

NHD-10.1-1024600AF-ASXV#

TFT (Thin-Film-Transistor) Color Liquid Crystal Display Module

NHD-	Newhaven Display
10.1-	10.1" Diagonal
1024600-	1024xRGBx600 Pixels
AF-	Model
A-	RGB Interface
S-	High Brightness, White LED Backlight
X-	TFT
V-	MVA, Transmissive, Standard Temperature
#-	RoHS Compliant

Newhaven Display International, Inc.

2661 Galvin Ct.

Elgin IL, 60124

Ph: 847-844-8795

Fax: 847-844-8796

www.newhavendisplay.com

nhtech@newhavendisplay.com

nhsales@newhavendisplay.com

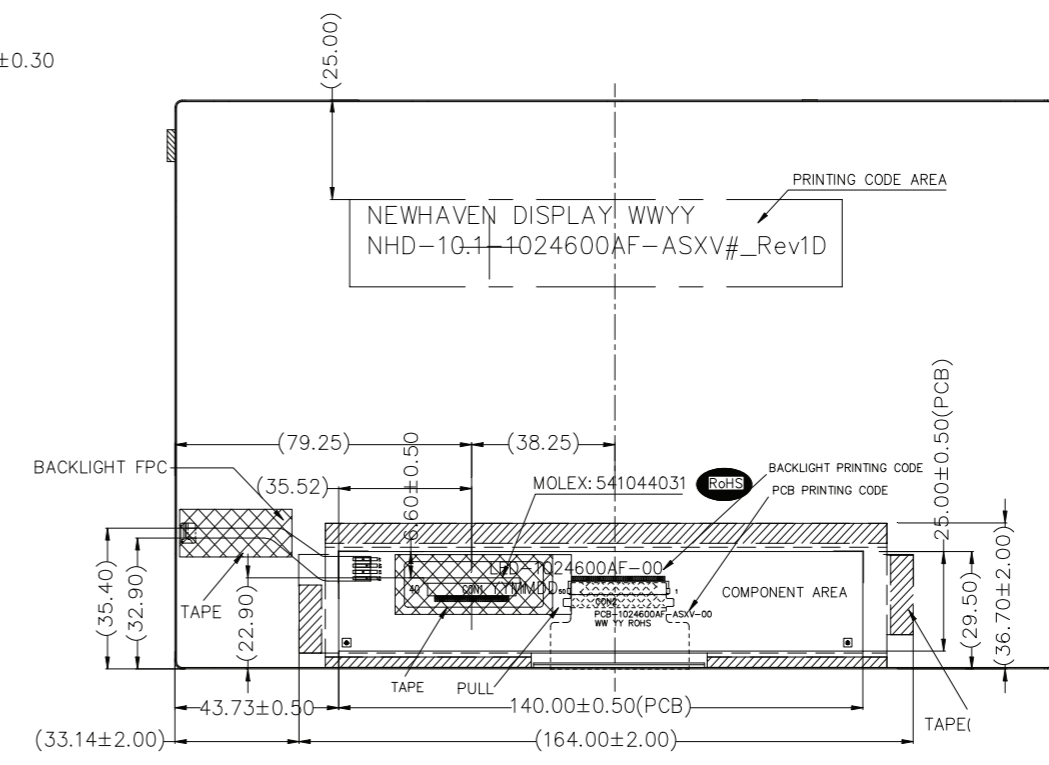
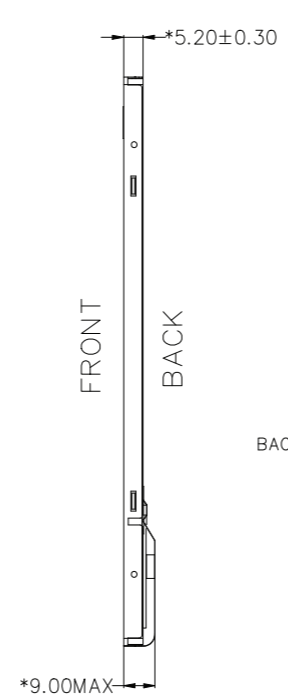
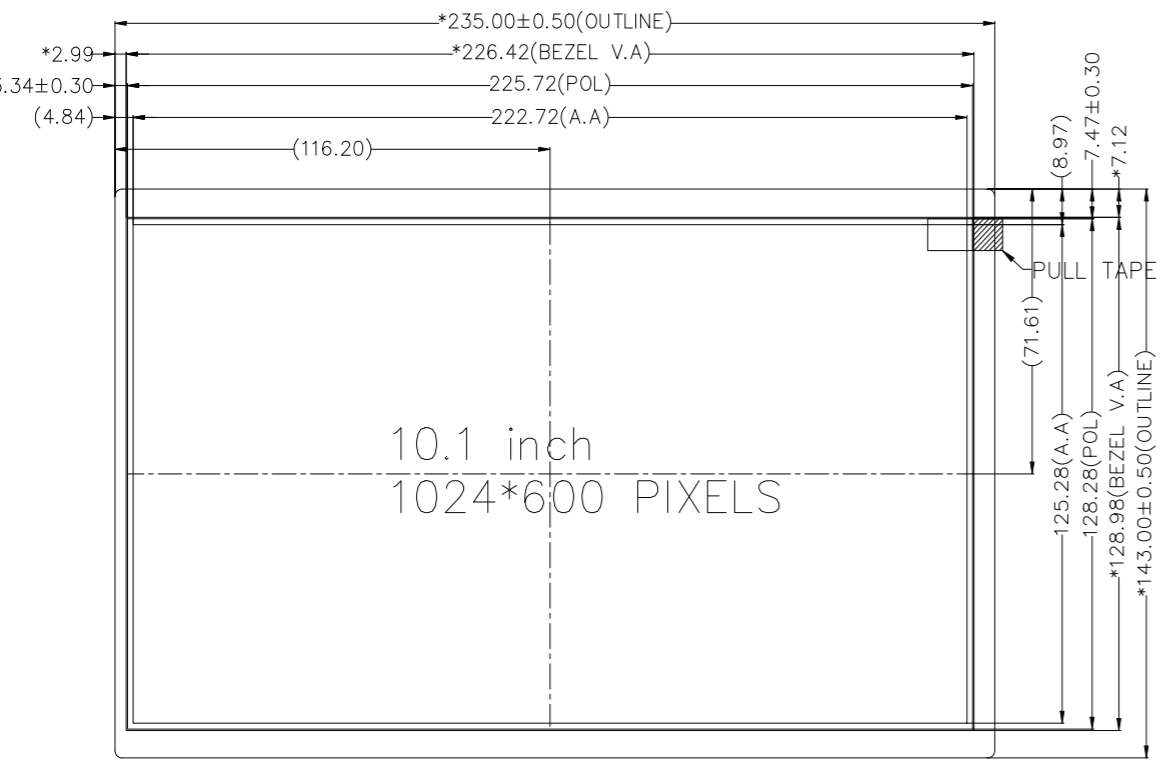
Document Revision History

Revision	Date	Description	Changed by
-	08/01/18	Initial Release	NP
1	7/10/19	Backlight Voltage Updated	SB
2	3/11/20	Optical Characteristics Updated	SB
3	9/3/20	Updated 2D Drawing; Kapton Tape over Molex Connector	AS

Functions and Features

- 1024xRGBx600 Resolution
- LED Backlight
 - Built In-LED Driver
 - PWM Brightness Control
- RGB Interface
- 262K Colors
- Wide Viewing Angles

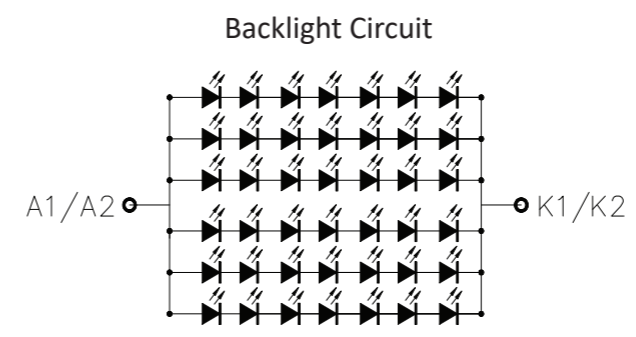
Mechanical Drawing



TFT Pinout:

Pin No.	Symbol
1	LED_GND
2-4	LED_VDD
5	LED_PWM
6	LED_EN
7	GND
8	VDD
9-16	[R0-R7]
17-24	[G0-G7]
25-32	[B0-B7]
33	GND
34	DCLK
35	HSD
36	VSD
37	DEN
38	MODE
39	RESET
40	STBYB

- Notes:**
- Display Size: 10.1" TFT
 - Display Resolution: 1024 x 600 Pixels
 - Display Mode: Transmissive / Normally White / Anti-Glare
 - Optimal View: Full View
 - Driver IC: HX8282 - RGB Interface
 - Power Supply Voltage: 3.3V
 - Backlight: White LED
 - Luminance: 800 cd/m² (Typ)



STANDARD TOLERANCE: (UNLESS OTHERWISE SPECIFIED)		NEWHAVEN DISPLAY INTERNATIONAL	
LINEAR: ±0.3mm		DRAWING/PART NUMBER: NHD-10.1-1024600AF-ASXV#	
UNLESS OTHERWISE SPECIFIED: - DIMENSIONS ARE IN MILLIMETERS - THIRD ANGLE PROJECTION		DRAWN BY: A. Shah	APPROVED BY: A. Shah
		DRAWN DATE: 9/3/20	APPROVED DATE: 9/3/20
		DO NOT SCALE DRAWING	
		SHEET 1 OF 1	
THIS DRAWING IS SOLELY THE PROPERTY OF NEWHAVEN DISPLAY INTERNATIONAL, INC. THE INFORMATION IT CONTAINS IS NOT TO BE DISCLOSED, REPRODUCED OR COPIED IN WHOLE OR PART WITHOUT WRITTEN APPROVAL FROM NEWHAVEN DISPLAY.			

SYMBOL	REVISION	DATE

Pin Description

Pin No.	Symbol	Connection	Function Description
1	LED_GND	Power Supply	Ground for Backlight Driver
2-4	LED_VDD	Power Supply	Supply Voltage for Backlight Driver
5	LED_PWM	MPU	Backlight PWM Signal Input (See Table Below)
6	LED_EN	MPU	Backlight Enable H: Backlight On; L: Backlight Off
7	GND	Power Supply	Ground
8	V _{DD}	Power Supply	Supply voltage for LCD (+3.3V)
9-16	[R0-R7]	MPU	Red Data Signals
17-24	[G0-G7]	MPU	Green Data Signals
25-32	[B0-B7]	MPU	Blue Data Signals
33	GND	Power Supply	Ground
34	DCLK	MPU	Dot data Clock
35	HSYNC	MPU	Horizontal sync input
36	VSYNC	MPU	Vertical sync input
37	DEN	MPU	Data Enable signal
38	MODE	MPU	DE/SYNC mode select MODE= H: DE mode MODE= L: SYNC mode
39	RESET	MPU	Active Low Reset Signal
40	STBYB	MPU	Active Low Standby Signal

LCD connector: 0.5mm pitch 40-Conductor FFC.

Recommended cable: 40 POS FFC **Molex P/N:** 15020-0435

LED_PWM Signal Operating Frequency:

PWM Frequency (F)	Duty Cycle (Min.)	Duty Cycle (Max.)
100Hz < F < 500Hz	5%	100%
500Hz < F < 20KHz	10%	100%

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	T _{OP}	Absolute Max	0	-	+50	°C
Storage Temperature Range	T _{ST}	Absolute Max	-20	-	+60	°C
Supply Voltage for LCD	V _{DD}	-	3.0	3.3	3.6	V
Supply Current for LCD	I _{DD}	V _{DD} = 3.3V	50	120	180	mA
"H" Level Input	V _{IH}	-	0.7 * V _{DD}	-	V _{DD}	V
"L" Level Input	V _{IL}	-	GND	-	0.3 * V _{DD}	V
"H" Level Output	V _{OH}	-	V _{DD} - 0.4	-	V _{DD}	V
"L" Level Output	V _{OL}	-	GND	-	GND + 0.4	V
Supply Voltage for Backlight Driver	LED_V _{DD}	-	5.0	12.0	22.4	V
Supply Current for Backlight Driver ¹	LED_I _{DD}	-	160	360	1200	mA
Backlight Enable Voltage	LED_EN	-	1.5	3.3	5.5	V
Backlight PWM Voltage	LED_PWM	I _{PWM} ≤ 5 mA	1.5	3.3	5.5	V
Backlight Lifetime ²	-	T _{OP} = 25° C	20,000	50,000	-	Hrs.

¹Minimum supply current occurs when supply voltage is at max; maximum supply current when supply voltage is at minimum.

²Backlight lifetime is rated as Hours until **half-brightness**, under normal operating conditions.

Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	
Optimal Viewing Angles	Top	Cr ≥ 10	-	80	-	°	
	Bottom		-	80	-	°	
	Left		-	80	-	°	
	Right		-	80	-	°	
Contrast Ratio	CR	-	300	450	750	-	
Luminance	L _V	-	600	800	1000	cd/m ²	
Response Time	Rise + Fall	T _R + T _F	T _{OP} = 25° C	-	8	-	ms
Chromaticity	Red	X _R	-	0.565	0.605	0.635	-
		Y _R	-	0.309	0.349	0.379	-
	Green	X _G	-	0.286	0.326	0.356	-
		Y _G	-	0.565	0.605	0.635	-
	Blue	X _B	-	0.112	0.152	0.182	-
		Y _B	-	0.075	0.115	0.145	-
White	X _W	-	0.257	0.297	0.327	-	
	Y _W	-	0.283	0.323	0.353	-	

Driver Information

Built-in HX8282 Source Driver: <http://www.newhavendisplay.com/appnotes/datasheets/LCDs/HX8282-A01.pdf>

Built-in HX8696 Gate Driver: <http://www.newhavendisplay.com/appnotes/datasheets/LCDs/HX8696-A.pdf>

Quality Information

Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	+60°C, 240 hrs.	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-20°C, 240 hrs.	1,2
High Temperature Operation	Endurance test applying the electric stress (voltage & current) and the high thermal stress for a long time.	+50°C, 120 hrs.	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	0°C, 120 hrs.	1,2
High Temperature / Humidity Operation	Endurance test applying the electric stress (voltage & current) and the high thermal with high humidity stress for a long time.	+50°C, 90% RH, 120 hrs.	1,2
Thermal Shock resistance	Endurance test applying the electric stress (voltage & current) during a cycle of low and high thermal stress.	0°C, 30min->25°C, 5min -> 50°C, 30min 10 cycles	
Vibration test	Endurance test applying vibration to simulate transportation and use.	10-55Hz, 1.5mm amplitude. 60 sec in each of 3 directions X, Y, Z For 15 minutes	3
Static electricity test	Endurance test applying electric static discharge.	Air: V _s =8KV, Contact: V _s =4KV 10 Times	

Note 1: No condensation to be observed.

Note 2: Conducted after 4 hours of storage at 25°C, 0%RH.

Note 3: Test performed on product itself, not inside a container.

Precautions for using LCDs/LCMs

See Precautions at www.newhavendisplay.com/specs/precautions.pdf

Warranty Information and Terms & Conditions

http://www.newhavendisplay.com/index.php?main_page=terms