

NHD-4.3-480272YF-ATXI#-T-1

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

NHD-	Newhaven Display
4.3-	4.3" Diagonal
480272-	480xRGBx272 pixels
YF-	Model
A-	Built-in driver / NO Controller
T-	White LED backlight
X-	TFT
I-	Center viewing angle, Wide Temp
#-	RoHS Compliant
T-1	with 4-wire resistive Touch Panel

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Document Revision History

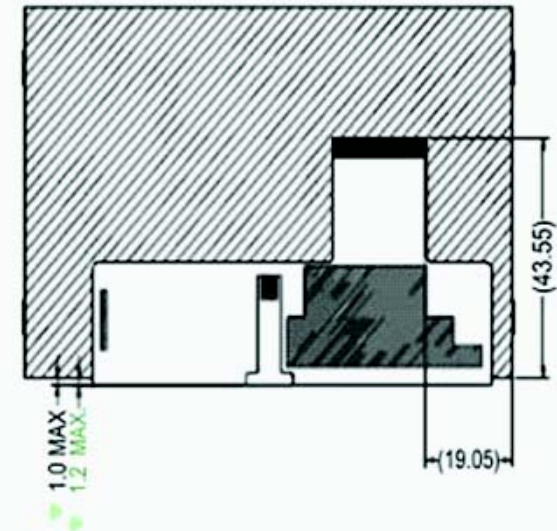
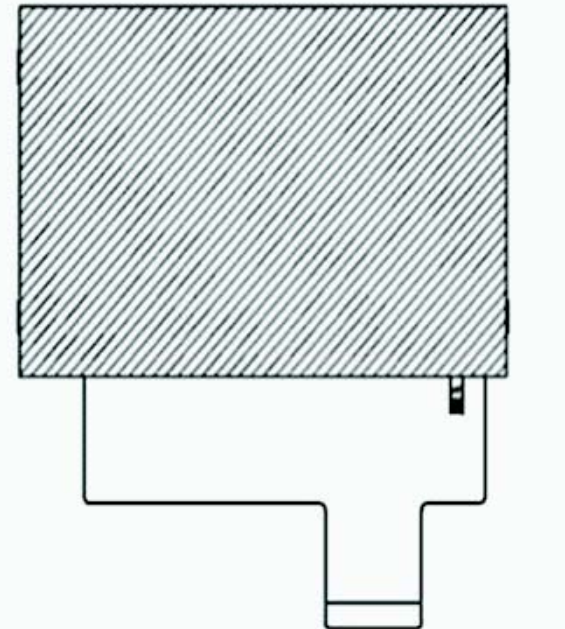
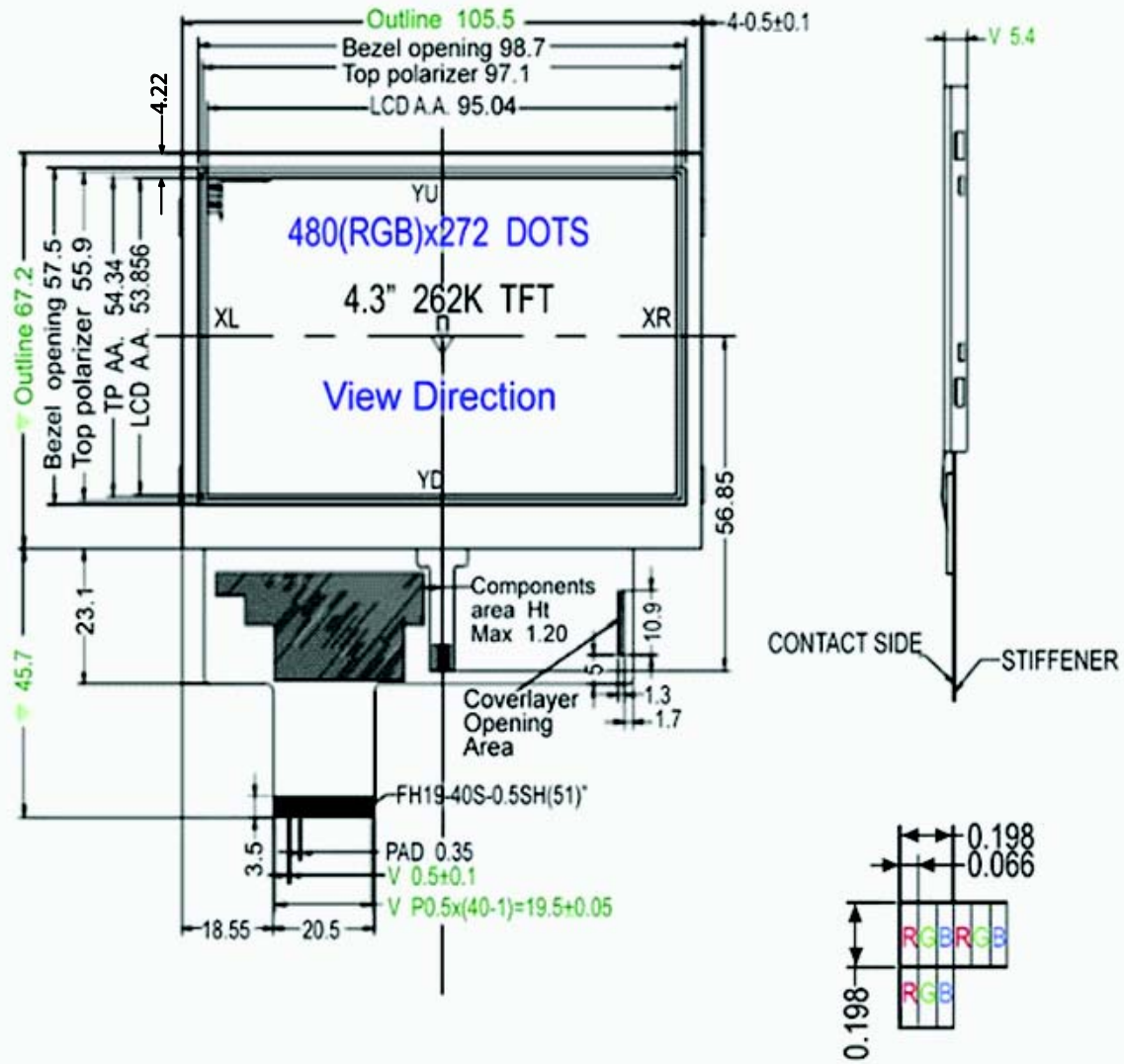
Revision	Date	Description	Changed by
0	7/8/2009	Initial Release	CL
1	7/29/2009	Updated Touch panel information	CL
2	7/29/2009	MECHANICAL DRAWING UPDATE	BE
3	8/5/2009	Mechanical Drawing Update	MC

Functions and Features

- 480xRGBx272 resolution, up to 16.7M colors
- 7-LED backlight
- 24 bit RGB interface
- 4-wire resistive touch panel

Mechanical Drawing

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BACKLIGHT CIRCUIT

Pin Description

Pin No.	Symbol	External Connection	Function Description
1	LED-	LED Power Supply	Backlight GND
2	LED+	LED Power Supply	Backlight Power (20mA @ 20~24V)
3	GND	Power Supply	GND
4	VCC	Power Supply	Power supply for LCD and logic (3.3V)
5-12	[R0-R7]	MPU	Red Data Signals
13-20	[G0-G7]	MPU	Green Data Signals
21-28	[B0-B7]	MPU	Blue Data Signals
29	GND	Power Supply	GND
30	PCLK	MPU	Data sample Clock signal
31	DISP	MPU	Display ON/OFF signal
32	HSYNC	MPU	Line synchronization signal
33	VSYNC	MPU	Frame synchronization signal
34	DE	MPU	Data Enable signal
35	AVDD	Power Supply	Power supply for Internal Analog Circuit (5.0V)
36	GND	Power Supply	GND
37	XR	Touch Panel MPU	Touch Panel RIGHT
38	YD	Touch Panel MPU	Touch Panel DOWN
39	XL	Touch Panel MPU	Touch Panel LEFT
40	YU	Touch Panel MPU	Touch Panel UP

Recommended LCD connector: 0.5mm pitch 40-Conductor FFC. Molex p/n: 54132-4097

Backlight connector: on LCD connector **Mates with:** ---

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	Top	Absolute Max	-20	-	+60	°C
Storage Temperature Range	Tst	Absolute Max	-30	-	+70	°C
Supply Voltage	VDD		2.9	3.3	3.5	V
Supply Voltage	AVDD		4.8	5.0	5.2	V
Power Dissipation (White screen)		fV=60Hz		80	95	mW
Power Dissipation (Black screen)		fV=60Hz		85	100	mW
VSYNC frequency	fV			60	70	Hz
HSYNC frequency	fH			17.26		kHz
PCLK frequency	fPCLK			9.2		MHz
Backlight Supply Current	IB			20	25	mA
Backlight Power Consumption	PBL			480		mW

Backlight is 7-Serial LEDs

Where $IB=20mA$, $VB=PBL / IB$

Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle – Top		$Cr \geq 10$	55	60		°
Viewing Angle – Bottom		$Cr \geq 10$	55	60		°
Viewing Angle – Left		$Cr \geq 10$	75	80		°
Viewing Angle – Right		$Cr \geq 10$	75	80		°
Contrast Ratio	Cr			400		
Luminance	YL			350		cd/m ²
Response Time (rise)	Tr	-	-	5	15	ms
Response Time (fall)	Tr	-	-	25	30	ms

Touch Panel Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Linearity					1.5	%
Circuit Resistance – X-Axis			450	800	1150	Ω
Circuit Resistance – Y-Axis			100	350	600	Ω
Insulation Resistance			20			MΩ
Operating Voltage					5	V
Chattering					10	Ms
Transmittance			82			%
Activation Force					60	g
Pen Writing Durability			10,000			Characters
Pitting Durability			1,000,000			Touches
Surface Hardness			3			H
Haze				7		%

Driver Information

Built-in HX8257-A.

For specific **timing** and **color** information, please download specification at

http://www.newhavendisplay.com/app_notes/HX8257.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.	+70°C , 200hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C , 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (voltage & current) and the high thermal stress for a long time.	+60°C 200hrs	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	-20°C , 200hrs	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 , 96hrs	1,2
Thermal Shock resistance	Endurance test applying the electric stress (voltage & current) during a cycle of low and high thermal stress.	-20°C,30min -> 25°C,5min -> 60°C,30min = 1 cycle 10 cycles	
Vibration test	Endurance test applying vibration to simulate transportation and use.	10-55Hz , 15mm amplitude. 60 sec in each of 3 directions X,Y,Z For 15 minutes	3
Static electricity test	Endurance test applying electric static discharge.	VS=800V, RS=1.5kΩ, CS=100pF One time	

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