Chimei-Innolux Corporation

BT140GW03 V.A LCD MODULE SPECIFICATION

( ) Preliminary Specification
(●) Final Specification

Customer	Checked & Approved by
Lenovo (China)	

Approved by	Checked by	Prepared by
MKT	PD	PM
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Date: 2010/11/11

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Version: 7

Record of Revision

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0	2010/04/13	All	First Edition issued
1	2010/04/15	5	Pin Assignment
		8	Typical Operating Conditions
2	2010/04/26	21	Label
3	2010/05/20	16	Optical specifications
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5	2010/08/24	14	PWM frequency
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		21	Label Drawing
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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	320.9(W) X 199.1(H) X 3.6(D) (max)	mm
7	Weight	320Max.	Grams
8	Surface treatment	Glare	
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	RoHS	RoHS compliance	

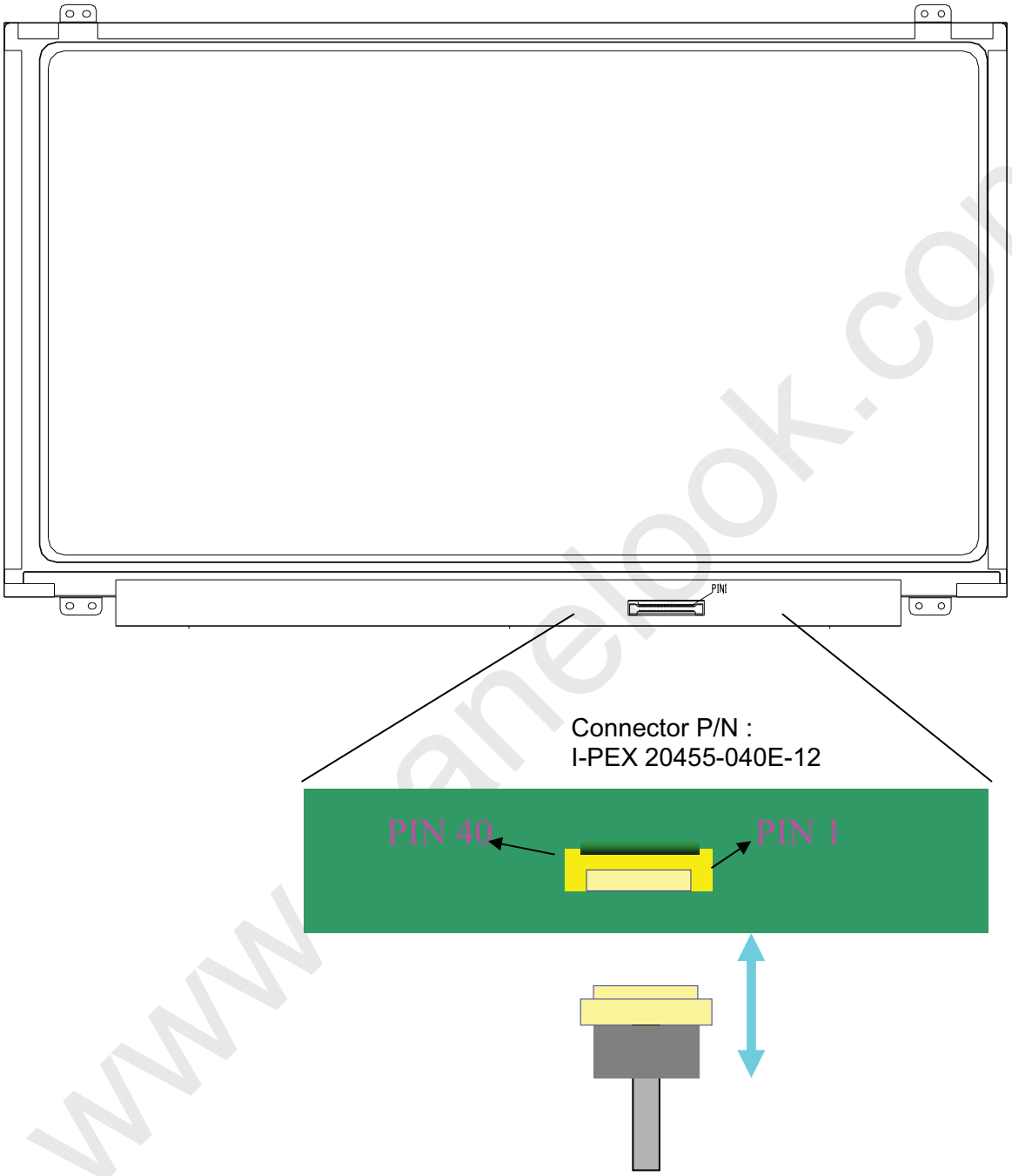
2. Electrical Specifications

2-1 Pin Assignment

a. Panel connector
Connector Part No: I-PEX 20455-040E-12
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	CE_EN	Color Engine Enable (Reserve)	
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	CABC_EN	CABC Enable (Reserve)	
38	V_LED	LED power supply 6.0V~21V	
39	V_LED	LED power supply 6.0V~21V	
40	V_LED	LED power supply 6.0V~21V	

b. General Block Diagram (Rear Side)

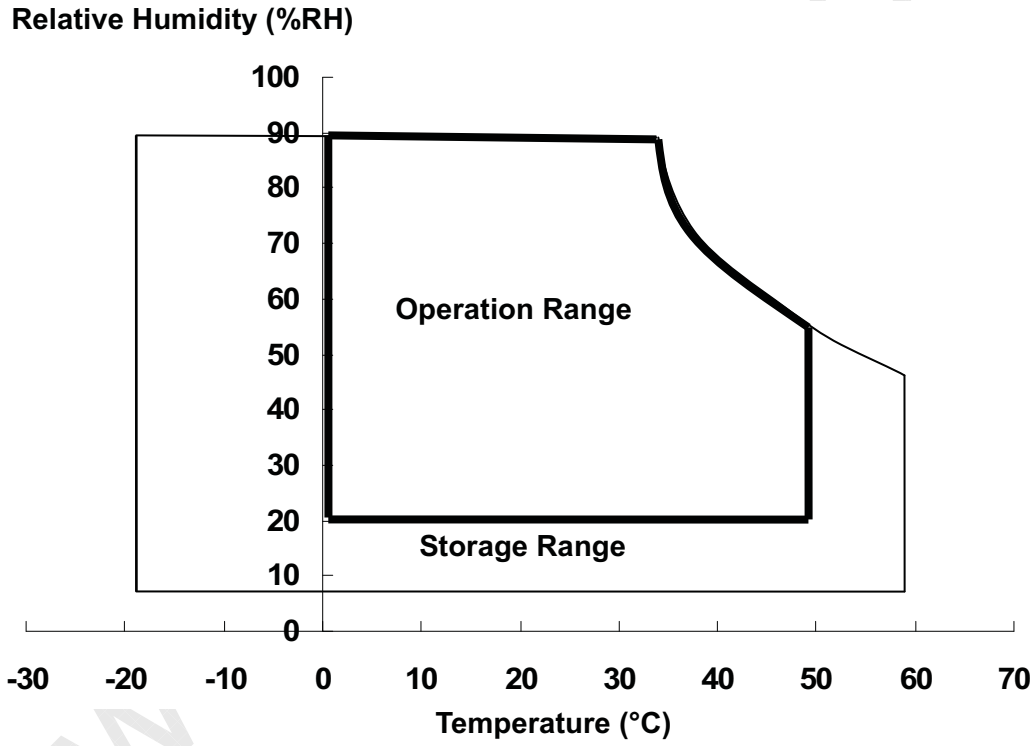


2-2. Absolute Maximum Ratings

Parameter	Symbol	Values		Unit	Remark
		Min.	Max.		
Power input voltage	V_{CC}	- 0.3	4.0	V	At 25˚C
Signal input voltage	V_{IN}	- 0.3	4.0	V	At 25˚C
Operating temperature	T_{OP}	0	50	˚C	Note 1
Storage temperature	T_{ST}	- 20	60	˚C	Note 2

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

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



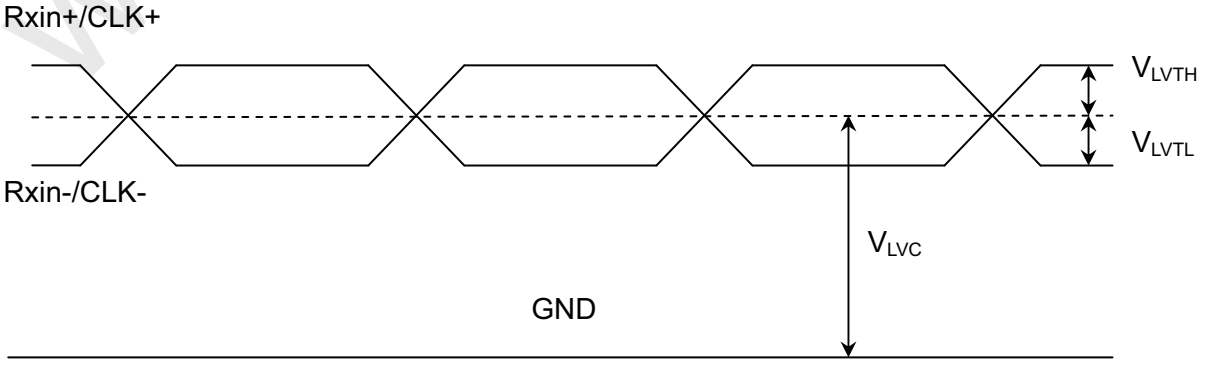
2-3. Electrical Characteristics

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}	-	260	300	mA	Note 1
Power consumption		P_C	-	0.85	1	Watts	Note 1
LVDS interface	Differential input high threshold voltage	V_{LVTH}	-	-	+100	mV	LVDS interface
	Differential input low threshold voltage	V_{LVTL}	-100	-	-	mV	
	Common input voltage	V_{LVC}	1.0	1.2	1.4	V	
	Terminating resistor	R_T	90	100	110	ohm	
Color Engine Voltage Level	Enable	COLOR_EN	2.4	--	3.6	V	
	Disable	COLOR_EN	0	--	0.8	V	
CABC Voltage Level	Enable	CABC_EN	2.4	--	3.6	V	
	Disable	CABC_EN	0	--	0.8	V	
Rush current		I_{Rush}	-	-	1.5	A	Note 3
LED rush current		$I_{LED-Rush}$	-	-	3.0	A	Note 4

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.

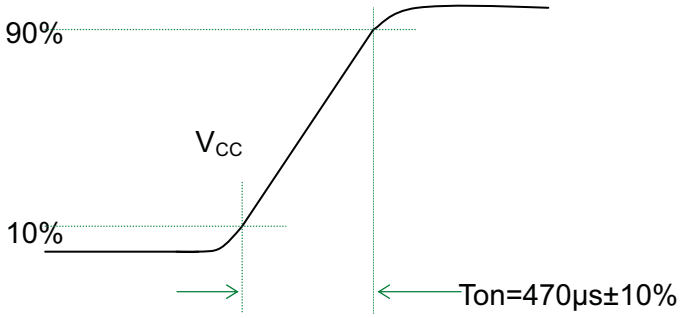
Note 2: LVDS waveform diagram



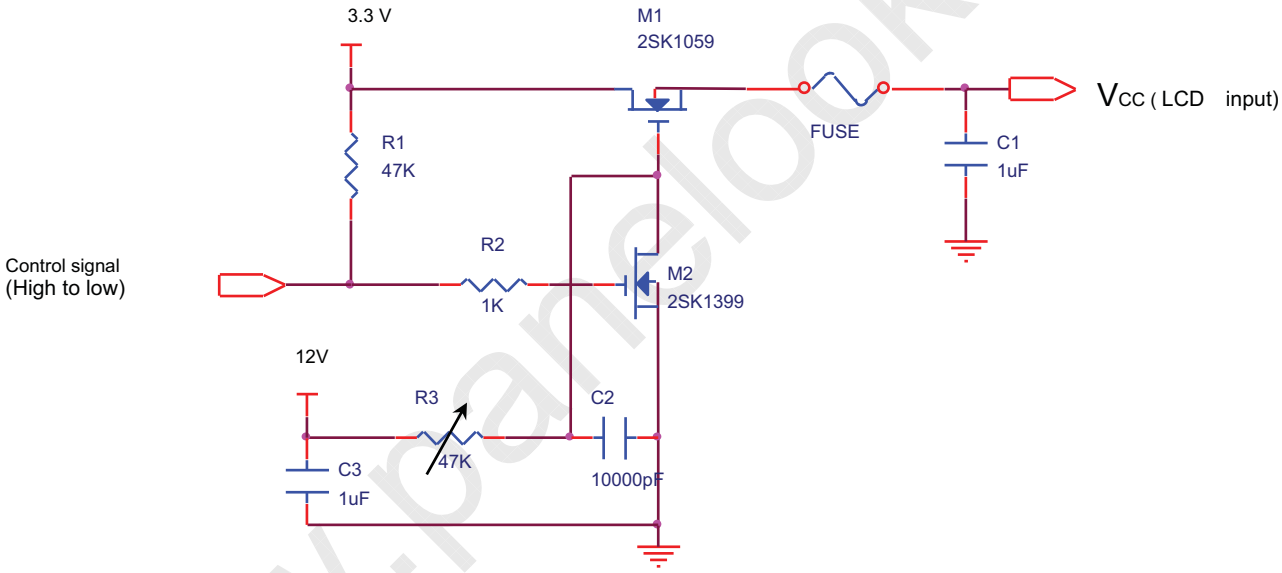
Note 3: Test condition

(1) Pattern: Black pattern

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



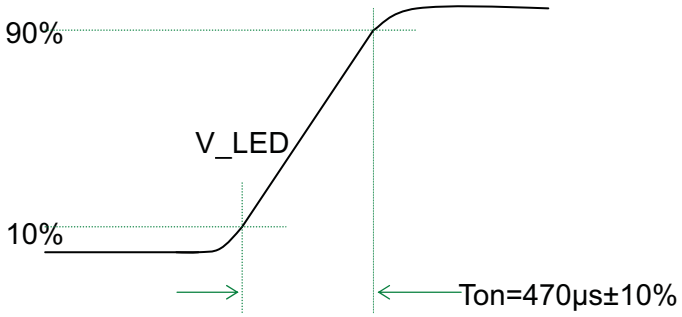
(3) Test circuit



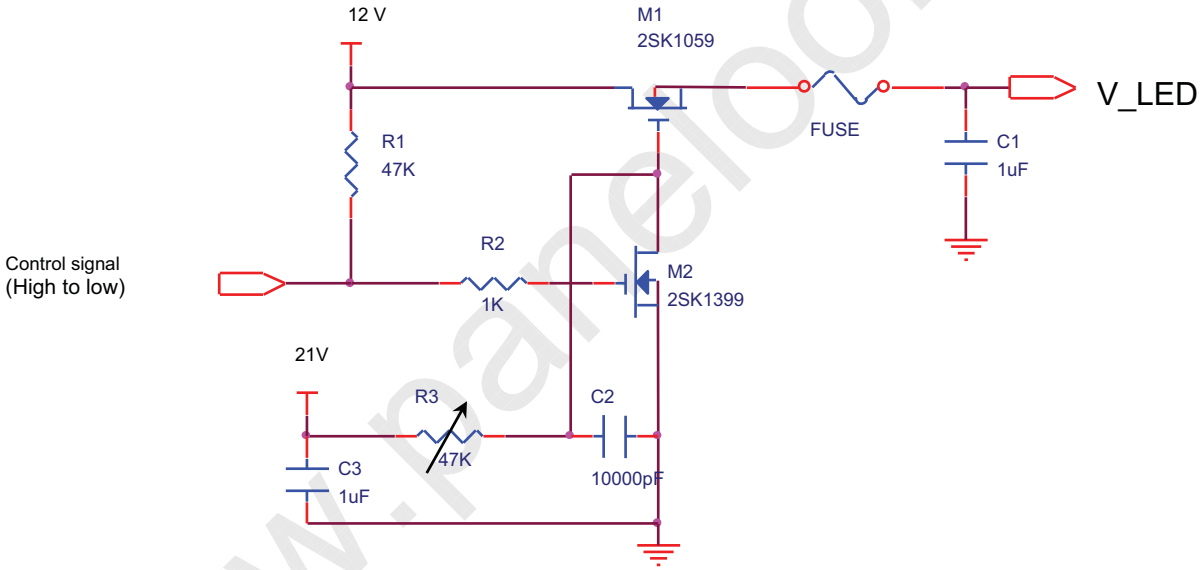
Note 4: Test condition

(1) Pattern: LED duty 100%

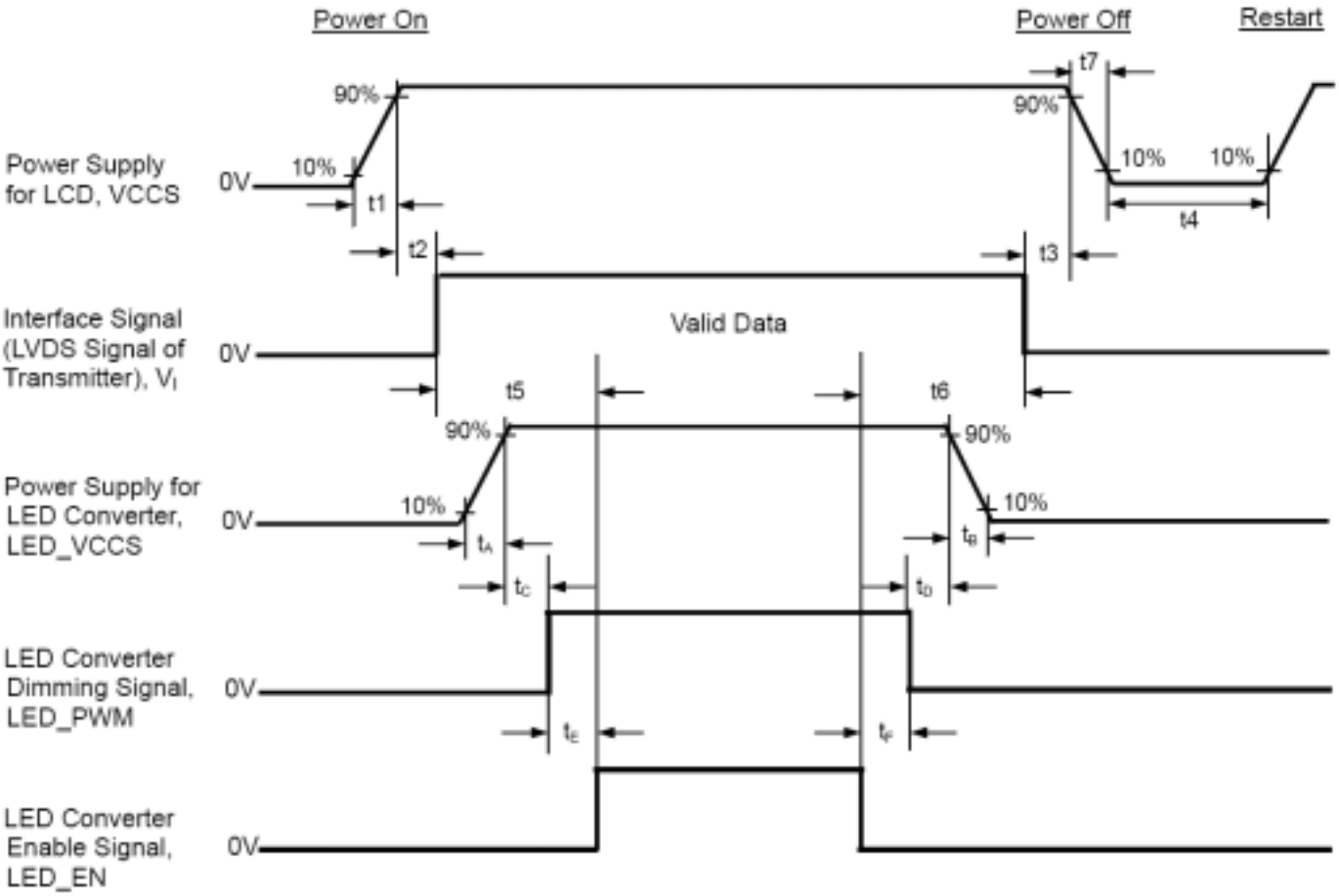
(2) V_LED = 12.0V, V_LED rising time = 470 μs ± 10%



(3) Test circuit



b. Power sequence

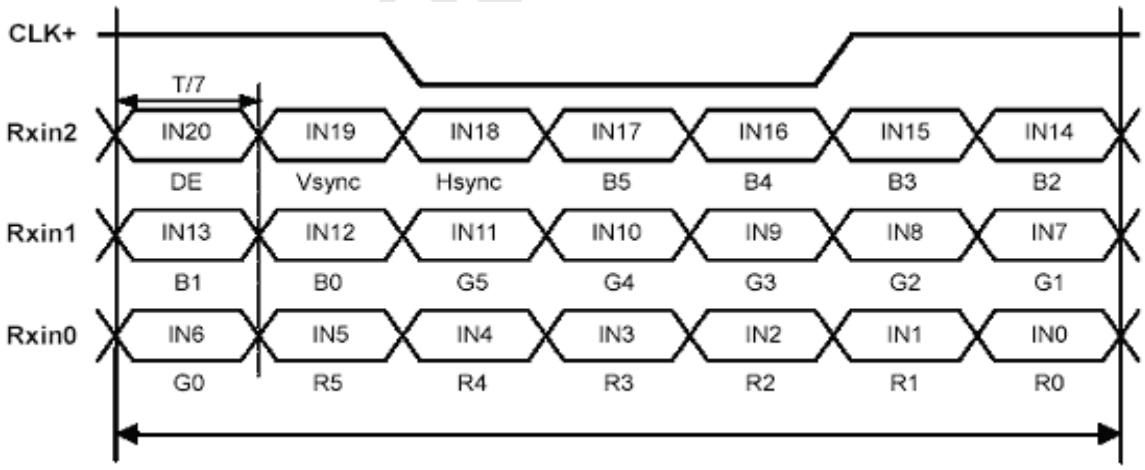


Power sequence timing table

Parameter	Value			Units
	Min.	Typ.	Max.	
t_1	≧0.5	--	≦10	ms
t_2	≧0	--	≦50	ms
t_3	≧0	--	--	ms
t_4	≧150	--	--	ms
t_5	≧200	---	--	ms
t_6	≧0	--	--	ms
t_7	≧0	--	≦10	ms
t_A	≧0.5	--	≦10	ms
t_B	>0	--	--	ms
t_C	≧0	--	--	ms
t_D	≧0	--	--	ms
t_E	≧0	--	--	ms
t_F	≧0	--	--	ms

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})

d. Input signal timing

Timing table

Refresh rate 60Hz

Signal	Item	Symbol	Min.	Typ.	Max.	Unit	Note
DCLK	Frequency	1/Tc	62.4	69.3	72.8	MHz	-
DE	Vertical Total Time	TV	776	788	793	TH	-
	Vertical Active Display Period	TVD	768	768	768	TH	-
	Vertical Active Blanking Period	TVB	TV-TVD	20	TV-TVD	TH	
	Horizontal Total Time	TH	1456	1466	1492	Tc	-
	Horizontal Active Display Period	THD	1366	1366	1366	Tc	-
	Horizontal Active Blanking Period	THB	TH-THD	100	TH-THD	Tc	

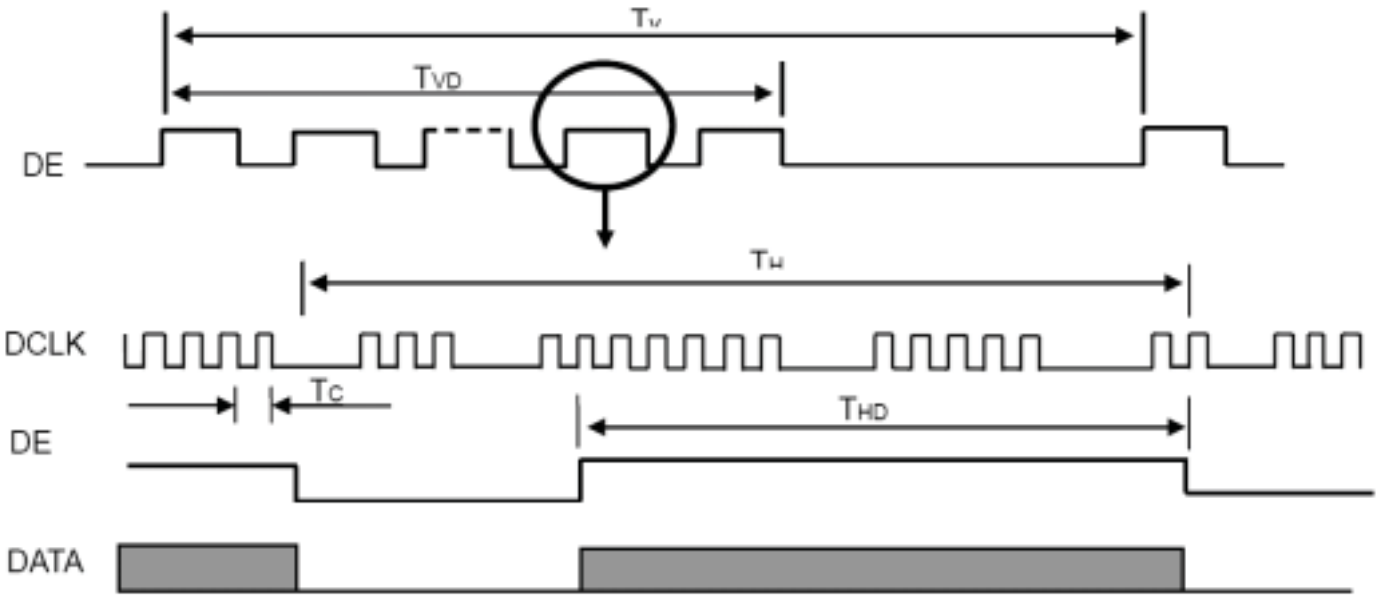
Refresh rate 50Hz

Signal	Item	Symbol	Min.	Typ.	Max.	Unit	Note
DCLK	Frequency	1/Tc	57.418	60.44	63.462	MHz	-
DE	Vertical Total Time	TV	776	788	793	TH	-
	Vertical Active Display Period	TVD	768	768	768	TH	-
	Vertical Active Blanking Period	TVB	TV-TVD	20	TV-TVD	TH	
	Horizontal Total Time	TH	1523	1534	1561	Tc	-
	Horizontal Active Display Period	THD	1366	1366	1366	Tc	-
	Horizontal Active Blanking Period	THB	TH-THD	168	TH-THD	Tc	

Refresh rate 40Hz

Signal	Item	Symbol	Min.	Typ.	Max.	Unit	Note
DCLK	Frequency	1/Tc	45.93	48.35	50.77	MHz	
DE	Vertical Total Time	TV	776	788	793	TH	
	Vertical Active Display Period	TVD	768	768	768	TH	
	Vertical Active Blanking Period	TVB	TV-TVD	20	TV-TVD	TH	
	Horizontal Total Time	TH	1523	1534	1561	Tc	
	Horizontal Active Display Period	THD	1366	1366	1366	Tc	
	Horizontal Active Blanking Period	THB	TH-THD	168	TH-THD	Tc	

INPUT SIGNAL TIMING DIAGRAM



e. Display position

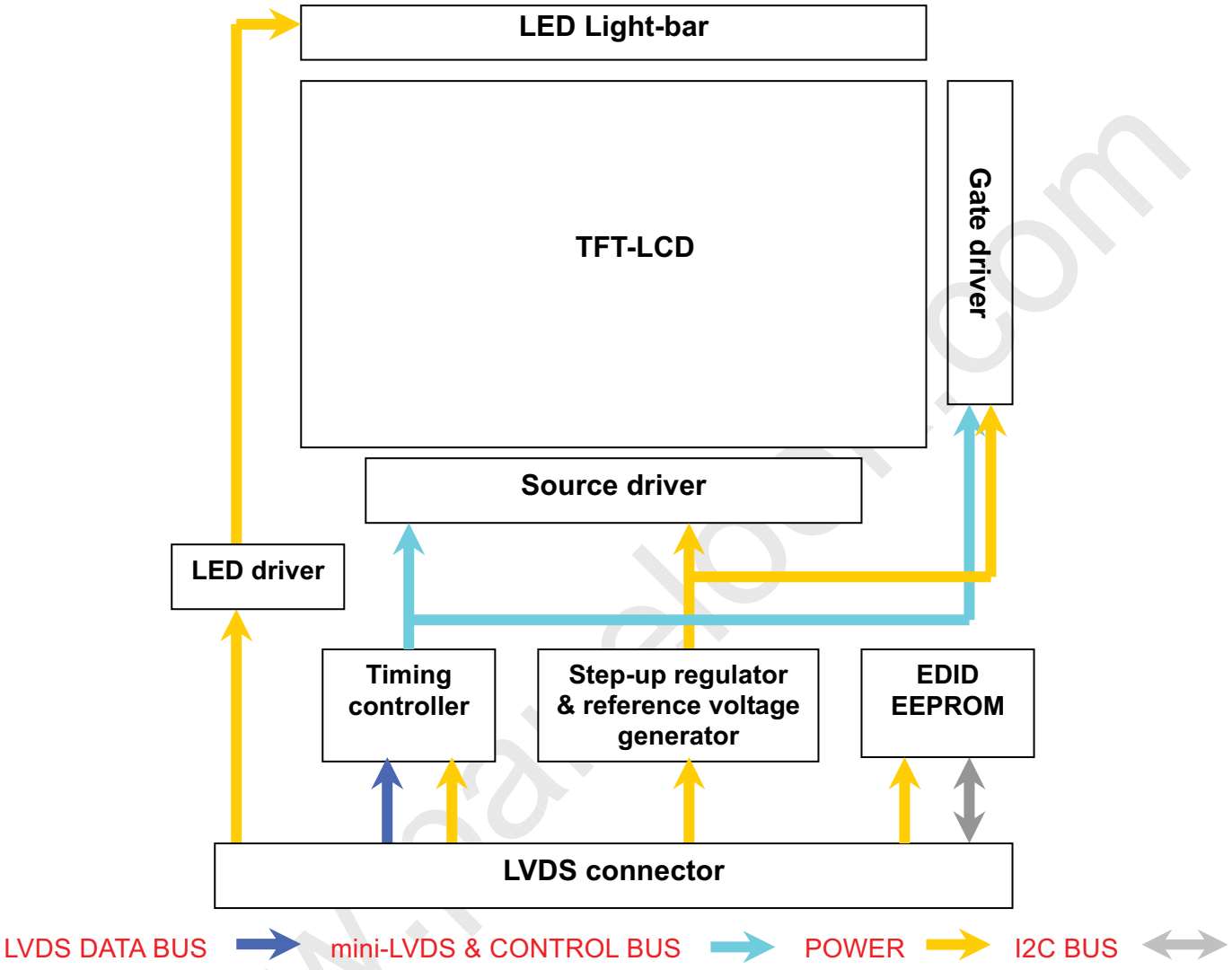
D(1, 1)	D(2, 1)	……	D(683, 1)	……	D(1365, 1)	D(1366, 1)
D(1, 2)	D(2, 2)	……	D(683, 2)	……	D(1365, 2)	D(1366, 2)
⋮		……	⋮	……	⋮	⋮
D(1, 384)	D(2, 384)	……	D(683, 384)	……	D(1365, 384)	D(1366, 384)
⋮		……	⋮	……	⋮	⋮
D(1, 767)	D(2, 767)	……	D(683, 767)	……	D(1365, 767)	D(1366, 767)
D(1, 768)	D(2, 768)	……	D(683, 768)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

f. Backlight driving conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
LED Forward Voltage	V_F	3	3.2	3.4	V	T = 25°C
LED Forward Current	I_F		20		mA	T = 25°C
Power consumption	P_{LED}			3.0	W	T = 25°C
Input PWM frequency	F_{PWM}	190		2000	Hz	T = 25°C
Duty ratio	-	5		100	%	Note 1
LED life time	-	15,000			Hr	T = 25°C , Note 2

Note 1: PWM duty ratio linearity guarantees 20~100%
Note 2: LED life time definition is Brightness decrease to 50% of initial or abnormal lighting.

g. Module function block



3. Optical specifications

Ambient temperature = 25˚C

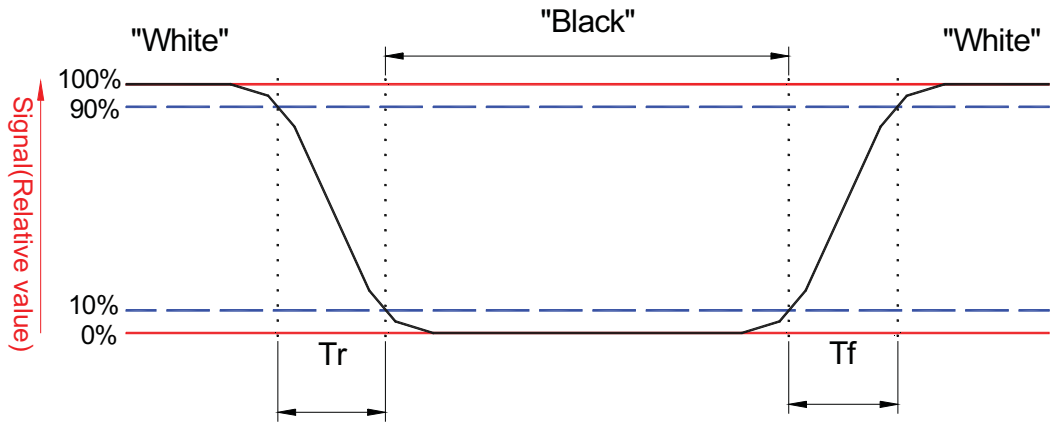
Item	Symbol	Condition	Specification			Unit	Remark
			Min.	Typ.	Max.		
Response time	Tr+Tf	θ= 0˚		8	16	ms	Note 3
Contrast ratio	CR	θ= 0˚	500	600			Note 2,4
Viewing angle	Top	CR≧10	15			deg	Note 2,4,6
	Bottom	CR≧10	30				
	Left	CR≧10	40				
	Right	CR≧10	40				
Brightness (5 points average)	Y_L		170	200		nit	Note 2,5
Color chromaticity (CIE)	W_x	θ= 0˚	-0.03	0.313	+0.03		Note 2,9
	W_y			0.329			
	R_x			0.586			
	R_y			0.355			
	G_x			0.317			
	G_y			0.563			
	B_x			0.16			
	B_y			0.144			
Color Gamut	NTSC	CIE1931		45		%	-
White uniformity	$\delta_{W(5)}$		0.8				Note 2,7
	$\delta_{W(13)}$		0.6				
Cross talk	Ct				2%		Note 8

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 signals 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:

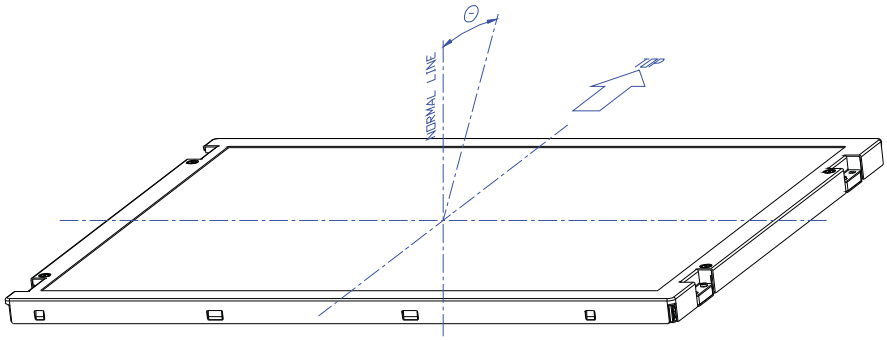
$$\text{Contrast ratio (Avg of 5pts)} = \frac{L_{\text{white (Avg of 5pts.)}}}{L_{\text{Black (Avg of 5pts.)}}}$$

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

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

$Y_L = (Y1 + Y2 + Y3 + Y4 + Y5) / 5$

Note 6: Definition of viewing angle

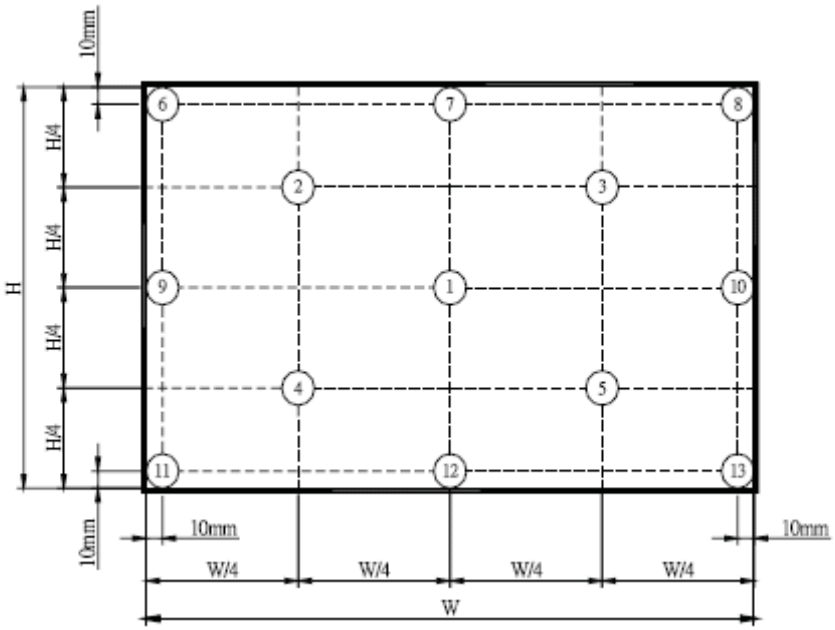


Note 7: Definition white uniformity

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

$\delta_{W(13)}$ = Minimum [L(1) ~ L(13)] / Maxmimum [L(1)~L(13)]

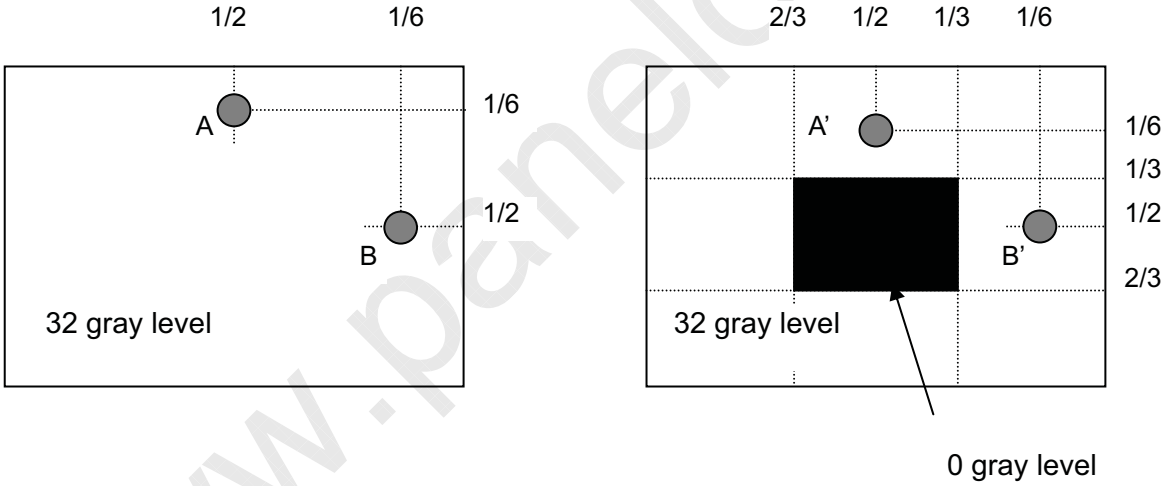
$\delta_{W(5)}$ = Minimum [L(1) ~ L(5)] / Maxmimum [L(1)~L(5)]



X : Test Point
X=1 to 13

Active area

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'

Note 9: Definition of color chromaticity (CIE)

Color coordinate of White, Red, Green, Blue at center point (1).

4. Reliability test items

Test Item	Test Condition	Judgment	Remark
High temperature storage	60˚C, 240 hours	Note 1	Note 2
Low temperature storage	-20˚C, 240 hours	Note 1	Note 2
High temperature & high humidity operation	50˚C, 80% RH, 240 hours (No condensation)	Note 1	Note 2
High temperature operation	50˚C, 240 hours	Note 1	Note 2
Low temperature operation	0˚C, 240 hours	Note 1	Note 2
Thermal Shock (Non-operation)	-20˚C / 30 mins ~ 60˚C / 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 / 10-500 Hz, Sine wave, 30 min/cycle, 1cycle for each 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 for more than one hour.

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

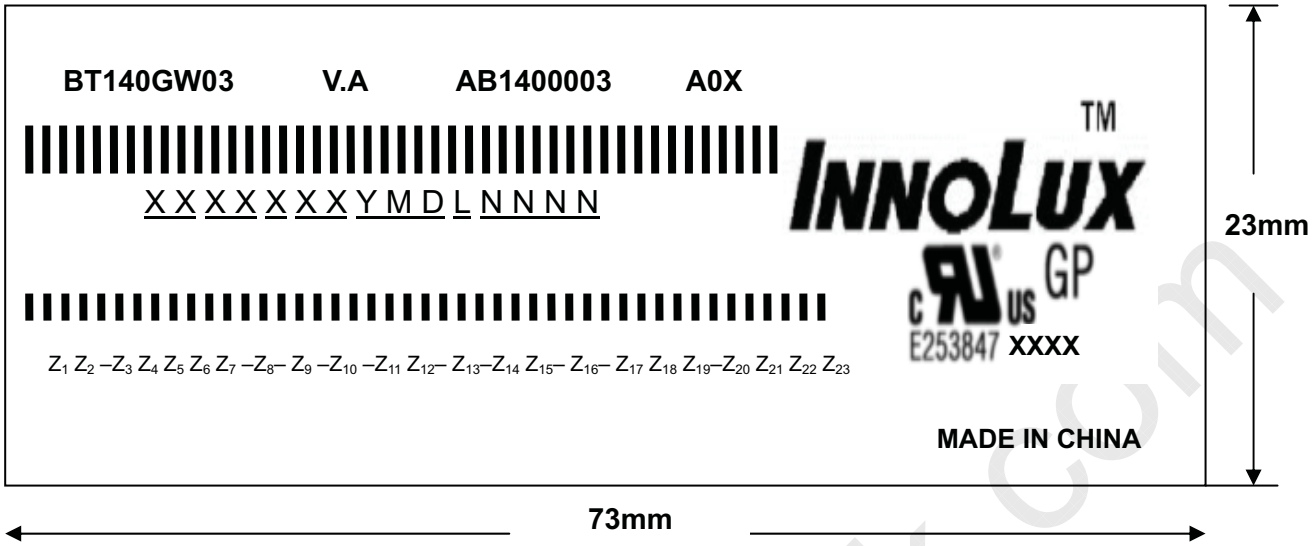
The display quality of the color TFT-LCD module should be in compliance with the InnoLux incoming inspection standard.

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.

8. Label Definition

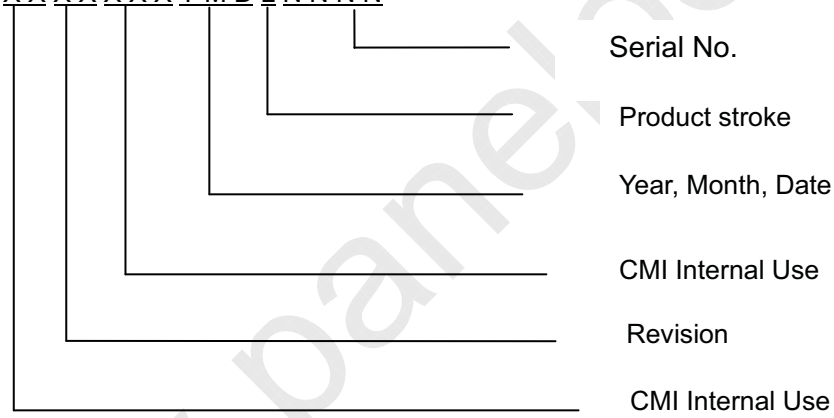
8-1. Module label



(a) Model Number : BT140GW03 V.A

(b) Product Number : AB1400003A0X

(c) Serial ID: X X X X X X X Y M D L N N N N



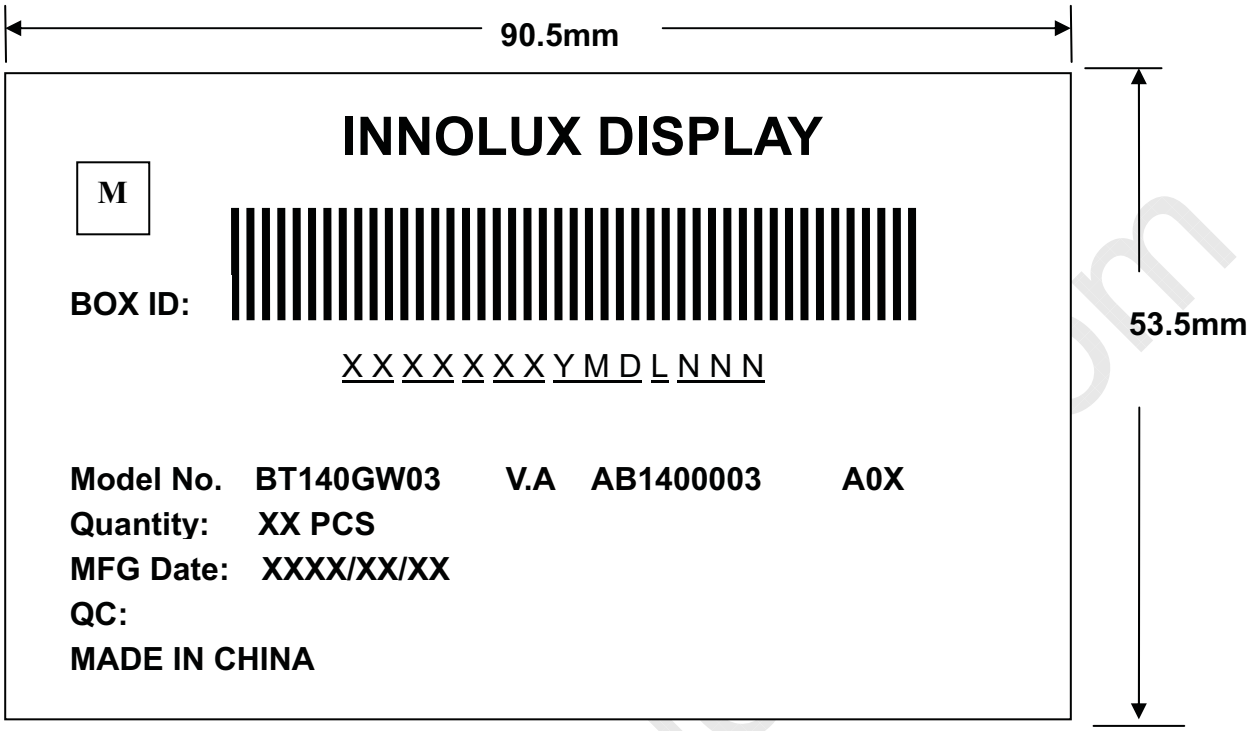
(d) Production Location: MADE IN XXXX.

(e) UL/CB logo: "XXXX" especially stands for panel manufactured by CMI Ningbo satisfying UL/CB requirement. "LEOO" "CANO" is the CMI's UL factory code for Ningbo factory.

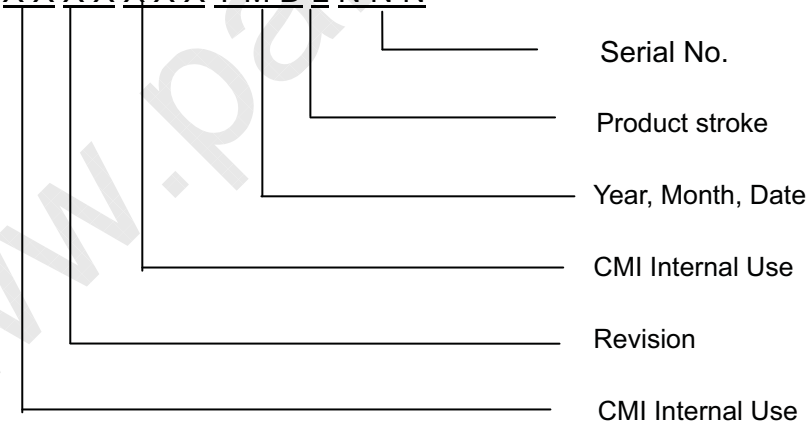
(5) Serial ID II (CMI Internal Use):

$Z_1\ Z_2\ –Z_3\ Z_4\ Z_5\ Z_6\ Z_7\ –Z_8–\ Z_9\ –Z_{10}\ –Z_{11}\ Z_{12}–\ Z_{13}–Z_{14}\ Z_{15}–\ Z_{16}–\ Z_{17}\ Z_{18}\ Z_{19}–Z_{20}\ Z_{21}\ Z_{22}\ Z_{23}$

8-2. Carton label

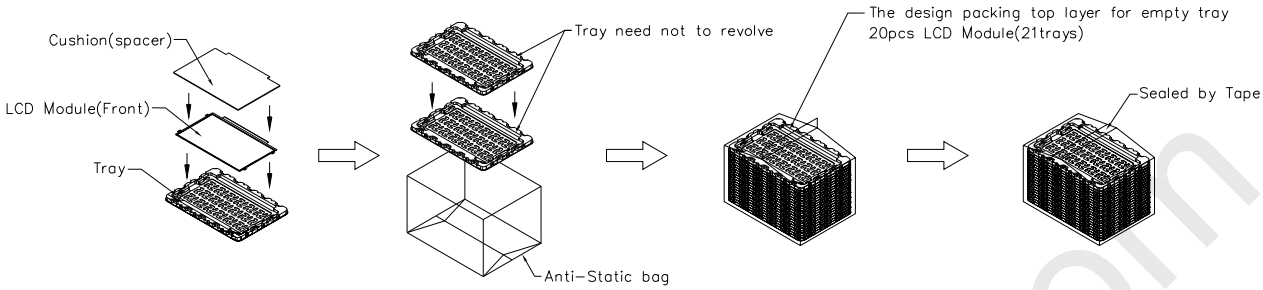


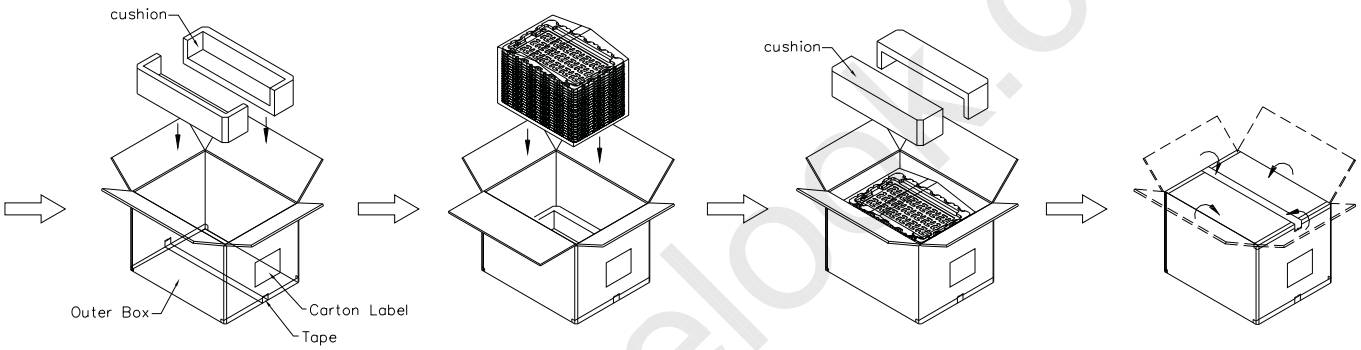
(1) Model No. : BT140GW03
(2) Version: V.A
(3) Package Quantity :XXPCS
(4) Serial ID: X X X X X X Y M D L N N N



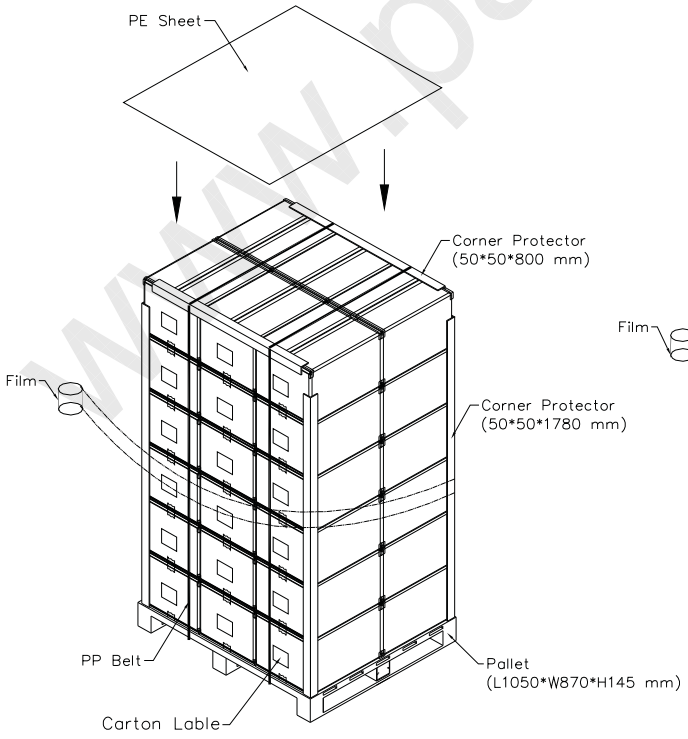
9. Packing Form

Box Dimensions : 435(L)*350(W)*320(H)
Weight: Approx. 9.6kg(20 module .per. 1 box)

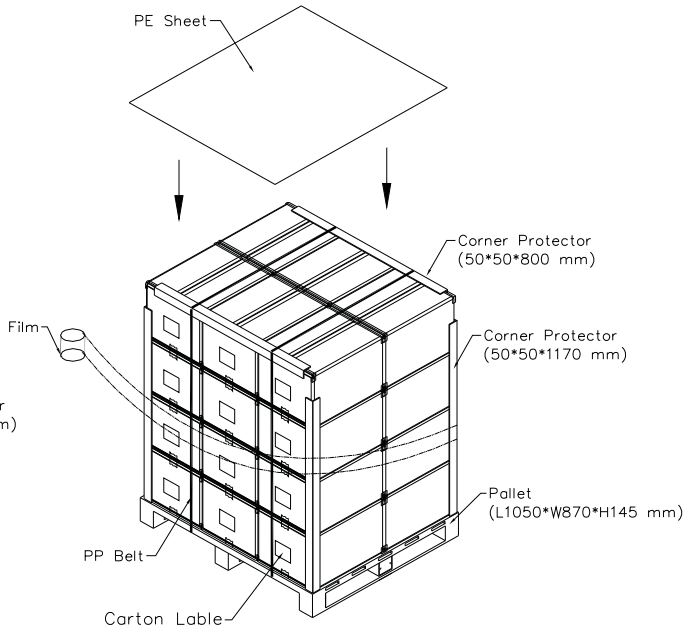




Sea & Land Transportation

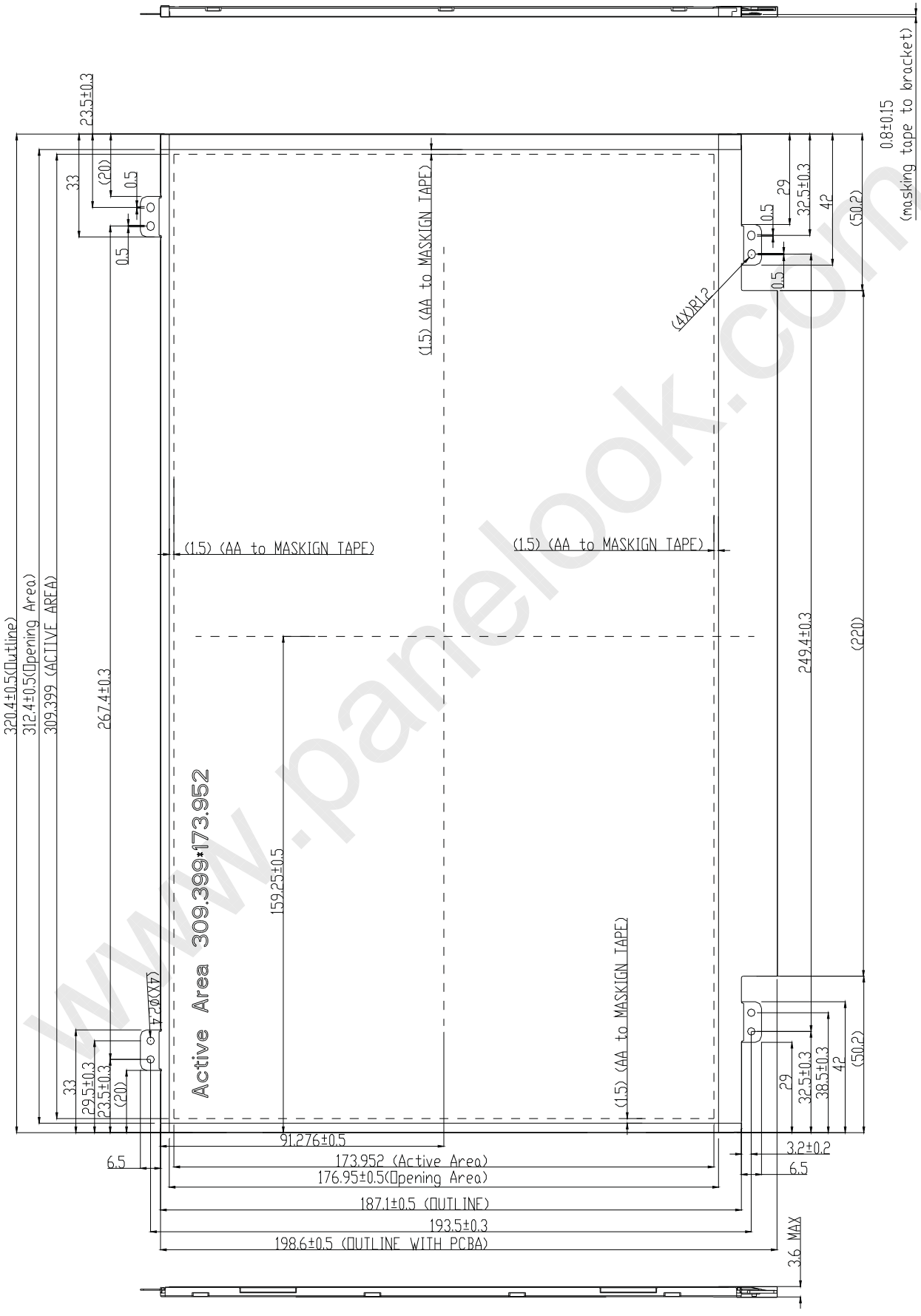


Air Transportation

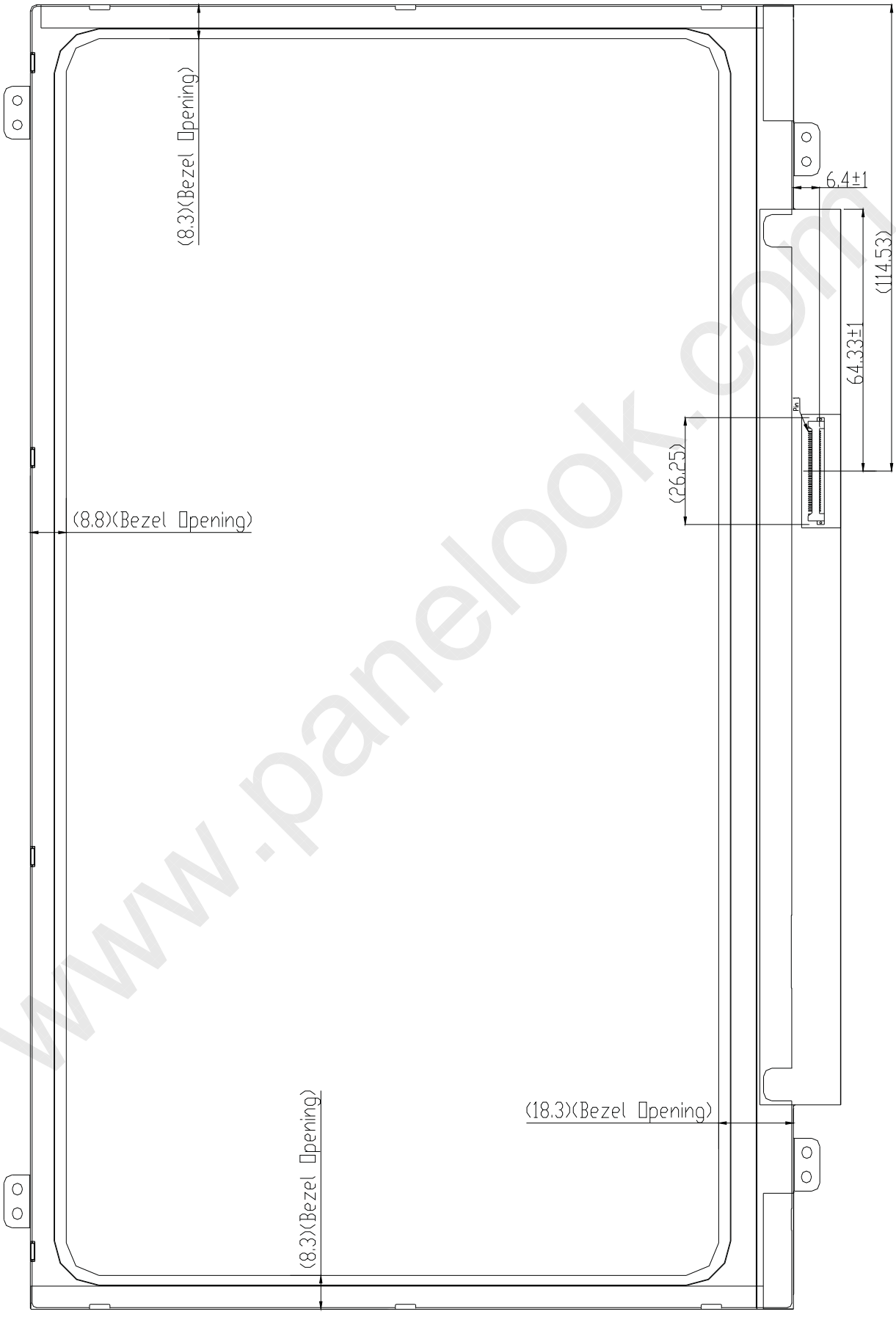


10. Mechanical Drawings

10-1 Front Side



10-2 Rear side



Appendix: EDID Code

	Byte (Hex)	Field Name and Comments	Value (Hex)	Value (Bin)
Header	00	Header	00	00000000
	01	Header	FF	11111111
	02	Header	FF	11111111
	03	Header	FF	11111111
	04	Header	FF	11111111
	05	Header	FF	11111111
	06	Header	FF	11111111
	07	Header	00	00000000
Vendor / Product EDID Version	08	EISA manufacture code (3 Character ID) " LEN"	30	00110000
	09	EISA manufacture code (Compressed ASCⅡ)	AE	10101110
	0A	Panel Supplier Reserved - Product Code "14" 16:9 HD 1366x768 LED B/L"	A0	10100000
	0B	Panel Supplier Reserved - Product Code	40	01000000
	0C	ID Serial Number (32-bit serial number)	00	00000000
	0D	ID Serial Number (32-bit serial number)	00	00000000
	0E	ID Serial Number (32-bit serial number)	00	00000000
	0F	ID Serial Number (32-bit serial number)	00	00000000
	10	Week of Manufacture 00 weeks	00	00000000
	11	Year of Manufacture 2010 years	14	00010100
	12	EDID structure version # = 1	01	00000001
	13	EDID revision # = 3	03	00000011
Display Parameters	14	Video input Definition = Digital signal	80	10000000
	15	Max H image size (Rounded cm) = 31 cm	1F	00011111
	16	Max V image size (Rounded cm) = 18 cm	12	00010010
	17	Display gamma = (gamma*100)-100 = Example:(2.2*100)-100=120 = 2.2 Gamma	78	01111000
	18	Feature Support (Standby,Suspend,Active Off/Very Low Power, RGB color display,Preferred Timing Mode)	EA	11101010
Panel Color Coordinates	19	Red/Green Low Bits (RxRy/GxGy)	87	10000111
	1A	Blue/White Low Bits (BxBy/WxWy)	F5	11110101
	1B	Red X Rx = 0.580	94	10010100
	1C	Red Y Ry = 0.340	57	01010111
	1D	Green X Gx = 0.310	4F	01001111
	1E	Green Y Gy = 0.548	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 timing 1 (00h if not used)	**00**	00000000
	24	Established timing 2 (00h if not used)	**00**	00000000
	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 Descriptor #1	**36**	Pixel Clock/10,000 (LSB) 69.3 MHz @ 60Hz	**12**	00010010
	37	Pixel Clock/10,000 (MSB)	**1B**	00011011
	38	Horizontal Active (lower 8 bits) 1366 Pixels	**56**	01010110
	39	Horizontal Blanking(Thp-HA) (lower 8 bits) 100 Pixels	**64**	01100100
	3A	Horizontal Active / Horizontal Blanking(Thp-HA) (upper 4:4bits)	**50**	01010000
	3B	Vertical Avtive 768 Lines	**00**	00000000
	3C	Vertical Blanking (Tvp-HA) (DE Blanking typ.for DE only panels) 20 Lines	**14**	00010100
	3D	Vertical Active : Vertical Blanking (Tvp-HA) (upper 4:4bits)	**30**	00110000
	3E	Horizontal Sync. Offset (Thfp) 48 Pixels	**30**	00110000
	3F	Horizontal Sync Pulse Width (HSPW) 32 Pixels	**20**	00100000
	40	Vertical Sync Offset(Tvfp) : Sync Width (VSPW) 1 Lines : 4 Lines	**14**	00010100
	41	Horizontal Vertical Sync Offset/Width (upper 2bits)	**00**	00000000
	42	Horizontal Image Size (mm) 309 mm	**35**	00110101
	43	Vertical Image Size (mm) 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	Non-Interlace, Normal display, no stereo, Digital Separate (Non-interlaced,Normal display,no stereo,Vertical Polarity Negative,Horizontal Polarity Negative)	**18**	00011000

Timing Descriptor #2	48	Pixel Clock/10,000 (LSB) 60.44 MHz @ 50Hz	9C	10011100
	49	Pixel Clock/10,000 (MSB)	17	00010111
	4A	Horizontal Active (lower 8 bits) 1366 Pixels	56	01010110
	4B	Horizontal Blanking(Thp-HA) (lower 8 bits) 168 Pixels	A8	10101000
	4C	Horizontal Active / Horizontal Blanking(Thp-HA) (upper 4:4bits)	50	01010000
	4D	Vertical Avtive 768 Lines	00	00000000
	4E	Vertical Blanking (Tvp-HA) (DE Blanking typ.for DE only panels) 20 Lines	14	00010100
	4F	Vertical Active : Vertical Blanking (Tvp-HA) (upper 4:4bits)	30	00110000
	50	Horizontal Sync. Offset (Thfp) 48 Pixels	30	00110000
	51	Horizontal Sync Pulse Width (HSPW) 32 Pixels	20	00100000
	52	Vertical Sync Offset(Tvfp) : Sync Width (VSPW) 1 Lines : 4 Lines	14	00010100
	53	Horizontal Vertical Sync Offset/Width (upper 2bits)	00	00000000
	54	Horizontal Image Size (mm) 309 mm	35	00110101
	55	Vertical Image Size (mm) 174 mm	AE	10101110
	56	Horizontal Image Size / Vertical Image Size	10	00010000
	57	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000
	58	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000
	59	Non-Interlace, Normal display, no stereo, Digital Separate (Non-interlaced,Normal display,no stereo,Vertical Polarity Negative,Horizontal Polarity Negative)	18	00011000
Timing Descriptor #3	5A	Flag	00	00000000
	5B	Flag	00	00000000
	5C	Flag	00	00000000
	5D	Data Type Tag (ASCII String)	00	00000000
	5E	Flag	00	00000000
	5F	(Horizontal active pixel / 8) - 31 "1368"	8C	10001100
	60	Image Aspect Ratio "16 : 9"	09	00001001
	61	Middle Refresh Rate "50Hz"	32	00110010
	62	(Horizontal active pixel / 8) - 31 "1368"	8C	10001100
	63	Image Aspect Ratio "16 : 9"	09	00001001
	64	Low Refresh Rate "40Hz"	28	00101000
	65	Brightness (1/10nit) "220" nit	16	00010110
	66	Feature flag " TN, White LED Backlight "	09	00001001
	67	Reserved	00	00000000
	68	LCD Supplier manufacture Code (3 character ID) "CMI"	0D	00001101
	69	LCD Supplier manufacture Code (3 character ID)	A9	10101001
	6A	LCD Supplier Product code	00	00000000
	6B	LCD Supplier Product code	00	00000000

Timing Descriptor #4	**6C**	Flag		**00**	00000000
	6D	Flag		**00**	00000000
	6E	Flag		**00**	00000000
	6F	Data Type Tag (Monitor Name, stored as ASCII)		**FE**	11111110
	70	Flag		**00**	00000000
	71	Model Name, stored as ASCII	"B"	**42**	01000010
	72	Model Name, stored as ASCII	"T"	**54**	01010100
	73	Model Name, stored as ASCII	"1"	**31**	00110001
	74	Model Name, stored as ASCII	"4"	**34**	00110100
	75	Model Name, stored as ASCII	"0"	**30**	00110000
	76	Model Name, stored as ASCII	"G"	**47**	01000111
	77	Model Name, stored as ASCII	"W"	**57**	01010111
	78	Model Name, stored as ASCII	"0"	**30**	00110000
	79	Model Name, stored as ASCII	"3"	**33**	00110011
	7A	Model Name, stored as ASCII	"V"	**56**	01010110
	7B	Model Name, stored as ASCII	"A"	**41**	01000001
	7C	Model Name, stored as ASCII		**0A**	00001010
	7D	Model Name, stored as ASCII		**20**	00100000
Checksum	**7E**	Extension flag (# of optional 128 panel ID extension block to follow, Typ = 0)		**00**	00000000
	7F	Check Sum (The 1-byte sum of all 128 bytes in this panel ID block shall = 0)		**F7**	11100111