

Product Specification Sheet

Customer :

Model Name :

PO652F2K

Date :

2024-11-25

Version :

Ver 1.0

Customer' s Approval		CSOT	
Signature	Date	Approved By	Date
		Reviewed By	Date
		Prepared By:	Date

Record of Revision

Version	Revise Date	Page	Content
V1.0	2024/07/13	/	-1st Version set up

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1 General Description

1.1 Features

- 1.1.1 6.52" Flexible AMOLED Panel
- 1.1.2 Supported FHD +(2520×840 pixels) Resolution
- 1.1.3 Green Design
- 1.1.4 Driving Frequency: support 60Hz & 90Hz;

1.2 Specifications Summary

No.	Item	Unit	Specification	Note
1	Screen size	inch	6.52	
2	Resolution	dot	2520×840 (SPR)	
3	Display mode	--	AMOLED	
4	Aspect Ratio	--	27 : 9	
5	Active area	mm	52.3992*157.1976	
6	Outline Dimension	mm	54.3792* 159.472	MOD W/O CG
7	Driver IC	--	RM692C4 (Recommend)	
8	Touch IC	--	FT3658U (Recommend)	
9	IC Location	--	Driver IC : COP Touch IC : FPC	
10	Touch Sensor	--	DOT	
11	Interface	--	Drive : MIPI Touch : I2C	

2 Electrical Specifications

2.1 Module Panel Absolute Maximum Ratings

Item	Symbol	Value		Unit	Remark
		Min.	Max.		
Digital Power Supply	VDDIO	1.65	1.95	V	Note1
Analog Power Supply	VCI	2.65	4.8	V	
Power Supply For Analog Circuit.	AVDD	6	8.0	V	
Digital Power Supply	DVDD	1.1	1.23	V	
ELVDD Power Supply	ELVDD	4.6	5.0	V	Note2
ELVSS Power Supply	ELVSS	-5.4	-1.4	V	
Operating Temperature(Ambient)	Top	-	-	°C	Refer to RA test result
Storage Temperature(Ambient)	Tstg	-	-	°C	
Humidity	Hstg	-	-	%RH	

Note1: If the module exceeds the absolute maximum ratings, it may be damaged permanently.

Note2: PMIC (NT50372S) Supply;

3 Electrical Characteristics

Item	Symbol	Condition	Values			Unit	Notes
			Min.(≥)	Typ.	Max.(≤)		
Color shift	$\Delta u' v'$	Up/Down/Right/Left $\theta=30^\circ$	/	/	3.5	JNCD	Note1 Note2
		Up/Down/Right/Left $\theta=45^\circ$	/	/	5.5		
		Up/Down/Right/Left $\theta=60^\circ$	/	/	6		
Contrast ratio	CR	@0 degree	400,000 : 1	/	/	/	Note2
Viewing angle	CR	@80 degree	1000 : 1	/	/	/	Note2
HBM mode color chromaticity equal to normal mode	RGBW Δx	CIE1931 x	-0.005	0	0.005	/	Note2
	RGBW Δy	CIE 1931 y	-0.005	0	0.005	/	
AOD mode color chromaticity equal to normal mode	RGBW Δx	CIE1931 x	-0.008	0	0.008	/	Note2
	RGBW Δy	CIE 1931 y	-0.008	0	0.008	/	
Color chromaticity (CIE1931)	Wx	CIE1931 x	0.290	0.300	0.310	/	Note2
	Wy	CIE 1931 y	0.305	0.315	0.325		
	Rx	CIE1931 x	0.663	0.683	0.703		
	Ry	CIE 1931 y	0.297	0.317	0.337		
	Gx	CIE1931 x	0.225	0.255	0.285		
	Gy	CIE 1931 y	0.683	0.713	0.743		

	Bx	CIE1931 x	0.104	0.134	0.164		
	By	CE 1931 y	0.026	0.056	0.065		
Color Gamut	/	DCI P3(CIE1931)	98%	100	/	%	Note2
Luminance (complete machine)	L	/	387	430	473	nits	Note2
HBM Luminance (complete machine)	L	/	630	700	770	nits	Note2
AOD Luminance (complete machine)	L	/	54	60	66	nits	Note2
Reflectivity	reflectivity	/	/	/	5	%	/
	a	L*a*b	-1.8	0	1.8	/	
	b	L*a*b	-1.8	0	1.8	/	
Response time (first frame on +off)	/	/	/	/	2	ms	/
The brightness of first frame	/	/	80	/	/	%	Note 7
Color uniformity	/	L255/L128/L64	/	/	2	JNCD	
Luminance uniformity	U%		80	/	/	%	
Crosstalk	/	IEC	/	/	2	%	Note 6
Lifetime@T95	/	/	400	/	/	Hr	Note2
		$\Delta u' v'$			0.004		
Item	Symbol	Condition	Values			Unit	Notes
			Min.(≥)	Typ.	Max.(≤)		
Gamma	/	L5~L232	2.0	2.2	2.4	/	HBM : 700nit
		L233~L240	1.9	2.2	2.5	/	
		L5~L232	2.0	2.2	2.4	/	100nit < L255 ≤130nit
		L233~L240	1.9	2.2	2.5	/	
		L13~L227	2.0	2.2	2.4	/	10nit < L255 ≤100nit
		L228~L235	1.9	2.2	2.5	/	
		L25~L222	2.0	2.2	2.4	/	2nitsL255 ≤10nit
		L223~L230	1.9	2.2	2.5	/	
		L13~L227	2.0	2.2	2.4	/	AOD : 60nit
		L228~L235	1.9	2.2	2.5	/	

Color shift of white pattern in different DBV register value	$\Delta u' v'$	Condition1	/	/	0.004	/	L255 满足左侧需求
	CCT	Condition2	/	/	400	K	
Image Sticking	/	The Time to < 1 JND(0.004)	/	20	25	s	Note 9
	/	8*8 checker pattern 10min , to G128	/	45	50	min	

Note1 : Internal control, to ensure that large Angle of view to the direction of green.

Note2 : 视角超视部分以主观限样为准;

Test Conditions:

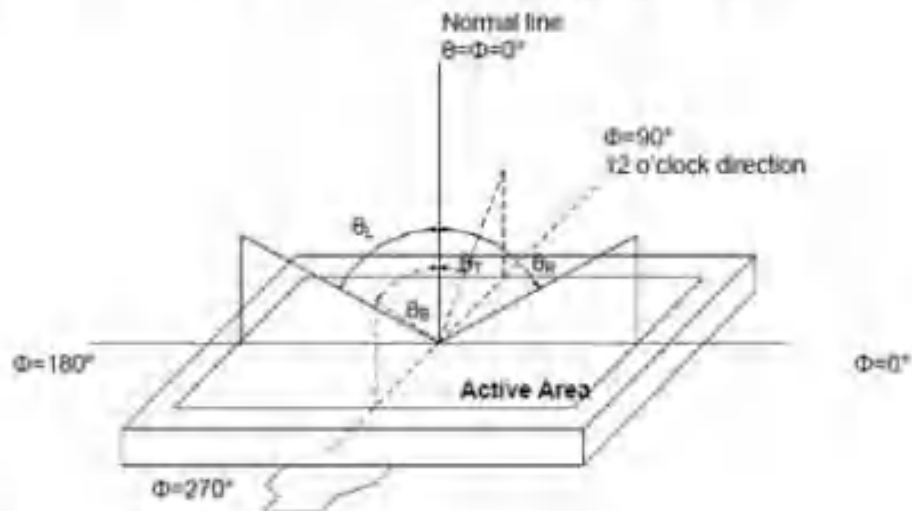
Condition1 : $\max(\text{duv of (DBV level min- max)})-\min(\text{duv of (DBV level min- max)})$, DBV level 1=2nits ;

Condition2 : $\max(\text{CCT of (DBV level min- max)})-\min(\text{CCT of (DBV level min- max)})$, DBV level 1=2nits ;

Condition3 : The ambient temperature is 25°C,in dark room

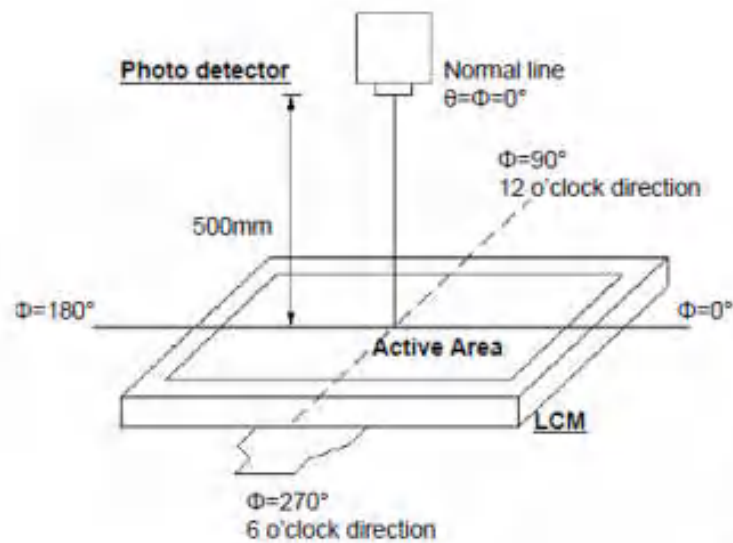
Condition4 : The test systems refer to Note 2.

Note 1 : Definition of viewing angle range



Note 2 : Definition of optical measurement system.

The optical characteristics should be measured in dark room. The optical properties are measured at the center point of the OLED screen. (Viewing angle is measured by CS2000A/Height :500mm , Response time is measured by Eldim optiscope200, other items are measured by CS2000A/ spot diameter 8mm /Height: 500mm.)



Note 3 : Definition of contrast ratio

Contrast ratio (CR) = Luminance measured when OLED on the "White" state/ Luminance measured when OLED on the "Black" state

Note 4 : Definition of color chromaticity

White/Red/Green/Blue Color coordinates measured at center point of OLED.

Note 5 : Definition of Luminance

White 255 Gray measured at center point of OLED.

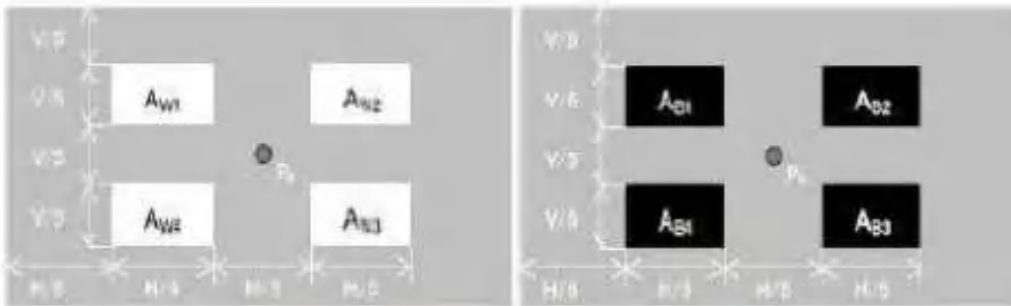
Note 6 : Definition of cross-talk

Measure luminance at the position, P_0

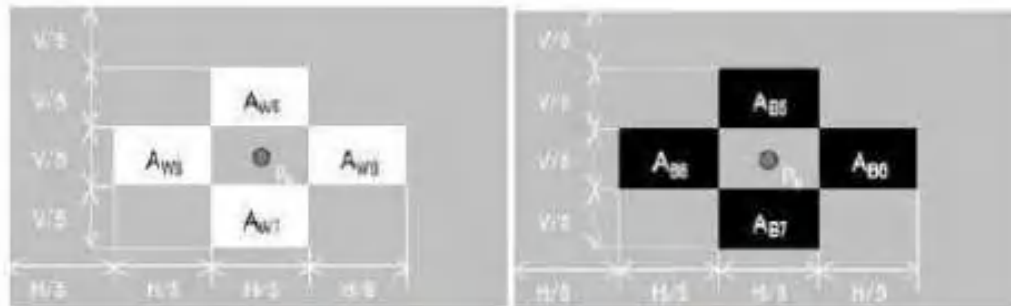
Calculate cross-talk as below equation

$$crosstalk = \frac{|L_{W_i_ON} - L_{W_OFF}|}{L_{W_OFF}} \times 100\% \quad (i = 5 \text{ to } 8)$$

$$crosstalk = \frac{|L_{B_i_ON} - L_{B_OFF}|}{L_{B_OFF}} \times 100\% \quad (i = 5 \text{ to } 8)$$



(a) L_{W_off} , L_{B_off} measuring pattern

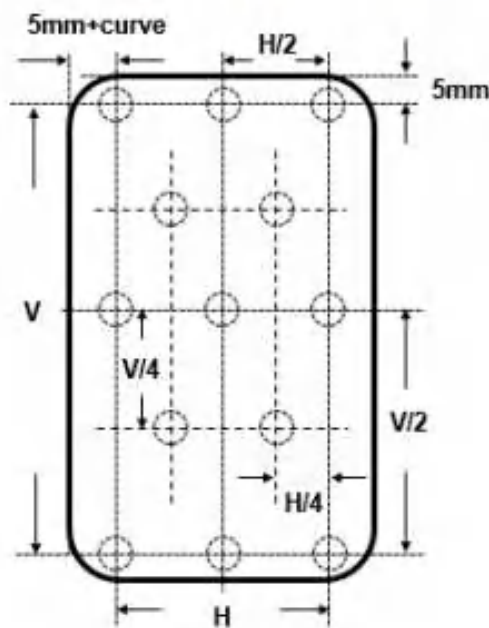


(b) L_{W_on} , L_{B_on} measuring pattern

Note 7 : Definition of Luminance Uniformity

Measure the luminance of gray level 255 & 128 & 64 at 13 points

$$\text{Uniformity} = \frac{L_{min}}{L_{max}} * 100\%$$



Note 8 : Definition of Lifetime

Lifetime Measure Steps :

- ◆ Light on W Aging pattern for 0.5h before lifetime measure
- ◆ 0h —W Aging pattern,measure pt.① initial luminance & $\Delta U'V'$
- ◆ 0~1h —W Aging pattern
- ◆ 1h —W Aging pattern,measure pt ① luminance & $\Delta U'V'$
- ◆ Loop step below progressto 300h

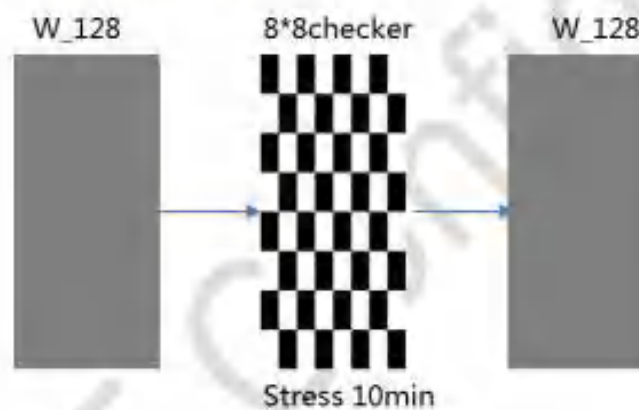
Aging pattern



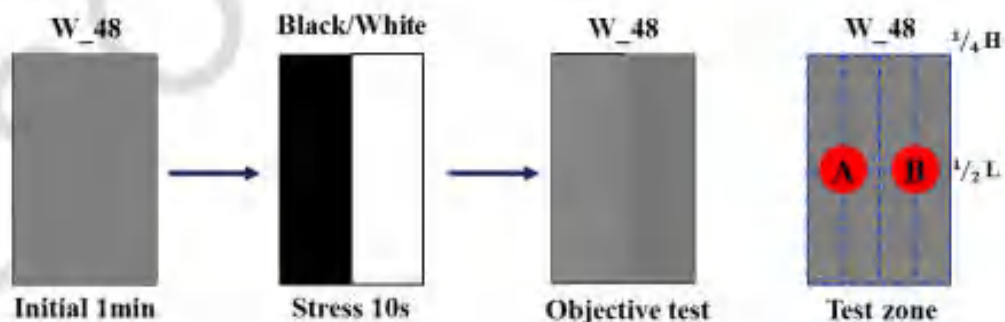
Note 9 : Definition of Image sticking

9.1 Subjective test

1. Test environment temperature is 25°C.
2. Light on W48 pattern for 1min , then change to 8*8 checker pattern for 10s , at last change to W48 pattern and record the time of duration.



9.2 Objective test



Step:

1. Test environment temperature is 25°C.
2. light on 48 gray pattern for 1min , than Change to a black/white pattern for 10s , at last change the pattern back to 48 gray for 1min.

5 Package Drawing

5.1 Packing Specifications

Item	Specification	Remark
Carton(Box) Packing	-----	
Gross weight	-----	
Net weight	-----	
Packing Quantity	2880 pcs	

5.2 Packing Method

