PMIC PCA9451 FOR I.MX 93

PCA9451 is the power management IC (PMIC) designed to support i.MX 93 processor. Required Buck/LDO voltage and startup sequence have been fixed for i.MX 93. Power supply can support peripherals as well as i.MX 93.

We recommend PCA9451 when using i.MX 93 for design simplification of power supply.

POWER SUPPLY FOR I.MX 8M PLUS AND PERIPHERALS

<table>
<thead>
<tr>
<th>MPU PERIPHERALS</th>
<th>POWER 5 V</th>
<th>EXTERNAL POWER SUPPLY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.85 V/4A</td>
<td>0.6 V/2A</td>
</tr>
<tr>
<td>i.MX93</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>LPDDR4</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>LPDDR4X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NAND Flash</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Wi-Fi/Bluetooth</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Camera</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Audio Codec</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Ethernet</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PDM MIC/MQS</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>USB Type-C</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>MicroSD</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>CAN-FD</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

✓ Power supply from PCA9451   ✓ External Power supply (not PCA9451)
i.MX 93 POWER TREE

- PCA9451
  - BUCK1 (0.85 V)
  - BUCK3 (0.85 V)
  - BUCK4 (3.3 V)
  - BUCK5 (1.8 V)
  - BUCK6 (1.1 V)
  - BUCK2 (0.6 V)
  - LDO1 (1.8 V)
  - LDO4 (0.8 V)
  - LDO5 (3.3 V/1.8 V)

- Selectable voltage: 1.8 V or 3.3 V for BF

- SD CARD
  - Vcc

- LPDDR4/4X
  - VDD1
  - VDD2
  - VDDQ

- NAND Flash (eMMC)
  - VCCQ
  - VCC

- Memory/Storage

- Ethernet
  - VDD 1.8 V
  - VDD 3.3 V

- Wi-Fi/Bluetooth
  - VBAT
  - VI0

- Network

- Load SW
  - SWIN
  - SWOUT

- Power 5 V

- i.MX 93
  - VDD–SOC
  - VDD–USB_3P3
  - NVCC_AON, NVCC_GPIO, NVCC_WAKEUP
  - VDD–MIPI_1P8, VDD–USB_1P8
  - VDD–LVDS_1P8, VDD–ANA0_1P8
  - VDD–ANA1_1P8, VDD–ANAVDET_1P8
  - VDD–DDR
  - VDD–DDR
  - NVCC_BBSM_1P8
  - VDD–ANA_0P8, VDD–MIPI_0P8
  - VDD–USB_0P8
  - NVCC_SD2

- USB Type-C
  - 3.3 V
  - 5.0 V

- Audio Codec
  - AVDD/LINE VDD (3.3 V)
  - SPKVDD (5.0 V)

- Audio

- Camera (MIPI CSI)
  - 1.8 V / 3.3 V / 5.0 V / etc.

- Display (MIPI DSI)
  - 1.8 V / 3.3 V / 5.0 V / etc.

- Display (LVDS)
  - 1.8 V / 3.3 V / 5.0 V / etc.

- Imaging / Display