Next Vision Display
Brighten The Future

NEXT VISION DISPLAY

SPECIFICATION

CUSTOMER : _____

MODULE NO.: NT156-N001ML

Version	01
Engineer	
Date	2019/4/15

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Customer:
Approved by

NEXT VISION DISPLAY CO., LTD.

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1. General Description

- The NT156-N001ML model is a Color TFT LCD supplied by Next Vision Display.
- This main Module has a 15.6 inch diagonally measured active display area with 1920(RGB)X1080 resolution. Each pixel is divided into Red, Green and Blue sub-pixels and dots, which are arranged in vertical stripes.
- The NT156-N001ML has been designed to apply the HDMI interface method that enables low power, high speed, and high contrast.

2. Mechanical Specification

ITEM	Standard Value	Unit
Display Mode	Normally White, Transmissive LCD	--
Module Dimension	350.66×216.25×2.60	mm
Resolution	1920(RGB)X 1080	Pixels
Active Display Area	344.16×193.59	mm
Viewing Direction	Free	--
Gray inversion direction	Free	
LED Backlight Color	White	--
Interface	LCD:HDMI	--
Power supply	External 12V	--
System Support	Win7/Win8/Win10(Plug and play)	
	Android/Linux (need to be configured first)	

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3. Absolute Max Ratings & Electrical Specification

- **Absolute Max Rating**

Item	Min.	Typ	Max	Unit	Remark
Operating temperature	0	--	50	° C	
Storage temperature	-20	--	60	° C	
Humidity	--	--	90%	RH	@60° C

Note:

*1) Liquid Crystal driving voltage.

Due to the characteristics of LC Material, this voltage vary with environmental temperature.

*2) Temp.>60℃, Absolute humidity shall be less than 90%RH at 60℃

*3) Temp.≤60℃, 90%RH MAX.

*4) The recommended operating conditions refer to a range in which operation of this product is guaranteed. Should this range is exceeded, the operation cannot be guaranteed even if the values may be without the absolute maximum ratings.

Accordingly, please make sure that the module is used within this range. And these current values are measured under the condition that all devices are stopped, each component is stable and logic signal is input.

■ Electrical Specification

Item	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	Power	9.0	12.0	16.0	V

■ Backlight Characteristic

Item	Symbol	Min.	Typ.	Max.	Unit
Current dissipation	IBL	-	-	-	mA
PWM signal voltage	VpwmH	2.2	-	5.0	V
	VpwmL	0	-	0.6	V
Brightness Control Duty Ratio	Duty	1	-	100	%
Brightness Control frequency	fpwm	100	-	10000	Hz

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Note:

Note1: The LED Supply Voltage is defined by the number of LED at Ta=25℃ and If=21mA.

Note2: The LED lifetime define as the estimated time to 50% degradation of initial luminous. The LED lifetime could be decreased if operating If is larger than 21mA.

Backlight circuit:

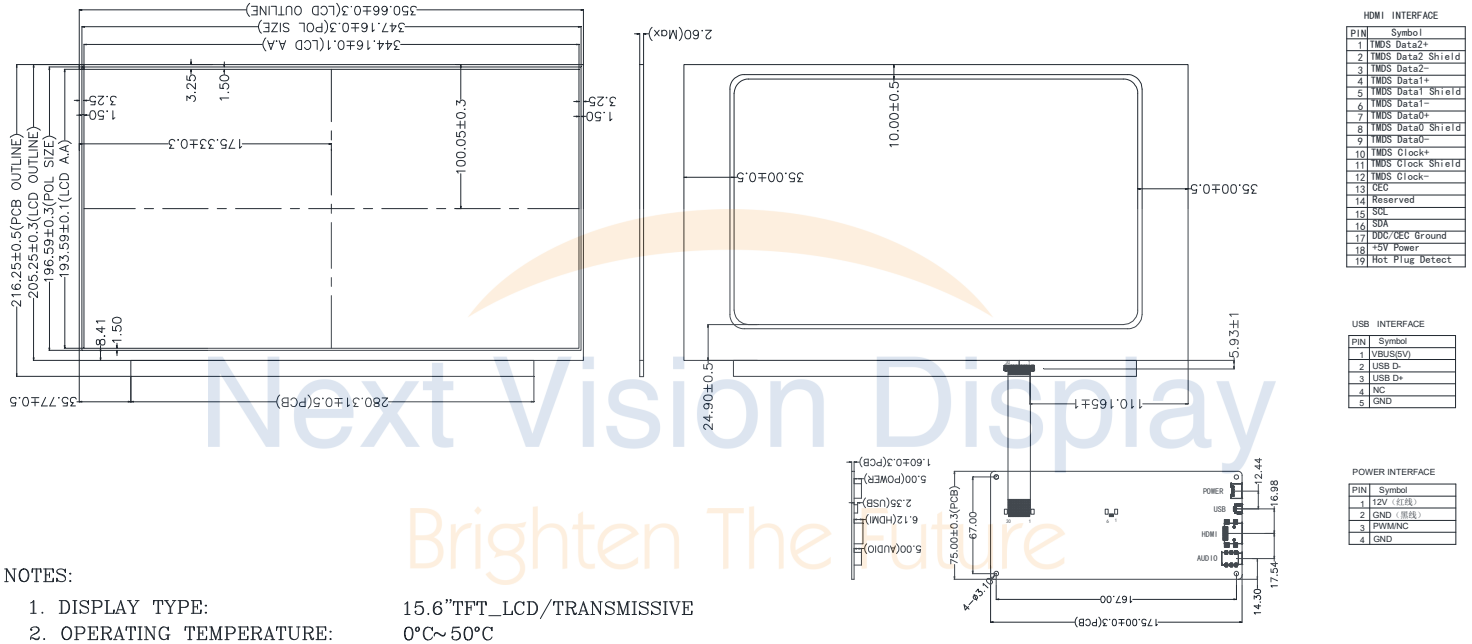
4. Optical Specification

Item	Symbol	**Condition**	Min.	Typ.	Max.	Unit	Note
Brightness	Bp	θ=0°	250	300	-	cd/m^2	
Uniformity	ΔBp	Φ=0°	-	80	-	%	
Viewing Angle	θ1 (Φ=90° or270°)	12 o'clock	-	85	-	Deg	Cr≥10
		6 o'clock	-	85	-		
	θ2 (Φ=0° or 180°)	9 o'clock	-	85	-		
		3 o'clock	-	85	-		
CIE	Wx	θ=0° Φ=0°	0.27	0.31	0.35		
	Wy		0.28	0.32	0.36		
Contrast Ratio	Cr		-	800		-	
Response Time	t_{on}		-	30	35	ms	
	t_{off}		-			ms	

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ALL PAGES OF THIS VERSION APPROVED			
SIGNATURE:		DATE:	

REV.	Description	Date
01	New released	



HDMI INTERFACE

PIN	Symbol
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2-
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1-
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0-
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock-
13	CEC
14	Reserved
15	SCL
16	SDA
17	DDC/CEC Ground
18	+5V Power
19	Hot Plug Detect

USB INTERFACE

PIN	Symbol
1	VBUS(5V)
2	USB D-
3	USB D+
4	NC
5	GND

POWER INTERFACE

PIN	Symbol
1	12V（红线）
2	GND（黑线）
3	PWM/NC
4	GND

NOTES:

1.	DISPLAY TYPE:	15.6"TFT_LCD/TRANSMISSIVE
2.	OPERATING TEMPERATURE:	0°C~50°C
3.	STORAGE TEMPERATURE:	-20°C~60°C
4.	VIEWING ANGLE:	ALL
5.	BACKLIGHT BRIGHTNESS:	300CD/M2
6.	DRIVER:	/
7.	RESOLUTION:	1920(RGB)X1080
8.	INTERFACE:	HDMI
9.	UNMARK TOLERANCES:	±0.2MM

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GENERAL TOL 0.30	ALL UNITS: MM	DATE	MODEL NUMBER : NT156-N001ML		SHEET: 1 OF 1
DWN:					
CHK:					DATE:
APP:			DO NOT SCALE THIS DRAWING.	PROJECTION	

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6. Interface Pin Connections

HDMI interface：

NO.	Symbol	DESCRIPTION
1	TMDS Data2+	Positive side of channel 2 TMDS low-voltage signal differential input pair
2	TMDS Data2 Shield	Ground
3	TMDS Data2-	Negative side of channel 2 TMDS low-voltage signal differential input pair
4	TMDS Data1+	Positive side of channel 1 TMDS low-voltage signal differential input pair
5	TMDS Data1 Shield	Ground
6	TMDS Data1-	Negative side of channel 1 TMDS low-voltage signal differential input pair
7	TMDS Data0+	Positive side of channel 0 TMDS low-voltage signal differential input pair
8	TMDS Data0 Shield	Ground
9	TMDS Data0-	Negative side of channel 0 TMDS low-voltage signal differential input pair
10	TMDS Clock+	Positive side of reference clock. TMDS low-voltage signal differential input pair
11	TMDS Clock Shield	Ground
12	TMDS Clock-	Negative side of reference clock. TMDS low-voltage signal differential input pair
13	CEC	No Connection
14	Reserved(N.C.)	No Connection
15	SCL	DDC SCL
16	SDA	DDC SDA
17	DDC/CEC Ground	Ground
18	+5V Power	+5V Power
19	Hot Plug Detect	Hot Plug Detect

USB TOUCH interface：

NO.	Symbol	DESCRIPTION
1	VUSB	USB Power(5V)
2	D-	USB Data-
3	D+	USB Data+
4	NC	No connection
5	GND	Power Ground

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External POWER Interface Description：

NO.	*Symbol*	*DESCRIPTION*
1	*9V~16V*	*External power input(9V~16V)*
2	*GND*	*Power Ground*
3	*PWM/NC*	*Brightness Control input signal(200~2000Hz)*
4	*GND*	*Power Ground*

Application note: please connected USB interface first, then next connect HDMI interface.

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