Radxa ROCK 4 SE

schematic

V1.53
CONTENT INDEXING

01. Cover page
02. Index
03. Block Diagram
04. ES8316
05. CONNECTOR
06. RK3399 Power
07. RK3399 PMU Controller
08. RK3399 DDR Controller
09. RK3399 Flash & SDMMC Controller
10. RK3399 USB/USIC Controller
11. RK3399 SARADC/Key
12. RK3399 DVP Interface
13. RK3399 Display Interface
14. RK3399 GPIO
15. RK3399 PCIe
16. Power-DC IN
17. Power-PMIC RK808-D
18. RTL8211F
19. USB3.0 OTG Port
20. RAM-LPDDR4(200P)
21. Memory-EMMC
22. WIFI/BT AP6255
23. TF Card
24. HDMI Output
25. PCIe NGFF/M.2
26. FAN-KEY-LED
27. Hole
This is a block diagram of the ROCK 4 SE device. The diagram shows the various components and their connections, including:

- **RK3399** central processor unit (CPU)
- **NB679 DCDC** power management unit
- **PMU RK808** power management unit
- **24MHZ Crystal** oscillator
- **DDR4** memory
- **EMMC** flash memory
- **ES8316** audio codec
- **TFCARD** memory card reader
- **KEY M** key module
- **CAM** camera
- **LCD** display
- **MIPI RX0** MIPI receiver
- **MIPI TX1** MIPI transmitter
- **PCIE** peripheral component interconnect express
- **SDMMC** secure digital media memory card
- **I2S0** serial audio interface
- **OSC** oscillator
- **DDR** memory
- **PMU I2C0** power management unit interface
- **HDMI** high-definition multimedia interface
- **USB2.0 HOST0** USB host controller
- **USB2.0 HOST1** USB host controller
- **USB3.0 TYPEC0** USB 3.0 Type-C connector
- **USB3.0 OTG0** USB 3.0 On-The-Go
- **USB2.0 OTG1** USB 2.0 On-The-Go
- **UART0** universal asynchronous receiver-transmitter
- **SDIO0** serial digital input/output
- **RGII MI** reduced grain interface
- **RTL8211F** Ethernet controller
- **CM256 WIFI** Wi-Fi module
- **40PIN** connector
- **RJ45** Ethernet connector

The diagram is labeled with various connections and interfaces, indicating the flow of data and power within the device.
Note: Power filter CAP please place back of SOC or close to SOC.
Note: RK3399 part C is 1.8V Only
DDR FILTER Note: R1202 cannot be deleted

DDR FILTER Note: R1203 cannot be deleted
BOM ID

<table>
<thead>
<tr>
<th>Item</th>
<th>Rup</th>
<th>Rdown</th>
<th>VOL</th>
<th>VERSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL1</td>
<td>DNP</td>
<td>100K</td>
<td>0V</td>
<td>A</td>
</tr>
<tr>
<td>LEVEL2</td>
<td>100K</td>
<td>20K</td>
<td>0.3V</td>
<td>B</td>
</tr>
<tr>
<td>LEVEL3</td>
<td>100K</td>
<td>51K</td>
<td>0.6V</td>
<td>C</td>
</tr>
<tr>
<td>LEVEL4</td>
<td>100K</td>
<td>100K</td>
<td>0.9V</td>
<td>D</td>
</tr>
<tr>
<td>LEVEL5</td>
<td>100K</td>
<td>200K</td>
<td>1.2V</td>
<td>E</td>
</tr>
<tr>
<td>LEVEL6</td>
<td>100K</td>
<td>499K</td>
<td>1.5V</td>
<td>F</td>
</tr>
<tr>
<td>LEVEL7</td>
<td>100K</td>
<td>DNP</td>
<td>1.8V</td>
<td>G</td>
</tr>
</tbody>
</table>
Note: RK3399 part E is 1.8V/3.0V mode

Note: RK3399 part I is 3.3V only

Note: RK3399 part G is 1.8V only

Note: RK3399 part J is 1.8V/3.0V mode
DC IN\&SYSTEM Power