

Product Specification

SPECIFICATION
FOR
APPROVAL

(●) Preliminary Specification
() Final Specification

Title	Customer Approval Sheet for Noahedu 10.1WU HADS
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Customer	
Part Number	

SUPPLIER	BOE
MODEL	TV101WUM-NW1
Version	Ex. 1.0

SIGNATURE	DATE
<div>/</div>	
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Please return 1 copy for your confirmation with your signature and comments.

APPROVED BY	DATE
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REVIEWED BY	
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REV.	ECN NO.	DESCRIPTION OF CHANGES	DATE	PREPARED
1.0	-	Initial Release		

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1-4. Change List

	No.	Reason	Change Details		Remarks
			Before	After	

Remarks:

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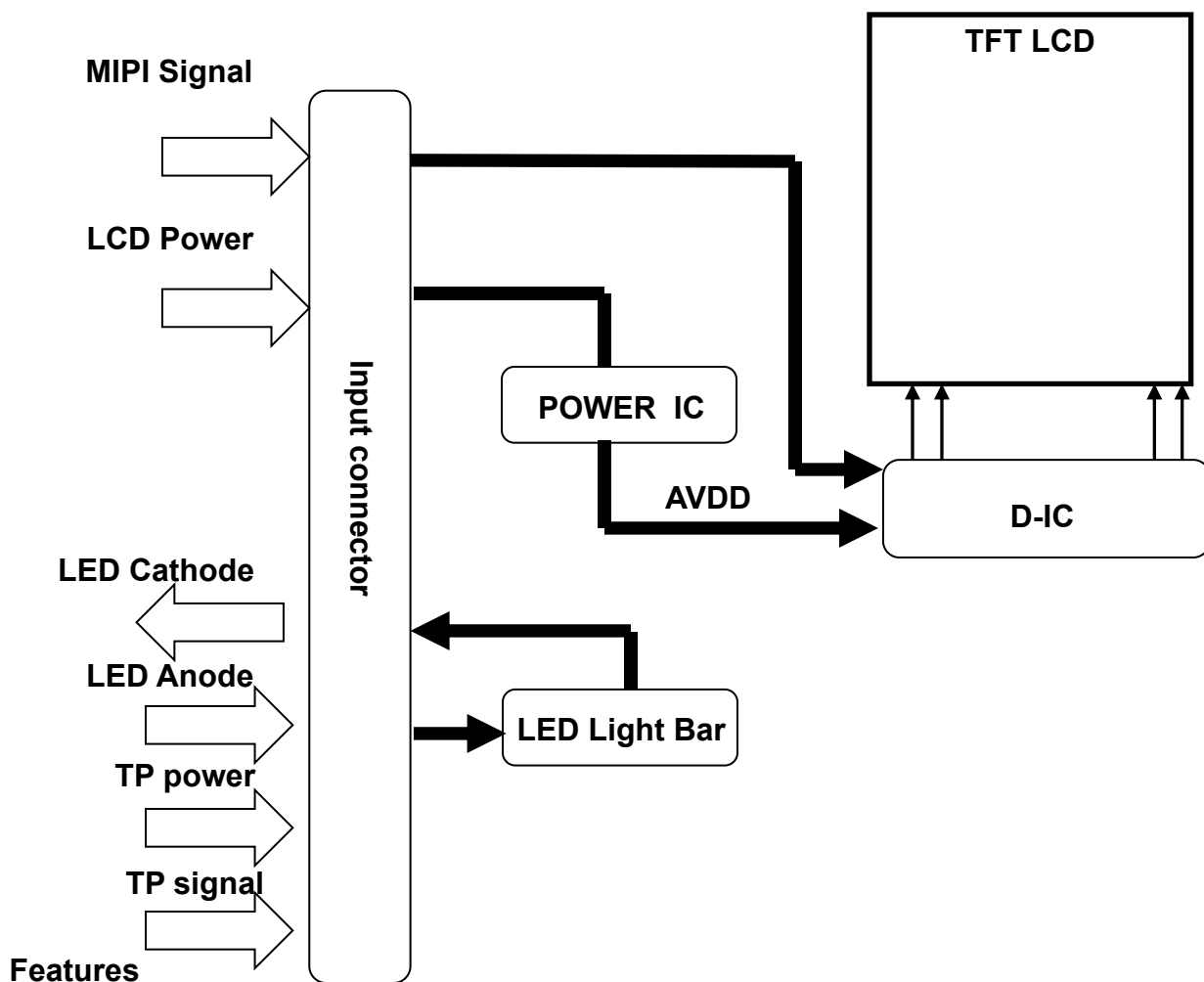
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1.0. GENERAL DESCRIPTION

Block Diagram



TV101WUM-NL1 is 10.1" color TFT-LCD (Thin Film Transistor Liquid Crystal Display) module composed of LCD panel, Power Drive IC, MIPI driver ICs, control circuit and backlight. By applying 8 bit digital data, $1200 \times \text{RGB (3)} \times 1920$, 16.7M-color images are displayed on the 8" diagonal screen

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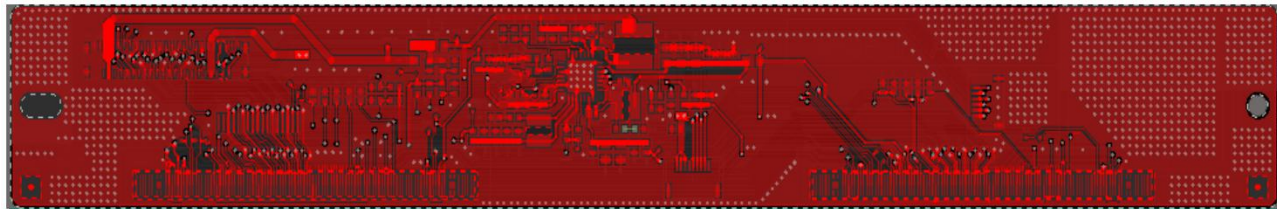
1.1 General Specifications

Parameter	Specification	Unit	Remarks
Screen Size	10.1	Inch	
Active Area	135.36X216.576	mm	
Panel Size	140.26X220.046	mm	
Outline Dimension	142.76*228.18	mm	W/I FPC bending area
Display Resolution	1200*RGB*1920	pixel	
Pixel Pitch	37.6*112.8	um	
Display Method	HADS	-	
Display Mode	Normal black	-	
Display Color	16.7M	-	
Color Gamut	typ:70.8% , min: 65%	%	NTSC
Luminance	typ: 450nit , min: 370nit	nit	Center
Contrast Ratio	Typ 1000:1,min 800:1	-	
Viewing Angle	85/85/85/85(CR>10)	-	Single Center Point
Pol Surface Treatment	HC+Clear	-	
Weight	/	g	
D-IC	NT51021*2	-	
Inversion Method	Column	-	
LED Q'ty	32	ea	
Power Consumption	/	mw	Logic+Backlight

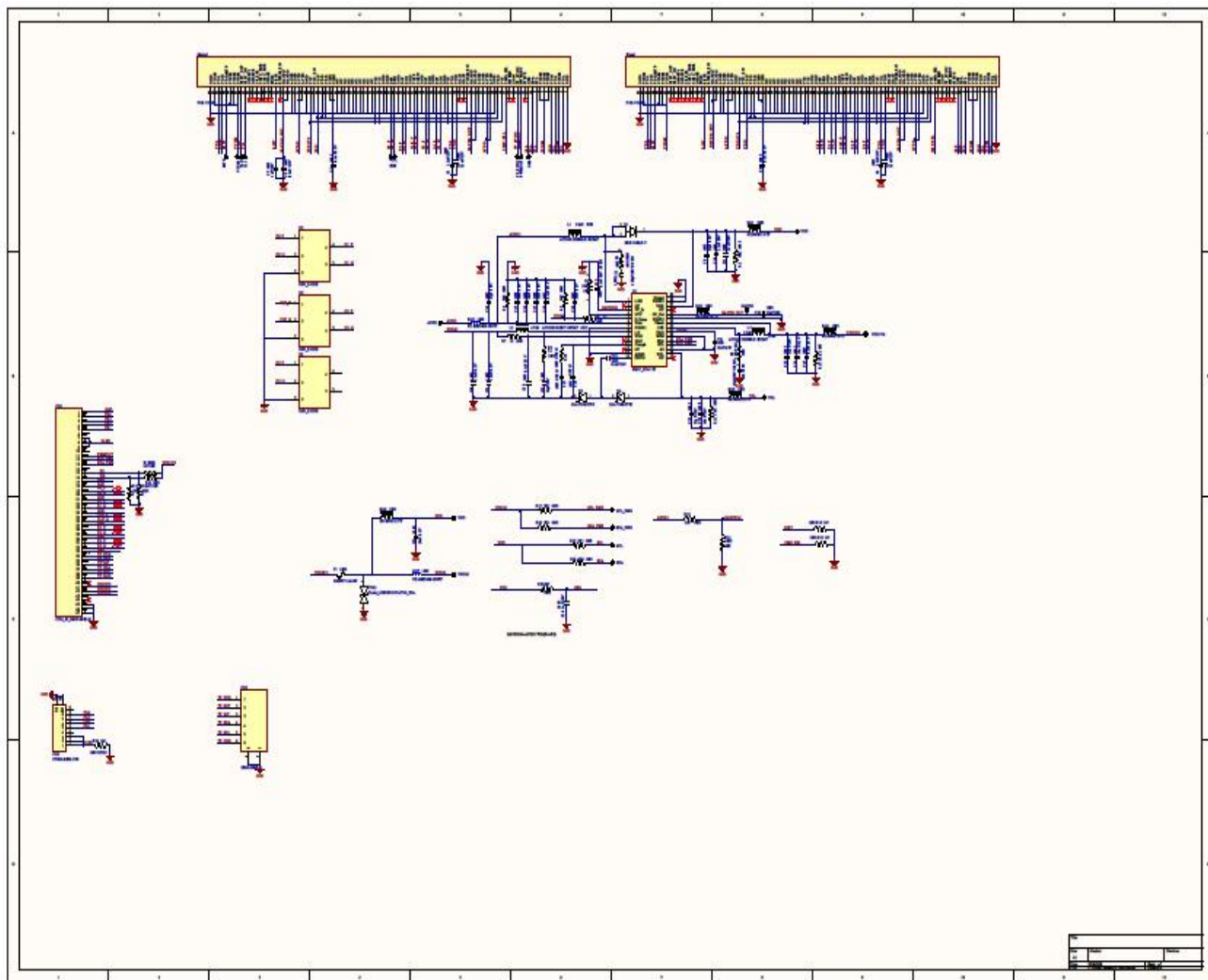
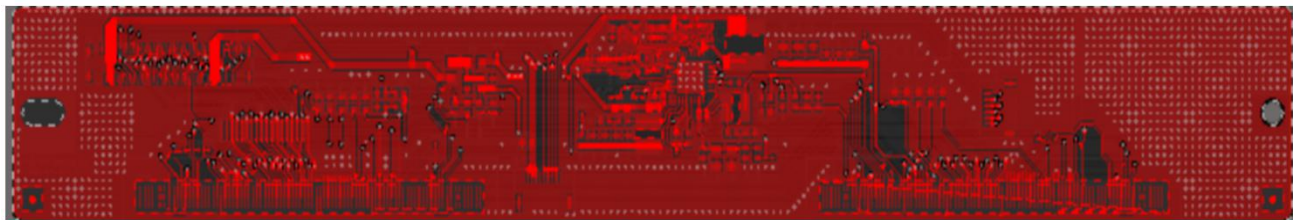
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1.3.1. PCBA Gerber/Layout and Schematic Diagram

TV101WUM-NW1



TV101WUM-NW1



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1.3.2. FPC Pin Assignment

Please pay attention that IC bump down(TFT glass up and C/F glass down)

PIN NO.	Symbol	PIN NO.	Symbol	PIN NO.	Symbol	PIN NO.	Symbol	PIN NO.	Symbol
No.1	GND	No.23	GND	No.45	D2P	No.67	NC(DRVL2)	No.89	UPDNB
No.2	NULL	No.24	AVDD	No.46	GND	No.68	NC(DRVL1)	No.90	CABC_ENB0
No.3	VGL	No.25	AVDD	No.47	CLKN	No.69	VLPH	No.91	CABC_ENB1
No.4	VCOM	No.26	AGND	No.48	CLKP	No.70	VLPH	No.92	CE_ENB
No.5	VGL	No.27	AGND	No.49	GND	No.71	VDD	No.93	OPDRV0
No.6	VGH	No.28	HAVDD	No.50	D1N	No.72	VDD	No.94	OPDRV1
No.7	VGH	No.29	HAVDD	No.51	D1P	No.73	VDD	No.95	LVDS/MIPI
No.8	VCOM	No.30	VCOMO	No.52	GND	No.74	VCC_EN	No.96	LVFMT
No.9	VCOM	No.31	VCOMO	No.53	D0N	No.75	VCC	No.97	TESTIN
No.10	VCOM	No.32	VCOMO	No.54	D0P	No.76	GND	No.98	TESTOUT
No.11	SCL	No.33	VCOM_EN	No.55	GND	No.77	AVDD	No.99	VCOM
No.12	SDA	No.34	HAOP	No.56	GND	No.78	AVDD	No.100	VCOM
No.13	GRB	No.35	HAOP	No.57	VCC	No.79	AVDD	No.101	VCOM
No.14	STBYB	No.36	HAOP	No.58	VCC	No.80	AGND	No.102	VPP_MTP
No.15	PWMOUT	No.37	VQH	No.59	NC(DRVH3)	No.81	AGND	No.103	VGH
No.16	TP_SYNC	No.38	VQL	No.60	NC(DRVH2)	No.82	AGND	No.104	VGH
No.17	XON	No.39	VCC	No.61	NC(DRVH1)	No.83	HAVDD	No.105	VGL
No.18	PWMIN	No.40	GND	No.62	NC(VSP_O)	No.84	HAVDD	No.106	VGL
No.19	CMD_SEL	No.41	D3N	No.63	NC(VSP)	No.85	HAVDD	No.107	VCOM
No.20	PORT2B	No.42	D3P	No.64	NC(AGND)	No.86	RTERM_EN	No.108	GND
No.21	VCC	No.43	GND	No.65	NC(VSN)	No.87	BISTB	No.109	NULL
No.22	VDD	No.44	D2N	No.66	NC(VSN_O)	No.88	SHLR	No.110	GND

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2.0 ABSOLUTE MAXIMUM RATINGS

The followings are maximum values which, if exceed, may cause faulty operation or damage the unit. The operational and non-operational maximum voltage and current values are listed in the following table .

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
Logic Power Supply Voltage	V_{DD}	3.0	3.3	3.6	V	Note1
LED Forward Current of every LED string	I_{LED}	-	23	-	mA	Note2
LED string Reverse Voltage	V_R	-	-	26.4	V	
Operating Temperature	T_{OP}	-20	-	+60	°C	Note3
Storage Temperature	T_{ST}	-30	-	+70	°C	

- Notes : 1. Permanent damage to the device may occur if maximum values are exceeded functional operation should be restricted to the condition described under normal operating conditions.
2. the max value of LED forward current is relative to ambient temperature,the correlation is show in figure 1.
3. Temperature and relative humidity range are shown in the figure below.
95 % RH Max. (40 °C ≥ Ta)
Maximum wet - bulb temperature at 39 OC or less. (Ta > 40 OC) No condensation.

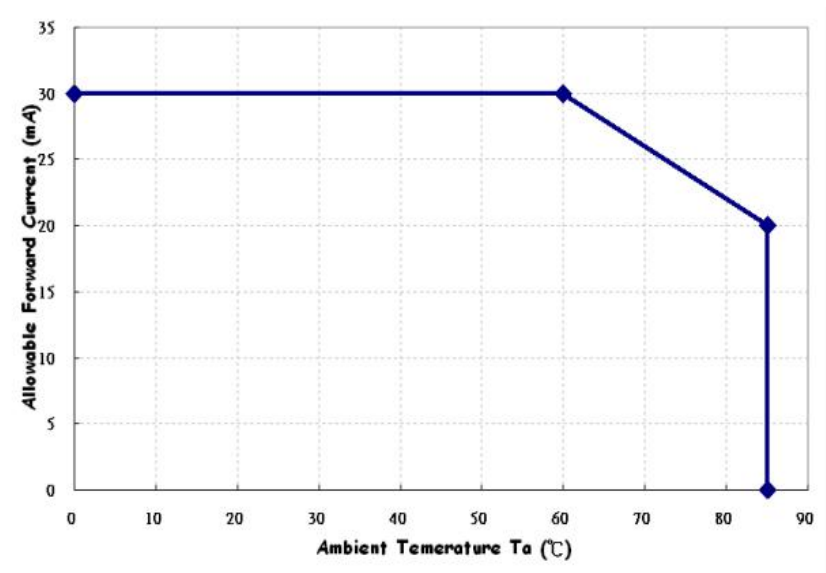


Figure 1. forward current vs ambient temperature

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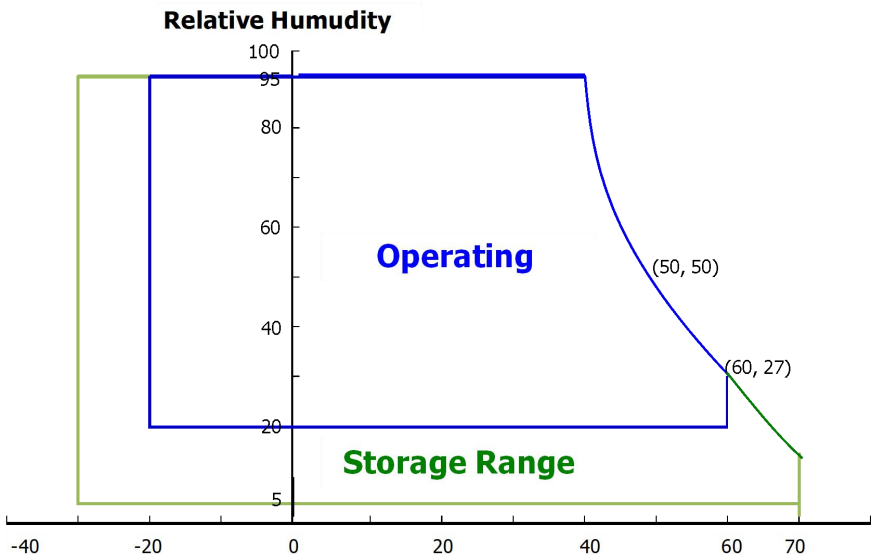


Figure 2. Operation temperature vs Humidity

3.0 Electrical Specifications

[Ta =25±2 °C]

Parameter	Symbol	Values			Unit	Notes
		Min	Typ	Max		
Logic Power Supply Input Voltage	VDDI	3.0	3.3	3.6	Vdc	1
LED Forward Voltage of every LED string	V _{LED}	22.4	-	26.4	Vdc	
LED Forward Current of every LED string	I _{LED}	-	23	-	mA	@60°C
Logic Power Consumption	Plogic	-	-	0.5	W	@W
BLU Power Consumption	Pblu	-	2.3	2.43	W	23mA
Rush current	IRUSH	-	0.7	1.3	A	2

- Notes :**
1. The supply voltage is measured and specified at the interface connector of LCM.
The current draw and power consumption specified is for VDD=3.3V, Frame rate fV=60Hz.
Test pattern of power supply current is : Typ. @White and Max. @Red Pattern
 2. The duration of rush current is about 2ms and rising time of Power input is 1ms(min)

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3.1. Logic Power Consumption

Parameter	Symbol	Typ.		uite	Notes
		Typ.	Max.		
Normal Mode	IVDD	145	166	mA	@W

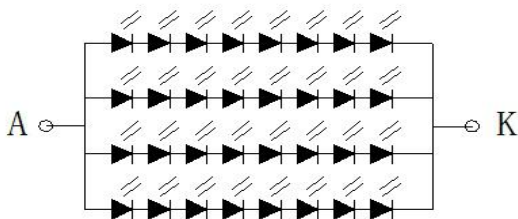
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3.2 BACK LIGHT UNIT

The edge-lighting type of back light unit consists of 32 LEDs which is connected in serial.

Table 3.1 Electrical Characteristics Of Back Light Unit

Parameter	Symbol	Values			Units	Notes
		Min	Typ.	Max		
LED Current	I _{LED}	-	92	-	mA	
LED Forward Voltage	V _{LED}	22.4	-	26.4	V	



$8 \times 4 = 32 \text{LED}$ $23 \times 4 = 92 \text{mA}$

LED Circuit Diagram

3-2-1 LED Rank

Luminous Flux Rank Chart

Condition	Bin code	Luminous Flux rank* (Lm)		Luminous Intensity for reference (mcd)	
		Min.	Max.	Min.	Max.
IF = 20mA		-	-	3500	3700

Color Rank Chart

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3.3. LCD INTERFACE CONNECTIONS

Interface Connector: FPC Connector **FH33J-40S-0.5SH** is used for the module electronics interface.

<Table 3.2. Pin Assignments for the Interface Connector>

10.1 inch WUXGA ADS Portrait									
Pin NO.	Symbol	Pin NO.	Symbol	Pin NO.	Symbol	Pin NO.	Symbol	Pin NO.	Symbol
1	NC	9	MIPI_OP	17	MIPI_2N	25	GND	33	SCL
2	VDD	10	GND	18	MIPI_2P	26	SDA	34	WPN
3	VDD	11	MIPI_1N	19	GND	27	PWMO	35	NC
4	NC	12	MIPI_1P	20	MIPI_3N	28	ID(1.8V)	36	MTP
5	NC	13	GND	21	MIPI_1P3	29	GND	37	NC
6	ID(0V)	14	MIPI_CKN	22	GND	30	GND	38	NC
7	GND	15	MIPI_CKP	23	NC	31	LED-	39	LED+
8	MIPI_ON	16	GND	24	NC	32	LED-	40	LED+

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4.0. SIGNAL TIMING SPECIFICATIONS

ITEM			SYMBOL	min	typ	max	UNIT
LCD	Frame Rate		-	-	60	-	Hz
	Pixels Rate		-	156.8	156.8	159.9	MHz
Timing	Mipi CLK	Frequency	fCLK	490	490	498	MHz
		Period	Tclk	2.01	2.04	2.04	ns
	Horizontal	Horizontal total time	tHP	1343	1343	1366	t _{CLK}
		Horizontal Active time	tHadr	1200			t _{CLK}
		Horizontal Pulse Width	tHsync	1	1	1	t _{CLK}
		Horizontal Back Porch	tHBP	32	32	32	t _{CLK}
		Horizontal Front Porch	tHFP	110	110	133	t _{CLK}
		Horizontal Sync	tHsync	1	1	1	t _{CLK}
	Vertical	Vertical total time	tvp	1946	1946	1951	t _H
		Vertical Active time	tVadr	1920			t _H
		Vertical Pulse Width	tVsync	1	1	1	t _H
		Vertical Back Porch	tVBP	14	14	14	t _H
		Vertical Front Porch	tVFP	11	11	16	t _H
Bit Rate			TX SPD (MBPS)	980	980	995	Mbps
Lane				-	4	-	Lane



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MIPI interface (Mobile Industry Processing Interface)

The Display Serial Interface standard defines protocols between a host processor and peripheral devices that adhere to MIPI Alliance standards for mobile device interfaces. The DSI standard builds on existing standards by adopting pixel formats and command set defined in MIPI Alliance standards.

DSI-compliant peripherals support either of two basic modes of operation: Command Mode and Video Mode. Which mode is used depends on the architecture and capabilities of the peripheral. The mode definitions reflect the primary intended use of DSI for display interconnect, but are not intended to restrict DSI from operating in other applications.

Command Mode refers to operation in which transactions primarily take the form of sending commands and data to a peripheral, such as a display module, that incorporates a display controller. The display controller may include local registers. Systems using Command Mode write to, and read from the registers. The host processor indirectly controls activity at the peripheral by sending commands, parameters and data to the display controller. The host processor can also read display module status information. Command Mode operation requires a bidirectional interface.

Video Mode refers to operation in which transfers from the host processor to the peripheral take the form of a real-time pixel stream. In normal operation, the display module relies on the host processor to provide image data at sufficient bandwidth to avoid flicker or other visible artifacts in the displayed image. Video information should only be transmitted using High Speed Mode. To reduce complexity and cost, systems that only operate in Video Mode may use a unidirectional data path.

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MIPI Lane Configuration

Lane Pair	MCU (Master) Display Module (Slave)
Clock Lane	Unidirectional Lane <ul style="list-style-type: none">■ Clock Only■ Escape Mode(ULPS Only)
Data Lane 0	Bi-directional Lane <ul style="list-style-type: none">■ Forward High-Speed■ Bi-directional Escape Mode■ Bi-directional LPDT
Data Lane 1 Data Lane 2 Data Lane 3	Unidirectional Lane <ul style="list-style-type: none">■ Forward High-Speed■ Escape Mode (ULPM only)■ No LPDT

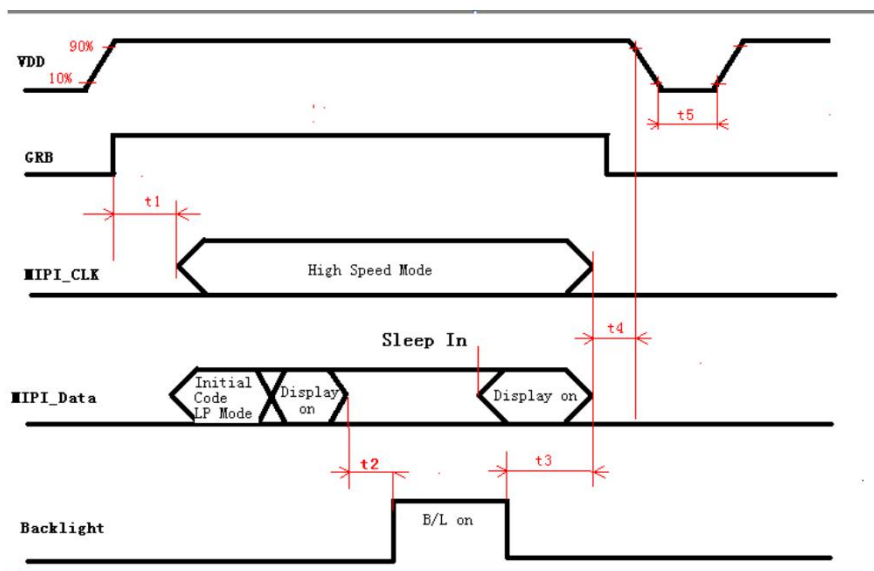
The connection between host device and display module is as reference.

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4.2. Power On/Off Sequence

(1). Power on Timing Sequence:

VDD=3.3V



	Min.	Typ.	Max.	Unit
T1	5	-	60	ms
T2	100	-	-	ms
T3	80	-	-	ms
T4	0	-	-	ms
T5	300	-	-	ms

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4.3. Initial Code

< Power On Sequence >



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4.4. IC General Spec and Size

FEATURES

1. Features

- Special design for middle size TFT LCD Panel with MIPI interface
- The chip integrate 1803 channel source driver and timing controller
- Support panel resolution (HxV) :
1200(RGB)x1920, 600(RGB)x1024, 1080(RGB)x1920, 1200(RGB)x1600
- 8-bit resolution 256 gray-scale
- Operating frequency: MIPI: 1Gbps/Lane (Max.)
- Support 2, 3 or 4 data lanes for MIPI interface
- Power for digital circuit(VCC/VCC_IF): 1.55V ~ 1.65V
- Power for digital circuit(VDD): 2.7V ~ 3.6V
- Power for analog circuit(AVDD): 7.0 ~ 10.0V
- Support RGB independent gamma correction function
- Support CABC function
- Support Color Enhancement function
- Support Advance BIST function
- Support Zig-Zag driving method
- Support GIP function
- Not support MIPI BTA function
- COG package
- Chip size = 28500 um x 775 um
- Output bump pitch = 12 um

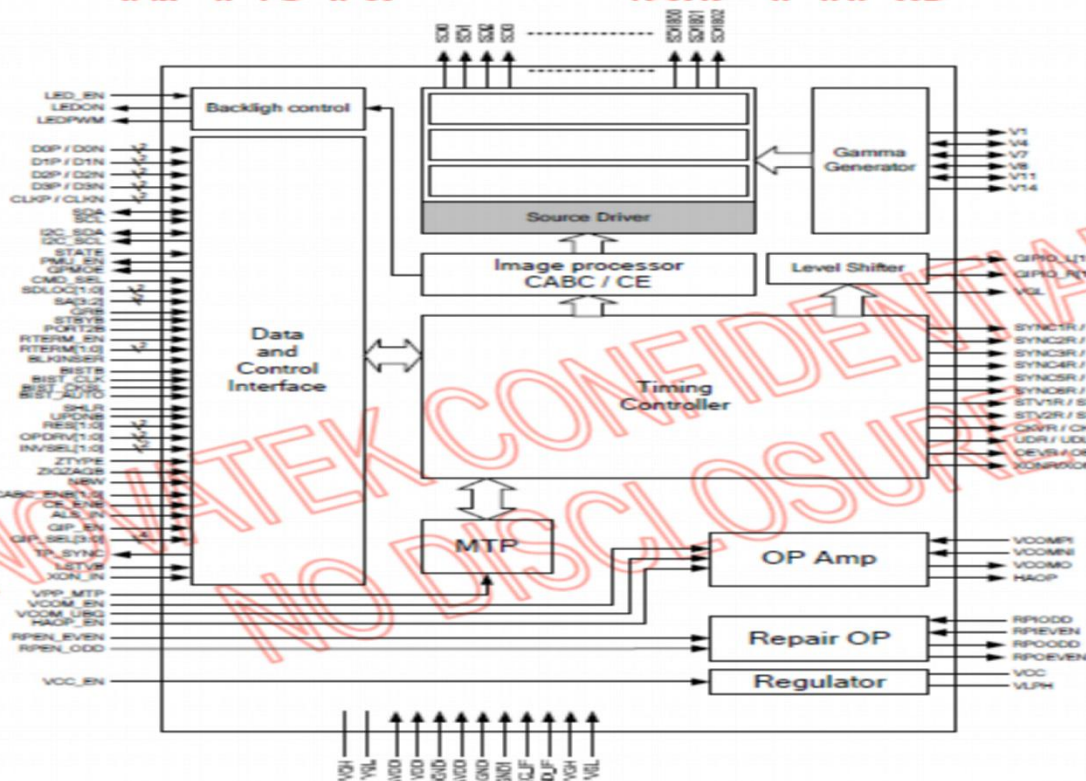


Figure 1. System Function Block Diagram

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4.5. Power Consumption

	Parameter	Symbol	Typ.	Unit	Remark
CABC OFF	Logic Power	L0	462.4	mW	
		L32	462.3	mW	
		L64	462.3	mW	
		I96	465.6	mW	
		L127	462.2	mW	
		L160	468.9	mW	
		L192	465.6	mW	
		I224	468.9	mW	
		L255	462.3	mW	
		R255	462.3	mW	
		G255	462.3	mW	
		B255	462.3	mW	
		8 color bar	465.6	mW	
	BLU	100% on	2.43	W	

If there is more than one mode for CABC function, please fill out all data

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5.0 Optical Specifications -Backlight 100%

The test of Optical specifications shall be measured in a dark room (ambient luminance ≤ 1 lux and temperature = $25 \pm 2^\circ\text{C}$) with the equipment of Luminance meter system (CA-310、BM-5A) and test unit shall be located at an approximate distance 50cm from the LCD surface at a viewing angle of θ and Φ equal to 0° .

Parameter		Symbol	Condi tion	Min.	Typ.	Max.	Unit	Remar k
Viewing Ang le range	Horizontal	Θ_3	CR > 10		85	-	Deg.	Note 1
		Θ_9			85	-	Deg.	
	Vertical	Θ_{12}			85	-	Deg.	
		Θ_6			85	-	Deg.	
Color Gamut				65	70.8	-	%	-
Luminance Contrast ratio		CR	$\Theta = 0^\circ$	800:1	1000 : 1		-	Note 2
Luminance of White	5 Points	Y_w	$\Theta = 0^\circ$	370	450	-	cd/m ²	Note 3 (LCM)
White Lumi nance unifor mity	13 Points	ΔY_{13}		70	75	-	%	Note 4
	5 Points	ΔY_5		80	85	-	%	
White balance		W_x	$\Theta = 0^\circ$	0.27	0.30	0.33	-	Note 5
		W_y		0.28	0.31	0.34	-	
		CT		/	/	/	K	
Reproductio n of color	Red	R_x	$\Theta = 0^\circ$	0.61	0.640	0.67	-	Note6 (TLCM)
		R_y		0.3	0.330	0.36		
	Green	G_x		0.27	0.300	0.33		
		G_y		0.57	0.600	0.63		
	Blue	B_x		0.12	0.150	0.18		
		B_y		0.028	0.058	0.088		
Response Time (Rising + Falling)		T_{RT}	Ta= 25° C $\Theta = 0^\circ$	25	30	35	ms	Note 7

Cell & BLU Optical Characteristics

Parameter	Typ	Unit	Remarks
Aperture Ratio	70	%	
Upper Pol Trans.	43	%	
Lower Pol Trans.	43	%	
Panel Trans.	4.3%	%	w/o APF
Panel Trans.	8.4%	%	with DBEF5
BLU Luminance	5340	Cd/m ²	With DBEF5

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Note :

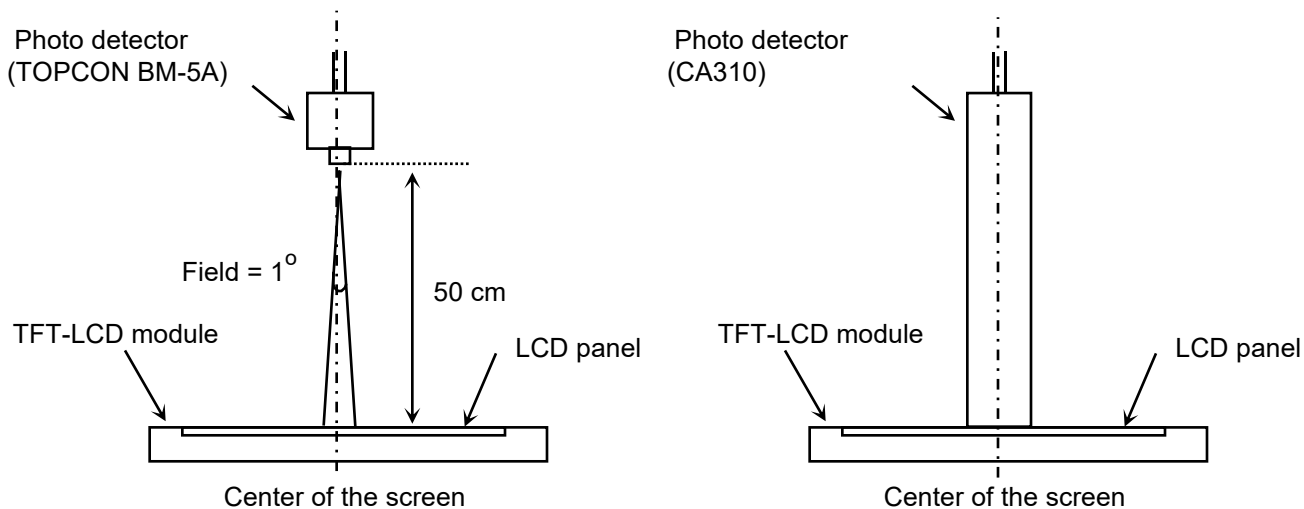
1. Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing angles are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface (see FIGURE 1).
2. Contrast measurements shall be made at viewing angle of $\Theta = 0$ and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state. (see FIGURE 1) Luminance Contrast Ratio (CR) is defined mathematically.

$$CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$$

3. Center Luminance of white is defined as luminance values of 1 point average across the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 1 for a total of the measurements per display. The luminance is measured by CA310 when the LED current is set at 20mA.
4. The White luminance uniformity on LCD surface is then expressed as : $\Delta Y = \text{Minimum Luminance of 9 points} / \text{Maximum Luminance of 9 points}$ (see FIGURE 2).
5. The color chromaticity coordinates specified shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the panel.
6. The color chromaticity coordinates specified shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the panel.
7. The electro-optical response time measurements shall be made as FIGURE 3 by switching the "data" input signal ON and OFF. The times needed for the luminance to change from 10% to 90% is T_r , and 90% to 10% is T_d .

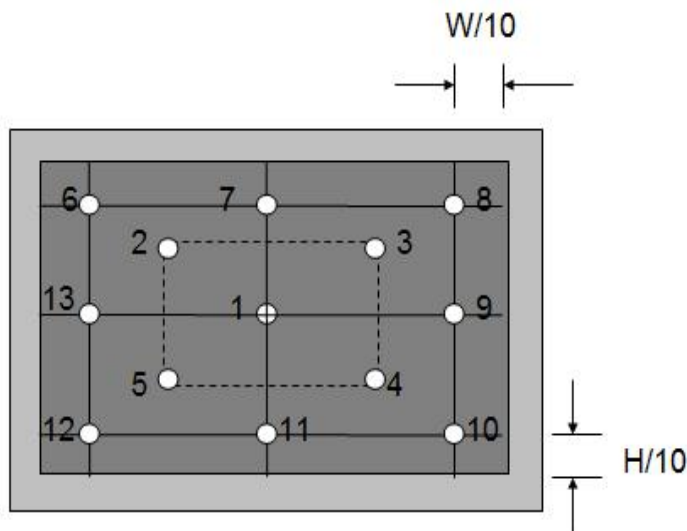
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Figure 1. Measurement Set Up



View angle range measurement setup Luminance , uniformity and color measurement setup

Figure 2. White Luminance and Uniformity Measurement Locations (13 points)

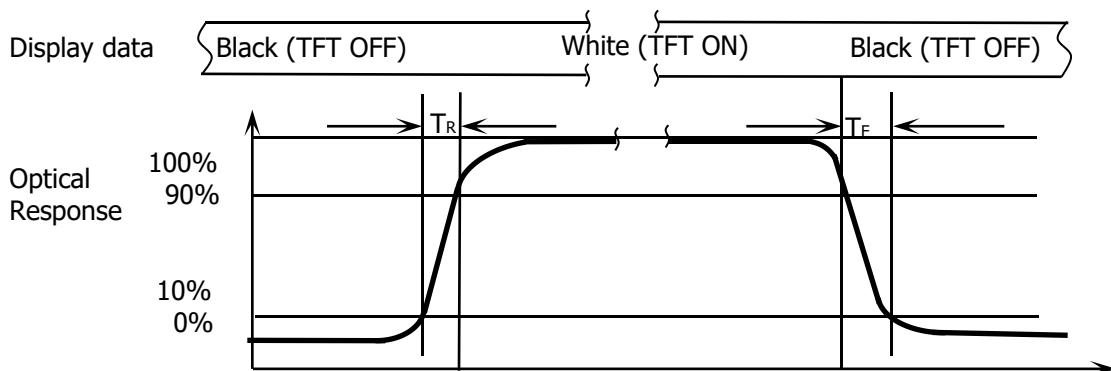


Center Luminance of white is defined as luminance values of center 9 points across the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 2 for a total of the measurements per display.

$$\text{Brightness Uniformity} = \frac{\text{Minimum Photo detector output for P1-P13 with all pixels white}}{\text{Maximum Photo detector output for P1-P13 with all pixels white}}$$

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Figure 3. Response Time Testing



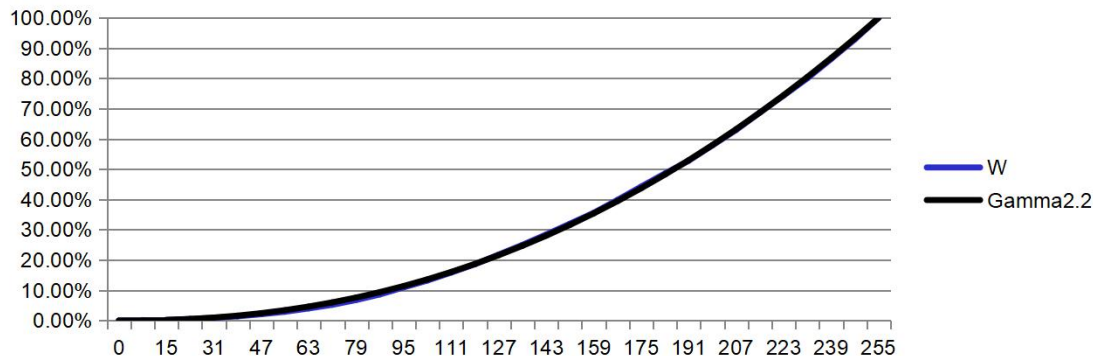
The electro-optical response time measurements shall be made as shown in FIGURE 3 by switching the “data” input signal ON and OFF. The times needed for the luminance to change from 10% to 90% is T_R and 90% to 10% is T_d .

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5.1. Gamma/Color Coordinate Uniformity

(1) Gamma Curve

Request: R/G/B/W, 0-255 gray scale, step 8 gray scale



(2)Color Coordinate Uniformity

Request: white pattern, 0-255 gray scale, step 8 gray scale.

Gary scale	x	y	Gary scale	x	y
0	0. 2679	0. 264	135	0. 2999	0. 32
7	0. 2766	0. 2752	143	0. 3002	0. 3206
15	0. 292	0. 2988	151	0. 3004	0. 3209
23	0. 2999	0. 3119	159	0. 3008	0. 3215
31	0. 2955	0. 3079	167	0. 3005	0. 3212
39	0. 2934	0. 306	175	0. 3004	0. 3209
47	0. 291	0. 3037	183	0. 3005	0. 3209
55	0. 2911	0. 3046	191	0. 3005	0. 321
63	0. 2923	0. 3068	199	0. 3006	0. 3212
71	0. 2933	0. 3085	207	0. 3008	0. 3213
79	0. 2946	0. 3108	215	0. 301	0. 3214
87	0. 2959	0. 3128	223	0. 3012	0. 3217
95	0. 2973	0. 3153	231	0. 3012	0. 3215
103	0. 2974	0. 3159	239	0. 3012	0. 3213
111	0. 298	0. 3168	247	0. 3009	0. 3208
119	0. 2988	0. 3181	255	0. 3007	0. 3201
127	0. 2997	0. 3198			

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6. MECHANICAL CHRACTERISTICS

The contents provide general mechanical characteristics for the model.

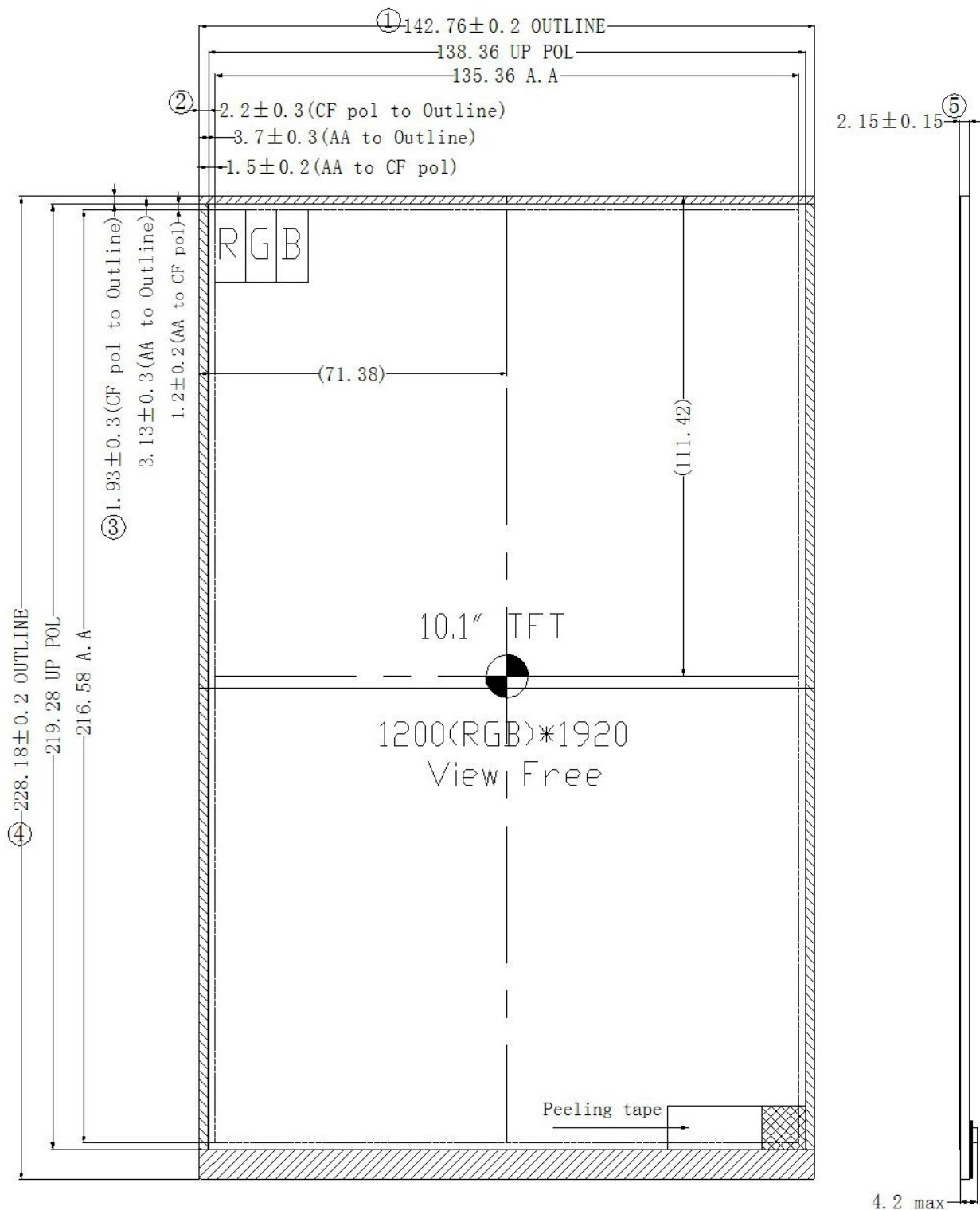
In addition the figures in the next page are detailed mechanical drawing of the LCD.

item		Description	Typ.	Tolerance	Unit
Mother glass		Size	2500*2200	-	mm
CF and TFT thickness after s limming		thickness	0.2/ 0.2		mm
Panel	AA	A/A	216.576*135.36	-	mm
	CF	CF	222.046*140.26	±0.2	mm
	TFT	TFT	225.346*140.26	±0.2	mm
	BM	BM(U/D/L/R)	2.0/6.77/2.45/2.45	-	mm
	IC Bonding ar ea	IC Bonding Ar ea	19.5	-	mm
	Pol size	Pol Size	CF : 138.36*219.276 ; TFT : 139.86*219.476	±0.15	mm
	Gap between pol~glass(U/D /L/R)	Gap Between Pol~glassbord er (U/D/L/R)	CF: 0.8/1.97/0.95/0.95 TFT : 0.3/5.57/0.3/0.3	±0.3	mm
Module	Horizontal	Horizontal	142.76	±0.2	mm
	Vertical	Vertical	228.18	±0.2	mm
	Thickness	Thickness	2.15	±0.15	mm
	Uv glue thickn ess	UV Glue Thic kness	no higher than IC	-	mm

Product Specification

6.1 Touch Display Module Drawing

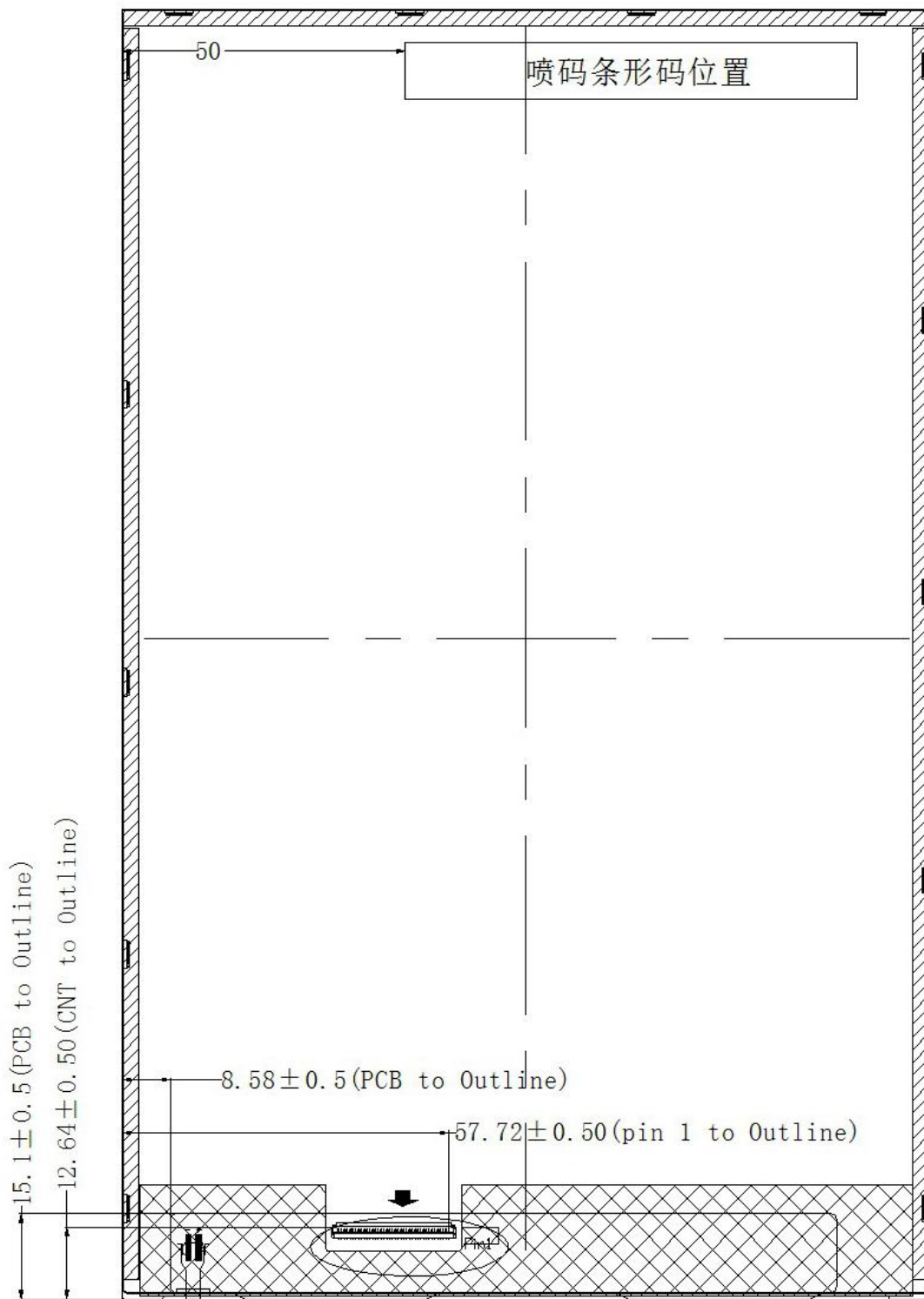
(1) Front side



Product Specification

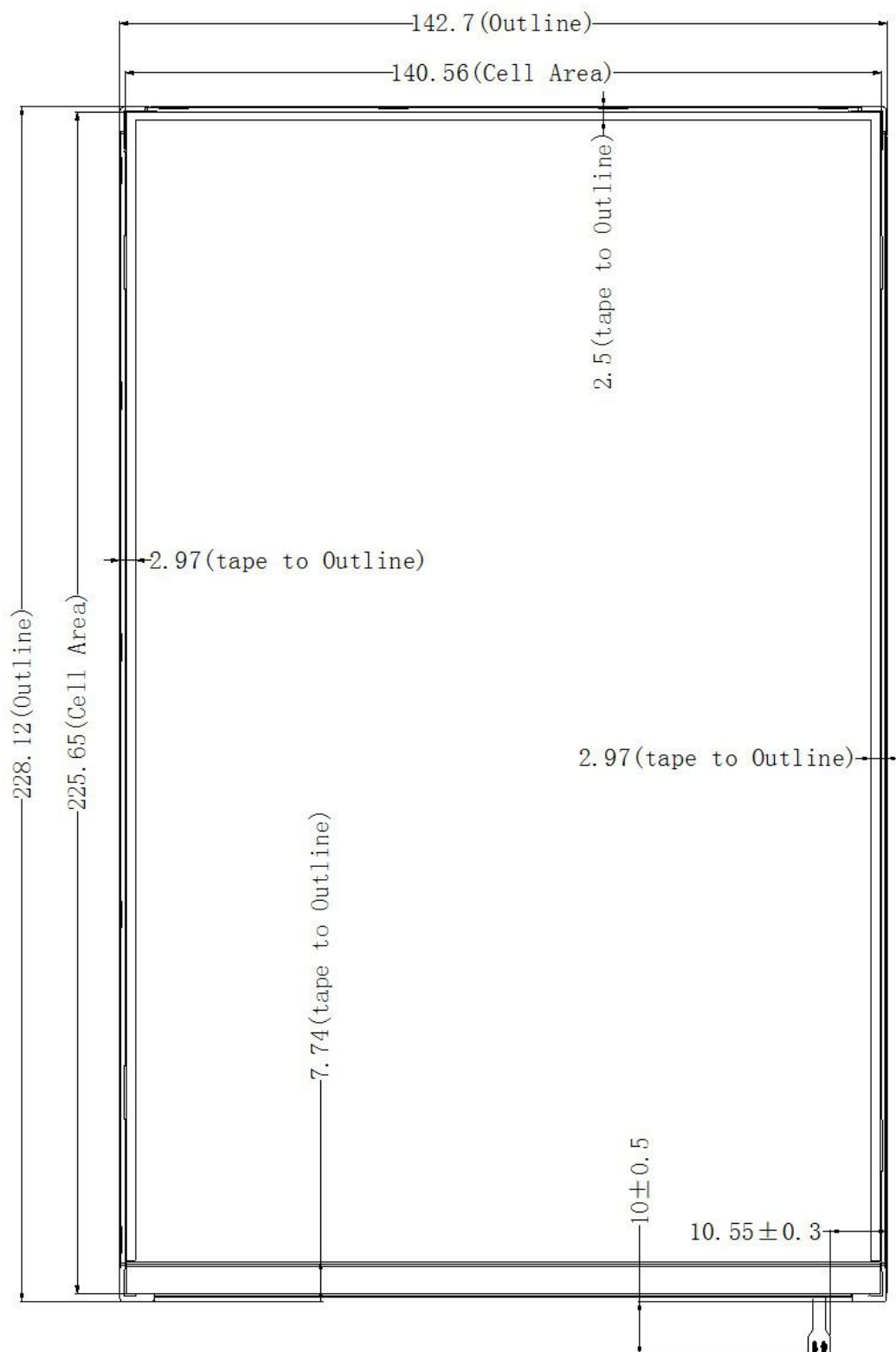
6.1 Touch Display Module Drawing

(2) Rear side



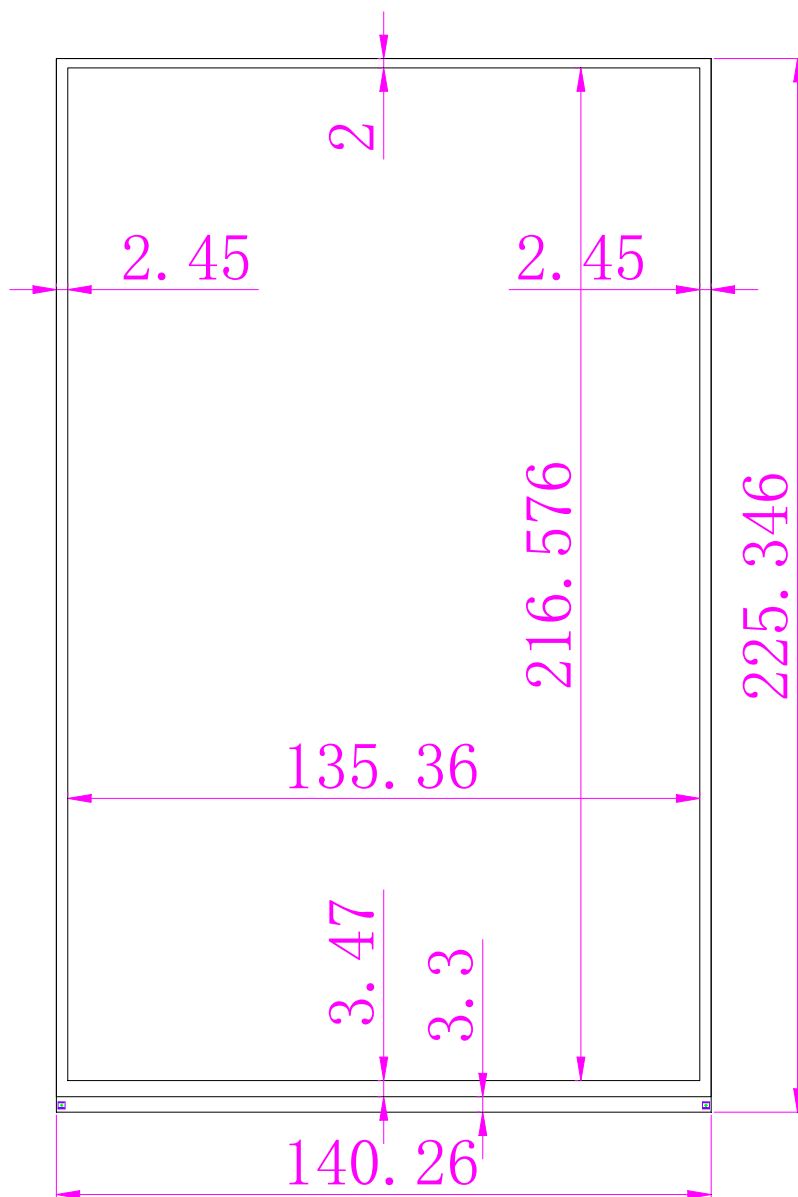
Product Specification

6.2 BLU Outline Dimension



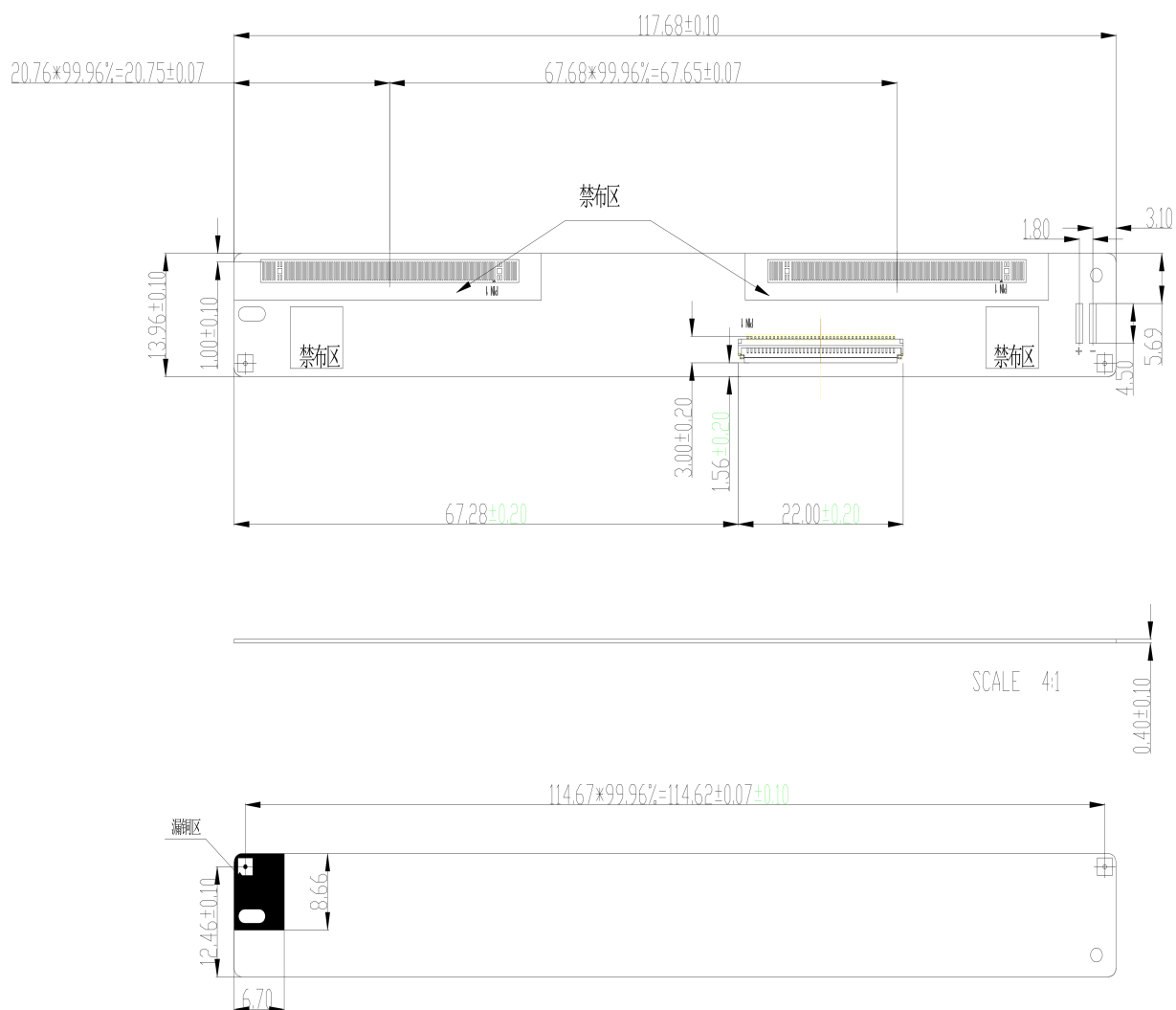
Product Specification

6.3 Panel Outline Dimension



Product Specification

6.4 PCBA Outline Dimension



Product Specification

7.0 Reliability Test

No	Test Item	Test Condition	Remark
1	High temperature storage test	Ta = 70 °C, 240 hrs	-
2	Low temperature storage test	Ta = -20°C, 240 hrs	
3	Thermal Shock Test	-20°C/1hr → 60°C/1hr ×30Cycle	
4	High temperature Operate test	Ta = 60 °C,240hrs,	
5	Low temperature Operate test	Ta = -20 °C, 240hrs	
6	High temperature High humidity	Ta = 60 °C, 90% , 240hrs	

Note (1) criteria : Normal display image with no obvious non-uniformity and no line defect.

Note (2) Evaluation should be tested after storage at room temperature for more than two hour

Product Specification

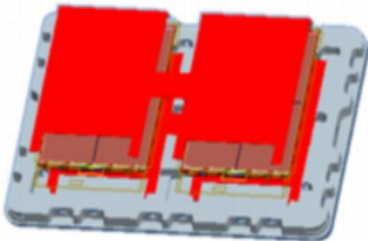
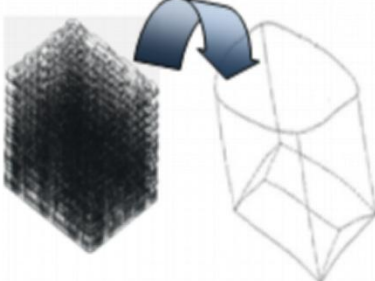

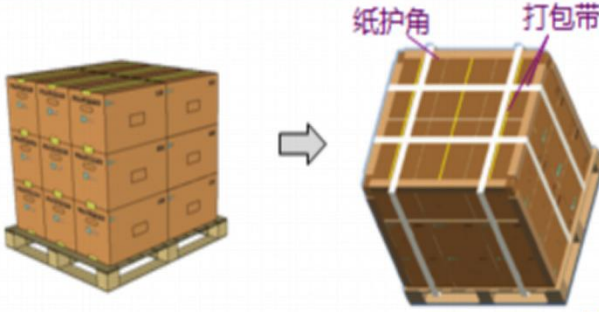
8.0. Package

8.1. Packing Description

The stacked tray per a box : 26pcs tray

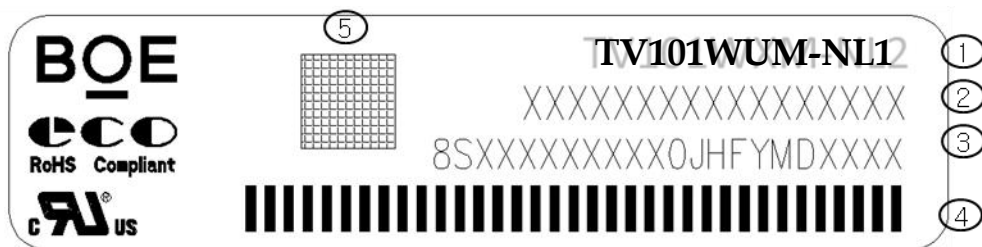
→ Full (LCD Included) tray 25pcs + Empty tray 1pcs

(LCM 50 pcs/1 box)

<p>- 将 1pcs EPE Pad 放于Tray底部, 再将2pcs MDL 平放入EPE Pad 上面 (Panel 面朝上放置), 然后上部再放一张EPE Pad 26层叠加(tray 不旋转叠放), 顶部1pcs空Tray. - 容量: 2pcs MDL/Tray</p>	<p>- 将26pcs PET Tray 堆码后两端缠3圈胶带后, 平放入PE Bag并 用胶带十字封口 - 容量: 50pcs MDL/PE Bag</p>
 <p>Step 1</p>	 <p>Step 2</p>
<p>- 将PET Tray堆码后平放入Inner Box, 上下放置EPE Board - 容量 : 50pcs MDL/Inner Box</p>	<p>- 每个Pallet上放3层Box, 1层6箱, 共计18ea Box , Pallet 四边及 打包带位置放置纸护角8ea后, 以缠绕膜包裹, 并 “井” 字打包 - 容量: 900pcs MDL/Pallet</p>
<div data-bbox="14 1346 285 1585"><p>厢车装载方式: 双层码放 Pallet摆放方式: 一横一竖 12m厢车装载量: 36000pcs (40托)</p></div>  <p>Step 3</p>	 <p>Step 4</p>

Product Specification

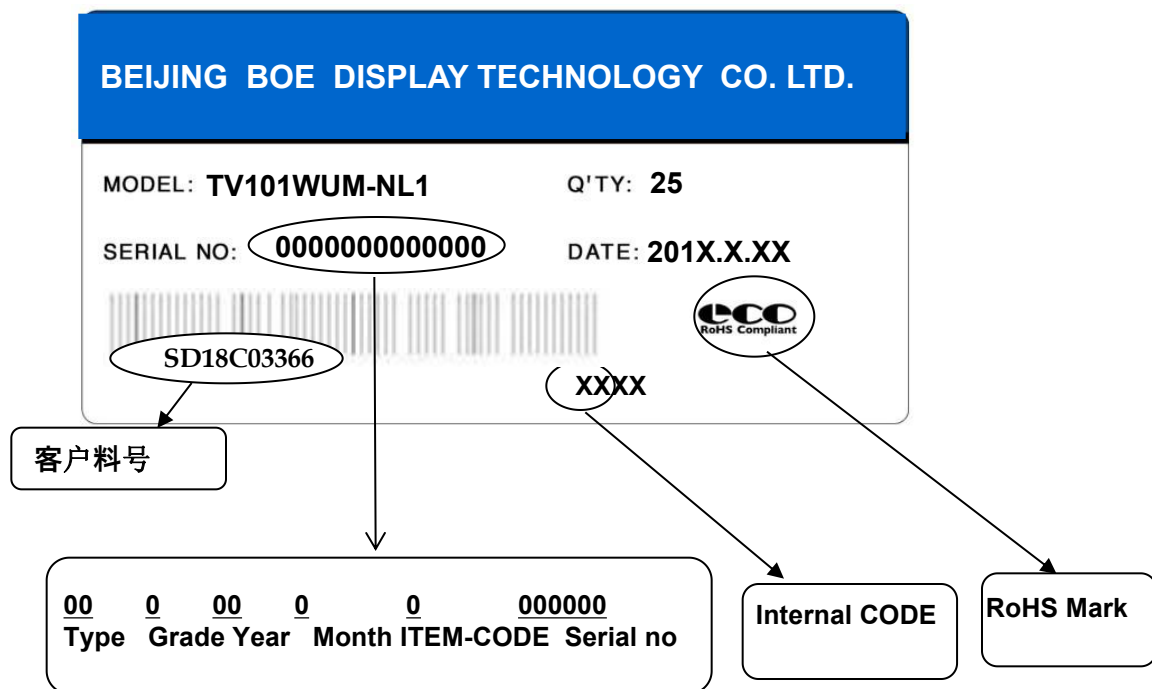
8.2 Box label



1. FG-CODE
2. MDL ID
3. 8S 码
4. MDL ID 条形码
5. 8S 码 二维码

喷码要求:

- >1. Label尺寸: 48mm × 12mm
- >2. 8S 码对对应二维码需在标识区域



Product Specification

9.0 Handling & Cautions

(1) Cautions when taking out the module

- Pick the pouch only, when taking out module from a shipping package.

(2) Cautions for handling the module

- As the electrostatic discharges may break the LCD module, handle the LCD module with care. Peel a protection sheet off from the LCD panel surface as slowly as possible.
- As the LCD panel and back - light element are made from fragile glass material, impulse and pressure to the LCD module should be avoided.
- As the surface of the polarizer is very soft and easily scratched, use a soft dry cloth without chemicals for cleaning.
- Do not pull the interface connector in or out while the LCD module is operating.
- Put the module display side down on a flat horizontal plane.
- Handle connectors and cables with care.

(3) Cautions for the operation

- When the module is operating, do not lose CLK, ENAB signals. If any one of these signals is lost, the LCD panel would be damaged.
- Obey the supply voltage sequence. If wrong sequence is applied, the module would be damaged.

(4) Cautions for the atmosphere

- Dew drop atmosphere should be avoided.
- Do not store and/or operate the LCD module in a high temperature and/or humidity atmosphere. Storage in an electro-conductive polymer packing pouch and under relatively low temperature atmosphere is recommended.

(5) Cautions for the module characteristics

- Do not apply fixed pattern data signal to the LCD module at product aging.
- Applying fixed pattern for a long time may cause image sticking.

(6) Other cautions

- Do not disassemble and/or re-assemble LCD module.
- Do not re-adjust variable resistor or switch etc.
- When returning the module for repair or etc., Please pack the module not to be broken. We recommend to use the original shipping packages.