Chimei-Innolux Corporation

BT140GW01 V.7 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: 2010/10/13

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Version: 6

Record of Revision

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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	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	RoHS	RoHS compliance	

2. Electrical Specifications

2-1 Pin Assignment

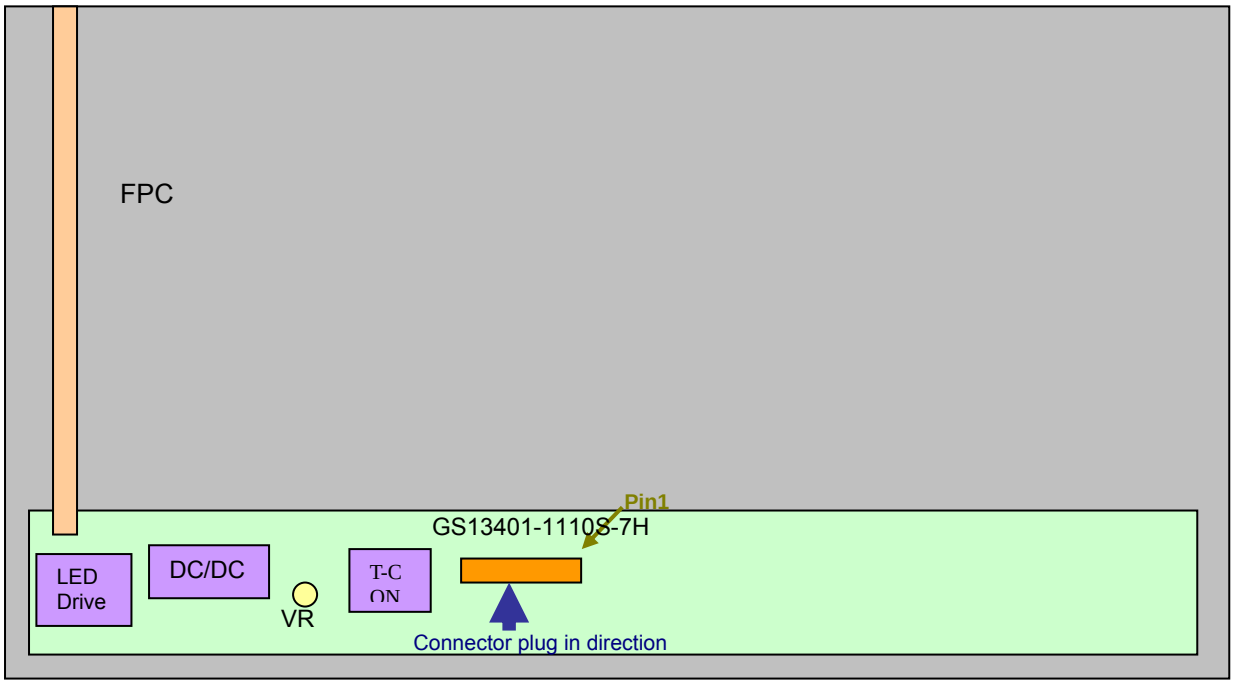
a. Panel connector

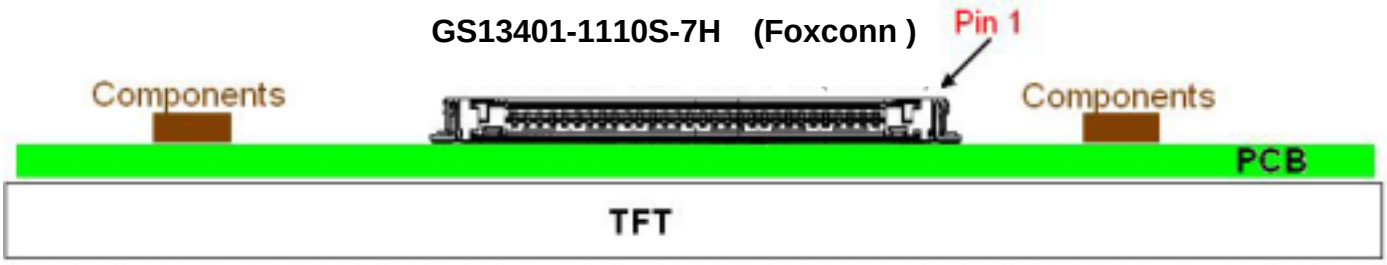
Connector Part No: GS13401-1110S-7H (Foxconn)

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	NC	No connection (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	NC	No connection (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



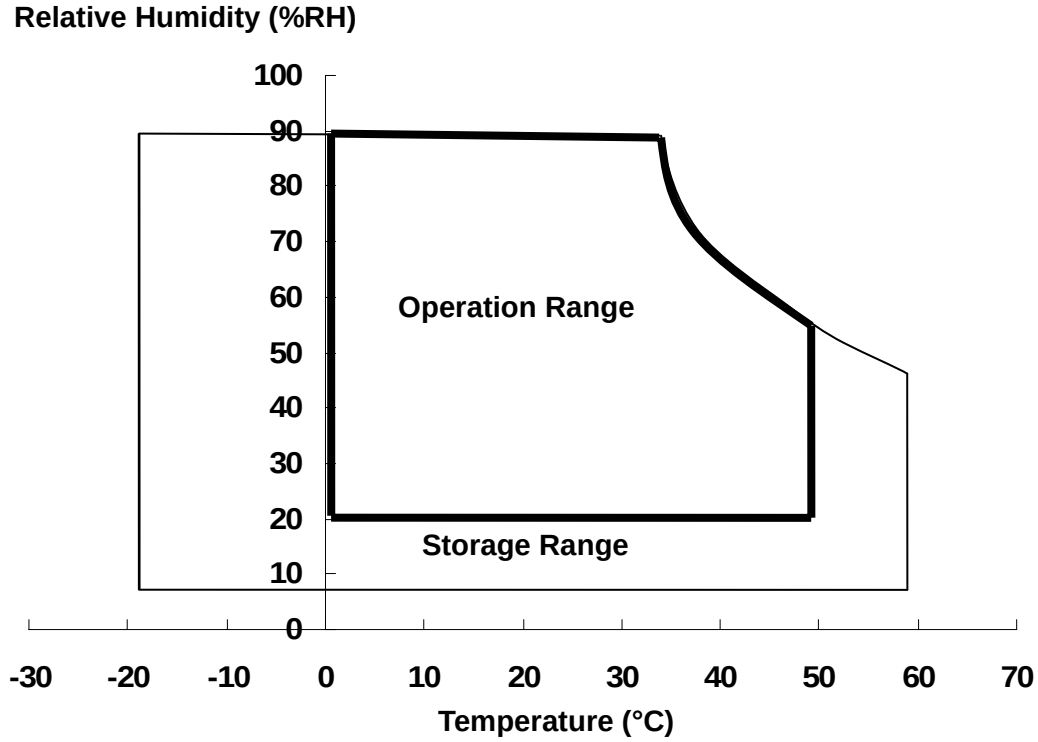


2-2. Absolute Maximum Ratings

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.



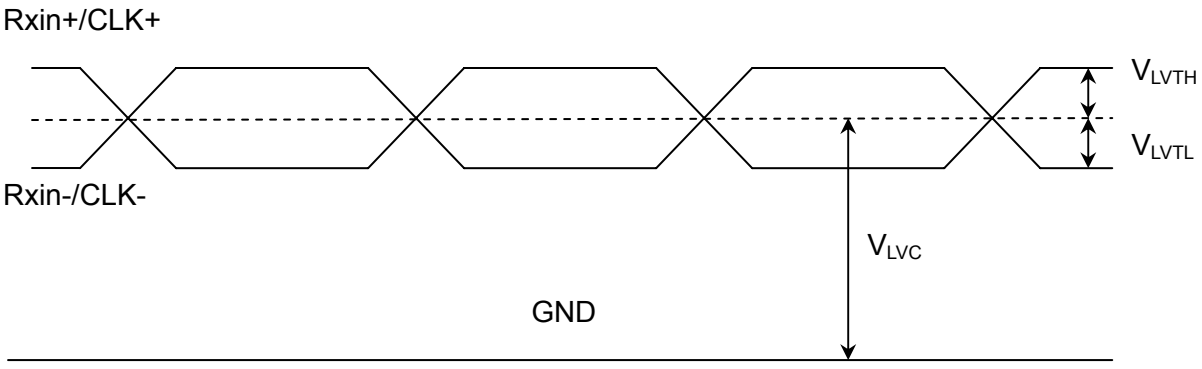
2-3. Electrical Characteristics

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}	-	300	330	mA	Note 1
Power consumption		P_C	-	1	1.2	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	
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.

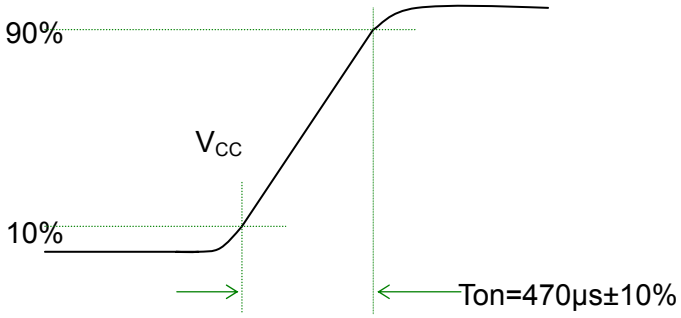
Note 2: LVDS waveform diagram



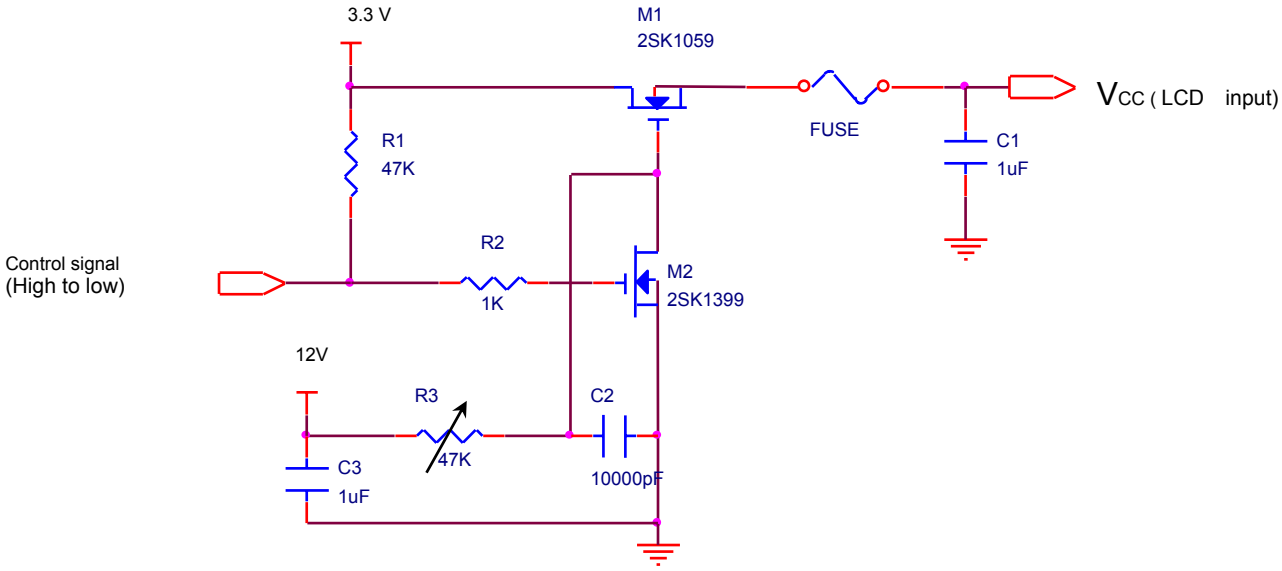
Note 3: Test condition

(1) Pattern: Black pattern

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



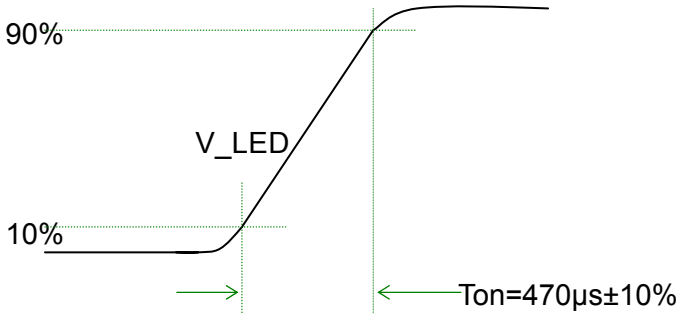
(3) Test circuit



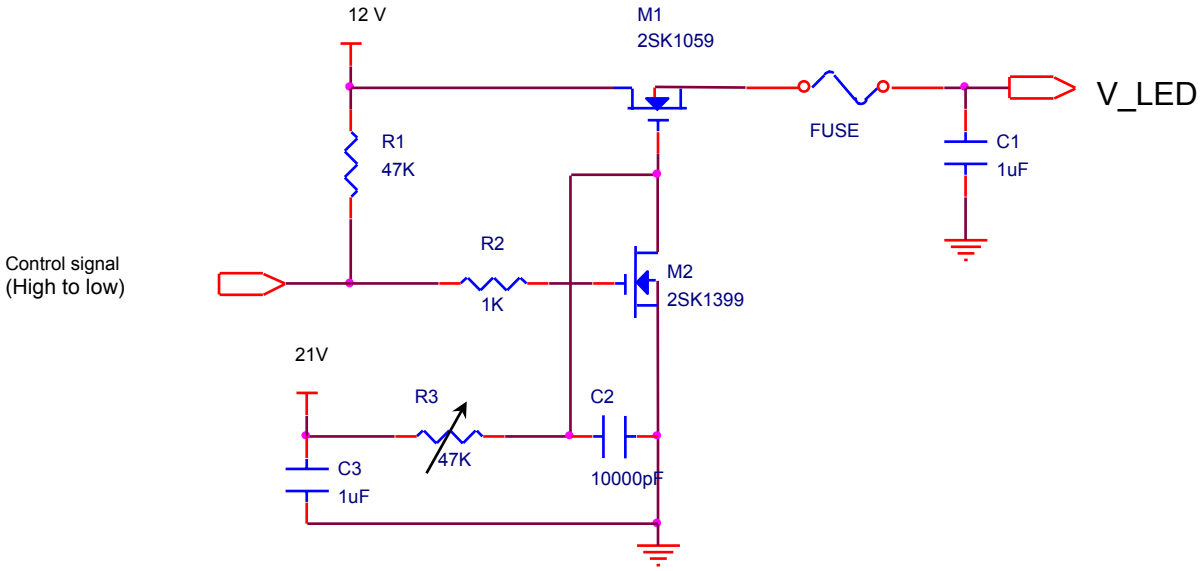
Note 4: Test condition

(1) Pattern: LED duty 100%

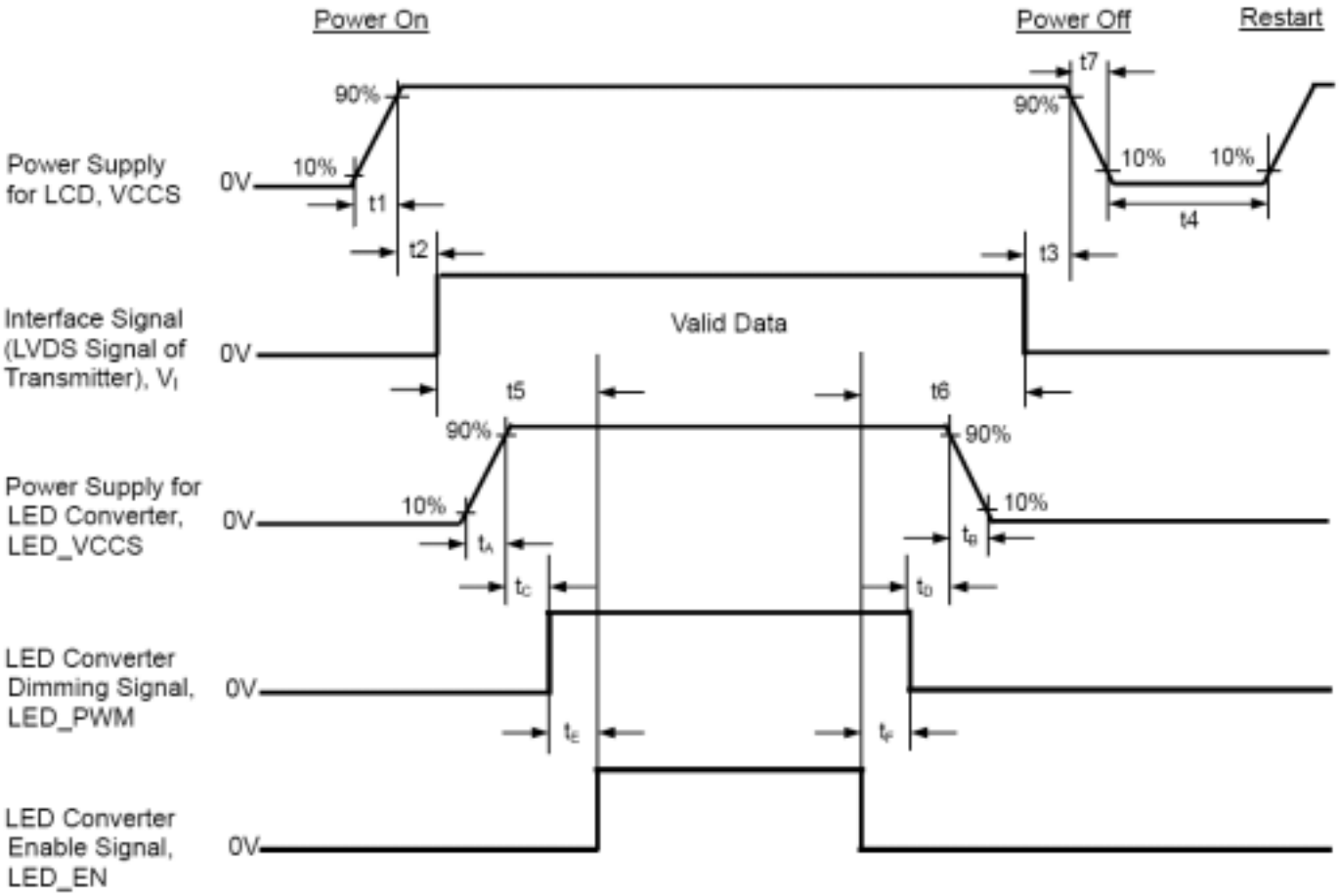
(2) V_LED = 12.0V, V_LED rising time = 470 μs ± 10%



(3) Test circuit



b. Power sequence

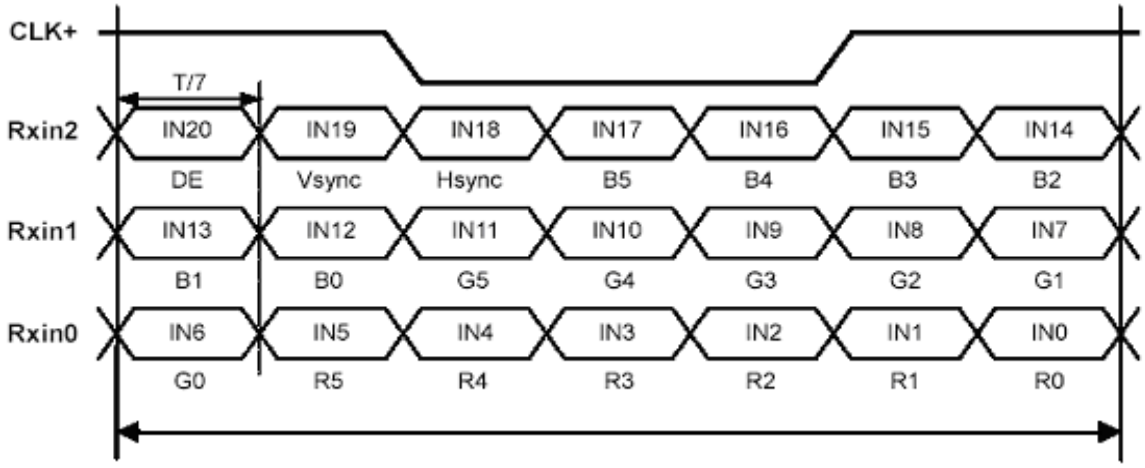


Power sequence timing table

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	

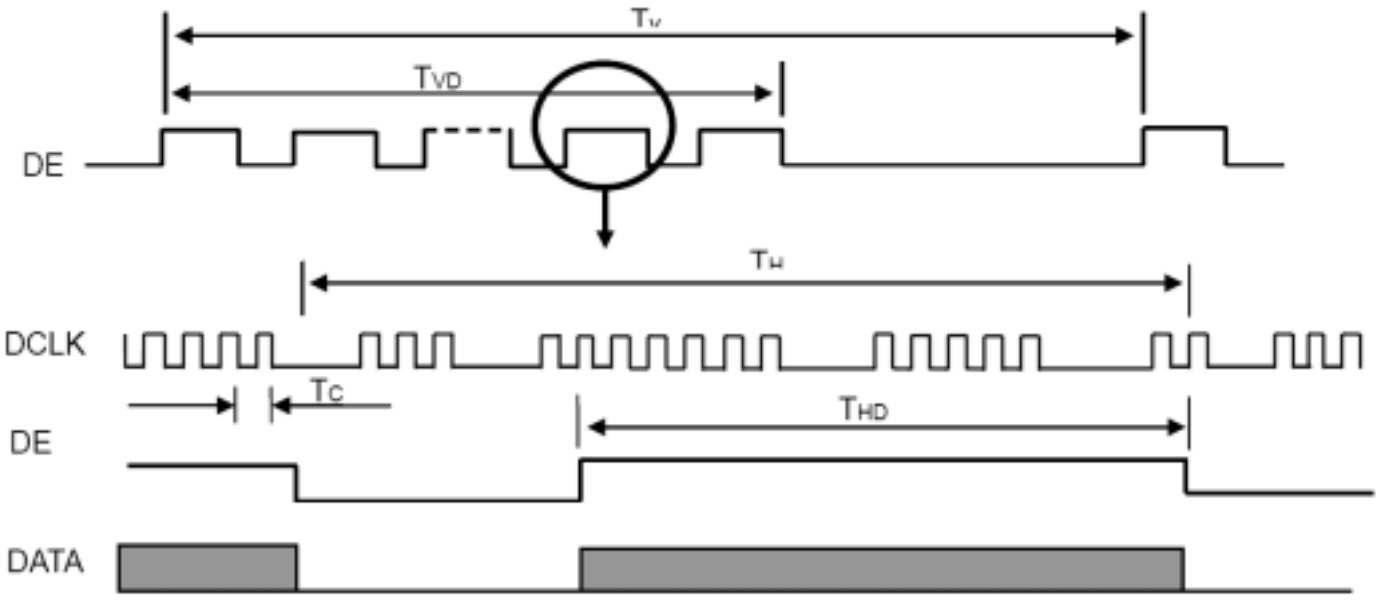
Refresh rate 50Hz

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

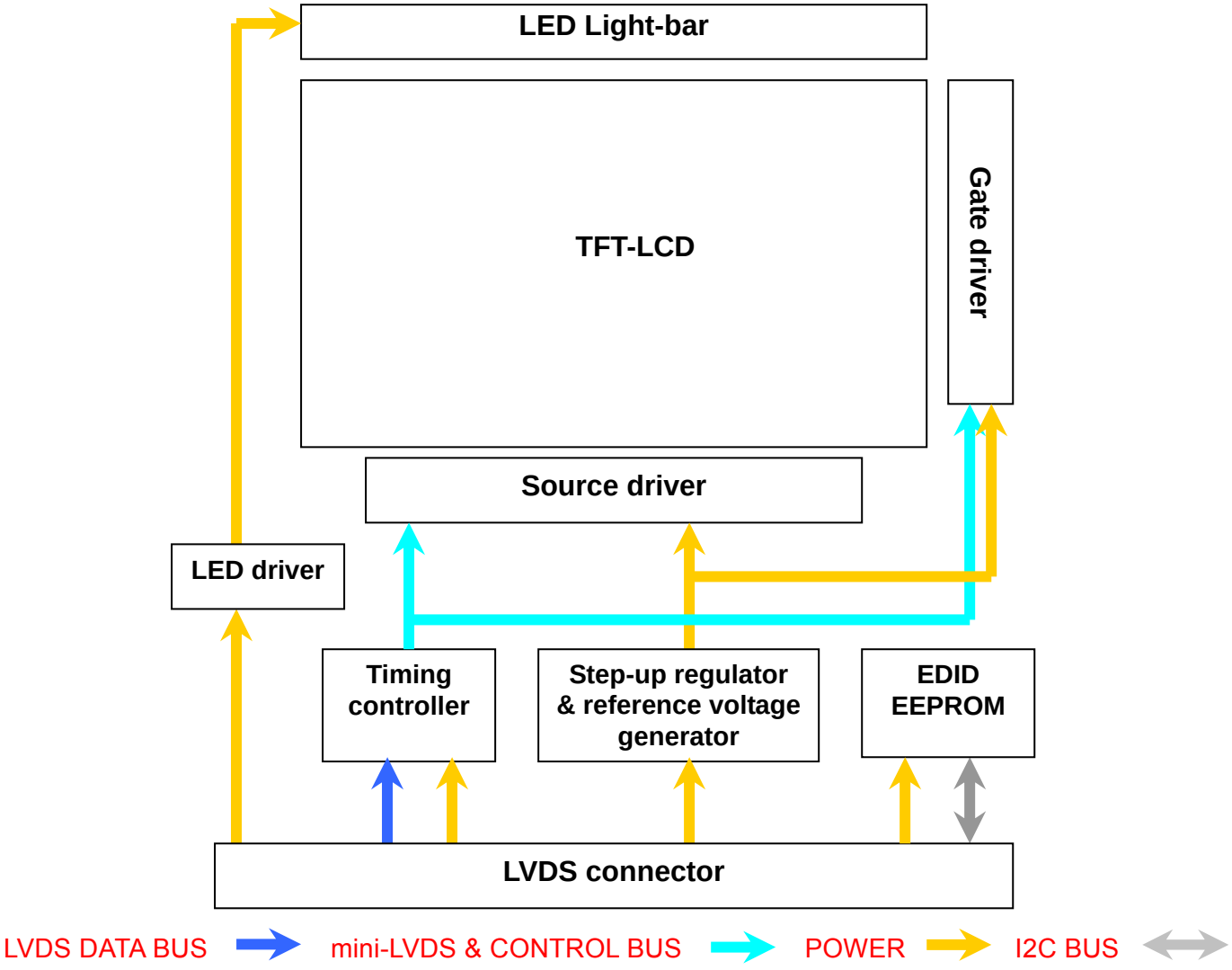
D(1, 1)	D(2, 1)	……	D(683, 1)	……	D(1365, 1)	D(1366, 1)
D(1, 2)	D(2, 2)	……	D(683, 2)	……	D(1365, 2)	D(1366, 2)
⋮		……	⋮	……	⋮	⋮
D(1, 384)	D(2, 384)	……	D(683, 384)	……	D(1365, 384)	D(1366, 384)
⋮		……	⋮	……	⋮	⋮
D(1, 767)	D(2, 767)	……	D(683, 767)	……	D(1365, 767)	D(1366, 767)
D(1, 768)	D(2, 768)	……	D(683, 768)	……	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_{rms}	T = 25°C
LED Forward Current	I_F		20		mA_{rms}	T = 25°C
Power consumption	P_{LED}			3.0	W	T = 25°C
Input PWM frequency	F_{PWM}	100		2000	Hz	T = 25°C
Duty ratio	-	1		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

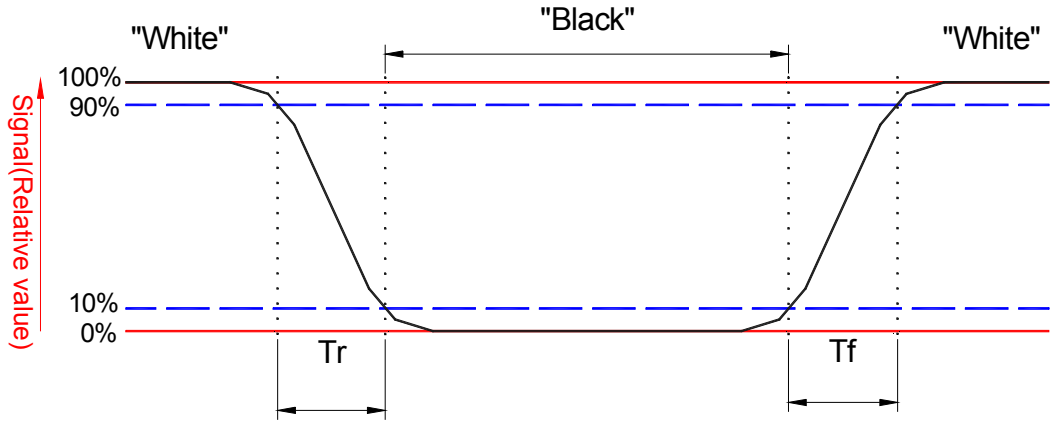
Item	Symbol	Condition	Specification			Unit	Remark
			Min.	Typ.	Max.		
Response time	Tr+Tf	θ= 0 °		8	16	ms	Note 3
Contrast ratio	CR	θ= 0 °	500	600			Note 2,4
Viewing angle	Top	CR≧10	15			deg	Note 2,4,6
	Bottom	CR≧10	30				
	Left	CR≧10	40				
	Right	CR≧10	40				
Brightness (5 points average)	Y_L		190	220		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			0.353			
	G_x			0.32			
	G_y			0.577			
	B_x			0.165			
	B_y			0.14			
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:

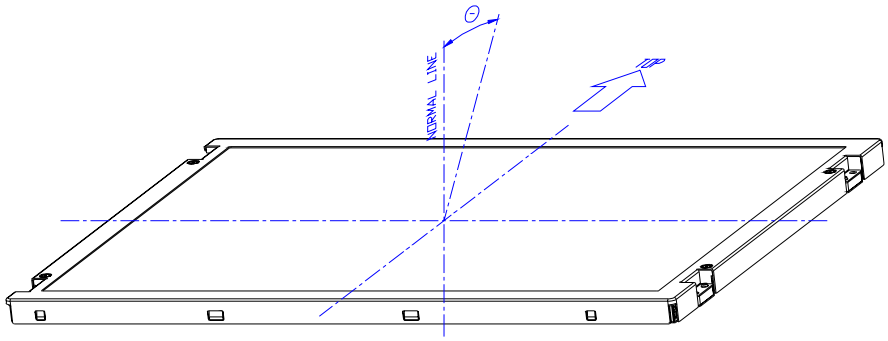
$$\text{Contrast ratio (Avg of 5pts)} = \frac{L_{\text{white (Avg of 5pts.)}}}{L_{\text{Black (Avg of 5pts.)}}}$$

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

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

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

Note 6: Definition of viewing angle



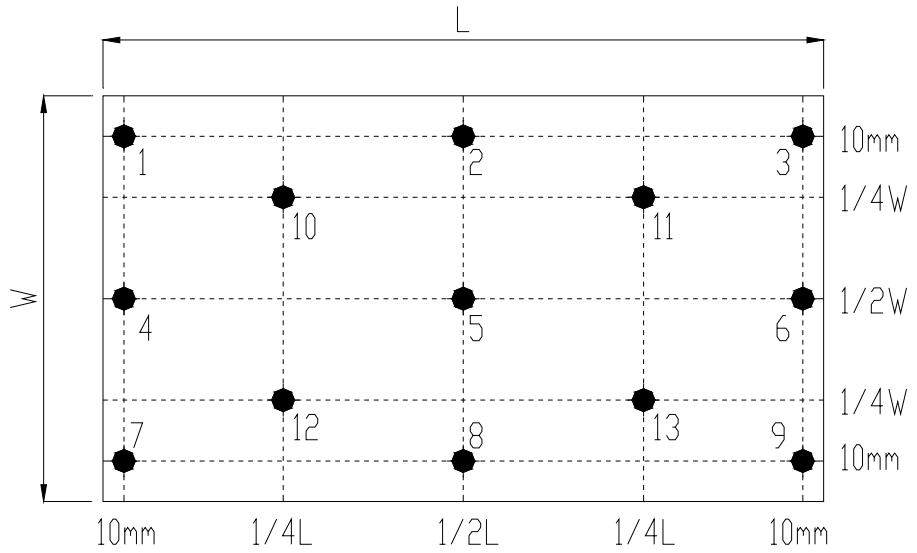
Note 7: Definition white uniformity

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

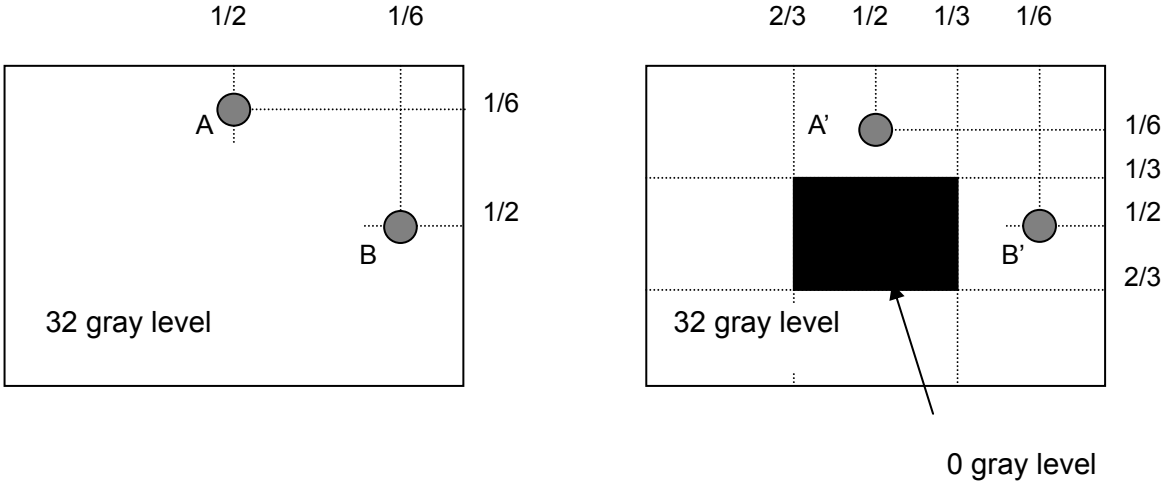
$$\delta_{W(13)} = \frac{\text{Minimum brightness of thirteen points}}{\text{Maximum brightness of thirteen points}}$$

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

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

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

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

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	40°C, 90% 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)	-25°C / 30 mins ~ 65°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 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 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

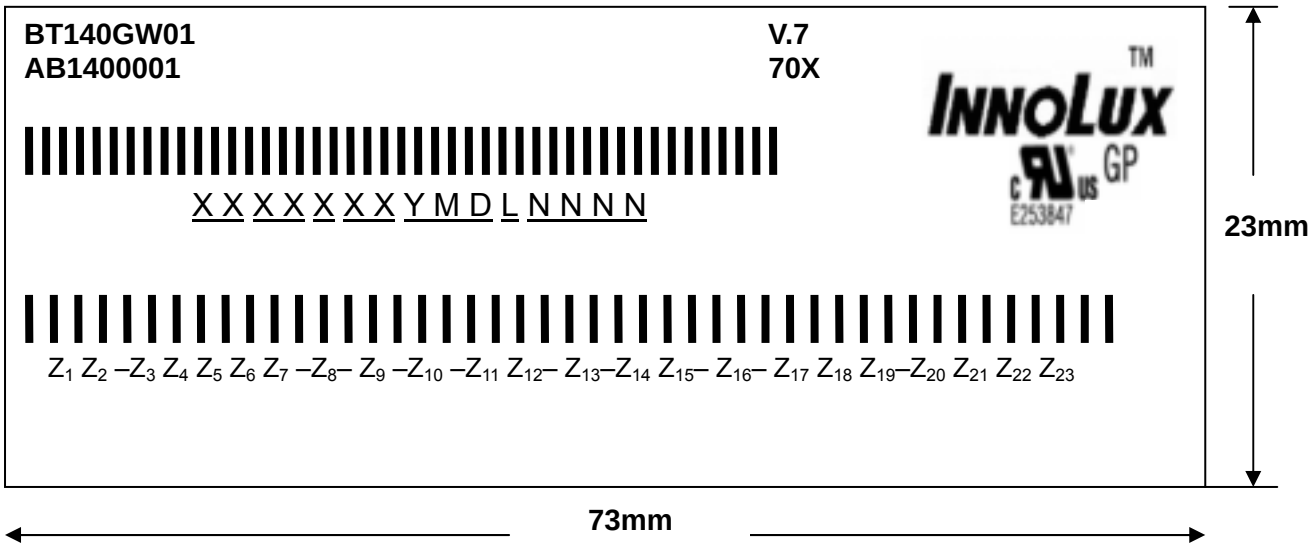
The display quality of the color TFT-LCD module should be in compliance with the InnoLux incoming inspection standard.

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

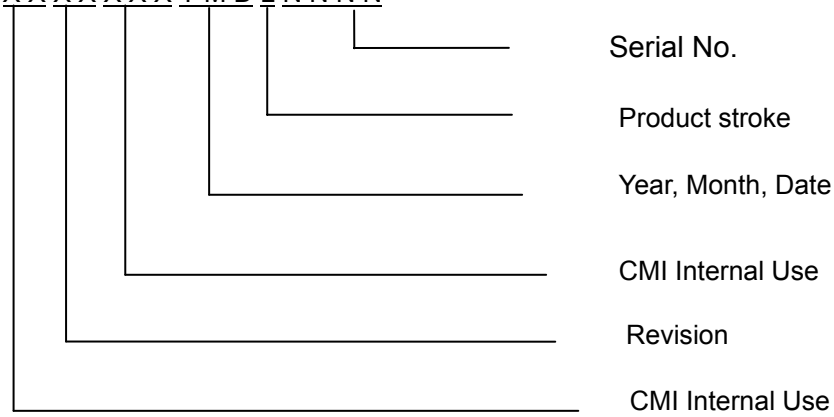
8-1. Module label



(a) Model Number : BT140GW01 V.7

(b) Product Number : AB140000170X

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



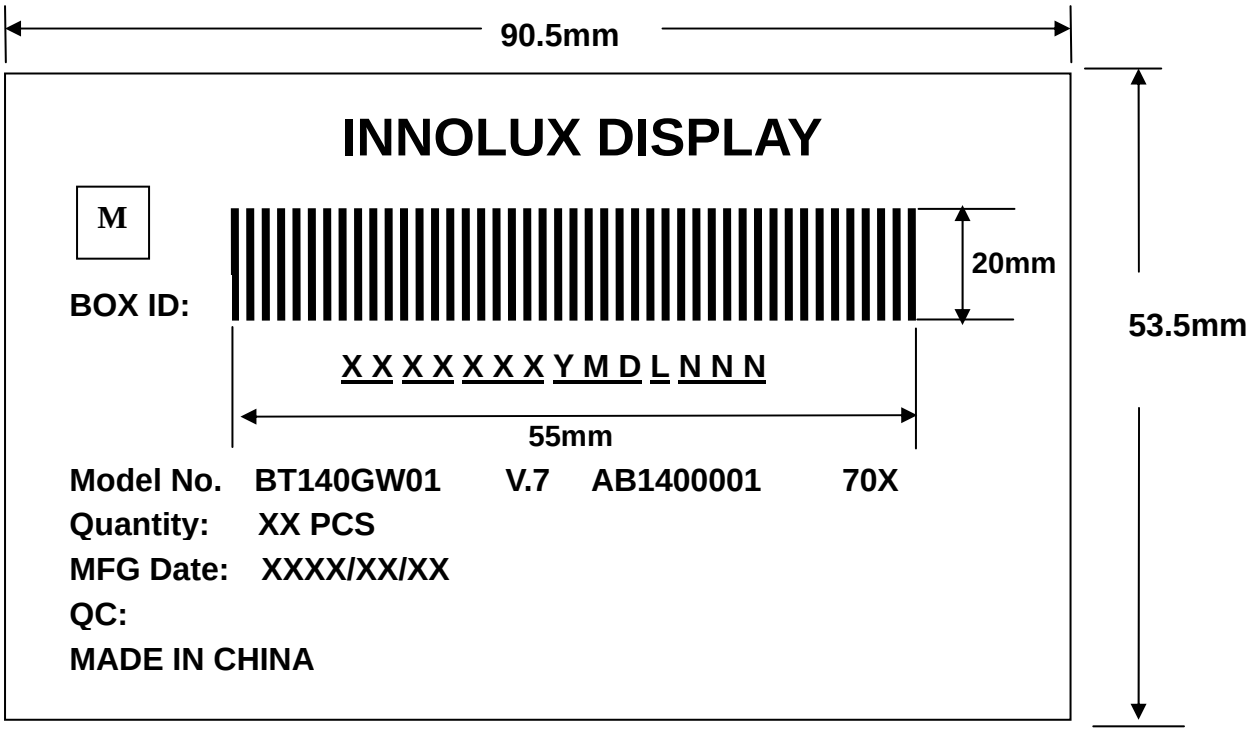
(d) Production Location: MADE IN XXXX.

(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.

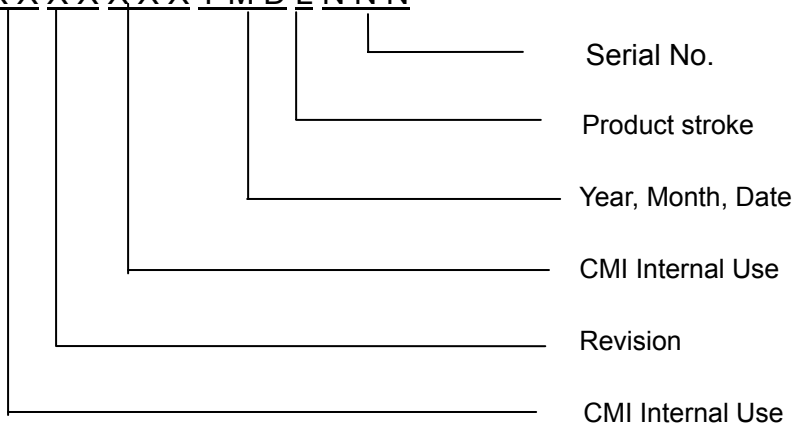
Serial ID II (INL Internal Use):

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. : BT140GW01
(2) Version: V.7
(3) Package Quantity :XXPCS
(c) Serial ID: X X X X X X Y M D L N N N



9. Packing Form

LCM

Step A
Put LCM into A/S bag

A/S Bag

Step B
Turn back A/S bag

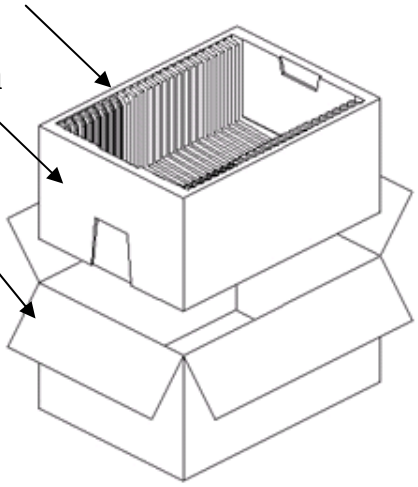
Step C

Step D
Put LCM with A/S bag into

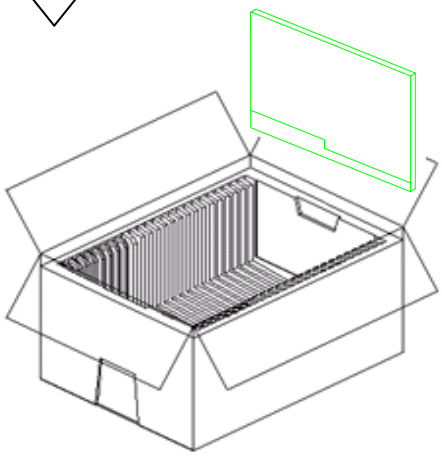
25 pcs

Lower Cushion

Carton

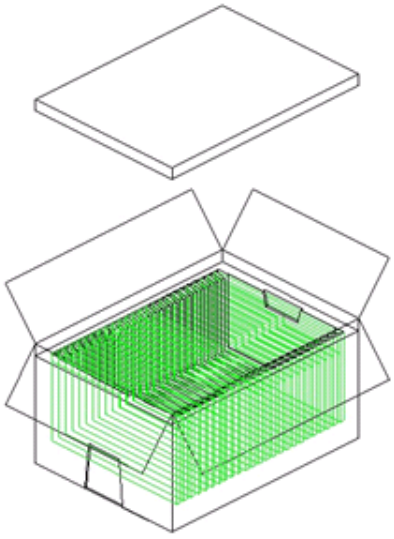


Step E



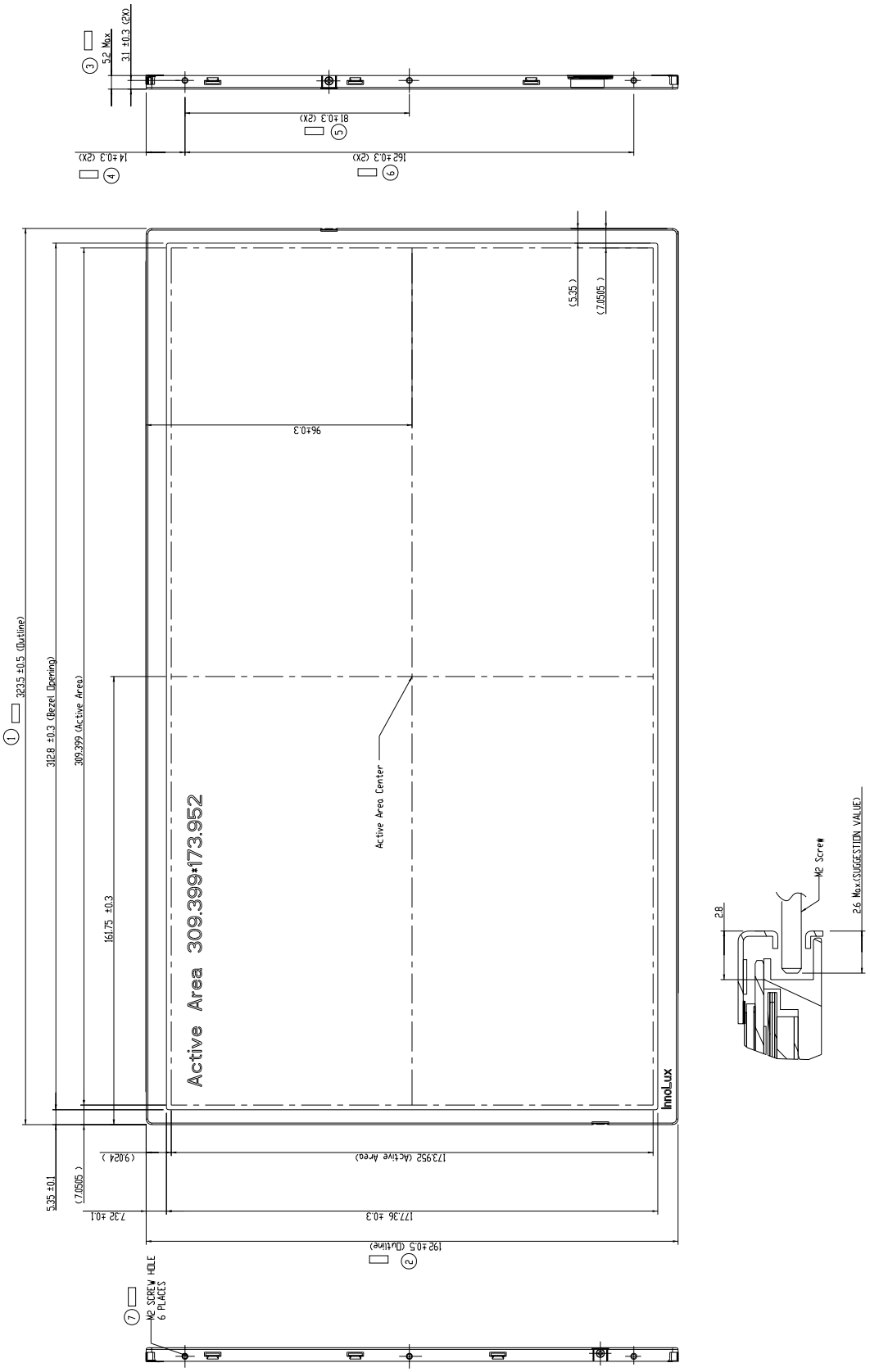
Step F

Upper Cushion

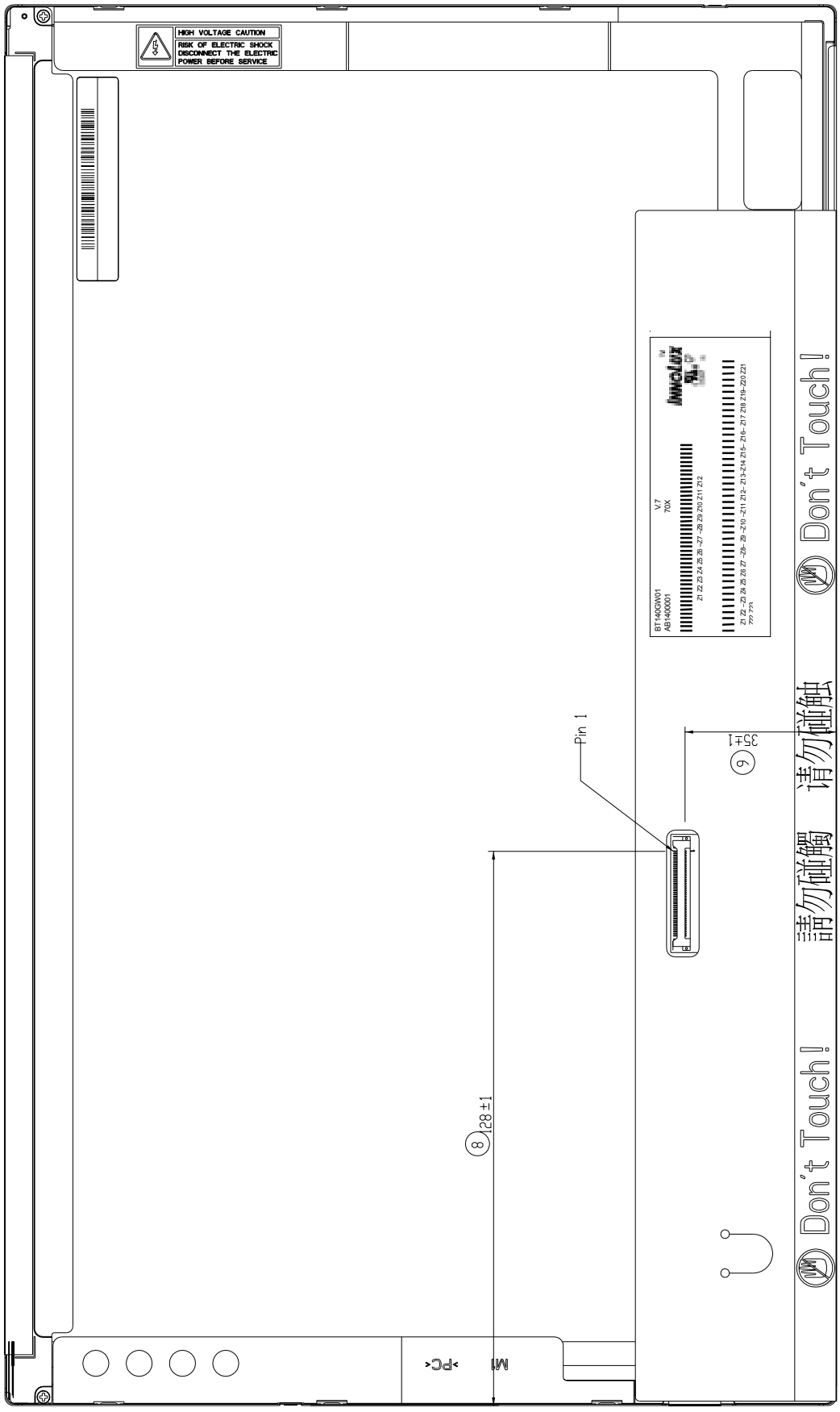


10. Mechanical Drawings

10-1 Front Side



10-2 Rear side



11: EDID Code

	Byte (Dec)	Byte (Hex)	Field Name and Comments	Value (Hex)	Value (Bin)
Header	0	**00**	Header	**00**	00000000
	1	**01**	Header	**FF**	11111111
	2	**02**	Header	**FF**	11111111
	3	**03**	Header	**FF**	11111111
	4	**04**	Header	**FF**	11111111
	5	**05**	Header	**FF**	11111111
	6	**06**	Header	**FF**	11111111
	7	**07**	Header	**00**	00000000
EDID Vendor / Product Version	8	**08**	EISA manufacture code (3 Character ID) " LEN"	**30**	00110000
	9	**09**	EISA manufacture code (Compressed ASCII)	**AE**	10101110
	10	**0A**	Panel Supplier Reserved - Product Code "14" 16:9 HD 1366x768 LED B/L"	**A0**	10100000
	11	**0B**	Panel Supplier Reserved - Product Code	**40**	01000000
	12	**0C**	ID Serial Number (32-bit serial number)	**00**	00000000
	13	**0D**	ID Serial Number (32-bit serial number)	**00**	00000000
	14	**0E**	ID Serial Number (32-bit serial number)	**00**	00000000
	15	**0F**	ID Serial Number (32-bit serial number)	**00**	00000000
	16	**10**	Week of Manufacture 00 weeks	**00**	00000000
	17	**11**	Year of Manufacture 2010 years	**14**	00010100
	18	**12**	EDID structure version # = 1	**01**	00000001
	19	**13**	EDID revision # = 3	**03**	00000011
Display Parameters	20	**14**	Video input Definition = Digital signal	**80**	10000000
	21	**15**	Max H image size (Rounded cm) = 31 cm	**1F**	00011111
	22	**16**	Max V image size (Rounded cm) = 18 cm	**12**	00010010
	23	**17**	Display gamma = (gamma*100)-100 = Example:(2.2*100)-100=120 = 2.2 Gamma	**78**	01111000
	24	**18**	Feature Support (Standby,Suspend,Active Off/Very Low Power, RGB color display,Preferred Timing Mode)	**EA**	11101010
Panel Color Coordinates	25	**19**	Red/Green Low Bits (RxRy/GxGy)	**87**	10000111
	26	**1A**	Blue/White Low Bits (BxBy/WxWy)	**F5**	11110101
	27	**1B**	Red X Rx = 0.580	**94**	10010100
	28	**1C**	Red Y Ry = 0.340	**57**	01010111
	29	**1D**	Green X Gx = 0.310	**4F**	01001111
	30	**1E**	Green Y Gy = 0.548	**8C**	10001100
	31	**1F**	Blue X Bx = 0.155	**27**	00100111
	32	**20**	Blue Y By = 0.155	**27**	00100111
	33	**21**	White X Wx = 0.313	**50**	01010000
	34	**22**	White Y Wy = 0.329	**54**	01010100

Established Timings	35	**23**	Established timing 1 (00h if not used)	**00**	00000000
	36	**24**	Established timing 2 (00h if not used)	**00**	00000000
	37	**25**	Manufacturer's timings (00h if not used)	**00**	00000000
Standard Timing ID	38	**26**	Standard timing ID1 (01h if not used)	**01**	00000001
	39	**27**	Standard timing ID1 (01h if not used)	**01**	00000001
	40	**28**	Standard timing ID2 (01h if not used)	**01**	00000001
	41	**29**	Standard timing ID2 (01h if not used)	**01**	00000001
	42	**2A**	Standard timing ID3 (01h if not used)	**01**	00000001
	43	**2B**	Standard timing ID3 (01h if not used)	**01**	00000001
	44	**2C**	Standard timing ID4 (01h if not used)	**01**	00000001
	45	**2D**	Standard timing ID4 (01h if not used)	**01**	00000001
	46	**2E**	Standard timing ID5 (01h if not used)	**01**	00000001
	47	**2F**	Standard timing ID5 (01h if not used)	**01**	00000001
	48	**30**	Standard timing ID6 (01h if not used)	**01**	00000001
	49	**31**	Standard timing ID6 (01h if not used)	**01**	00000001
	50	**32**	Standard timing ID7 (01h if not used)	**01**	00000001
	51	**33**	Standard timing ID7 (01h if not used)	**01**	00000001
	52	**34**	Standard timing ID8 (01h if not used)	**01**	00000001
	53	**35**	Standard timing ID8 (01h if not used)	**01**	00000001
Timing Descriptor #1	54	**36**	Pixel Clock/10,000 (LSB) 69.3 MHz @ 60Hz	**12**	00010010
	55	**37**	Pixel Clock/10,000 (MSB)	**1B**	00011011
	56	**38**	Horizontal Active (lower 8 bits) 1366 Pixels	**56**	01010110
	57	**39**	Horizontal Blanking(Thp-HA) (lower 8 bits) 100 Pixels	**64**	01100100
	58	**3A**	Horizontal Active / Horizontal Blanking(Thp-HA) (upper 4:4bits)	**50**	01010000
	59	**3B**	Vertical Avtive 768 Lines	**00**	00000000
	60	**3C**	Vertical Blanking (Tvp-HA) (DE Blanking typ.for DE only panels) 20 Lines	**14**	00010100
	61	**3D**	Vertical Active : Vertical Blanking (Tvp-HA) (upper 4:4bits)	**30**	00110000
	62	**3E**	Horizontal Sync. Offset (Thfp) 48 Pixels	**30**	00110000
	63	**3F**	Horizontal Sync Pulse Width (HSPW) 32 Pixels	**20**	00100000
	64	**40**	Vertical Sync Offset(Tvfp) : Sync Width (VSPW) 1 Lines : 4 Lines	**14**	00010100
	65	**41**	Horizontal Vertical Sync Offset/Width (upper 2bits)	**00**	00000000
	66	**42**	Horizontal Image Size (mm) 309 mm	**35**	00110101
	67	**43**	Vertical Image Size (mm) 174 mm	**AE**	10101110
	68	**44**	Horizontal Image Size / Vertical Image Size	**10**	00010000
	69	**45**	Horizontal Border = 0 (Zero for Notebook LCD)	**00**	00000000
	70	**46**	Vertical Border = 0 (Zero for Notebook LCD)	**00**	00000000
	71	**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	72	**48**	Pixel Clock/10,000 (LSB) 60.44 MHz @ 50Hz		**9C**	10011100
	73	**49**	Pixel Clock/10,000 (MSB)		**17**	00010111
	74	**4A**	Horizontal Active (lower 8 bits) 1366 Pixels		**56**	01010110
	75	**4B**	Horizontal Blanking(Thp-HA) (lower 8 bits) 177 Pixels		**A8**	10101000
	76	**4C**	Horizontal Active / Horizontal Blanking(Thp-HA) (upper 4:4bits)		**50**	01010000
	77	**4D**	Vertical Avtive 768 Lines		**00**	00000000
	78	**4E**	Vertical Blanking (Tvp-HA) (DE Blanking typ.for DE only panels) 20 Lines		**14**	00010100
	79	**4F**	Vertical Active : Vertical Blanking (Tvp-HA) (upper 4:4bits)		**30**	00110000
	80	**50**	Horizontal Sync. Offset (Thfp) 48 Pixels		**30**	00110000
	81	**51**	Horizontal Sync Pulse Width (HSPW) 32 Pixels		**20**	00100000
	82	**52**	Vertical Sync Offset(Tvfp) : Sync Width (VSPW) 1 Lines : 4 Lines		**14**	00010100
	83	**53**	Horizontal Vertical Sync Offset/Width (upper 2bits)		**00**	00000000
	84	**54**	Horizontal Image Size (mm) 309 mm		**35**	00110101
	85	**55**	Vertical Image Size (mm) 174 mm		**AE**	10101110
	86	**56**	Horizontal Image Size / Vertical Image Size		**10**	00010000
	87	**57**	Horizontal Border = 0 (Zero for Notebook LCD)		**00**	00000000
	88	**58**	Vertical Border = 0 (Zero for Notebook LCD)		**00**	00000000
	89	**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	90	**5A**	Flag		**00**	00000000
	91	**5B**	Flag		**00**	00000000
	92	**5C**	Flag		**00**	00000000
	93	**5D**	Data Type Tag (ASCII String)		**00**	00000000
	94	**5E**	Flag		**00**	00000000
	95	**5F**	(Horizontal active pixel / 8) - 31 "1368"		**8C**	10001100
	96	**60**	Image Aspect Ratio "16 : 9"		**09**	00001001
	97	**61**	Middle Refresh Rate "50Hz"		**32**	00110010
	98	**62**	(Horizontal active pixel / 8) - 31 "1368"		**8C**	10001100
	99	**63**	Image Aspect Ratio "16 : 9"		**09**	00001001
	100	**64**	Low Refresh Rate "40Hz"		**28**	00101000
	101	**65**	Brightness (1/10nit)		**16**	00010110
	102	**66**	Feature flag " TN, White LED Backlight "		**09**	00001001
	103	**67**	Reserved		**00**	00000000
	104	**68**	LCD Supplier manufacture Code (3 character ID) "INL"		**25**	00100101
	105	**69**	LCD Supplier manufacture Code (3 character ID)		**CC**	11001100
	106	**6A**	LCD Supplier Product code		**00**	00000000
	107	**6B**	LCD Supplier Product code		**00**	00000000

Timing Descriptor #4	108	**6C**	Flag	**00**	00000000
	109	**6D**	Flag	**00**	00000000
	110	**6E**	Flag	**00**	00000000
	111	**6F**	Data Type Tag (Monitor Name, stored as ASCII)	**FE**	11111110
	112	**70**	Flag	**00**	00000000
	113	**71**	Model Name, stored as ASCII "B"	**42**	01000010
	114	**72**	Model Name, stored as ASCII "T"	**54**	01010100
	115	**73**	Model Name, stored as ASCII "1"	**31**	00110001
	116	**74**	Model Name, stored as ASCII "4"	**34**	00110100
	117	**75**	Model Name, stored as ASCII "0"	**30**	00110000
	118	**76**	Model Name, stored as ASCII "G"	**47**	01000111
	119	**77**	Model Name, stored as ASCII "W"	**57**	01010111
	120	**78**	Model Name, stored as ASCII "0"	**30**	00110000
	121	**79**	Model Name, stored as ASCII "1"	**31**	00110001
	122	**7A**	Model Name, stored as ASCII "V"	**56**	01010110
	123	**7B**	Model Name, stored as ASCII "7"	**37**	00110111
	124	**7C**	Model Name, stored as ASCII	**0A**	00001010
	125	**7D**	Model Name, stored as ASCII	**20**	00100000
	126	**7E**	Extension flag (# of optional 128 panel ID extension block to follow, Typ = 0)	**00**	00000000
Checksum	127	**7F**	Check Sum (The 1-byte sum of all 128 bytes in this panel ID block shall = 0)	**C8**	11001000