010
	72	Manufacture P/N "T"	54	01010100
	73	Manufacture P/N "1"	**31**	00110001
	74	Manufacture P/N "4"	**34**	00110100
	75	Manufacture P/N "0"	**30**	00110000
	76	Manufacture P/N "G"	**47**	01000111
	77	Manufacture P/N "W"	**57**	01010111

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux

	78	Manufacture P/N "0"	**30**	00110000
	79	Manufacture P/N "1"	**31**	00110001
	7A	Manufacture P/N "V"	56	01010110
	7B	Manufacture P/N "6"	36	00110110
	7C		0A	00001010
	7D		20	00100000
Checksum	7E	Extension flag	00	00000000
	7F	Checksum	**D1**	11010001

INNOLUX General
版權屬於群創所有，禁止任何未經授權的使用
ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS DOCUMENT SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Chimei-Innolux