

RDK-V LCD 7-inch Display Support - User Manual - 2019 M6

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Introduction

- Raspberry Pi Official 7" lcd screen display will be working . The 7" touch screen monitor for Raspberry Pi gives users the ability to create all-in-one, integrated projects such as tablets, infotainment systems and embedded projects.
- The 800x480 display connects via an adapter board which handles power and signal conversion.
- We can plug keyboard and mouse to the raspberrypi for the userinteraction.
- Screen resolution 800 x 480 pixels Connects to the Raspberry Pi board using a ribbon cable connected to the DSI port.
- Adapter board is used to power the display and convert the parallel signals from the display to the serial (DSI) port on the Raspberry Pi.
- The display works with all existing Raspberry Pi models with RDK images.

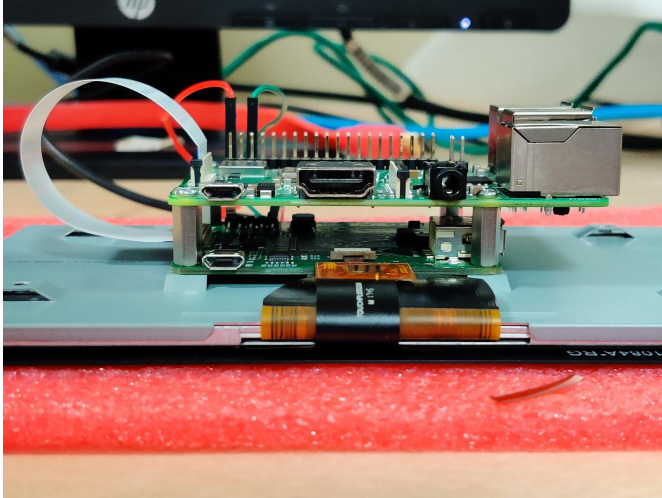
Hardware requirement

- Raspberry Pi 3 Model B+
- Raspberry Pi Touchscreen LCD Display (7-inch)
- MicroSDHC Class 10 98 MB/s (Sandisk ultra)
- Power adapter for raspberrypi
- Normal headset for connecting to raspberrypi 3.5mm jack

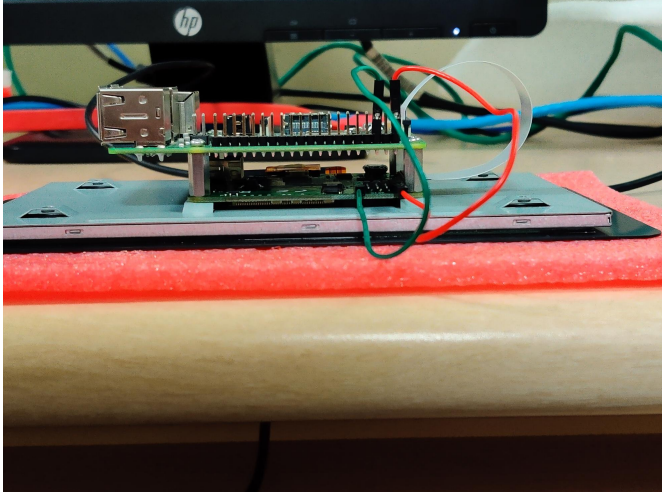
Note: Raspberry Pi Touchscreen LCD Display (7-inch) can be ordered from <https://www.amazon.in/Raspberry-Pi-Touchscreen-Display-7-inch/dp/B0153R2A9>

Hardware setup

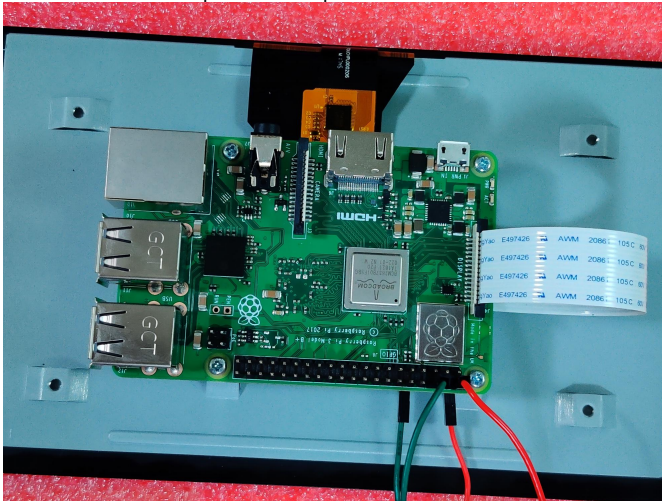
- This LCD will connects to the Raspberry Pi board using a ribbon cable connected to the DSI port as shown below.



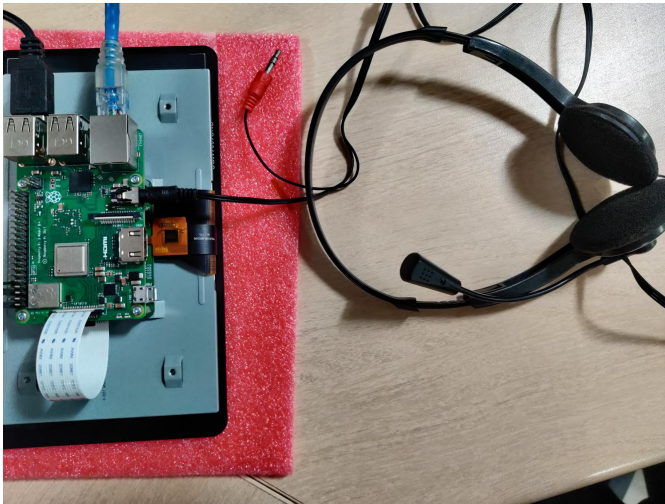
- LCD display will be powered using connected wires as shown below. From 7-inch lcd power 5v pin (pin1) needs to be connected to raspberrypi 5v (Pin2) and Gnd pin(pin5) needs to be connected to raspberrypi gnd pin (pin6).



- Connections to GPIO pins and DSI port.



- Headset connection to RPI 3.5mm jack for audio

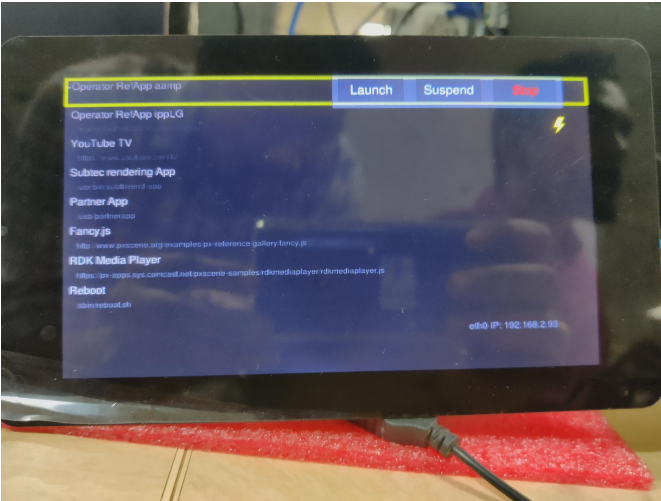


Building procedure

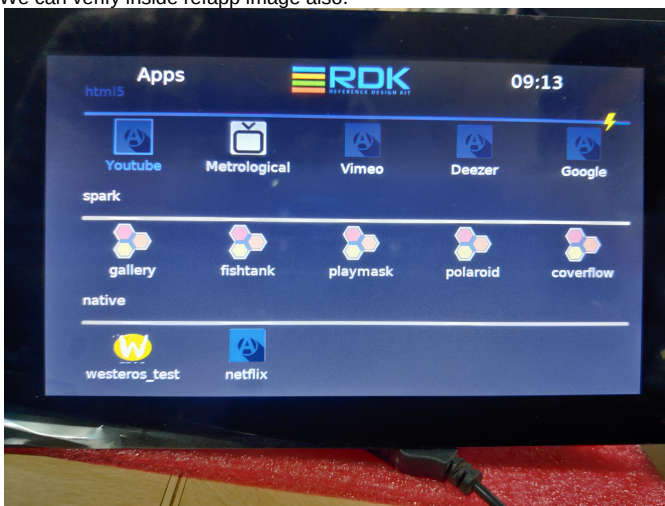
- `repo init -u https://code.rdkcentral.com/r/manifests -b rdk-next -m rdkv-nosrc.xml`
- `repo sync --no-tags`
- `source meta-cmf-raspberrypi/setup-environment`
- `select meta-cmf-raspberrypi/conf/machine/raspberrypirdkhybrefapp-seven-inch-lcd.conf`
- `bitbake rdk-generic-hybrid-refapp-image`

Verification

- After boot-up we can verify that application(Ex:appmanager) will be fitted into 7-inch display resolution as shown below:



- We can verify inside refapp image also.



DEBUG Logs

- For confirming resolution user can see the logs by watching journalctl on particular service.

Example:

```
journalctl -x -u appmanager
```

- Also user can launch runAppmanager directly for observing console logs.
systemctl stop appmanager
sh /lib/rdk/runAppmanager

Test cases

- On 7-inch display we can verify all features like
 1. westeros_test(compositor test application)
 2. Browser applications like rdkbrowser2
 3. playback through gstreamer plugins
 4. rmfApp playback
 5. aamp playback
 6. spark applications, appmanager and refapp etc.
- Attached system test plan will covers all these test cases.

Reference

- <https://thepihut.com/blogs/raspberry-pi-tutorials/45295044-raspberry-pi-7-touch-screen-assembly-guide>
- <https://www.raspberrypi.org/documentation/hardware/display/>
- <https://learn.pimoroni.com/tutorial/pi-lcd/getting-started-with-raspberry-pi-7-touchscreen-lcd>