# UCTRONICS 3.5 Inches 480 x 320 TFT LCD Touch Screen Display

Model: U4703

## 1. Introduction

UCTRONICS 3.5" TFT LCD display module is designed for Raspberry Pi zero/Pi 2 /Pi 3 Model B / B+ and can also be used on other hardware platforms with have SPI interface. The 3.5" screen is the same size as the standard Raspberry Pi model B/B+, and well mate with the Raspberry Pi boards. With its touch screen, it is suitable for portable devices and projects, and it is a replacement for a heavy and bulky HDMI monitor, keyboard and mice. The highlight of this display module, it supports plug and play without reboot the Pi, and SPI speed runs as fast as 32MHz to support games and videos.

## 2. Specification

| | |
|---|---|
| Support Kernel from 4.1 to 4.9 | Support plug and play |
| Resolution: 480 x 320 pixels | Support touch screen |
| Interface: SPI | Support game and video |
| SPI speed: 32MHz | Automatic driver installation script |
| Dimension: 55.98 x 85.60 mm | Well mate with Pi Zero, Pi B+, Pi2 and Pi3 |

## 3. Hardware installation

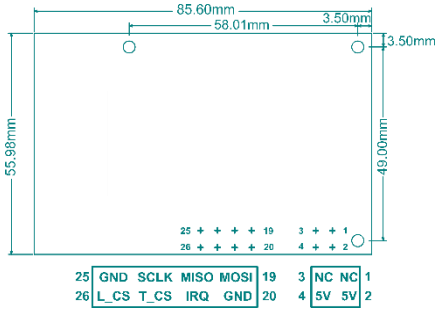


Figure 1

Figure 2

The Figure 1 shows the display module pin out and dimension. Connect the 3.5inch LCD to the Raspberry Pi board like the Figure 2 shows. Power on the Raspberry Pi board and make sure the internet is connected properly.

**Note**: LCD module pin1 should be aligned to Raspberry Pi board Pin1, misalign might cause damage.

## 4. Download and install driver

The LCD driver has been already installed in the Micro SD card shipped only with the kit that includes a Micro SD card. The following steps are for install the driver on a clean system. All the installation steps are also available from our github: https://github.com/UCTRONICS/UCTRONICS_LCD35_RPI/

**Step1** Expand the Micro SD card

*sudo raspi-config* then Select Advanced Operations ->**Expand Filesystem** and hit **YES**, then go to **Finish** and you need to run *sudo reboot* to reboot your Raspberry Pi.

**Step2** Update your Raspberry Pi system

*sudo apt-get update*

**Step3** Download the driver package

*sudo git clone https://github.com/UCTRONICS/UCTRONICS_LCD35_RPI.git*

**Step4** Go to the UCTRONICS_LCD35_RPI

*cd UCTRONICS_LCD35_RPI*

**Step5** Change the file permission

*sudo chmod 777 UCTRONICS_LCD_backup*

*sudo chmod 777 UCTRONICS_LCD35_install*

*sudo chmod 777 UCTRONICS_LCD_restore*

*sudo chmod 777 UCTRONICS_LCD_hdmi*

**Step6** Backup original system data

*sudo ./UCTRONICS_LCD_backup*

**Step7 I**nstall the LCD35 driver

*sudo ./UCTRONICS_LCD35_install*

Wait for a while the system will be installed and restarted automatically.

If you want to reuse the original system, you can use the below command

*sudo ./UCTRONICS_LCD_restore*

If you want to display on HDMI instead of LCD, just use the below command

*sudo ./UCTRONICS_LCD_hdmi*

If you don't want to run those command to install the LCD driver, we also provide ready to use system image file "UCTRONICS_LCD35_RPI.img". Please click the following link to download the system image file:

http://uctronics.oss-us-west-1.aliyuncs.com/LCD35/image/UCTRONICS_LCD35_RPI.img

Check the following link to install the win32diskimager tool in your computer. Then write the image file into the Micro SD card.

https://sourceforge.net/projects/win32diskimager/

## 5. Add more functions to the LCD

NO1. Install calibration software for calibration

*cd UCTRONICS_LCD35_RPI*

*sudo unzip Xinput-calibrator_0.7.5-1_armhf.zip*

*cd xinput-calibrator_0.7.5-1_armhf/*

*sudo dpkg -i -B xinput-calibrator_0.7.5-1_armhf.deb*

NO2. Install virtual keyboard

**Step 1** Execute the following commands to install the corresponding software

*sudo apt-get update*

*sudo apt-get install matchbox-keyboard*

*sudo nano /usr/bin/toggle-matchbox-keyboard.sh*

**Step 2** Copy the following contents to toggle box - keyboard. Sh, save the exit

*#!/bin/bash*

*#This script toggle the virtual keyboard*

*PID=pidof matchbox-keyboard*

*if [ ! -e $PID ]; then*

*killall matchbox-keyboard*

*else*

*matchbox-keyboard -s 50 extended&*

*fi*

**Step 3** Execute the following command

*sudo chmod +x /usr/bin/toggle-matchbox-keyboard.sh*

*sudo mkdir /usr/local/share/applications*

*sudo nano /usr/local/share/applications/toggle-matchbox-keyboard.desktop*

**Step 4** Copy the following contents to toggle - matchbox - keyboard. Desktop, save exit

*[Desktop Entry]*

*Name=Toggle Matchbox Keyboard*

*Comment=Toggle Matchbox Keyboard`*

*Exec=toggle-matchbox-keyboard.sh*

*Type=Application*

*Icon=matchbox-keyboard.png*

*Categories=Panel;Utility;MB*

*X-MB-INPUT-MECHANSIM=True*

**Step 5** To perform the following command, note that this step must use the "PI" user permission, and if the administrator privileges are used, the file will not be found

*nano ~/.config/lxpanel/LXDE-pi/panels/panel*

**Step 6** Find similar commands (different versions of ICONS may differ)

*Plugin {*

*type = launchbar*

*Config {*

*Button {*

*id=lxde-screenlock.desktop*

*}*

*Button {*

*id=lxde-logout.desktop*

*}*

*}*

**Step 7** Add the following code to add a Button item

*Button {*

*id=/usr/local/share/applications/toggle-matchbox-keyboard.desktop*

*}*

**Step 8** To restart the system with the following command, you can see a virtual keyboard icon in the top left corner

*sudo reboot*

## 6. Contact us

If need any further support, please feel free to contact us.

Website: http://www.uctronics.com

Case Installation Guide: www.uctronics.com/download/Amazon/U4703_installation.pdf

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