Next Vision Display
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NEXT VISION DISPLAY

SPECIFICATION

CUSTOMER : _____

MODULE NO.: NT050-N001ME

Version	A
Engineer	
Date	28/02/2023

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Customer:
Approved by

NEXT VISION DISPLAY CO., LTD.

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3. General Specifications

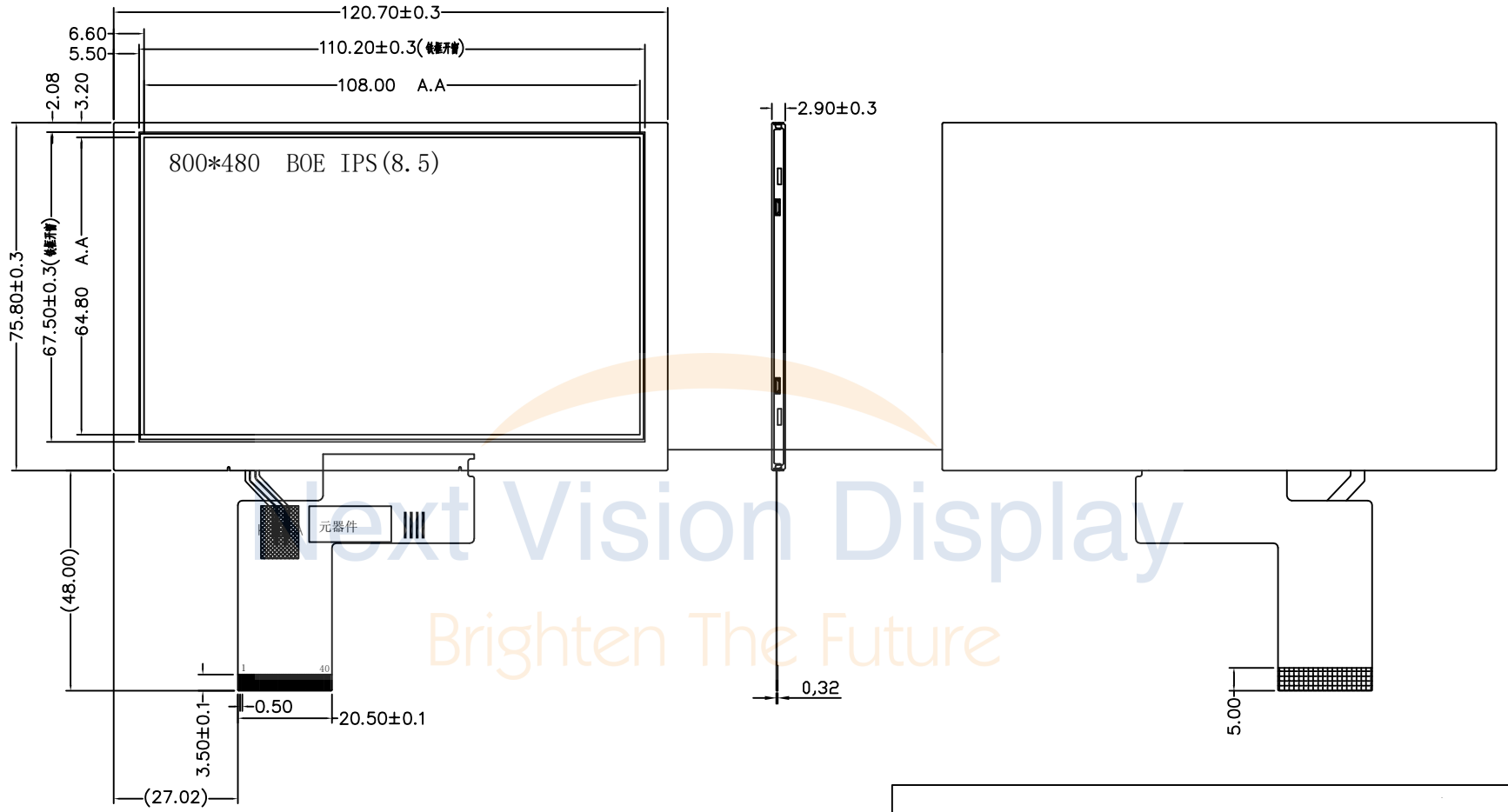
NT050-N001ME is a TFT-LCDmodule.It is composed of a TFT-LCD panel, driver IC, FPC, a backlight unit. The 5.0′′ display area contains 800 x 480 pixels and can display up to 16.7M colors. This product accords with RoHS environmental criterion.

Item	Contents	Unit	Note
LCD Type	Normally Black,Transmissive	-	
Display color	16.7M		1
Viewing Direction	ALL	O’ Clock	
Operating temperature	-20~+70	℃	
Storage temperature	-30~+80	℃	
Module size	120.70(W)×75.90(H)×3.05(T)	mm	2
ActiveArea(W×H)	108.00(W)×64.80(H)	mm	
Number of Dots	800×RGB×480	dots	
Backlight	18-LEDs(white)	pcs	
Data Transfer	RGB interface	-	

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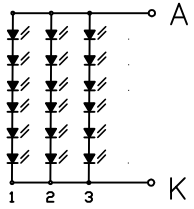
Note 1: Color tune is slightly changed by temperature and driving voltage.
Note 2: Without FPC and Solder.

REV	DESCRIPTION	DATE
A	初版	



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LED 电路图
Vf 18.0/TYP
IF=20*3=60mA(定电流测试)



Specification:

1). Display mode: 16.7M, TFT/Transmissive
2). Operating temp.:
Storage temp.:
3). Backlight: 18 hip White LED
4). Dimensions with mark "*" are important, with mark "()" are referenced

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TITLE:	ASSEMBLY	DO NOT SCALE THIS DRAWING, GENERAL TOLERANCE:±0.2			
MODULE NO.:	NT050-N001ME			REV	A
DRAWN BY:		DATE:		PROJECTION:	
CHECKED BY:		DATE:		SCALE:N.T.S	UNIT: mm
APPROVED BY:		DATE:		SHEET: 1 OF 1	

5. Absolute Maximum Ratings(Ta=25℃)

5.1 Electrical Absolute Maximum Ratings.(Vss=0V ,Ta=25℃)

Item	Symbol	Min.	Max.	Unit	Note
Power Supply Voltage	VDD	-0.3	3.6	V	1，2
Input Voltage	V_{In}	-0.3	VDD+0.5	V	
Current of LED	ILED	0	20	mA	

Notes:

1. If the module is above these absolute maximum ratings. It may become permanently damaged. Using the module within the following electrical characteristic conditions are also exceeded, the module will malfunction and cause poor reliability.
2. VDD>V_{SS} must be maintained.
3. Please be sure users are grounded when handing LCD Module.

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Parameter	Symbol	Value			Unit	Remark
		Min.	Typ.	Max.		
TFT Gate ON Voltage 1	VGH	10	12	14	V	Note 3.1
TFT Gate OFF Voltage 2	VGL	-14	-11.5	-11.5	V	Note 3.2
TFT Common Electrode Voltage	VCOM	-1.0	TBD	1.0	V	

6. Electrical Specifications and Timing Characteristics

6.1 Electrical characteristics(Vss=0V ,Ta=25℃)

Parameter		Symbol	Condition	Min	Typ	Max	Unit	Note
Power supply		VDD	Ta=25℃	2.8	3.3	3.6	V	
Input voltage	'H'	V_{IH}	VDD=3.3V	0.7VDD	-	VDD	V	
	'L'	V_{IL}	VDD=3.3V	0	-	0.3VDD	V	
Current Consumption		I_{CC1}	Normal mode	-	-	-	mA	2
		I_{CC2}	Sleep mode	-	0.03	0.09	mA	2

Note:

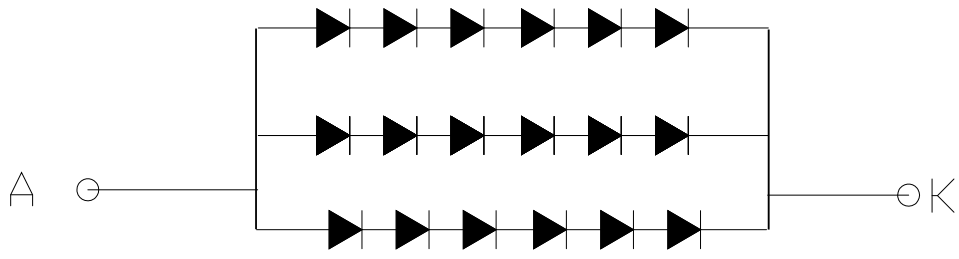
1:When an optimum contrast is obtained in transmissive mode.

2: Tested in 1×1 chessboard pattern.

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6.2 LED backlight specification(VSS=0V ,Ta=25℃)

Item	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply voltage	-	-	16.8	18.6	20.4	V	1
Supply current	I_f	-	-	60	-	MA	



Note:

1: $V_{LED}=V_{LED}(+)-V_{LED}(-)$.

2:The current of LED is 20mA.
A LED drive in constant current mode is recommended.

6.3 Interface signals

Pin	Symbol	Description.
1	LED_K	Backlight LED Ground
2	LED_A	Backlight LED Power
3	GND	GND
4	VDD	Power supply
5~12	R0-R7	Red data bus
13~20	G0-G7	Green data bus
21~28	B0-B7	Blue data bus
29	GND	GND
30	PCLK	Data clock
31	DISP	Standby mode select pin
32	HSYNC	Line SYNC signal
33	VSYNC	Frame SYNC signal
34	DE	Data Enable Input
35	NC	NC
36	GND	GND
37	X1	Touch Panel Control Pin
38	Y1	Touch Panel Control Pin
39	X2	Touch Panel Control Pin
40	Y2	Touch Panel Control Pin

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7. Optical Characteristics

Item	Symbol		Condition	Min.	Typ.	Max.	Unit	Note
Brightness	Bp		θ=0° Φ=0°		500		Cd/m²	1
Uniformity	⊿Bp			75	80	-	%	1,2
Viewing Angle	3:00		Cr≥10	70	80	-	Deg	3
	6:00			70	80	-		
	9:00			70	80	-		
	12:00			70	80	-		
Contrast Ratio	Cr		θ=0° Φ=0°	1000	1200			
Response Time	T_r+T_f				30	40	ms	5
Color of CIE Coordinate	W	x	θ=0° Φ=0°	0.27	0.32	0.37	-	1,6
		y		0.29	0.34	0.39	-	
		Y		-	-	-		
	R	x					-	
		y					-	
		Y		-	-	-		
	G	x					-	
		y					-	
		Y		-	-	-		
	B	x					-	
		y					-	
		Y		-	-	-		
NTSC Ratio	S			-	60	-	%	

Note：The parameter is slightly changed by temperature, driving voltage and materiel

Note 1: The data are measured after LEDs are turned on for 5 minutes. LCM displays full white. The brightness is the average value of 9 measured spots. Measurement equipment PR-705 (Φ8mm)

Measuring condition:

- Measuring surroundings: Dark room.
- Measuring temperature: Ta=25℃.
- Adjust operating voltage to get optimum contrast at the center of the display.

Measured value at the center point of LCD panel after more than 5 minutes while backlight turning on.

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