Radxa Rock 5 Model B 5B

Radxa Rock 5 Model B 5B Single Board Computer User Manual

Model: Rock 5 Model B 5B

1. INTRODUCTION

This user manual provides essential information for the proper setup, operation, and maintenance of your Radxa Rock 5 Model B 5B Single Board Computer. Please read this manual thoroughly before using the device to ensure optimal performance and longevity.

2. PRODUCT OVERVIEW

The Radxa Rock 5 Model B 5B is a high-performance single board computer designed for a wide range of applications. It features the powerful Rockchip RK3588 SoC, offering robust processing capabilities and extensive connectivity.

2.1 Key Features

- **SoC:** Rockchip RK3588 with Arm DynamIQ (Quad Cortex – A76 @ 2.2/2.4GHz, Quad Cortex – A55 @ 1.8GHz).
- **GPU:** Arm Mali G610MC4 GPU, supporting OpenGL ES1.1, ES2.0, ES3.2, OpenCL 1.1, 1.2, 2.2, Vulkan 1.1, 1.2.
- **Memory:** 8GB 64bit LPDDR4 RAM.
- **Video Output:** Dual HDMI ports (up to 8Kp60 and 4Kp60) and one Micro-HDMI port (up to 4Kp60).
- **Networking:** 1x 2.5 Gigabit Ethernet port (PoE support with add-on HAT).
- **USB Ports:** 2x USB2 HOST, 1x USB3 HOST, 1x USB3 OTG/HOST.
- **Operating System Support:** Debian, Ubuntu, Android 12.
- **Power Management:** Dedicated power on/off button for safe shutdowns.

2.2 Board Layout

Familiarize yourself with the various components and ports on the Rock 5 Model B 5B board.
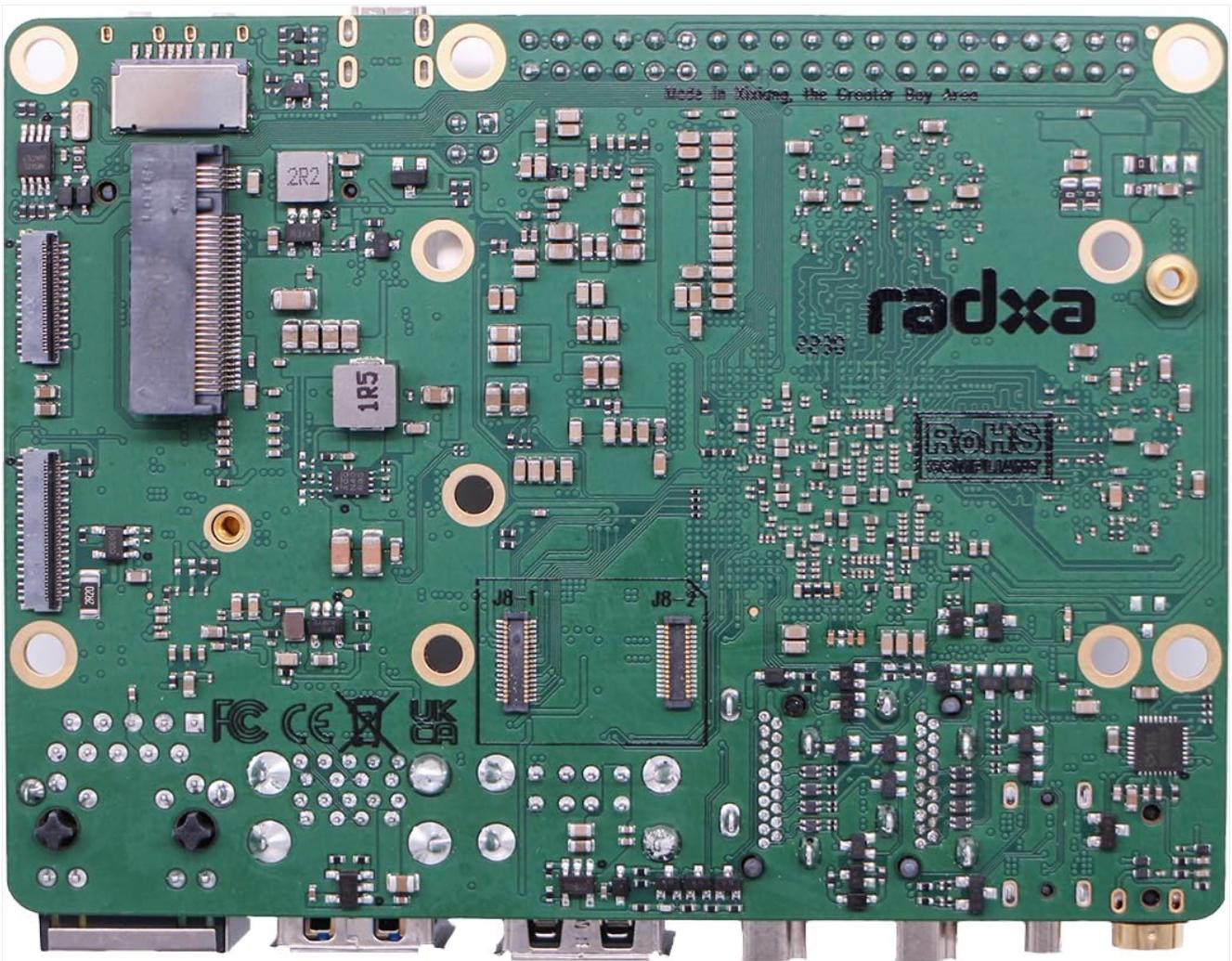
Image 1: Top view of the Radxa Rock 5 Model B 5B board. This image highlights the central Rockchip RK3588 SoC, the 8GB LPDDR4 RAM modules, and various peripheral connectors including USB ports, HDMI ports, and the Ethernet port.
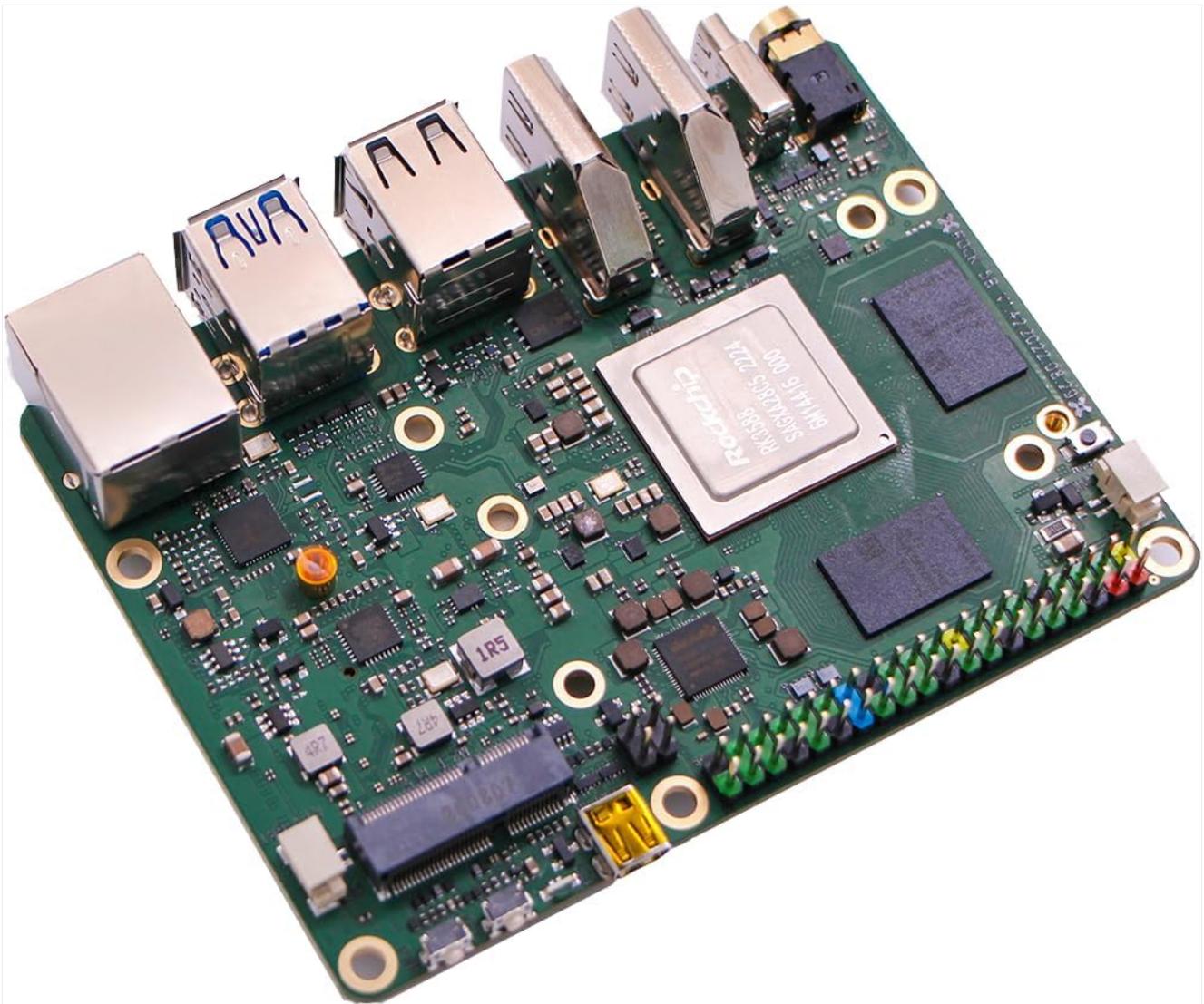
Image 2: Angled view of the Radxa Rock 5 Model B 5B board. This perspective provides a clearer view of the side-mounted ports, including USB, HDMI, and the 2.5 Gigabit Ethernet port, along with the main Rockchip processor.

3. SETUP INSTRUCTIONS

Follow these steps to set up your Radxa Rock 5 Model B 5B for initial use.

1. **Prepare Storage:** Install an operating system (e.g., Debian, Ubuntu, Android 12) onto a compatible eMMC module or microSD card. Refer to the official Radxa documentation for detailed OS installation guides.

2. **Connect Display:** Connect a monitor or display to one of the HDMI ports (standard or micro-HDMI) using an appropriate cable.

3. **Connect Peripherals:** Plug in a USB keyboard and mouse to the available USB HOST ports.

4. **Network Connection:** For wired network access, connect an Ethernet cable to the 2.5 Gigabit Ethernet port.

5. **Power Supply:** Connect a compatible 5V power supply to the USB-C power input port. Ensure the power supply can deliver sufficient current for stable operation.

6. **Power On:** Press the dedicated power on/off button to start the device.

4. OPERATING INSTRUCTIONS

This section covers basic operation of the Rock 5 Model B 5B.

4.1 Powering On and Off

- **Power On:** Press the power on/off button once to start the system.
- **Safe Shutdown:** To prevent data corruption, always perform a proper software shutdown through the operating system before pressing the power on/off button to turn off the device. A short press of the power button can initiate a graceful shutdown if configured in the OS.
- **Hard Power Off:** In emergencies, a long press (typically 5-10 seconds) of the power button will force a power off. Use this only when a graceful shutdown is not possible.

4.2 Connecting to Displays

The Rock 5 Model B 5B supports multiple display outputs:

- Use the standard HDMI ports for resolutions up to 8Kp60 and 4Kp60.
- The Micro-HDMI port supports resolutions up to 4Kp60.
- Ensure your display and HDMI cables support the desired resolution and refresh rate.

4.3 USB Connectivity

The board provides various USB ports for connecting peripherals:

- **USB2 HOST ports:** For keyboards, mice, and other low-bandwidth devices.
- **USB3 HOST port:** For high-speed devices like external storage.
- **USB3 OTG/HOST port:** Can function as either an On-The-Go (OTG) port or a standard host port, depending on configuration and connected device.

5. MAINTENANCE

Proper maintenance ensures the longevity and stable operation of your Rock 5 Model B 5B.

- **Environment:** Operate the device in a clean, dry environment, away from direct sunlight, excessive heat, and moisture.
- **Cooling:** Ensure adequate airflow around the board. For demanding applications, consider adding a heatsink or fan to the SoC for optimal thermal management.
- **Cleaning:** Use a soft, dry brush or compressed air to gently remove dust from the board. Avoid using liquids or abrasive cleaners.
- **Handling:** Always handle the board by its edges to avoid touching components, especially when the device is powered on. Static electricity can damage electronic components.
- **Software Updates:** Regularly update your operating system and installed software to benefit from performance improvements, security patches, and new features.

6. TROUBLESHOOTING

This section addresses common issues you might encounter.

- **No Display Output:**

  - Ensure the HDMI cable is securely connected to both the board and the monitor.
  - Verify the monitor is powered on and set to the correct input source.
  - Try a different HDMI port or cable.
  - Confirm that an operating system is properly installed on your storage device.

- **Device Does Not Power On:**

- Check that the power supply is correctly connected and providing sufficient power (5V, adequate current).
- Ensure the power button is pressed correctly.
- Disconnect all peripherals and try powering on with only the display connected.

- **USB Devices Not Recognized:**

  - Try connecting the device to a different USB port.
  - Ensure the operating system has the necessary drivers for the USB device.
  - For high-power USB devices, ensure your power supply can handle the additional load.

- **Network Connectivity Issues:**

  - Verify the Ethernet cable is properly connected to both the board and the router/switch.
  - Check network settings within your operating system.
  - Ensure your router/switch is functioning correctly.

7. SPECIFICATIONS

Detailed technical specifications for the Radxa Rock 5 Model B 5B.

Feature	Specification
Brand	Radxa
Model Name	Rock 5 Model B 5B
SoC	Rockchip RK3588
Processor	Arm DynamIQ (Quad Cortex – A76 @ 2.2/2.4GHz, Quad Cortex – A55 @ 1.8GHz)
GPU	Arm Mali G610MC4 GPU
RAM Memory	8 GB LPDDR4
HDMI Output	Dual HDMI (up to 8Kp60, 4Kp60), Micro-HDMI (up to 4Kp60)
Ethernet	1x 2.5 Gigabit LAN (PoE support with HAT)
USB Ports	2x USB2 HOST, 1x USB3 HOST, 1x USB3 OTG/HOST (Total 4)
Operating System Support	Android 12, Debian, Ubuntu
Connectivity Technology	2.5G LAN
Wireless Compatibility	802.11b (Note: May require an optional module or adapter for Wi-Fi)
Compatible Devices	TVs, Monitors, Gaming Consoles, Keyboards, Mice, Storage Devices, PoE-enabled Devices, Standard PC Peripherals
Manufacturer	Okdo
Mfr Part Number	2943159

8. WARRANTY AND SUPPORT

For warranty information, technical support, and additional resources, please refer to the official Radxa website or contact your point of purchase. Keep your proof of purchase for warranty claims.
Official Radxa Website: www.radxa.com