Next Vision Display
Brighten The Future

NEXT VISION DISPLAY

SPECIFICATION

CUSTOMER : _____

MODULE NO.: NT016RN001ML

Version	01
Engineer	
Date	2019/5/22

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Customer:
Approved by

NEXT VISION DISPLAY CO., LTD.

地址: 中國上海小木橋路600號
ADD: 600 XIAO MU QIAO ROAD, SHANGHAI, CHINA

WEB: www.nextvisiondisplay.com

TECHNICAL: technical@nextvisiondisplay.com
MARKETING: marketing@nextvisiondisplay.com
SALES: sales@nextvisiondisplay.com

Represented by:

first FC components
FIRST Components s.r.l.
www.first-components.com
sales@first-components.com
+39 0332 1888005

Documents Revision History:

Rivision	Date	Description	Changed By
01	2019/5/22	New released	

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General Specifications

NT016RN001ML is a TFT-LCD module. It is composed of a TFT-LCD panel, driver IC, FPC, backlight and CTP units. The 1.6′′ display area contains 400 x400 pixels and can display up to 262K colors. This product accords with RoHS environmental criterion.

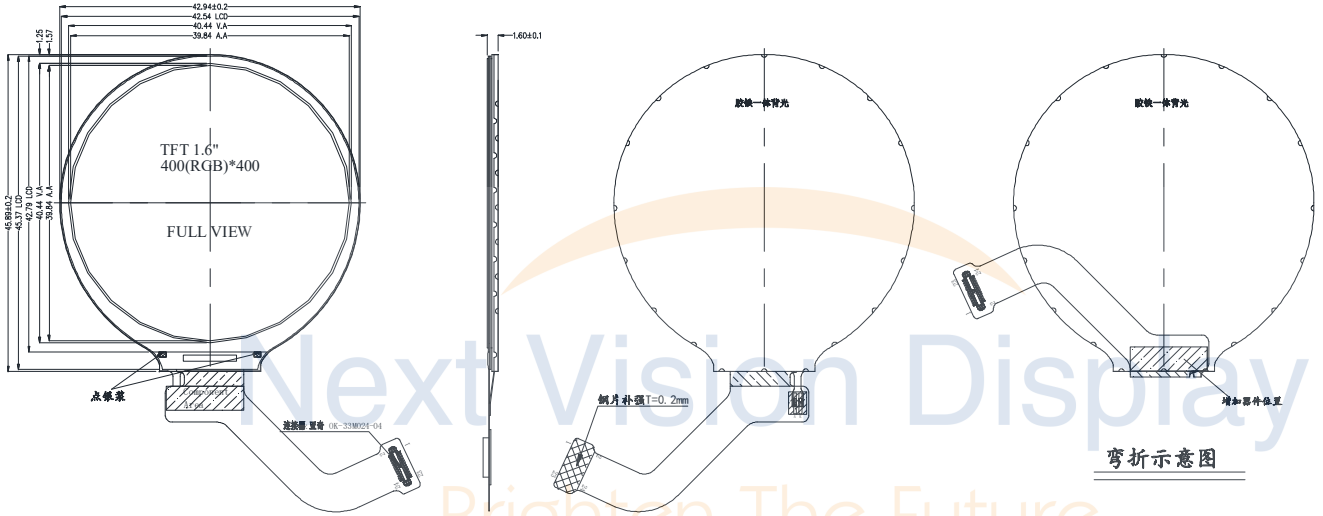
Item	Contents	Unit	Note
LCD Type	IPS TFT	-	
Display color	262K		
Viewing Direction	Free viewing	O'Clock	
Operating temperature	-20~+70	℃	
Storage temperature	-30~+80	℃	
Active Area(W×H)	39.84x39.84	mm	
Number of Dots	400×400	dots	
Controller	ST7797	-	
Outline Dimensions	Refer to outline drawing	-	
Backlight	2-LEDs (white)	pcs	
Weight	---	g	
Interface	MIPI	-	

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Outline Drawing

ALL PAGES OF THIS VERSION APPROVED			
SIGNATURE:		DATE:	

REV.	Description	Date
01	New released	



弯折示意图

FPC INTERFACE

No.	Symbol
1	GND
2	LCD_RST
3	TDN0
4	NC
5	TDP0
6	NC
7	GND
8	TE
9	TCN
10	GND
11	TCP
12	GND
13	GND
14	GND
15	VIO18
16	VCC28
17	GND
18	GND
19	NC
20	NC
21	NC
22	NC
23	LEDK
24	LEDA

NOTES:

1.	DISPLAY TYPE:	1.6"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:	ST7797
7.	RESOLUTION:	400(RGB)X400
8.	CONNECTOR:	FPC
9.	UNMARK TOLERANCES:	±0.2MM



背光灯电路图

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GENERAL TOL 0.30	ALL UNITS: MM	DATE	MODEL NUMBER : NT016RN001ML		SHEET: 1 OF 1
DWN:					DATE:
CHK:					
APP:			DO NOT SCALE THIS DRAWING.	PROJECTION	

Absolute Maximum Ratings

Item	Symbol	Min	Max	Unit
Supply voltage for logic	Vcc1,Vcc2	-0.3	4.6	V
Input voltage	V_{IN}	-0.3	V_{CC}+0.3	
Operating temperature	T_{OP}	-20	70	℃
Storage temperature	T_{ST}	-30	80	℃
Humidity	RH	--	90%(Max60C)	RH

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Electrical Specifications and Instruction Code

Electrical Characteristics

Item	Symbol	Min	Typ	Max	Unit
Supply voltage for logic	Vcc -Vss	2.6	2.8	3.2	V
Input Current	I_{DD}	--	10	--	mA
Input voltage ' H ' level	V_{IH}	0.7V_{DD}	--	V_{DD}	V
Input voltage ' L ' level	V_{IL}	-V_{SS}	--	0.2V_{DD}	V
Output voltage ' H ' level	V_{OH}	0.8V_{CC}	--	V_{CC}	V
Output voltage ' L ' level	V_{OL}	0	--	0.2V_{CC}	V

Backlight Characteristics

Item	Symbol	Min	Typ	Max	Unit	Remark
Forward voltage	V_F	5.6	6.0	6.5	V	
Luminance	L_V	--	300	--	Cd/m2	If=40mA
Number of LED	--	2			Pcs	
Connection mode	P	Serial			--	

Using condition: constant current driving method If= 20 mA(+/-10%)

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Interface Pin Connections

Pin No.	Symbol	Function
1	GND	Ground
2	RESET	This signal will reset the device and it must be applied to properly initialize the chip.
3	TDN0	Negative polarity of low voltage differential data signal
4	NC	No Connect
5	TDP0	Positive polarity of low voltage differential data signal.
6	NC	No Connect
7	GND	Ground
8	TE	Tearing effect output. If not used, leave this pin open
9	TCN	Negative polarity of low voltage differential clock signal
10	GND	Ground
11	TCP	Positive polarity of low voltage differential clock signal.
12-14	GND	Ground
15	IOVCC18	Power Supply for I/O system.(1.8V or VCC)
16	VCC28	Power Supply for Analog, Digital System and Booster Circuit
17-18	GND	Ground
19-22	NC	No Connect
23	LEDK	Backlight power supply negative
24	LEDA	Backlight power supply positive

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Optical Characteristics

Item	Symbol		Condition	Min.	Typ.	Max.	Unit	Note
Brightness	Bp		θ=0° Φ=0°	-	300	-	Cd/m²	1
Uniformity	⊿Bp			-	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°	650	800		-	4
Response Time	T_r			-	30	35	ms	5
	T_f			-			ms	
Color of CIE Coordinate	W	x	θ=0° Φ=0°	(0.281)	(0.301)	(0.321)	-	1,6
		y		(0.31)	(0.33)-	(0.35)	-	
	R	x		TBD	TBD	TBD	-	
		y		TBD	TBD	TBD	-	
	G	x		TBD	TBD	TBD	-	
		y		TBD	TBD	TBD	-	
	B	x		TBD	TBD	TBD	-	
		y		TBD	TBD	TBD	-	
NTSC Ratio	S			50	55	-	%	

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

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