Next Vision Display
Brighten The Future

NEXT VISION DISPLAY

SPECIFICATION

CUSTOMER : _____

MODULE NO.: NT028RN001ML

Version	01
Engineer	
Date	2022/10/28

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Customer:
Approved by

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Documents Revision History:

Rivision	Date	Description	Changed By
01	2022/10/28	New released	

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General Specifications

b¢лнywbллм a [is a TFT-LCD module. It is composed of a TFT-LCD panel, driver IC, FPC,a back light. The 2.8′′ display area contains 480X(RGB)x480 pixels and can display up to 16.7M colors. This product accords with ROHS environmental criterion.

Item	Contents	Unit	Note
LCD Type	TFT	-	
Display color	16.7M	Color	1
Viewing Direction	ALL	O'Clock	
Operating temperature	-20~+70	℃	
Storage temperature	-30~+80	℃	
Module size	73.00X77.59X2.3	mm	2
Active Area(W×H)	70.13X70.13	mm	
Number of Dots	480×480	dots	
IC Controller	ST7701S	-	
Power Supply Voltage	2.8	V	
Backlight	4-LEDs (white)	pcs	
Weight	---	g	
Interface	RGB	-	
-	-	-	

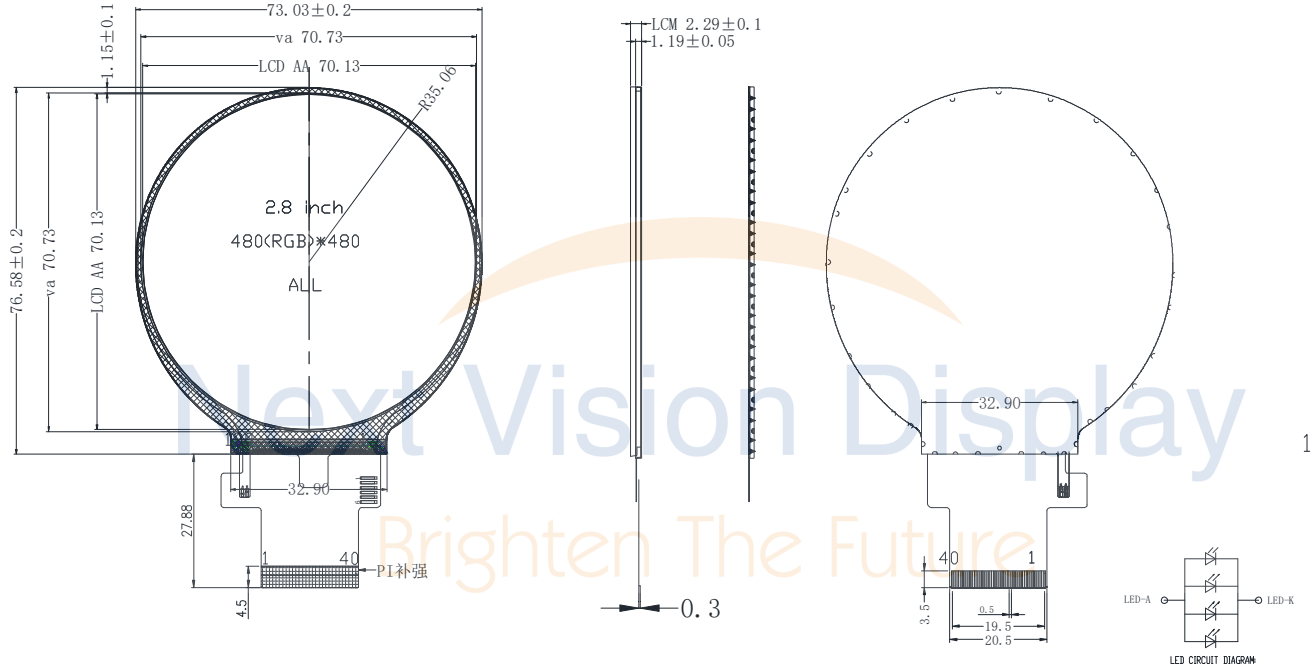
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Note 1: Color tune is slightly changed by temperature and driving voltage.

Outline Drawing

ALL PAGES OF THIS VERSION APPROVED			
SIGNATURE:		DATE:	

REV.	Description	Date
01	New released	



PIN	DESCRIPTION
1	A
2	K
3	K
4	GND
5	VCC
6	RST
7	NC
8	NC
9	SDA
10	SCK
11	CS
12	PCLK
13	DE
14	VS
15	HS
16~33	DB□~DB17
34	GND
35	TPINT
36	TPSDA
37	TPSCL
38	TPRST
39	TPVCC
40	GND

NOTES:

1.	DISPLAY TYPE:	2.8"TFT_LCD/TRANSMISSIVE
2.	OPERATING TEMPERATURE:	−20°C~70°C
3.	STORAGE TEMPERATURE:	−30°C~80°C
4.	VIEWING ANGLE:	ALL
5.	BACKLIGHT BRIGHTNESS:	450CD/M2
6.	DRIVER:	ST7701S
7.	RESOLUTION:	480(RGB)X480
8.	CONNECTOR:	FPC
9.	UNMARK TOLERANCES:	±0.2MM

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GENERAL TOL 0.30	ALL UNITS: MM	DATE	MODEL NUMBER : NT028RN001ML		SHEET: 1 OF 1
DWN:					
CHK:					DATE:
APP:			DO NOT SCALE THIS DRAWING.	PROJECTION	

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3. Absolute Maximum Ratings(Ta=25℃)

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

Item	Symbol	Min.	Max.	Unit	Note
Supply voltage for logic	VDD	-0.3	4.6	V	1,2
Input voltage	VIN	-0.3	VDD+0.3		
Humidity	RH	-	95%(Max60 °C)	RH	

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. I_{OVCC}>V_{SS} must be maintained.

3. Please be sure users are grounded when handing LCD Module.

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3.2 Environmental Absolute Maximum Ratings.

Item	Storage		Operating		Note
	MIN.	MAX.	MIN.	MAX.	
Ambient Temperature	-30℃	80℃	-20℃	70℃	1,2
Humidity	-	-	-	-	3

Notes:

1. The response time will become lower when operated at low temperature.

2. Background color changes slightly depending on ambient temperature.

   The phenomenon is reversible.

3. Ta<=40℃:85%RH MAX.

   Ta>=40℃:Absolute humidity must be lower than the humidity of 85%RH at 40℃.

Electrical Specifications

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

Parameter		Symbol	Min	Typ	Max	Unit
Supply voltage for logic		VDD	2.7	2.8	2.9	V
Input Current		IDD	-	TBD	TBD	mA
Input voltage	'H'	V_{IH}	0.7*VDD	-	VDD	V
	'L'	V_{IL}	VSS	-	0.3*VDD	V
Output voltage	'H'	V_{OH}	0.8VDD	-	VDD	V
	'L'	V_{OL}	VSS	-	0.2*VDD	V

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

Item	Symbol	Min	Typ	Max	Unit	Note
Forward voltage	V_f	2.8	3.3	-	V	
Uniformity	ΔBp	-	80	-	%	

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Note 1: Brightness to be decreased to 50% of the initial value at ambient temperature TA=25℃

Interface signals

Pin No.	Symbol	Function
1	LEDA	LED back light(Anode).
2-3	LEDK	LED back light(Cathode).
4	GND	Ground.
5	VCC	POWER SUPPLY FOR LCD 2.8~3.3V
6	RST	TFT Reset Pin
7-8	NC	NC
9	SDA	Serial data input/output bidirectional pin
10	SCL	Serial clock input
11	CS	A chip select signal
12	PCLK	Pixel clock input pin
13	DEN	Data input enable. Low: access enabled;High: access inhibited
14	VS	Vertical sync signal
15	HS	Horizontal sync signal
16~33	DB0~DB17	A 18-bit parallel data bus for RGB Interface.
34	GND	Ground.
35	TPINT	POWER SUPPLY FOR LCD 1.8~3.3V
36	TPSDA	NC
37	TPSCL	NC
38	TPRST	NC
39	TPVCC	NC
40	GND	Ground.

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Optical Characteristics

Item	Symbol		Condition	Min.	Typ.	Max.	Unit	Note
Brightness	Bp		θ=0° Φ=0°	420	450	-	Cd/m^2	1
Uniformity	⊿Bp			75	80	-	%	1,2
Viewing Angle	3:00		Cr≥10	-	80	-	Deg	3
	6:00			-	80	-		
	9:00			-	80	-		
	12:00			-	80	-		
Contrast Ratio	Cr		θ=0° Φ=0°	-	1200	-	-	4
Response Time	$T_{r+}T_f$			-	25	35	ms	5
Color of CIE Coordinate	W	x	θ=0° Φ=0°	Typ. -0.05	TBD	Typ. +0.05	-	1,6
		y			TBD		-	
	R	x			TBD		-	
		y			TBD		-	
	G	x			TBD		-	
		y			TBD		-	
	B	x			TBD		-	
		y			TBD		-	
NTSC	S			65	70	-	%	

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

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