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Brighten The Future

NEXT VISION DISPLAY

SPECIFICATION

CUSTOMER : _____

MODULE NO.: NT040RN001ML

Version	01
Engineer	
Date	2022/10/10

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Customer:
Approved by

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1. General Specifications

NT040RN001ML is a TFT-LCD module. It is composed of a TFT-LCD panel, driver IC, FPC,a back light. The 4.0'' display area contains 720X(RGB)x720 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	105.6X109.87X2.13	mm	2
Active Area(W×H)	101.52X101.52	mm	
Number of Dots	720×720	dots	
IC Controller	JD9365DA-H3	-	
Backlight	8-LEDs (white)	pcs	
Weight	---	g	
Interface	MIPI	-	

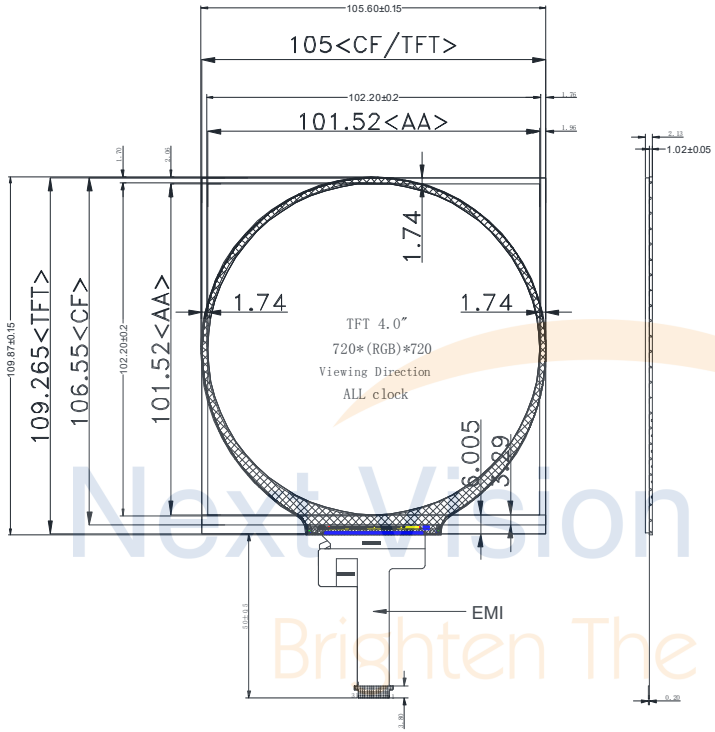
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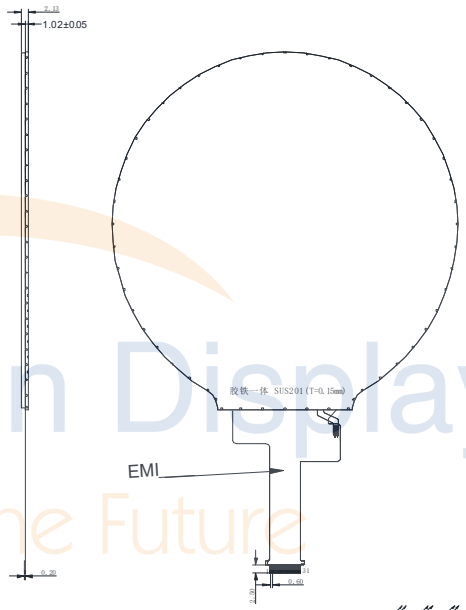
Note 1: Color tune is slightly changed by temperature and driving voltage.

Drawing

ALL PAGES OF THIS VERSION APPROVED			
SIGNATURE:		DATE:	

REV.	Description	Date
01	New released	





PIN	Symbol
1	A
2	A
3	A
4	NC
5	K
6	K
7	K
8	K
9	GND
10	GND
11	D2P
12	D2N
13	GND
14	D1P
15	D1N
16	GND
17	CP
18	CN
19	GND
20	D0P
21	D0N
22	GND
23	D3P
24	D3N
25	GND
26	NC
27	RST
28	GND
29	IOVCC
30	VDD
31	VDD



电压：2.8-3.2V 电流：40MA

NOTES:

1.	DISPLAY TYPE:	4.0"TFT_LCD/TRANSMISSIVE
2.	OPERATING TEMPERATURE:	−20°C~70°C
3.	STORAGE TEMPERATURE:	−30°C~80°C
4.	VIEWING ANGLE:	ALL
5.	BACKLIGHT BRIGHTNESS:	300CD/M2
6.	DRIVER:	JD9365DA−H3
7.	RESOLUTION:	720(RGB)X720
8.	CONNECTOR:	FPC
9.	UNMARK TOLERANCES:	±0.2MM

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GENERAL TOL 0.30	ALL UNITS: MM	DATE	MODEL NUMBER : NT040RN001ML		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	IOVCC	0.3	3.3	V	1,2
Supply voltage	VCI	0.3	6.5		
TFT Gate On voltage	VGH	10.6	15.4		
TFT Gate Off voltage	VGL	-14	-7.5		
Backlight Forward Current	IF	-	40	mA	
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℃.

4. Electrical Specifications

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

Parameter		Symbol	Min	Typ	Max	Unit
Supply voltage 1		IOVCC	1.7	-	3.6	V
Supply voltage 2		VCI	2.8	-	6.5	
Input voltage	'H'	V_{IH}	0.7*IOVCC	-	IOVCC	V
	'L'	V_{IL}	GND	-	0.3*IOVCC	V
Output voltage	'H'	V_{OH}	0.8IOVCC	-	IOVCC	V
	'L'	V_{OL}	GND	-	0.2*IOVCC	V

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

Item	Symbol	Condition	Min	Typ	Max	Unit	Note
Forward voltage	V_f	IL=40mA	-	12	12.8	V	
Forward current	IL		-	40	-	mA	
Luminance	Lv	IL=40mA	-	300	-	cd/m2	
LED life time	Hr	IL=20mA	20000	25000	-	Hr	

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

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4.3 Interface signals

Pin No.	Symbol	Function
1-3	LEDA	LED back light(Anode).
4	NC	NC
5-8	LEDK	LED back light(Cathode).
9-10	GND	Ground.
11	D2P	MIPI-DSI DATE signal input
12	D2N	MIPI-DSI DATE signal input
13	GND	Ground.
14	D1P	MIPI-DSI DATE signal input
15	D1N	MIPI-DSI DATE signal input
16	GND	Ground.
17	CP	MIPI-DSI DATE signal input
18	CN	MIPI-DSI DATE signal input
19	GND	Ground.
20	D0P	MIPI-DSI DATE signal input
21	D0N	MIPI-DSI DATE signal input
22	GND	Ground.
23	D3P	MIPI-DSI DATE signal input
24	D3N	MIPI-DSI DATE signal input
25	GND	Ground.
26	NC	NC
27	RST	Reset input pin
28	GND	Ground.
29	IOVCC	Power supply for I/O block. 1.8V
30	VDD	Power supply for interface logic circuits(2.8V)
31	VDD	Power supply for interface logic circuits(2.8V)

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5. Optical Characteristics

Item	Symbol		Condition	Min.	Typ.	Max.	Unit	Note
Brightness	Bp		θ=0° Φ=0°	-	300	-	Cd/m^2	1
Uniformity	⊿Bp			80	-	-	%	1,2
Viewing Angle	3:00		Cr≥10	80	85	-	Deg	3
	6:00			80	85	-		
	9:00			80	85	-		
	12:00			0	85	-		
Contrast Ratio	Cr		θ=0° Φ=0°	200	300	-	-	4
Response Time	$T_{r+}T_f$			-	30	35	ms	5
Color of CIE Coordinate	W	x	θ=0° Φ=0°	Typ. -0.03	0.292	Typ. +0.03	-	1,6
		y			0.337		-	
	R	x			0.650		-	
		y			0.322		-	
	G	x			0.280		-	
		y			0.563		-	
	B	x			0.135		-	
		y			0.141		-	
NTSC	S			65	70	-	%	

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

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