



☐ Preliminary Specification

☒ Approval Specification

SPECIFICATION FOR LCD MODULE

Customer : _____

ProductModel: ZS1.51-002-B

Sample Code: _____

Designed by	Checked by	Approved by

Final Approval by Customer

☐ LCM Machinery OK Checked By _____ ☐ LCM Display OK Checked By _____	☐ LCM OK ☐ NG, Problem survey: Approved By _____
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※The specification of “TBD” should refer to the measured value of sample . If there is difference between the design specification and measured value, we naturally shall negotiate and agree to solution with customer.



Revision History

Version	Contents	Date	Note
00	Original	2023.07.26	

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1. Scope

This specification applies to the OLED module which is designed and manufactured by LCM Factory of Technology Co., Ltd.

2. Features

- 1.508" OLED
- Supported 466(RGB)X466
- Driver IC(1 Chip): SH8601Z
- TP IC (1 Chip): CST820

3. General Specifications

NO	Item	Specification
1	Panel Size	1.508 inch
2	Number of Pixels	466 (H) x 466 (V)
3	Active Area	38.31(H) x 38.31 (V)
4	OutlineDimension	40.7(W) X 40.94(H) X 2.56(D) mm

4. Electrical Specifications

4.1 Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Supply Voltage for I/O Block	VDDI-VSS	- 0.3 to + 3.6	V
Supply Voltage for Step-up Circuit	VCI-VSS	- 0.3 to + 4.0	V
AMOLED Supply Voltage Range	AVDD-VSS	- 0.3 to + 8.4	V
	VSS-VINT	- 0.3 to + 6.6	V
	VLOUT2-VSS	- 0.3 to + 15.0	V
	VSS-VLOUT3	- 0.3 to + 15.0	V
	VGH-VSS	- 0.3 to + 11	V
	VSS-VGL	- 0.3 to + 11	V
	UEL VDD - VSS	- 0.3 to + 5.5	V
	VSS- UELVSS	- 0.3 to + 4.4	V
	VLOUT2-VLOUT3	- 0.3 to + 26	V
Supply Voltage for OTP	VOTP-VSS	- 0.3 to + 6.2	V
Input Voltage Range	V _{in}	- 0.3 to VDDI + 0.3	V
Storage Temperature	T _{stg}	- 55 to + 125	°C



4.2DC Characteristics for Panel Driving

Parameter	Symbol	Condition	Specification			Application Pin	Unit	Note
			Min.	Typ.	Max.			
Power supply voltage	VDDI		1.65	1.8	3.3	VDDI	V	
	VCI		2.7	2.8	3.6	VCI		
	VOTP			6.0		VOTP		

NOTE: TA = - 40 to 85 °C

2.3.2 DC Characteristics for Generated Voltage

Table 6 DC Characteristics for Power Lines

Parameter	Symbol	Condition	Specification			Unit	Note
			Min.	Typ.	Max.		
Operation voltage	VREGOUT	$V_{REGOUT} < AVDD - 0.5 V$	2.0	—	6.5	V	
	VGS		0	—	3.3		
	VINT	$V_{INT} > V_{LOUT3} + 2.0V$	-6.0	—	-0.2		
	VGH	$V_{GH} < V_{LOUT2} - 2.0V$	5.0	—	10.0		
	VGL	$V_{GL} > V_{LOUT3} + 2.0V$	-10.0	—	-5.0		
	AVDD	$V_{CI} \times 2, V_{CI} \times 3$	4.6	—	7.0		
	VLOUT2	$ V_{LOUT2} - V_{LOUT3} < 25 V$	4.6	—	14		
	VLOUT3		-14	—	-4.6		



4.3 power on/off

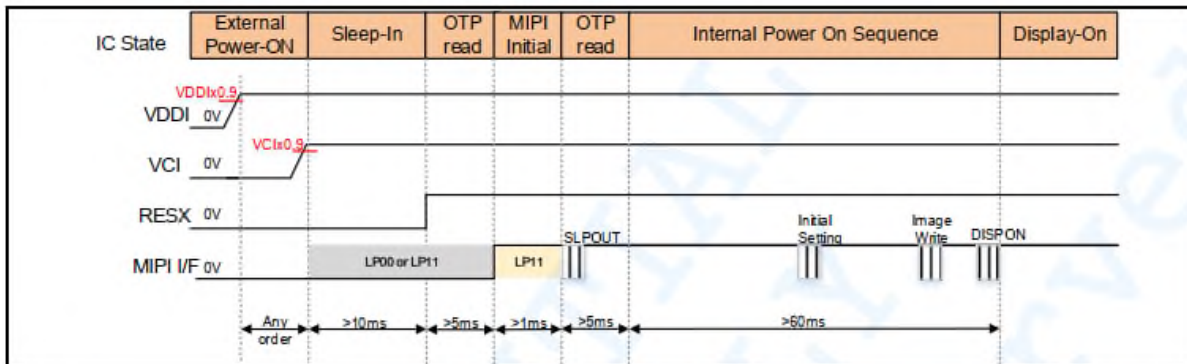


Figure 15 Power-On Sequence

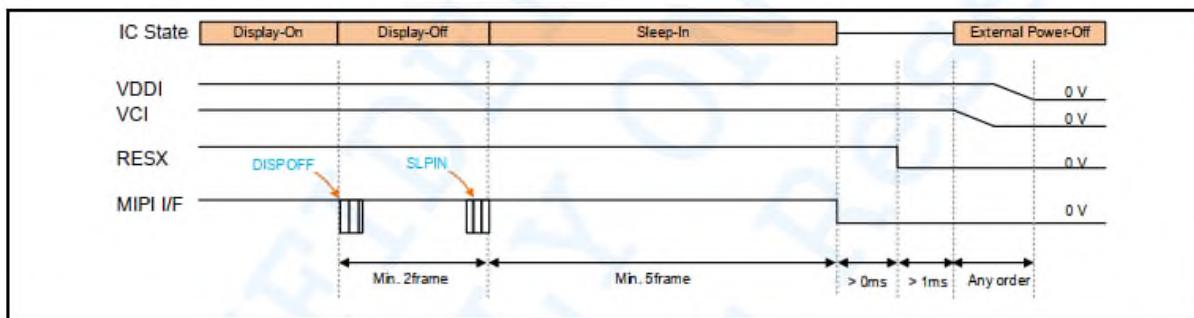


Figure 16 Power-Off Sequence

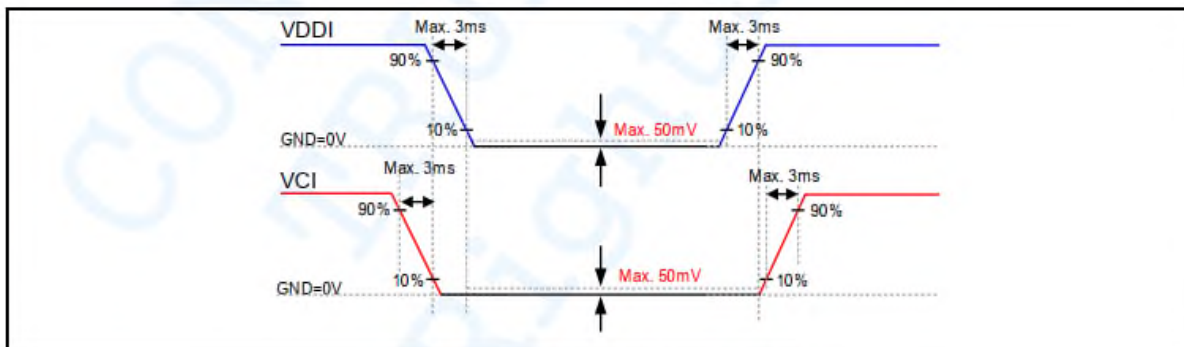


Figure 18 Power Ramp Up/Down



4.4 Optical specifications

4. Optical Specifications

序号	项目		符号	条件	参数			单位	备注
					Min	Typ	Max		
1	Viewing angle	Left	⊖ L	CR≥10	—	80	—	deg.	
		Right	⊖ R		—	80	—		
		Top	⊕ T		—	80	—		
		Bottom	⊕ B		—	80	—		
2	Color Chromaticity (CIE1931)	White	Wx	θ =0°	—	TBD	—	—	
			Wy		—	TBD	—		
3	Luminance Uniformity		UL	θ =0°	75	—	—	%	
4	brightness		—	Center point	—	TBD	—	Cd/m2	

5. Reliability Test Conditions And Methods

Item	Test Conditions	Remark
High Temperature Storage	Ta = 80℃ 120 hrs	
Low Temperature Storage	Ta = -30℃ 120 hrs	
High Temperature Operation	Ta = 70℃ 120 hrs	
Low Temperature Operation	Ta = -20℃ 120 hrs	
Storage at High Temperature and Humidity	+60℃, 90% 120 hrs	
Thermal Shock Test	-20℃ (30min) - +70℃ (min); Cycles: 12times;	



6. Interface Pin Connection

1	RESET	Reset PIN
2	GND	Ground
3	TE	Tearing effect
4	CS	interface chip select
5	S CLK	A synchronous clock signal in SPI I/F
6	QSPI D_1	QSPI DATA 1
7	QSPI D_0	QSPI DATA O
8	GND	Ground
9	NC	NC
10	MTP	External voltage input for OTP
11	VBAT	Power for power IC (2.9-5.5v)
12	VBAT	Power for power IC (2.9-5.5v)
13	GND	Ground
14	GND	Ground
15	VDD	Power supply
16	VDD	Power supply
17	TP_INT	TP_INT
18	TP_RST	TP_RST
19	TP_SDA	TP_SDA
20	TP_SCL	TP_SCL
21	GND	Ground
22	QSPI D_3	QSPI DATA 3
23	QSPI D_2	QSPI DATA 2
24	VCI_EN	VCI enable

7. Outline Dimension

