

NHD-5.7-320240WFB-CTXI#-T-1

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

NHD-	Newhaven Display
5.7-	5.7" Diagonal
320240-	320xRGBx240 pixels
WFB-	Model
C-	Built-in driver + Controller
T-	White LED backlight
X-	TFT
I-	6:00 view, Wide Temp
#-1	RoHS Compliant
T-1-	Touch Panel

Newhaven Display International, Inc.

2511 Technology Drive, Suite 101

Elgin IL, 60124

Ph: 847-844-8795

Fax: 847-844-8796

www.newhavendisplay.com

nhtech@newhavendisplay.com

nhsales@newhavendisplay.com

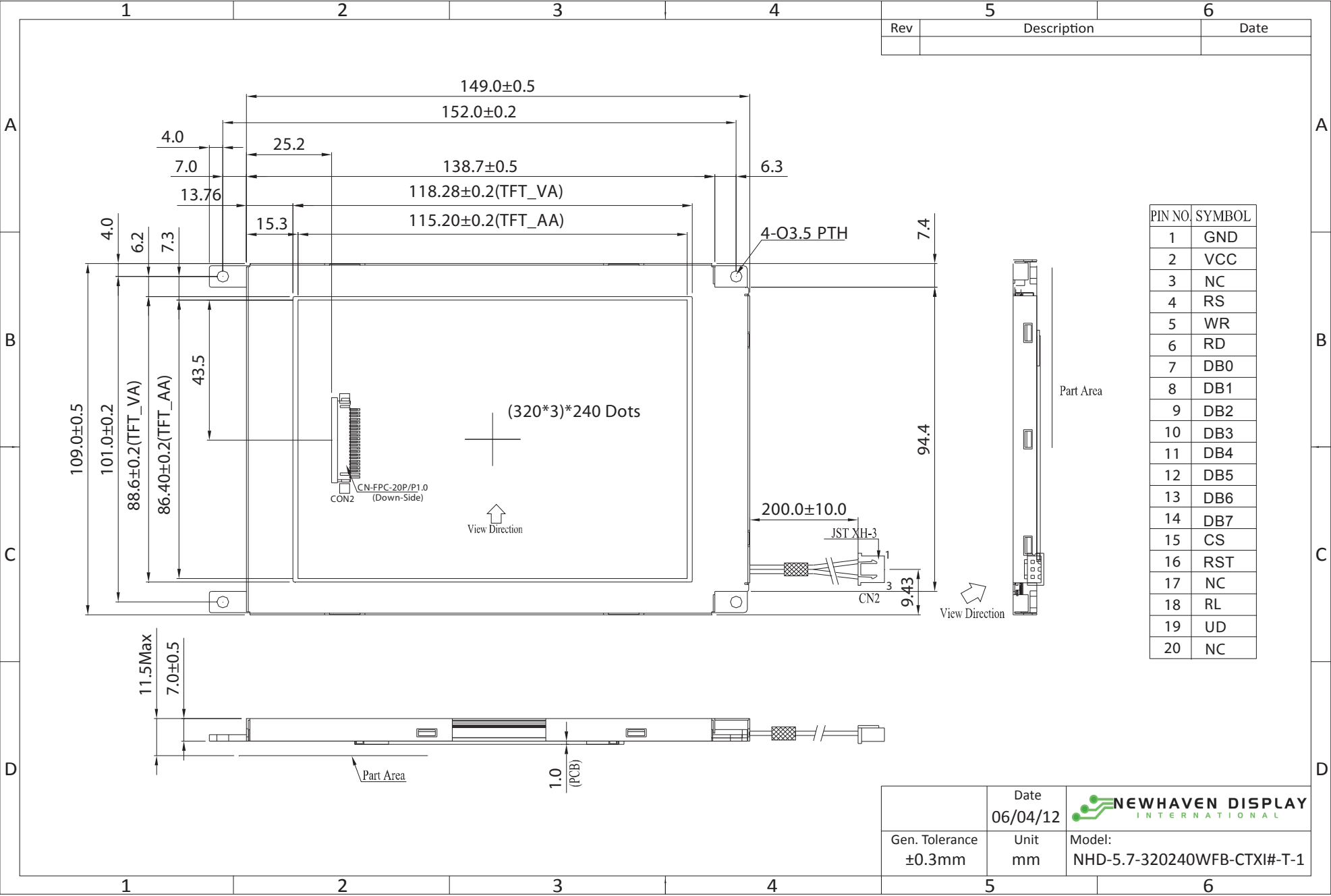
Document Revision History

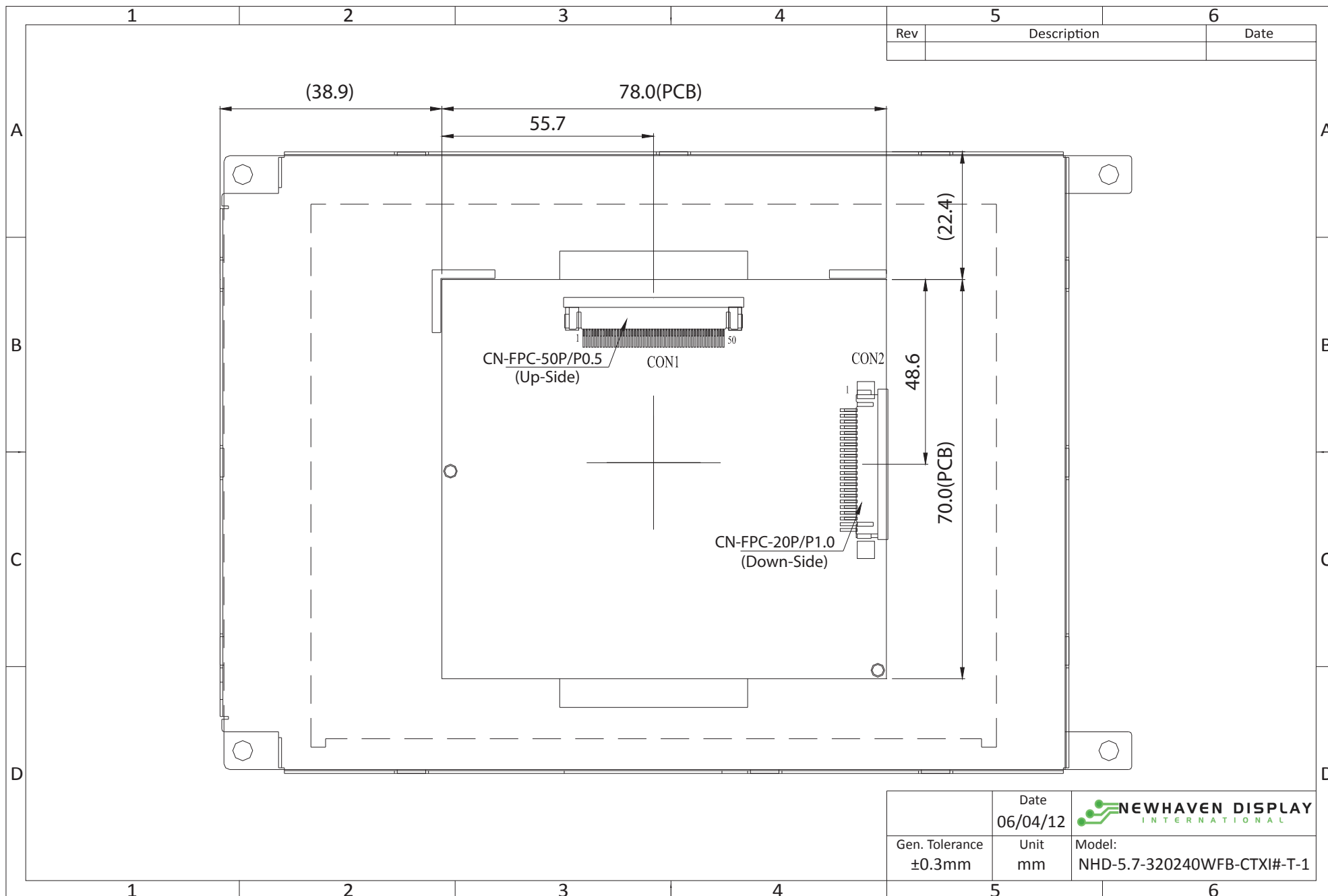
Revision	Date	Description	Changed by
0	7/8/2009	Initial Release	CL
1	7/29/2009	MECHANICAL DRAWING UPDATE	CL
2	11/4/2009	Quality Information Update	BE
3	3/26/2010	Pin description Update	MP
4	4/16/2010	Updated the Recommended LCD Connector	MC
5	6/21/2010	Touch Panel Pin Description Update	MP
6	2/22/2011	Symbols for pin desc./electrical updated	BE
7	5/24/2011	Electrical characteristics updated	AK
8	1/6/2012	Pixel data format updated	AK
9	1/9/2012	Touch panel pin description updated	AK
10	6/4/2012	Mechanical drawing \ Optical characteristics updated	AK
11	6/8/2012	Optical characteristics updated	TJ

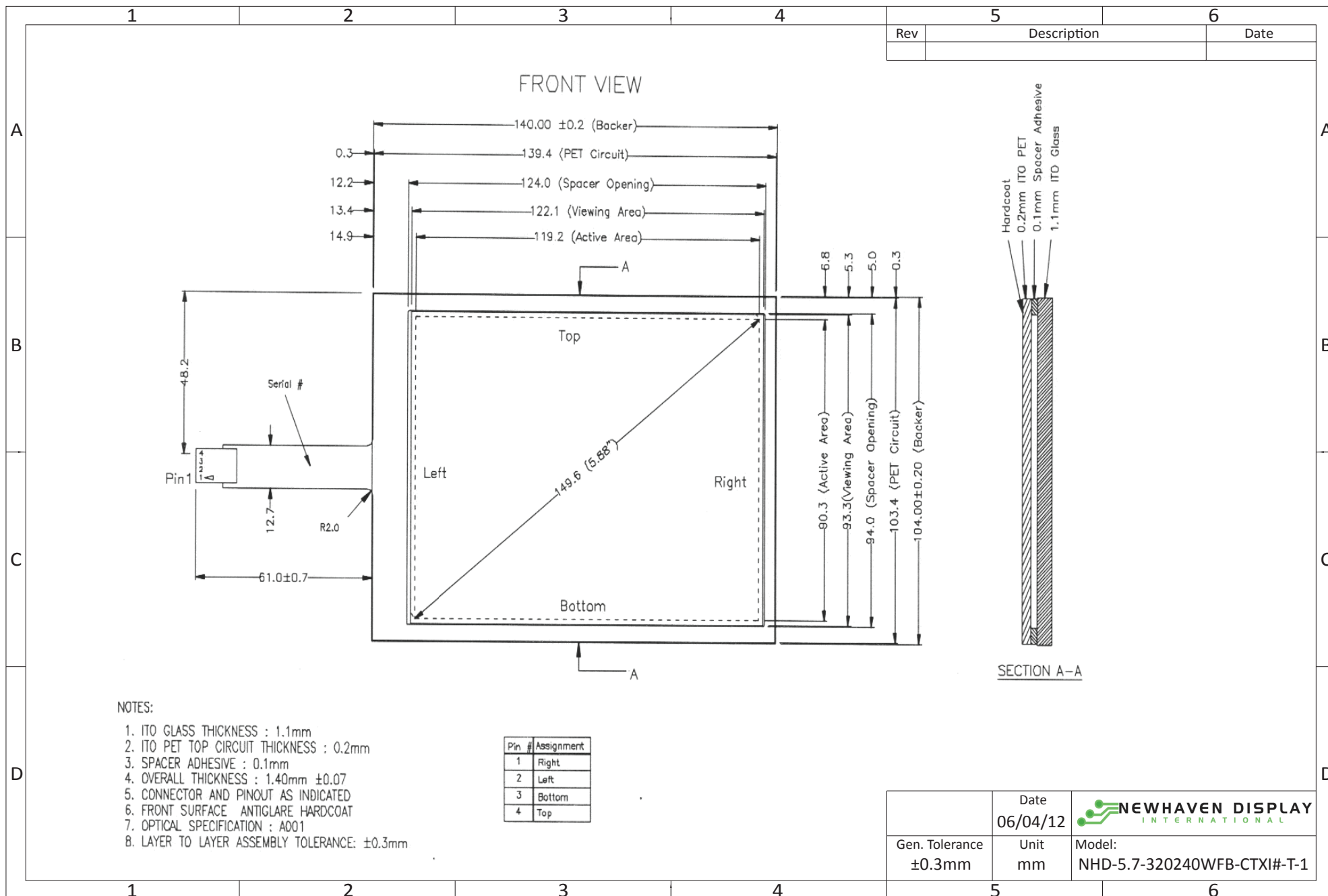
Functions and Features

- 320xRGBx240 resolution
- LED backlight
- 8-bit parallel interface
- SSD1963 Controller
- 4-Wire resistive Touch Panel

Mechanical Drawing







Pin Description

CON2:

Pin No.	Symbol	External Connection	Function Description
1	GND	Power Supply	Ground
2	VDD	Power Supply	Power supply for LCD and logic (3.3V)
3	NC	-	No Connect
4	D/C#	MPU	Register Select signal: 1=Data, 0= Command
5	WR#	MPU	Active LOW Write signal, 8080 MPU interface
6	RD#	MPU	Active LOW Read signal, 8080 MPU interface
7-14	[DB0-DB7]	MPU	Bi-directional data bus lines
15	CS#	MPU	Active LOW Chip Select signal
16	RES#	MPU	Active LOW Reset signal
17	NC	-	No Connect
18	R/L	-	Scan direction 1: Right (Tied internally)
19	U/D	-	Scan direction 0: Down (Tied internally)
20	NC	-	No Connect

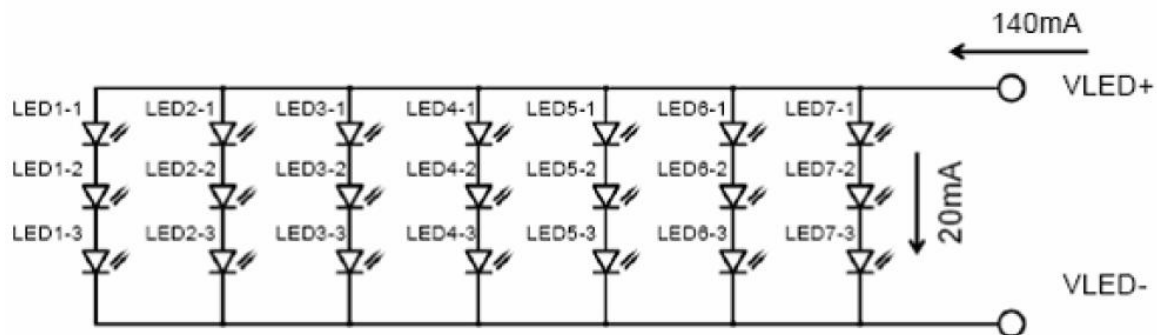
Recommended LCD connector: 1.0mm pitch 20-Conductor FFC. Molex 52271-2079

Backlight connector: JST p/n: XHP-3 **Mates with:** JST p/n: S3B-XH-SM3-TB

Backlight:

Pin No.	Symbol	External Connection	Function Description
1	VDD	Power Supply	Red, LED Anode (140mA @ 9.9V)
2	NC	-	No Connect
3	GND	Power Supply	White, LED Cathode

Backlight connector: JST p/n: XHP-3 **Mates with:** JST p/n: B 3B-XH-A



Touch Panel:

Pin No.	Symbol	External Connection	Function Description
1	X-	Touch Controller	RIGHT
2	X+	Touch Controller	LEFT
3	Y-	Touch Controller	BOTTOM
4	Y+	Touch Controller	TOP

Recommended Touch panel connector: 2.54mm pitch Standard Pin Headers

Controller Information

Built-in SSD1963 controller.

Please download specification at http://www.newhavendisplay.com/app_notes/SSD1963.pdf

8080 Mode Interface:

The 8080 mode MPU interface consists of CS#, D/C, RD#, WR#, and DB[7:0]. This interface uses WR# to define a write cycle and RD# to define a read cycle. If the WR# goes LOW when the CS# signal is LOW, the data or command will be latched into the system at the rising edge of WR#. Similarly, the read cycle will start when RD# goes LOW and end at the rising edge of RD#. See the SSD1963 datasheet for detailed timing diagrams.

Command Instructions:

See the SSD1963 datasheet for the Instruction Table and Command Descriptions.

Pixel Data Format:

Interface	Cycle	D[7]	D[6]	D[5]	D[4]	D[3]	D[2]	D[1]	D[0]
8 bits	1 st	R7	R6	R5	R4	R3	R2	R1	R0
	2 nd	G7	G6	G5	G4	G3	G2	G1	G0
	3 rd	B7	B6	B5	B4	B3	B2	B1	B0

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	Top	Absolute Max	-20	-	+70	°C
Storage Temperature Range	Tst	Absolute Max	-30	-	+80	°C
Supply Voltage	VDD		3.0	3.3	3.5	V
Supply Current	IDD	VDD=3.3	-	121	-	mA
“H” Level Input	VIH		0.8*VDD	-	VDD	V
“L” Level Input	VIL		0	-	0.2*VDD	V
Backlight Supply Voltage	VLED		9.0	9.9	10.5	V
Backlight Supply Current	ILED	VLED=9.4V	-	140	210	mA
Backlight Lifetime			-	50,000	-	Hr

Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle – Top (Note 1)		Cr ≥ 5	40	60	-	°
Viewing Angle – Bottom (Note 1)		Cr ≥ 5	60	70	-	°
Viewing Angle – Left		Cr ≥ 5	60	70	-	°
Viewing Angle – Right		Cr ≥ 5	60	70	-	°
Contrast Ratio	Cr		-	250	-	
Luminance	YL		300	-	-	cd/m ²
Response Time (rise)	Tr		-	15	-	ms
Response Time (fall)	Tf		-	35	-	ms

Note 1: Viewing direction – 12:00; Gray Scale inversion direction – 6:00.

Touch Panel Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Linearity					1.5	%
Circuit Resistance – X-Axis			350		1000	Ω
Circuit Resistance – Y-Axis			200		650	Ω
Insulation Resistance			20			MΩ
Operating Voltage					5	V
Chattering					15	Ms
Transmittance			80			%
Activation Force					80	g
Pen Writing Durability			10,000			Characters
Pitting Durability			1,200,000			Touches
Surface Hardness			2			H
Haze				7		%

Quality Information

Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	+80°C , 240hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C , 240hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (voltage & current) and the high thermal stress for a long time.	+70°C 240hrs	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	-20°C , 240hrs	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.	+60°C , 90% RH , 240hrs	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 -> 70°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