



UST070SSLNN00

7.0" IPS LCD-TFT MODULE SPECIFICATION

Key Specifications

Parameter	Specification
LCD Type	IPS TFT / Transmissive / Normal Black
Size (Diagonal)	7.0"
Viewing Direction	Full Viewing (All)
Outside Dimensions (W x H x D)	165.00 x 100.00 x 5.70 mm
Active Area (W x H)	154.21 x 85.92 mm
Pixel Pitch (W x H)	0.1506 x 0.1432 mm
Resolution	1024 x 600 (RGB)
Brightness	1000 cd / m ² (typ.)
Contrast Ratio	1000:1 (typ.)
Color Depth	16.7 M
Pixel Arrangement	RGB Vertical Stripe
Interface	LVDS
LCD Driver	JD9165BA
With / Without Touch	Without Touch Panel
Surface Treatment	Anti-Glare
Operating / Storage Temp.	-20°C ~ +70°C / -30°C ~ +80°C
Weight	135 g

Revision Table

Rev.	Date	Description
1.0	2026-10-06	First issue

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1. Coding System

1	2	3	4	5	6	7	8	9	10
US	T	070	S	S	L	N	N	N	00

No.	Parameter	Options
1	Manufacturer	Unisystem
2	Display Type	T – TFT
3	Display Size	070 – 7", 101 – 10.1", 121 – 12.1", 156 – 15.6"
4	Model Series	S – “Core” Standard Brightness IPS, H – “Pro” High Brightness IPS, L – “Lite” IPS
5	Resolution	M – 800x480, S – 1024x600 (WSVGA), W – 1280x800 (WXGA), X – 1024x768 (XGA), F – 1920x1080 (FHD)
6	Interface	L – LVDS, M – MIPI DSI, R – RGB, D – eDP, H – HDMI and USB-C
7	Frame	F – With Mounting Metal Frame, N – Without Mounting Metal Frame
8	Touch Panel	N – Without Touch Panel, C – With Projected Capacitive Touch Panel
9	Cover Glass Specification	N – Without Cover Glass, E – Rectangular Glass with Optical Bonding, U – Rounded Glass with Optical Bonding
10	Version	00 – base series, 10 – improved series

Passion for displays

3. Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit
Power supply voltage	V_{DD}	-0.3	3.96	V
Storage temperature	T_{STG}	-30	+80	°C
Operating temperature	T_{OP}	-20	+70	°C

$V_{SS} = 0V$, $T_a = 25^{\circ}C$

Note 1: If T_a is below $50^{\circ}C$, the maximum humidity is 90%RH, if T_a is over $50^{\circ}C$, absolute humidity shall not exceed that of 60%RH at $50^{\circ}C$.

Note 2: The response time will be extremely slow when the operating temperature is around $-10^{\circ}C$ or below, and the background will become darker during high-temperature operation.

4. DC Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	2.8	3.3	3.6	V
Logic-High Input Voltage	V_{ih}	$0.8 \times V_{DD}$	-	V_{DD}	V
Logic-Low Input Voltage	V_{il}	GND	-	$0.2 \times V_{DD}$	V
Logic-High Output Voltage	V_{oh}	$0.9 \times V_{DD}$	-	V_{DD}	V
Logic-Low Output Voltage	V_{ol}	GND	-	$0.1 \times V_{DD}$	V
Current Consumption (All white)	I_{DD}	-	125	-	mA

5. Backlight Characteristic

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$T_a = 25^{\circ}C$, $I_F = 25mA$ / LED	8.1	9.3	9.9	V
Forward Current	I_F	$T_a = 25^{\circ}C$, $I_F = 25mA$ / LED	-	250	-	mA
Power dissipation	P_D	-	-	2325	-	mW
Uniformity	Avg	-	-	80	-	%
LED working life ($25^{\circ}C$)	-	-	-	100000	-	Hrs
Drive method	Constant current					
LED Configuration	30 White LEDs (3 LEDs in one string and 10 groups in parallel)					

Note 1: LED lifetime is defined as follows: The final brightness is at 50% of original brightness.
The test is conducted under ambient air flow, at $T_a = 25 \pm 2^{\circ}C$, 60%RH $\pm$ 5%, $I_F = 25mA$ / LED.

6. Optical Characteristics

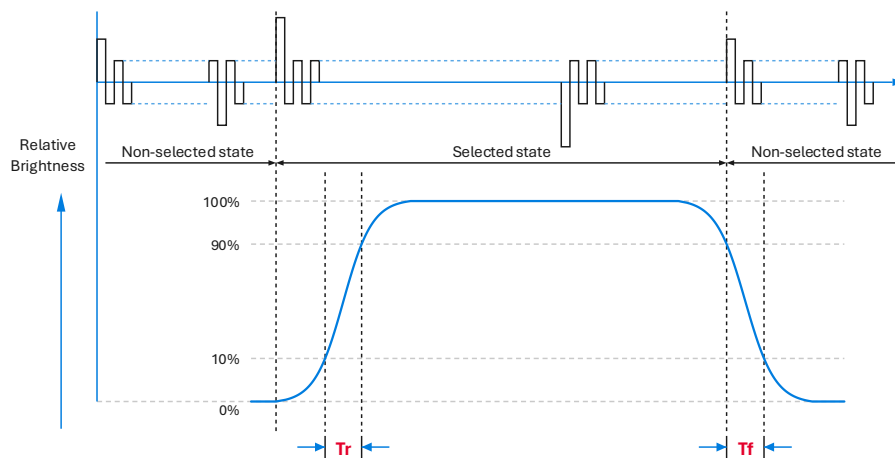
6.1 Optical Specifications

Ta = 25°C, VDD = 3.3V

Backlight On (Transmissive Mode)	Item		Symbol	Condition	Specification			Unit
					Min.	Typ.	Max.	
	Luminance on TFT (I _F = 25mA / LED)		L _V		-	1000	-	cd / m ²
	Contrast ratio (See 6.3)		CR		700	1000	-	
	Response time (See 6.2)		T _R + T _F		-	30	35	ms
	Chromaticity Transmissive (See 6.5)	Red	X _R		0.550	0.600	0.650	
			Y _R		0.325	0.375	0.425	
		Green	X _G		0.283	0.333	0.383	
			Y _G		0.512	0.562	0.612	
		Blue	X _B		0.084	0.134	0.184	
			Y _B		0.035	0.085	0.135	
		White	X _W		0.256	0.306	0.356	
			Y _W		0.292	0.342	0.392	
	Viewing Angle (See 6.4)	Horizontal	θ _{X+}	Center CR ≥ 10	70	80	-	Deg.
			θ _{X-}		70	80	-	
		Vertical	φ _{Y+}		70	80	-	
			φ _{Y-}		70	80	-	
	NTSC Ratio (Gamut)				45	50	-	%

6.2 Definition of Response Time

6.2.1 Normally Black Type (Negative)

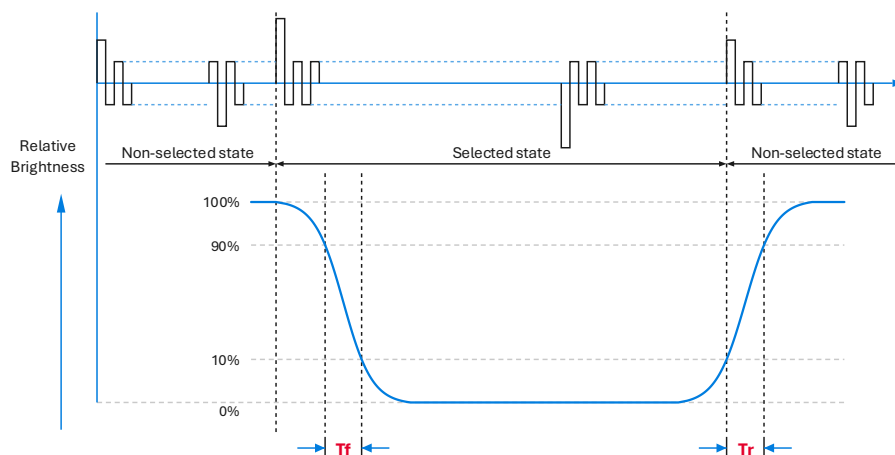


T_r is the time it takes to change from non-selected state with relative luminance 10% to selected state with relative luminance 90%.

T_f is the time it takes to change from selected state with relative luminance 90% to non-selected state with relative luminance 10%.

Note: Measuring machine: LCD-5100

6.2.2 Normally White Type (Positive)



T_r is the time it takes to change from non-selected state with relative luminance 90% to selected state with relative luminance 10%.

T_f is the time it takes to change from selected state with relative luminance 10% to non-selected state with relative luminance 90%.

Note: Measuring machine: LCD-5100 or equivalent

6.3 Definition of Contrast Ratio

Contrast is measured perpendicularly to the display surface in transmissive mode.

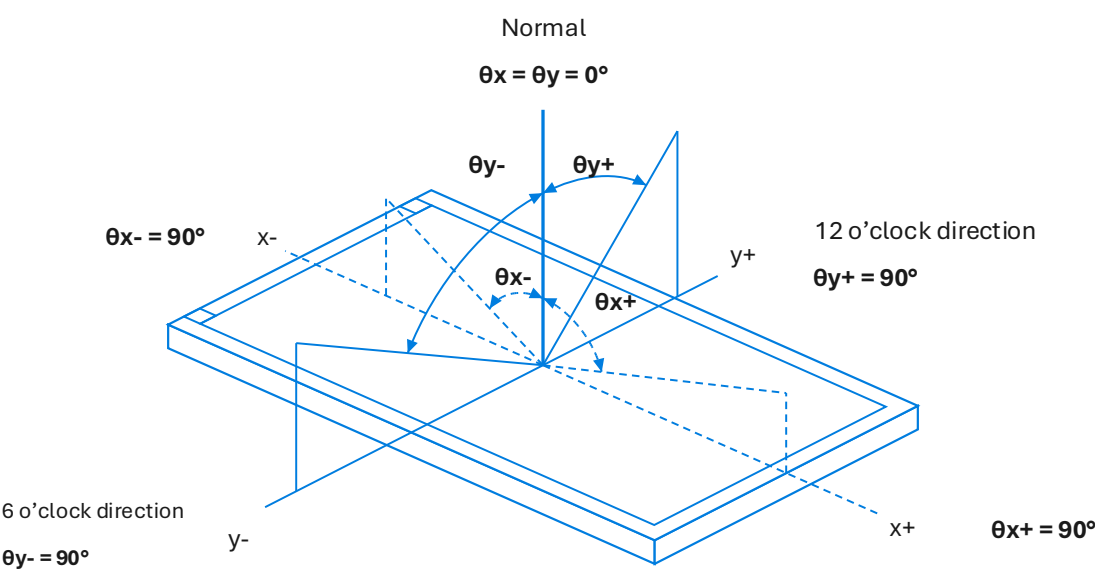
The measurement condition is:

Measuring Equipment	Eldim or Equivalent
Measuring Point Diameter	3mm / 1mm
Measuring Point Location	Active Area center point
Test pattern	A: All Pixels white
	B: All Pixel black
Contrast setting	Maximum

Definitions: CR (Contrast) = Luminance of White Pixel / Luminance of Black Pixel

6.4 Definition of Viewing Angles

Measuring machine: LCD-5100 or equivalent

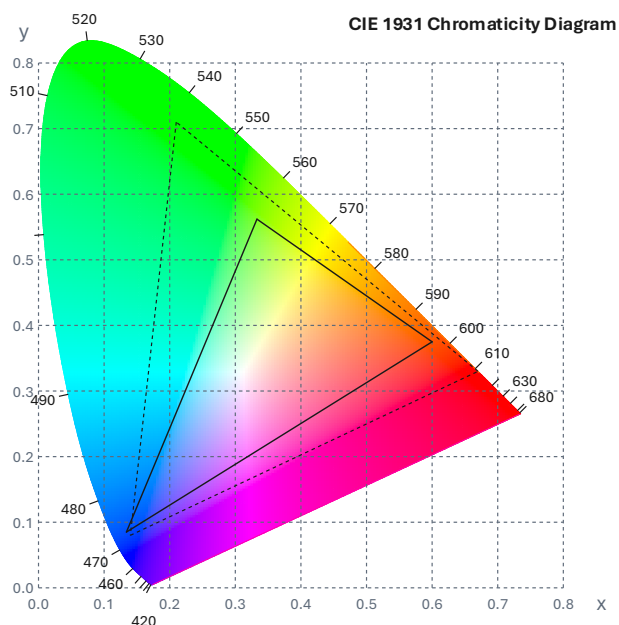


6.5 Definition of Color Appearance

R,G,B and W are defined by (x, y) on the CIE chromaticity diagram

NTSC = area of RGB triangle / area of NTSC triangle x 100%

Measuring picture: Red, Green, Blue and White (Measuring machine: BM-7)



6.6 Definition of Surface Luminance, Uniformity and Transmittance

Using the transmissive mode measurement approach, measure the white screen luminance of the display panel and backlight.

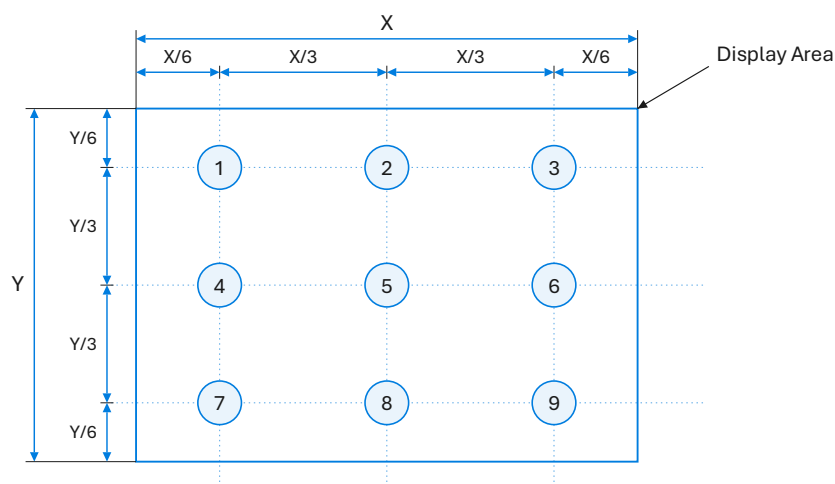
Surface Luminance: $L_V = \text{average } (L_{P1}:L_{P9})$

Uniformity = $\text{Minimal } (L_{P1}:L_{P9}) / \text{Maximal } (L_{P1}:L_{P9}) \times 100\%$

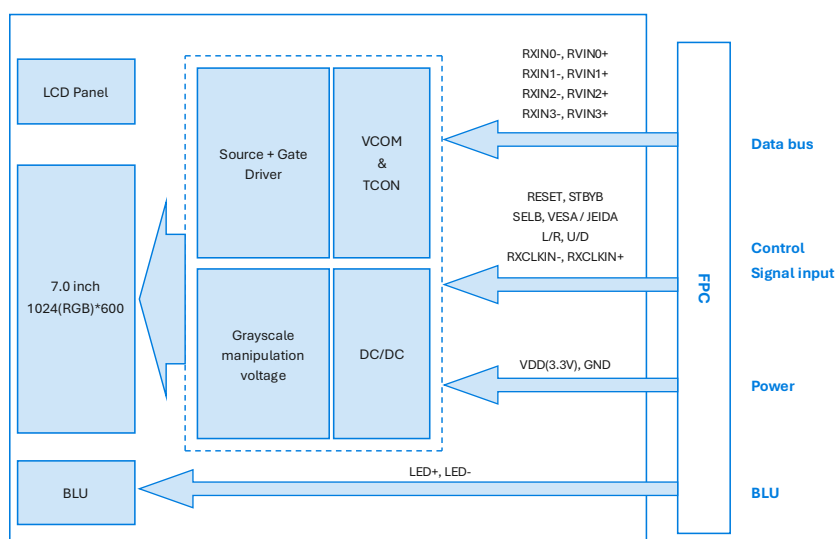
Transmittance = $L_V \text{ on LCD} / L_V \text{ on Backlight} \times 100\%$

Note: Measuring machine: BM-7

Note: Test 3 brightness points below 3.5 inches (point 2 / 5 / 8), test 5 brightness points between 3.5–7 inches (point 1 / 3 / 5 / 7 / 9), and test 9 brightness points above 7 inches (point 1 to 9).



7. Block Diagram and Power Supply



8. Interface Pins Definition

LCM PIN:

No.	Symbol	Function
1	NC	No Connection
2-3	V _{DD} 3.3V	Power supply
4	NC	No Connection
5	RESET	Global reset pin, active low. (Default pull High)
6	STBYB	Standby mode selection ¹⁾
7	GND	Ground
8	RXIN0-	Negative LVDS Differential data input
9	RXIN0+	Positive LVDS Differential data input
10	GND	Ground
11	RXIN1-	Negative LVDS Differential data input
12	RXIN1+	Positive LVDS Differential data input
13	GND	Ground
14	RXIN2-	Negative LVDS Differential data input
15	RXIN2+	Positive LVDS Differential data input
16	GND	Ground
17	RXCLKIN-	Negative LVDS Differential clock input
18	RXCLKIN+	Positive LVDS Differential clock input
19	GND	Ground
20	RXIN3-	Negative LVDS Differential data input
21	RXIN3+	Positive LVDS Differential data input
22	GND	Ground
23-24	NC	No Connection
25	GND	Ground
26-27	NC	No Connection
28	SELB	Used as 6-bit / 8-bit input select.
29	VESA / JEIDA	8-bit input format select for LVDS mode ²⁾
30	GND	Ground
31-32	LED-	LED Cathode.
33	L / R	Horizontal inversion ³⁾
34	U / D	Vertical inversion ⁴⁾

No.	Symbol	Function
35-38	NC	No Connection
39-40	LED+	LED Anode.

Note

1) Standby mode selection (Default pull High)

If not used, please fix this pin at V_{DD} level.

STBYB	Function
H	Normal mode
L	Standby mode

2) 8-bit input format select for LVDS mode (Default pull High)

VESA / JEIDA	Function
1	VESA format
0	JEIDA format

3) Horizontal inversion (Default pull Low)

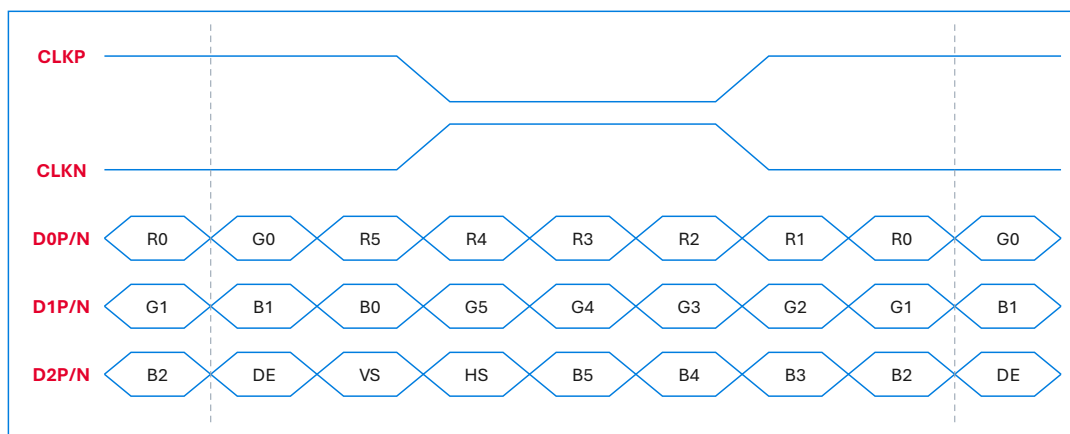
SHLR	Function
1	Right → Left
0	Left → Right

4) Vertical inversion (Default pull Low)

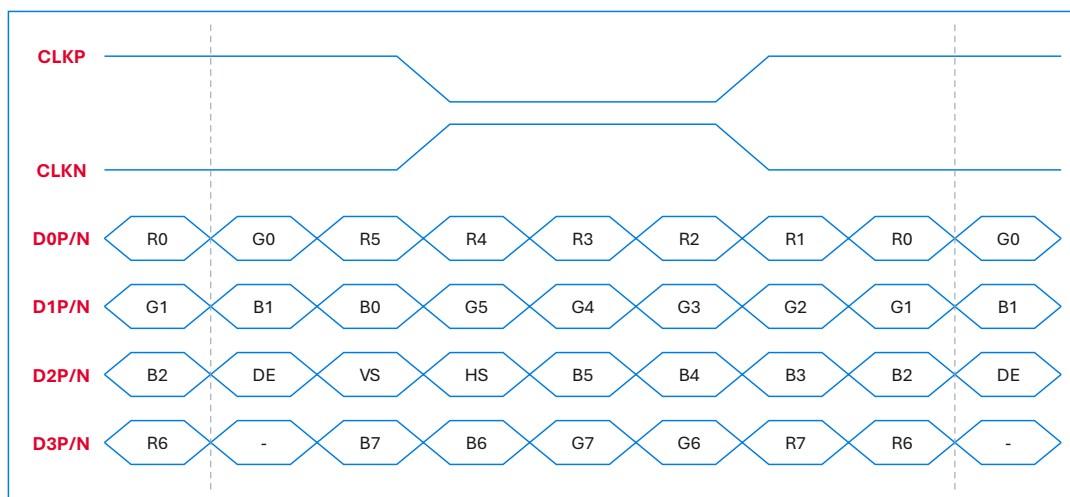
UPDN	Function
1	Bottom → Top
0	Top → Bottom

9. AC Characteristics

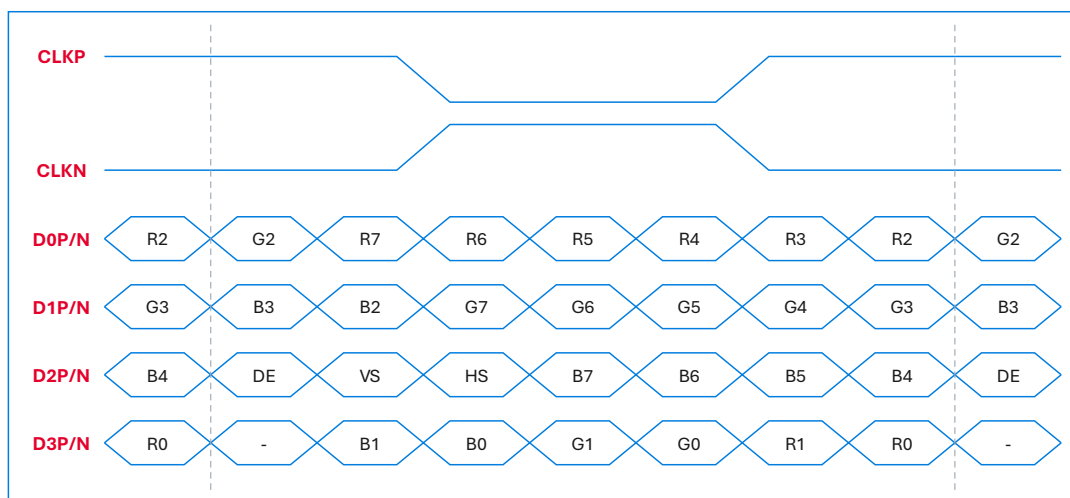
9.1 LVDS data input format



6-bit RGB LVDS input timing



8-bit RGB LVDS VESA input timing



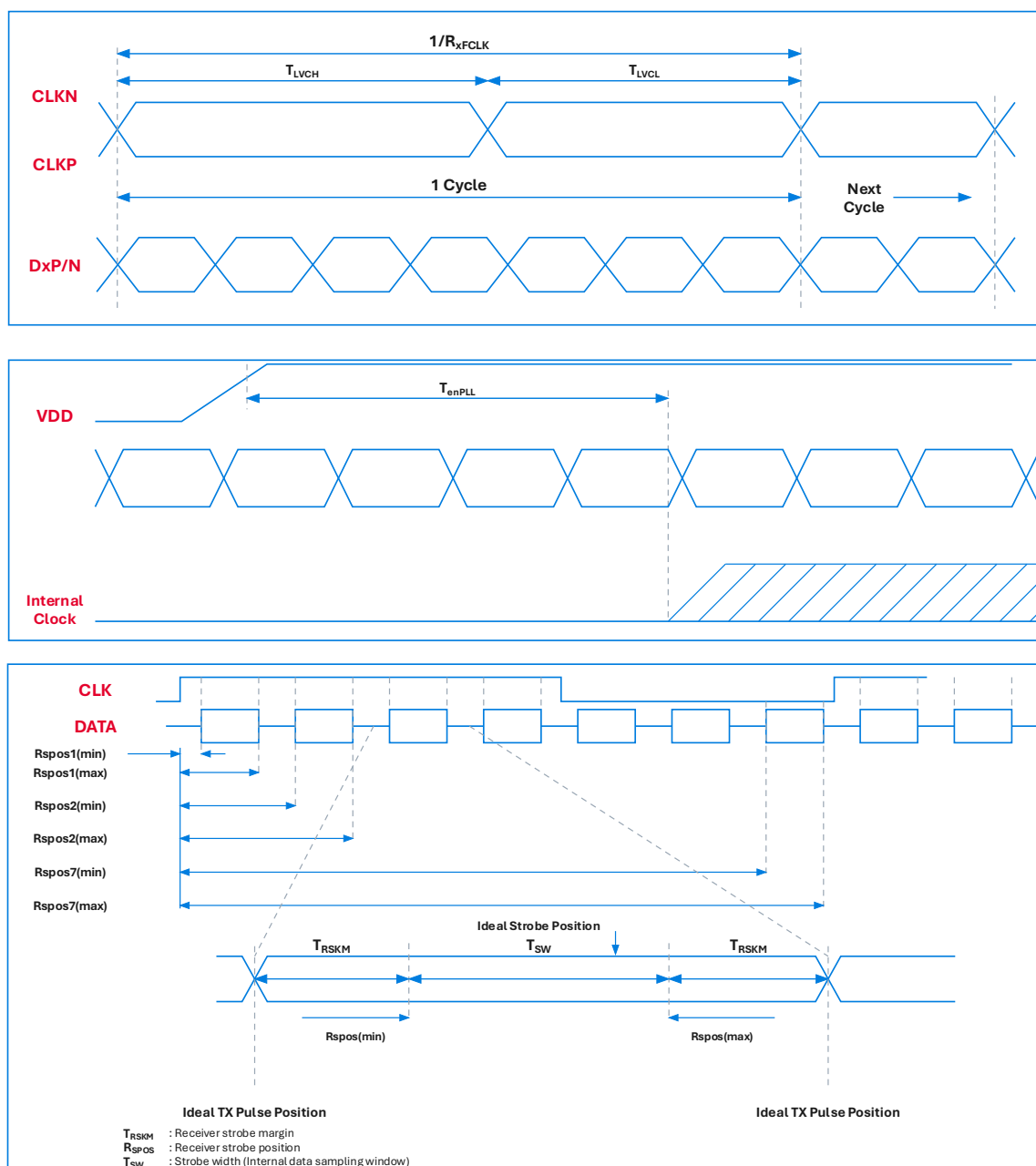
8-bit RGB LVDS JEIDA input timing

9.2 LVDS timing characteristic

LVDS Input Timing	Symbol	1024RGB x 600		
		Min	Typ	Max
DCLK Frequency	-	41.4	51.2	67.2
Horizontal Total	t_{ht}	1114	1344	1400
Hsync Pulse width	t_{hs}	1	24	HBP-1
Horizontal Back Porch	t_{hb}	60	160	160
Horizontal Valid Data	t_{hd}	1024		
Horizontal Front Porch	t_{hfp}	30	160	216
Vertical Total	t_{vt}	620	635	800
Vsync Pulse Width	t_{vs}	1	2	VBP-1
Vertical Back Porch	t_{vb}	8	23	100
Vertical Valid Data	t_{vd}	600		
Vertical Front Porch	t_{vfp}	12	12	100

Parameter	Symbol	Spec.			Unit	Condition
		Min.	Typ.	Max.		
Clock frequency	R_{xFCLK}	20	-	71	MHz	Refer to input timing table for each display resolution
Input data skew margin	T_{RSKM}	-0.2	-	0.2	UI	$ VID = 200mV$ $RxVCM = 1.2V$ $1UI = 1 / (R_{xFCLK} \times 7)$
Clock high time	T_{LVCH}	-	$4 / (7 * R_{xFCLK})$	-	ns	
Clock low time	T_{LVCL}	-	$3 / (7 * R_{xFCLK})$	-	ns	
PLL wake-up time	T_{enPLL}	-	-	150	us	

LVDS mode AC electrical characteristics



LVDS figure

10. Quality Assurance

10.1 Purpose

This Quality Assurance standard ensures the quality of LCD module products supplied to customer.

10.2 Standard for Quality Test

10.2.1 Sampling Plan:

GB/T2828.1-2012

Single sampling, general inspection level II

10.2.2 Sampling Criteria:

Visual inspection: AQL 1.5

Electrical functional: AQL 0.65.

10.2.3 Reliability Test:

For detailed requirements refer to Section 11 Reliability Specification.

10.3 Nonconforming Analysis & Disposition

10.3.1 Nonconforming analysis:

10.3.1.1 The customer should provide complete information on the non-conforming sample for their complaints.

10.3.1.2 After receipt of detailed information from customer, the analysis of nonconforming parts usually should be finished in one week.

10.3.1.3 If the analysis cannot be finished on time, the customer will be notified with the progress status.

10.3.2 Disposition of nonconforming:

10.3.2.1 Non-conforming product over PPM level will be replaced.

10.3.2.2 The cause of non-conformance will be analyzed. Corrective action will be discussed and implemented.

10.4 Agreement Items

The following situations shall be negotiated with the customer:

10.4.1 Any discrepancy in the standard of quality assurance.

10.4.2 Additional requirement to be added in product specification.

10.4.3 Any other special problem.

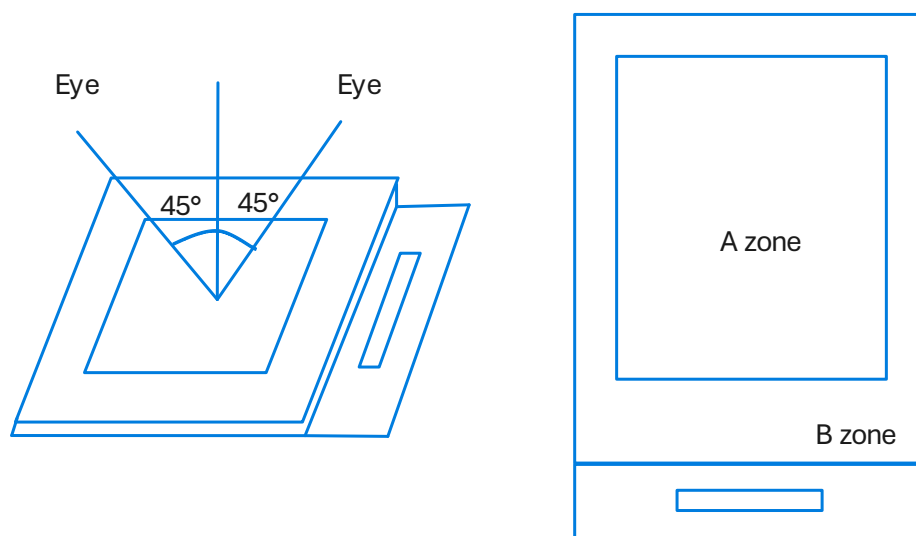
10.5 Standard of the Product Visual Inspection

10.5.1 Appearance inspection:

10.5.1.1 The inspection must be under illumination about 1000 – 1500 lx, and the viewing distance must be 30 cm ± 2 cm.

10.5.1.2 The viewing angle should be 45° from the vertical line without reflected light, or follow the customer's viewing angle specifications.

10.5.1.3 Definition of area: A Zone: Active Area, B Zone: Viewing Area,

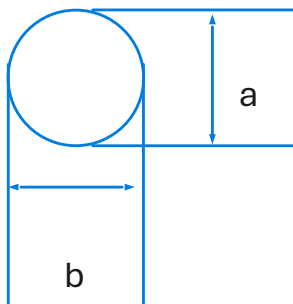


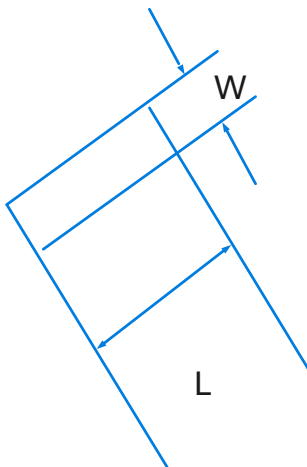
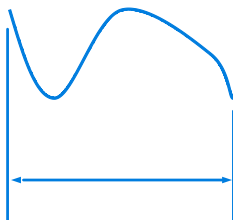
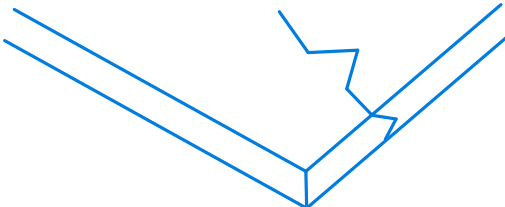
10.5.2 Basic principle:

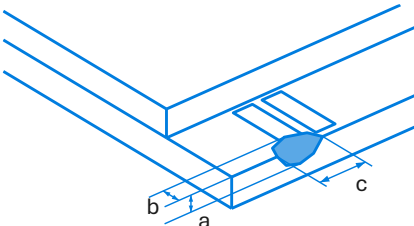
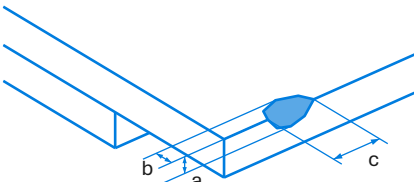
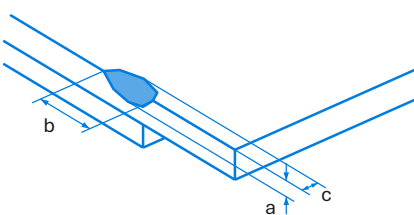
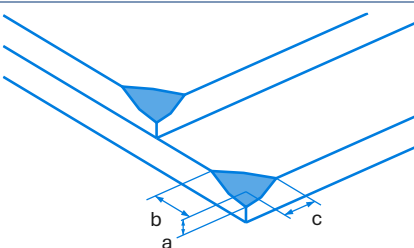
10.5.2.1 A set of samples to indicate the limit of acceptable quality level must be discussed by both us and customer when a dispute occurs.

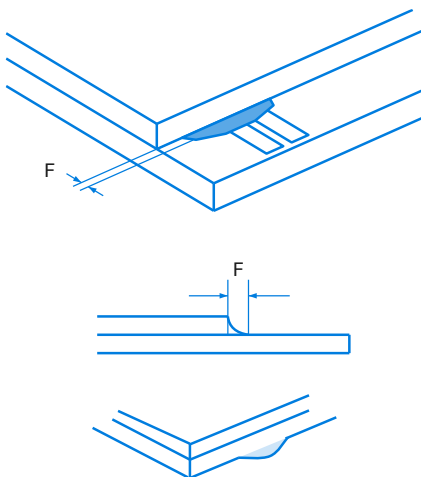
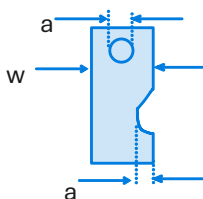
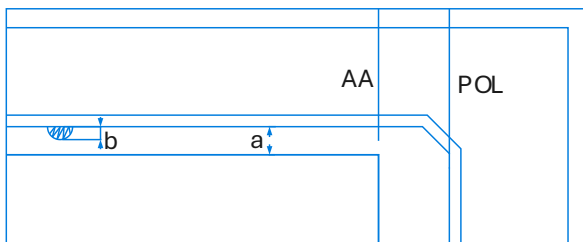
10.5.2.2 New items must be added when necessary.

10.6 Inspection Specification

No.	Item	Criteria (Unit: mm)									
01	Black / White spot Foreign material (Round type) Pinholes Stain Particles inside cell. (Minor defect)		<table><tr><th>Size \ Area</th><th>Acc. Qty</th></tr><tr><td>$\phi \leq 0.20$</td><td>Ignore</td></tr><tr><td>$0.20 < \phi \leq 0.50$</td><td>$N \leq 3$</td></tr><tr><td>$0.50 < \phi$</td><td>0</td></tr></table>	Size \ Area	Acc. Qty	$\phi \leq 0.20$	Ignore	$0.20 < \phi \leq 0.50$	$N \leq 3$	$0.50 < \phi$	0
			Size \ Area	Acc. Qty							
$\phi \leq 0.20$	Ignore										
$0.20 < \phi \leq 0.50$	$N \leq 3$										
$0.50 < \phi$	0										
		$\phi = (a + b) / 2$ Distance between 2 defects should be more than 5 mm.									

No.	Item	Criteria (Unit: mm)																		
02	Electrical Defect (Major defect)	Bright dot	Display Area	Total	Note1															
			$N \leq 2$	$N \leq 2$																
		Dark dot	$N \leq 4$	$N \leq 4$																
		Total dot	$N \leq 4$	$N \leq 4$																
		Mura	Not visible through 5% ND filters.		Note 2															
Remark: 1. Bright dot caused by scratch and foreign object is judged according to item 1.																				
03	Black and White line Scratch Foreign material (Line type) (Minor defect)																			
																				
		<table><thead><tr><th>Length</th><th>Width</th><th>Acc. Qty</th></tr></thead><tbody><tr><td>/</td><td>$W \leq 0.1$</td><td>Ignore</td></tr><tr><td>$L \leq 2.5$</td><td>$0.1 < W \leq 0.2$</td><td>3</td></tr><tr><td>$L > 2.5$</td><td>$0.2 < W$</td><td>0</td></tr><tr><td colspan="2">Total</td><td>3</td></tr></tbody></table>				Length	Width	Acc. Qty	/	$W \leq 0.1$	Ignore	$L \leq 2.5$	$0.1 < W \leq 0.2$	3	$L > 2.5$	$0.2 < W$	0	Total		3
		Length	Width	Acc. Qty																
		/	$W \leq 0.1$	Ignore																
$L \leq 2.5$	$0.1 < W \leq 0.2$	3																		
$L > 2.5$	$0.2 < W$	0																		
Total		3																		
Distance between 2 defects should be more than 3 mm. Scratches not viewable through the back of the display are acceptable.																				
04	Glass Crack (Major defect)																			
		A crack may enlarge, any type is not allowed.																		

No.	Item	Criteria (Unit: mm)										
05	Glass Chipping Pad Area: (Minor defect)	 <table><tr><th>Length and Width</th><th>Acc. Qty</th></tr><tr><td>$c > 3.0, b < 1.0$</td><td>1</td></tr><tr><td>$c < 3.0, b < 1.0$</td><td>3</td></tr><tr><td colspan="2">$a < \text{Glass Thickness}$</td></tr></table>	Length and Width	Acc. Qty	$c > 3.0, b < 1.0$	1	$c < 3.0, b < 1.0$	3	$a < \text{Glass Thickness}$			
Length and Width	Acc. Qty											
$c > 3.0, b < 1.0$	1											
$c < 3.0, b < 1.0$	3											
$a < \text{Glass Thickness}$												
06	Glass Chipping Rear of Pad Area: (Minor defect)	 <table><tr><th>Length and Width</th><th>Acc. Qty</th></tr><tr><td>$c > 3.0, b < 1.0$</td><td>1</td></tr><tr><td>$c < 3.0, b < 1.0$</td><td>2</td></tr><tr><td>$c < 3.0, b < 0.5$</td><td>4</td></tr><tr><td colspan="2">$a < \text{Glass Thickness}$</td></tr></table>	Length and Width	Acc. Qty	$c > 3.0, b < 1.0$	1	$c < 3.0, b < 1.0$	2	$c < 3.0, b < 0.5$	4	$a < \text{Glass Thickness}$	
Length and Width	Acc. Qty											
$c > 3.0, b < 1.0$	1											
$c < 3.0, b < 1.0$	2											
$c < 3.0, b < 0.5$	4											
$a < \text{Glass Thickness}$												
07	Glass Chipping Except Pad Area: (Minor defect)	 <table><tr><th>Length and Width</th><th>Acc. Qty</th></tr><tr><td>$c > 3.0, b < 1.0$</td><td>1</td></tr><tr><td>$c < 3.0, b < 1.0$</td><td>2</td></tr><tr><td>$c < 3.0, b < 0.5$</td><td>4</td></tr><tr><td colspan="2">$a < \text{Glass Thickness}$</td></tr></table>	Length and Width	Acc. Qty	$c > 3.0, b < 1.0$	1	$c < 3.0, b < 1.0$	2	$c < 3.0, b < 0.5$	4	$a < \text{Glass Thickness}$	
Length and Width	Acc. Qty											
$c > 3.0, b < 1.0$	1											
$c < 3.0, b < 1.0$	2											
$c < 3.0, b < 0.5$	4											
$a < \text{Glass Thickness}$												
08	Glass Corner Chipping: (Minor defect)	 <table><tr><th>Length and Width</th><th>Acc. Qty</th></tr><tr><td>$c < 3.0, b < 3.0$</td><td>Ignore</td></tr><tr><td colspan="2">$a < \text{Glass Thickness}$</td></tr></table>	Length and Width	Acc. Qty	$c < 3.0, b < 3.0$	Ignore	$a < \text{Glass Thickness}$					
Length and Width	Acc. Qty											
$c < 3.0, b < 3.0$	Ignore											
$a < \text{Glass Thickness}$												

No.	Item	Criteria (Unit: mm)								
09	Glass Burr: (Minor defect)	 <table><thead><tr><th>Length</th><th>Acc. Qty</th></tr></thead><tbody><tr><td>$F < 1.0$</td><td>Ignore</td></tr></tbody></table> Glass burr must not affect assembly and module dimensions.	Length	Acc. Qty	$F < 1.0$	Ignore				
Length	Acc. Qty									
$F < 1.0$	Ignore									
10	FPC Defect: (Minor defect)	 10.1 Dent, pinhole width $a < w / 3$. (w: circuitry width.) 10.2 Open circuit is unacceptable. 10.3 No oxidation, contamination and distortion.								
11	Bubble on Polarizer (Minor defect)	<table><thead><tr><th>Diameter</th><th>Acc. Qty</th></tr></thead><tbody><tr><td>$\phi \leq 0.30$</td><td>Ignore</td></tr><tr><td>$0.30 < \phi \leq 0.50$</td><td>$N \leq 2$</td></tr><tr><td>$0.50 < \phi$</td><td>$N = 0$</td></tr></tbody></table>  $b < 1 / 2a$ Note: In high-temperature and high-humidity experiments, bubbles do not disperse.	Diameter	Acc. Qty	$\phi \leq 0.30$	Ignore	$0.30 < \phi \leq 0.50$	$N \leq 2$	$0.50 < \phi$	$N = 0$
Diameter	Acc. Qty									
$\phi \leq 0.30$	Ignore									
$0.30 < \phi \leq 0.50$	$N \leq 2$									
$0.50 < \phi$	$N = 0$									

No.	Item	Criteria (Unit: mm)	
12	Dent on Polarizer (Minor defect)	Diameter	Acc. Qty
		$\phi \leq 0.25$	Ignore
		$0.25 < \phi \leq 0.50$	$N \leq 4$
		$0.50 < \phi$	None
13	Bezel	13.1 No rust, distortion on the Bezel. 13.2 No visible fingerprints, stains or other contamination.	
14	PCB	14.1 No distortion or contamination on PCB terminals. 14.2 All components on the PCB must be the same as documented on the BOM / component layout. 14.3 Follow IPC-A-600F.	
15	Soldering	Follow IPC-A-610C standard	
16	Electrical Defect (Major defect)	The below defects must be rejected. 16.1 Missing vertical / horizontal segment, 16.2 Abnormal Display. 16.3 No function or no display. 16.4 Current exceeds product specifications. 16.5 LCD viewing angle defect. 16.6 No Backlight. 16.7 Dark Backlight. 16.8 Touch Panel no function.	

Remark: LCD Panel Broken shall be rejected. Defect out of LCD viewing area is acceptable.

10.7 Classification of Defects

10.7.1 Visual defects (Except no / wrong label) are treated as minor defect and electrical defect is major.

10.7.2 Two minor defects are equal to one major in lot sampling inspection.

10.8 Identification / marking criteria

Any unit with illegible, wrong, double or missing marking / label shall be rejected.

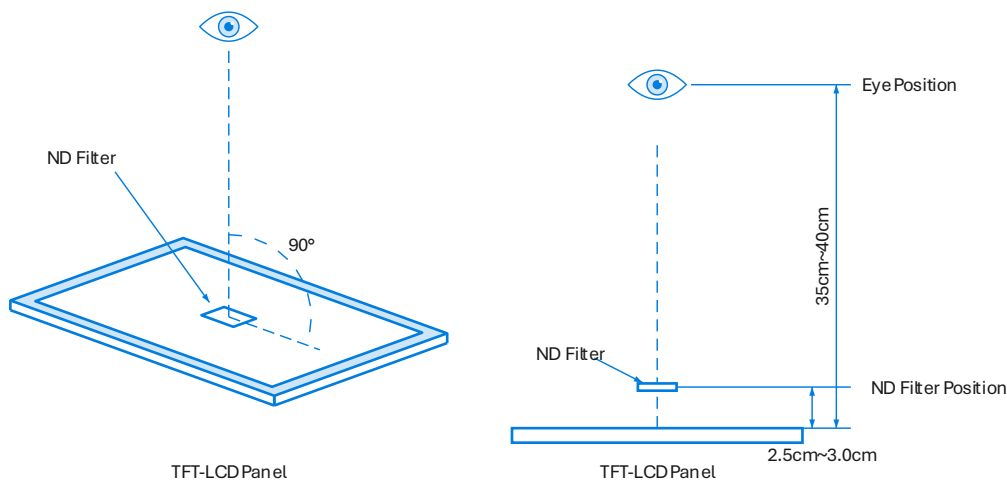
10.9 Packing

10.9.1 There should be no damage to the outer carton box, each packaging box should have one identical label.

10.9.2 Modules inside package box should have a compliance mark.

10.9.3 All direct package materials shall offer ESD protection.

Note1: Bright dot is defined as a dot whose defective area is larger than 50% of one sub-pixel area.



Bright dot: The bright dot size defect at black display pattern. It can be recognized by 2% transparency of filter when the distance between eyes and panel is 350mm±50mm.

Dark dot: Cyan, Magenta or Yellow dot size defect at white display pattern. It can be recognized by 5% transparency of filter when the distance between eyes and panel is 350mm±50mm.

Note2: Mura on display which appears darker / brighter against background brightness on parts of display area.

11. Reliability Specification

N o	Item	Condition	Quantity	Criteria
1	High Temperature Operating	70°C, 96Hrs	2	GB/T2423.2-2008
2	Low Temperature Operating	-20°C, 96Hrs	2	GB/T2423.1-2008
3	High Humidity Storage	50°C, 90%RH, 96Hrs	2	GB/T2423.3-2016
4	High Temperature Storage	80°C, 96Hrs	2	GB/T2423.2-2008
5	Low Temperature Storage	-30°C, 96Hrs	2	GB/T2423.1-2008
6	Thermal Cycling Test Storage	-20°C, 60 min ~ 70°C, 60 min, 20 cycles.	2	GB/T2423.22-2012
7	Packing vibration	Frequency range:10Hz ~ 50Hz Acceleration of gravity:5G X,Y,Z 30 min for each direction.	-	GB/T5170.14-2009
8	Electrical Static Discharge	Air:±4KV 150pF / 330Ω 5 times	2	GB/T17626.2-2018
		Contact:±2KV 150pF / 330Ω 5 times		
9	Drop Test (Packaged)	Height:80 cm,1 corner, 3 edges, 6 surfaces.	-	GB/T2423.7-2018

Note1. No cosmetic defects and no loss of operational function are allowed.

Note2. Total current Consumption should be below twice the initial value

12. Precautions and Warranty

12.1 Safety

12.1.1 The liquid crystal in the LCD is poisonous. Do not put it in your mouth. If the liquid crystal touches your skin or clothes, wash it off immediately using soap and water.

12.1.2 Since the liquid crystal cells are made of glass, do not apply strong impact on them.

Handle with care.

12.2 Handling

12.2.1 Store and use within ratings in order to keep performance and prevent damage.

12.2.2 Do not wipe the polarizer with dry cloth, as it might cause scratches. If the surface of the LCD needs to be cleaned, wipe it swiftly with cotton or other soft cloth soaked with IPA or petroleum benzine, do not use other chemicals.

12.3 Storage

12.3.1 Do not store the LCD module beyond the specified temperature ranges.

12.3.2 Strong light exposure causes degradation of polarizer and color filter.

12.4 Operation

12.4.1 Response time will increase at lower temperatures

12.4.2 Display may change color with different temperature

12.4.3 Mechanical disturbance during operation, such as pressing on the display area, may cause temporary display non-uniformity.

12.4.4 Do not connect or disconnect the LCM to or from the system when power is on.

12.4.5 Never use the LCM under abnormal condition of high temperature and high humidity.

12.4.6 Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimize the interference.

12.4.7 Do not display the fixed pattern for a long time (we suggest the time not longer than one hour), because it will develop image sticking due to the TFT structure.

12.5 Static Electricity

12.5.1 CMOS LSIs are equipped in this unit, so care must be taken to avoid the electro-static charge, by grounding the human body, etc.

12.5.2 The normal static prevention measures should be observed for work clothes and benches.

12.5.3 The module should be kept in anti-static bags or other containers resistant to static for storage.

13. Legal information

CE Marking

CE marking is obligatory only for complete end products. Unisystem display modules are semifinished goods designed to be integrated into finished devices and, therefore, are not CE marked.

Warranty

Unisystem grants a warranty for the proper operation of the goods for a period of 24 months from the date of delivery. If, as a result of a warranty claim, the customer receives a defect-free item as a replacement, the warranty period shall start anew from the moment the replacement is received.

Right to Change Specifications

Unisystem reserves the right to make changes to the product specifications, dimensions, and materials without prior notice in order to improve reliability, function, or design. It is the buyer's responsibility to verify that the datasheet is current before placing an order.

Intellectual Property

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High-Risk Applications Disclaimer

Unisystem products are not designed, intended, or authorized for use in safety-critical or high-risk applications where failure could directly result in personal injury, death, or severe environmental damage (e.g., life support machines, aerospace navigation, nuclear facilities). Using Unisystem products in such high-risk activities is entirely at the buyer's risk, and the buyer agrees to fully indemnify and hold Unisystem harmless from any damages or claims resulting from such unauthorized use.

14. Contact Information

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