

# 10.1" HDMI TFT Modules



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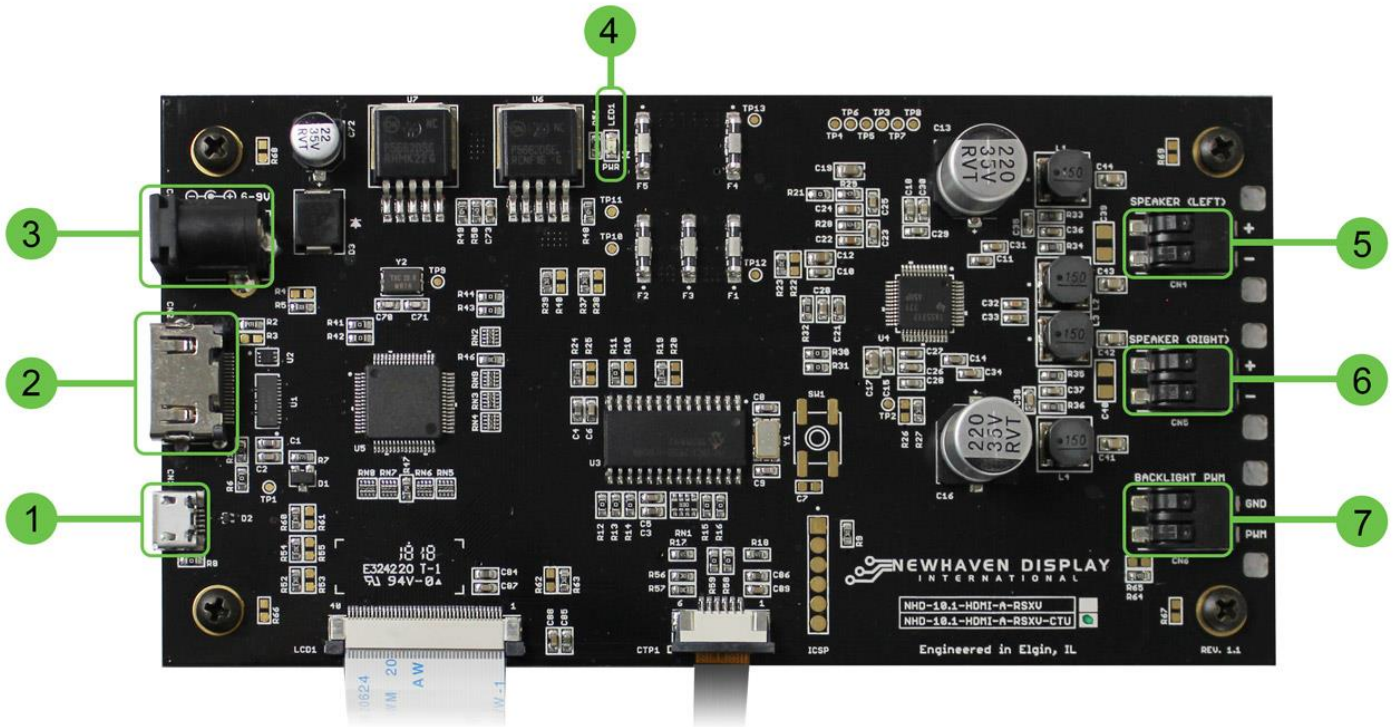
## Overview



The HDMI interface has become the most popular video interface standard to date, and HDMI video sources are easier to come by now than ever before. Whether you need an HDMI TFT display for your Raspberry Pi/BeagleBone Black application, a Windows/Windows Embedded PC monitor, or a touch screen HMI for your Linux or other embedded system, the Newhaven Display HDMI TFT product line offers a solution.

Our HDMI TFT Modules unite our existing high-quality TFT display panels with a custom PCB engineered in the USA by Newhaven Display. Assembled to the display, our PCB provides the user an all-in-one, plug-and-play HDMI + USB Touch solution for virtually any application.

## Interface Description

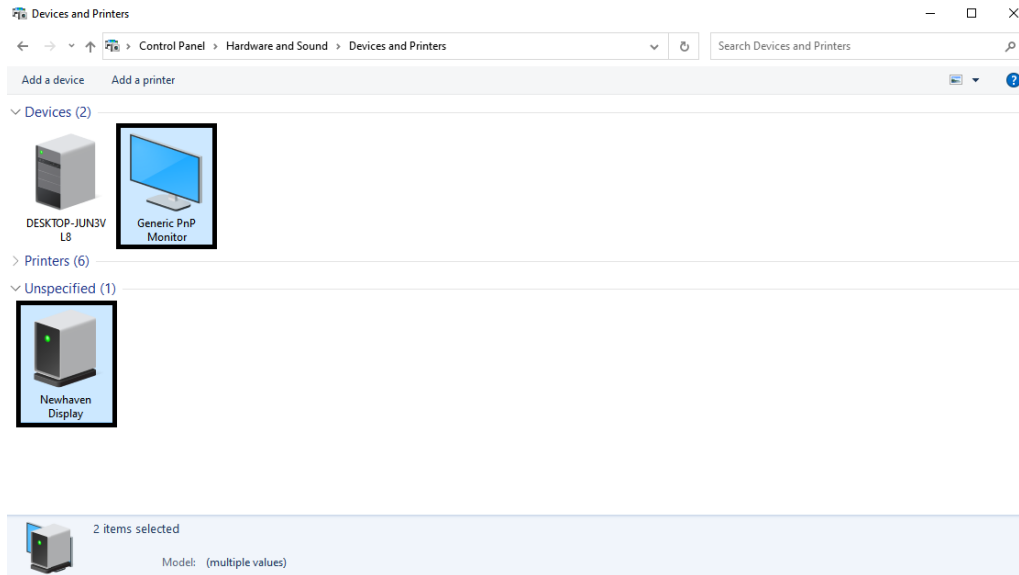


(Capacitive Touch model shown above as reference)

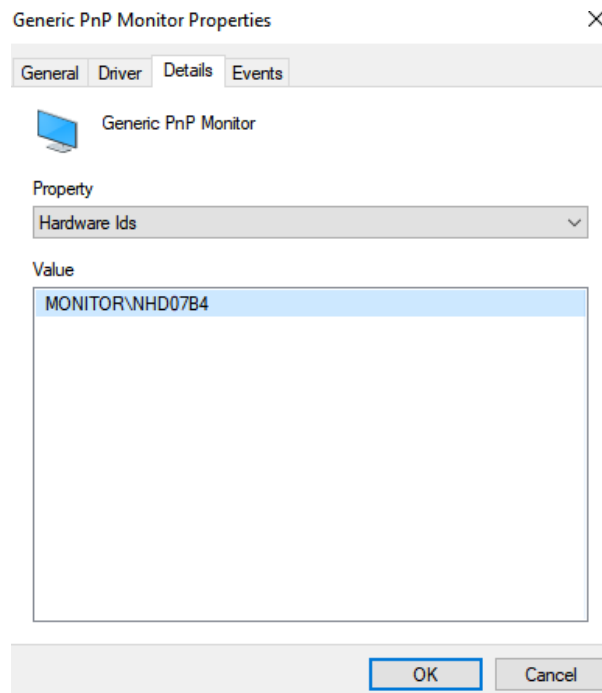
Num.	Description
1)	(CN3) <b>Micro-USB (Type-B) Connector for Touch – Touch Panel models only</b> This is to connect the Touch Panel of this module to a USB input to act as a USB-HID device.
2)	(CN2) <b>HDMI (Type-A) Connector</b> This is a full-size HDMI connector meant to connect the HDMI source signal (Video & Audio) to this module. The on-board HDMI Receiver does not scale video resolutions. Therefore, the output resolution of the source must be 1024x600 (WSVGA). In most applications, this is automatically detected by the HDMI source.
3)	(CN1) <b>DC Jack (Center-Positive), 2.1mm ID, 5.5mm OD</b> This is used to supply power to the display module. A DC power supply in the range of 6V – 9V must be used. The output current rating of the DC power supply should be at least the maximum Supply Current (I <sub>DD</sub> ) listed in the Electrical Characteristics section on the previous page. (Example Power Supply: L6R12-070, 7.0V/1.3A)
4)	(LED1) <b>LED Indicator for Power</b> This is a Green LED that will illuminate when DC power is supplied to the module.
5)	(CN4) <b>Terminal Block w/ Push Buttons (24-18AWG wire size), for Speaker output</b> This connection is the speaker output for the (Left) channel. An 8Ω speaker up to 10W can be used here.
6)	(CN5) <b>Terminal Block w/ Push Buttons (24-18AWG wire size), for Speaker output</b> This connection is the speaker output for the (Right) channel. An 8Ω speaker up to 10W can be used here.
7)	(CN6) <b>Terminal Block w/ Push Buttons (24-18AWG wire size), for Backlight PWM</b> This connection allows the user to dim the LED backlight through use of a PWM signal. See Electrical Characteristics for details.

## Connecting with Windows 10

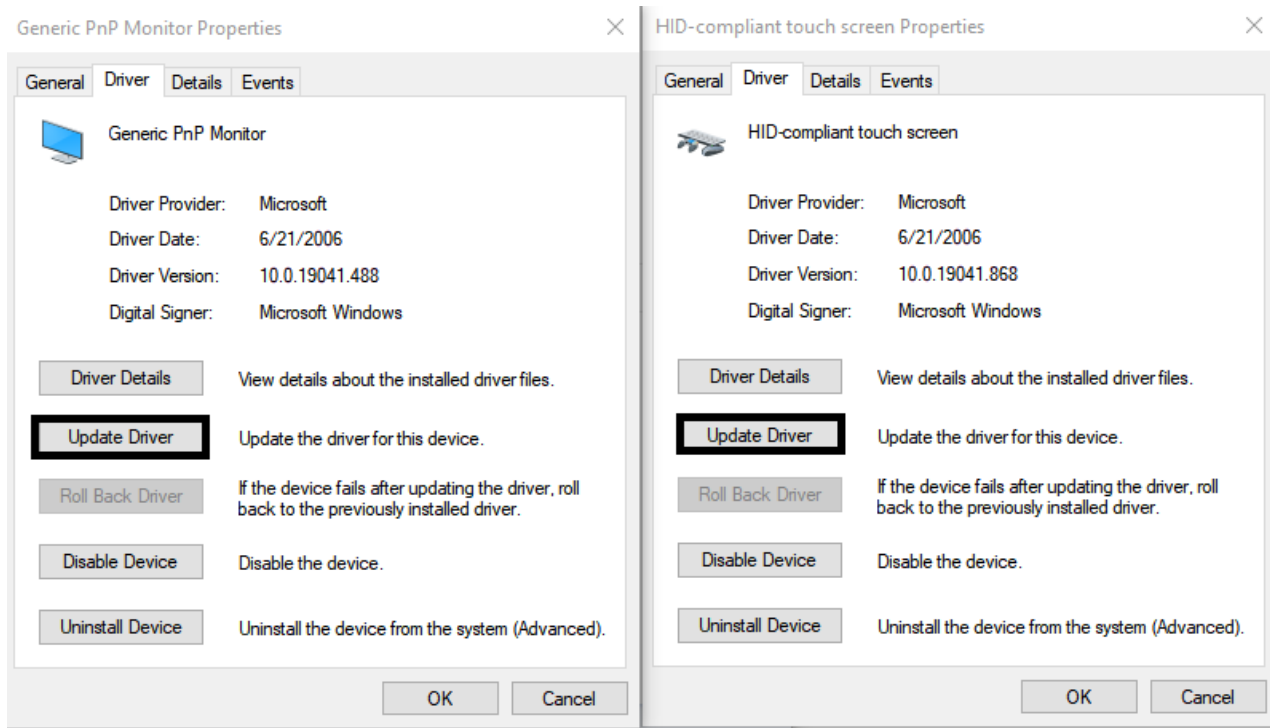
Connecting our HDMI TFT Modules to a Windows system is fully plug-and-play. Start by plugging in a DC power supply in the range of 6 – 9V, with at least 1A of output current. The green LED near the DC jack will illuminate when the board has power supplied to it. Next, connect the display to your system via HDMI cable. Due to the on-board EDID, the display will be detected automatically, and the system's output resolution will set itself. For Touch Panel models, once the display is connected to the system via USB, Windows will automatically detect and install the necessary drivers.



*Properly connected devices will appear in "Devices and Printers" within the Control Panel.*



*If multiple monitors are connected our display can be verified by looking at the hardware ID*



*Verify Driver's for both touch and display are the most recent.*



*Windows Home Screen.*

## Connecting with Raspberry Pi

Most Linux applications with an HDMI source will also be fully plug-and-play, however when using our HDMI TFT Modules with the Raspberry Pi, the config.txt file on the Pi's microSD card will need to be slightly modified by the user.

The following highlighted lines need to be added in config.txt for proper display output:

```
# For more options and information see
# http://rpf.io/configtxt
# Some settings may impact device functionality. See link above for details

# uncomment if you get no picture on HDMI for a default "safe" mode
#hdmi_safe=1

# uncomment this if your display has a black border of unused pixels visible
# and your display can output without overscan
#disable_overscan=1

# uncomment the following to adjust overscan. Use positive numbers if console
# goes off screen, and negative if there is too much border
#overscan_left=16
#overscan_right=16
#overscan_top=16
#overscan_bottom=16

# uncomment to force a console size. By default it will be display's size minus
# overscan.
#framebuffer_width=1280
#framebuffer_height=720

# uncomment if hdmi display is not detected and composite is being output
#hdmi_force_hotplug=1

# uncomment to force a specific HDMI mode (this will force VGA)
#hdmi_group=1
#hdmi_mode=1

hdmi_group=2
hdmi_mode=87
hdmi_cvt= 1024 600 60 6 0 0 0 #(1024x600 pixels)

# uncomment to force a HDMI mode rather than DVI. This can make audio work in
# DMT (computer monitor) modes
#hdmi_drive=2

# uncomment to increase signal to HDMI, if you have interference, blanking, or
# no display
#config_hdmi_boost=4

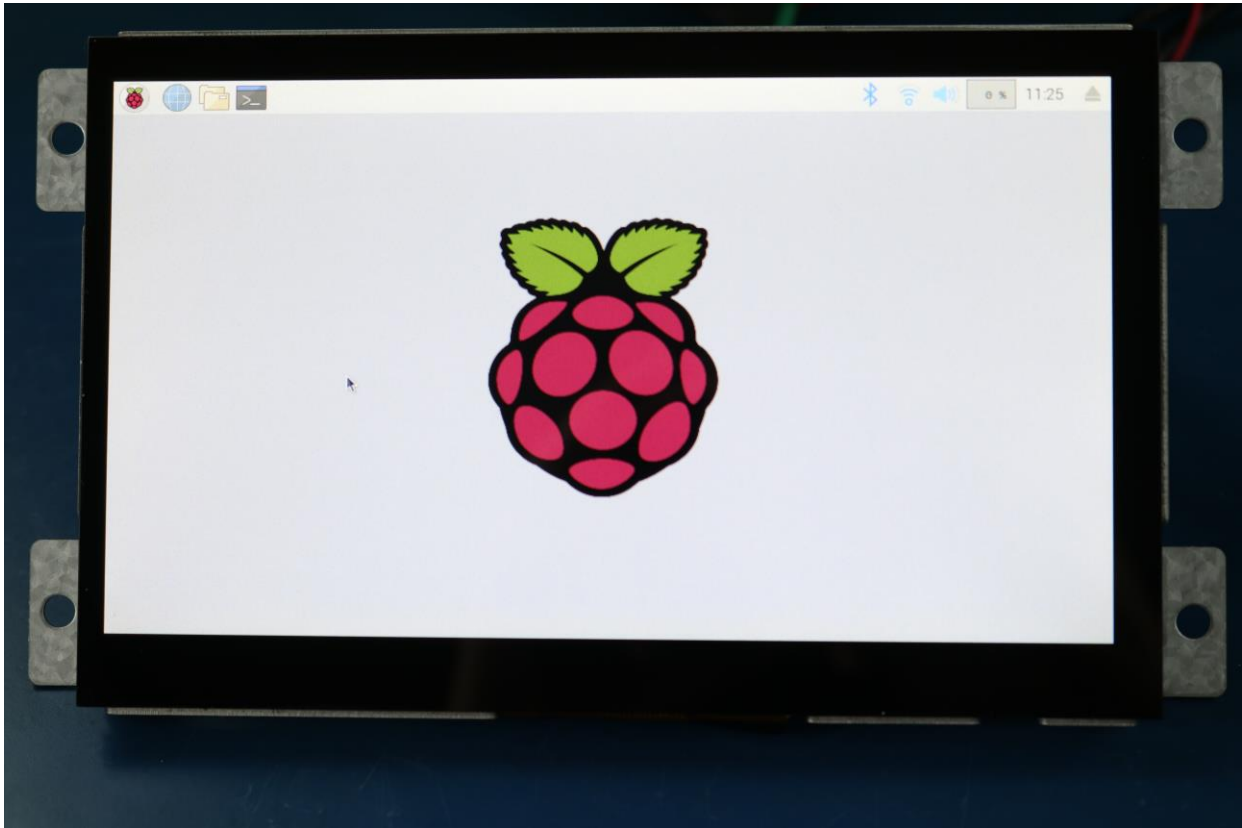
# uncomment for composite PAL
#sdtv_mode=2

#uncomment to overclock the arm. 700 MHz is the default.
#arm_freq=800

# Uncomment some or all of these to enable the optional hardware interfaces
#dtparam=i2c_arm=on
#dtparam=i2s=on
#dtparam=spi=on

# Uncomment this to enable the lirc-rpi module
#dtoverlay=lirc-rpi

# Additional overlays and parameters are documented /boot/overlays/README
```



*Raspberry Pi Home Screen.*

## Tutorial Videos

HDMI: [https://www.youtube.com/watch?v=6p2pMpa2c5Y&list=PLV6MQRlaoTx4WZBxy\\_fgYI4fxNI7pAsNo&index=6](https://www.youtube.com/watch?v=6p2pMpa2c5Y&list=PLV6MQRlaoTx4WZBxy_fgYI4fxNI7pAsNo&index=6)

PWM: [https://www.youtube.com/watch?v=xE5RPdkxyvE&list=PLV6MQRlaoTx6hdIA6g\\_GdkUwEoGpMwin\\_&index=13](https://www.youtube.com/watch?v=xE5RPdkxyvE&list=PLV6MQRlaoTx6hdIA6g_GdkUwEoGpMwin_&index=13)

## Precautions for Using LCDs/LCMs

See Precautions at [www.newhavendisplay.com/specs/precautions.pdf](http://www.newhavendisplay.com/specs/precautions.pdf)



## Document Revision History

Revision	Date	Comments
1.0	9/6/2018	Initial Release
1.1	6/4/2019	Correction of units for backlight PWM
1.2	7/1/2019	Electrical Characteristics updated