

# i.MX8 SOM

[imx8](#), [usom](#), [microsom](#), [som](#), [cpu](#), [SR-uSOM](#), [SR-uSOM-MX8](#)

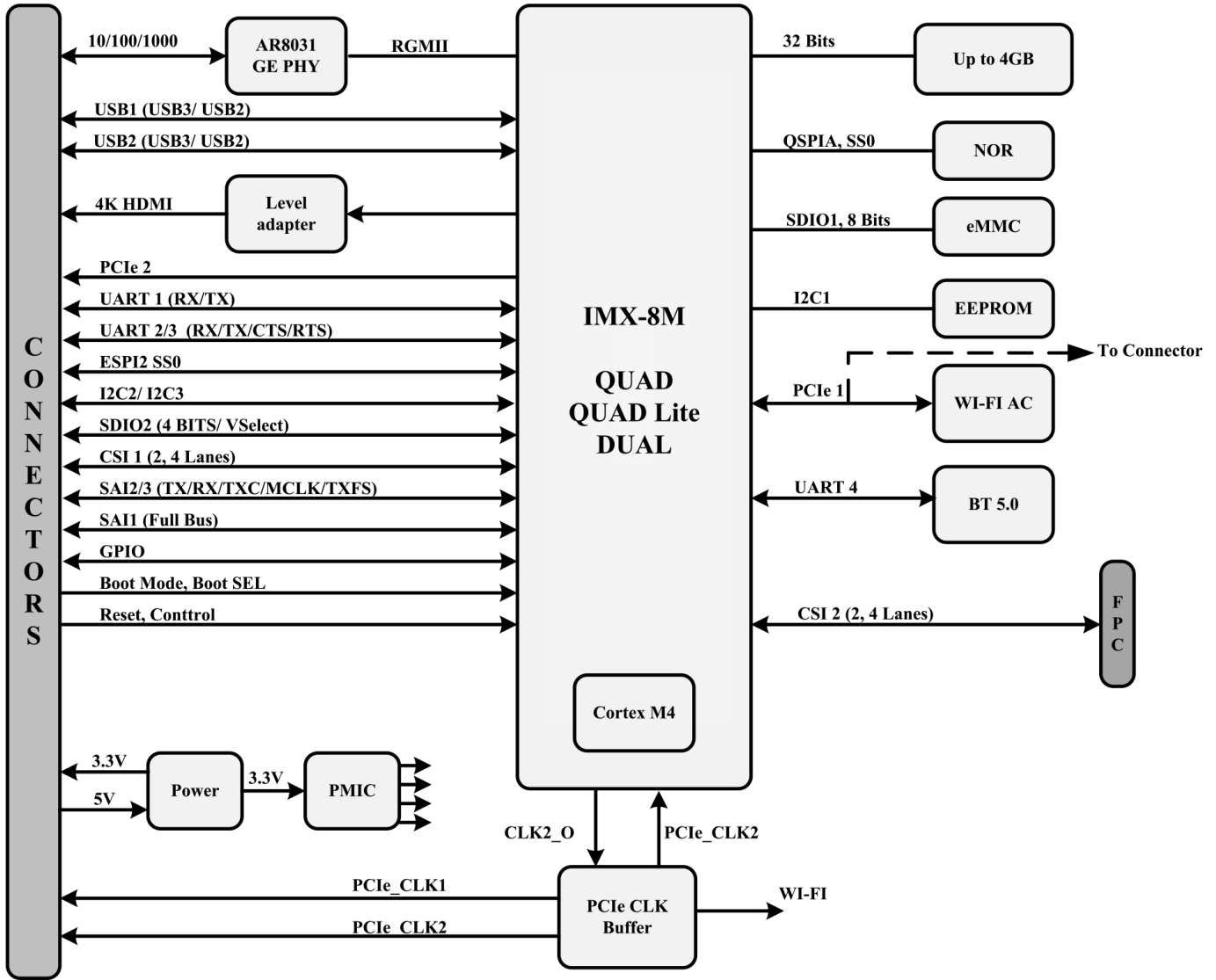


## Description

SolidRun's i.MX8 based System on Module (SOM) harnesses NXP's powerful i.MX8M in a flexible & compact SOM including a memory subsystem, power management subsystem, networking and system interconnectivity. The i.MX8 SOM will allow developers and OEMs to simplify the production cycle and reduce time-to-market drastically.

With its superior audio and video capabilities, including 4K UltraHD and Dolby vision, i.MX8 is tailor made for a wide range of multimedia and IoT applications - from digital signage and voice recognition solutions to home entertainment devices.

## Block Diagram





















### Comparison Table

SolidRun offers several SOMs with varying capability, differentiated primarily by processing cores, network capability, and integrated memory amount.

**Notes: The features of the SOMs are limited to the features of the Carrierboard (for example Hummingboard).**

| Description/Model                | SOM i.MX8 Dual                                | SOM i.MX8 Quad Lite                           | SOM i.MX8 Quad                                |
|----------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <b>System On Chip</b>            | i.MX8M D                                      | i.MX8M L                                      | i.MX8M Q                                      |
| <b>Processor core</b>            | Dual core ARM A53                             | Dual core ARM A53                             | Dual core ARM A53                             |
| <b>General Purpose Processor</b> | ARM Cortex M4                                 | ARM Cortex M4                                 | ARM Cortex M4                                 |
| <b>Processor speed</b>           | 1.3GHz (up to 1.5GHz)                         | 1.3GHz (up to 1.5GHz)                         | 1.3GHz (up to 1.5GHz)                         |
| <b>Floating Point</b>            | VFPv4                                         | VFPv4                                         | VFPv4                                         |
| <b>SIMD</b>                      | NEON                                          | NEON                                          | NEON                                          |
| <b>Graphics Processing Unit</b>  | Vivante GC7000 Lite                           | Vivante GC7000 Lite                           | Vivante GC7000 Lite                           |
| <b>3D GPU Support</b>            | OpenGL ES1.1/2.0/3.0/3.1, OpenCL 1.2 & Vulkan | OpenGL ES1.1/2.0/3.0/3.1, OpenCL 1.2 & Vulkan | OpenGL ES1.1/2.0/3.0/3.1, OpenCL 1.2 & Vulkan |

| Description/Model                     | SOM i.MX8 Dual                                                                      | SOM i.MX8 Quad Lite                                                                 | SOM i.MX8 Quad                                                                        |
|---------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>HW Video Dec/Enc</b>               | Multi Format                                                                        | Multi Format                                                                        | Multi Format                                                                          |
| <b>Memory</b>                         | 32 bit, up to 3GB<br>LPDDR4-3200                                                    | 32 bit, up to 3GB<br>LPDDR4-3200                                                    | 32 bit, up to 3GB<br>LPDDR4-3200                                                      |
| <b>Wired Network</b>                  | 10/100/1000 Mbps                                                                    | 10/100/1000 Mbps                                                                    | 10/100/1000 Mbps                                                                      |
| <b>Wireless Network</b>               | 802.11 ac/a/b/g/n<br>(Optional)                                                     | 802.11 ac/a/b/g/n<br>(Optional)                                                     | 802.11 ac/a/b/g/n<br>(Optional)                                                       |
| <b>Bluetooth</b>                      | BT 5.0 (Optional)                                                                   | BT 5.0 (Optional)                                                                   | BT 5.0 (Optional)                                                                     |
| <b>Display Max resolution</b>         | 4K @60                                                                              | 4K @60                                                                              | 4K @60                                                                                |
| <b>Display Interfaces</b>             | HDMI 2.0, MIPI-DSI                                                                  | HDMI 2.0, MIPI-DSI                                                                  | HDMI 2.0, MIPI-DSI                                                                    |
| <b>Dual display support</b>           |    |    |    |
| <b>Supported External Storage</b>     | NOR-Flash,<br>SD/microSD, PCIe SSD                                                  | NOR-Flash, SD/microSD,<br>PCIe SSD                                                  | NOR-Flash,<br>SD/microSD, PCIe SSD                                                    |
| <b>Supported Internal Storage</b>     | eMMC, QSPI-NOR<br>(Optional)                                                        | eMMC, QSPI-NOR<br>(Optional)                                                        | eMMC, QSPI-NOR<br>(Optional)                                                          |
| <b>SD/MMC</b>                         | 2                                                                                   | 2                                                                                   | 2                                                                                     |
| <b>USB 3.0</b>                        | 1+2 (HUB)                                                                           | 1+2 (HUB)                                                                           | 1+2 (HUB)                                                                             |
| <b>USB OTG</b>                        | 1                                                                                   | 1                                                                                   | 1                                                                                     |
| <b>Serial ports</b>                   | 2 (RTS/CTS/RX/TX) +1<br>(TX/RX)                                                     | 2 (RTS/CTS/RX/TX) +1<br>(TX/RX)                                                     | 2 (RTS/CTS/RX/TX) +1<br>(TX/RX)                                                       |
| <b>Digital audio serial interface</b> | 20 channels<br>32bits @384khz<br>DSD512<br>SPDIF TX&RX<br>HDMI ARC<br>Dolby         | 20 channels<br>32bits @384khz<br>DSD512<br>SPDIF TX&RX<br>HDMI ARC<br>Dolby         | 20 channels<br>32bits @384khz<br>DSD512<br>SPDIF TX&RX<br>HDMI ARC<br>Dolby           |
| <b>Camera interface port</b>          | 2x MIPI-CSI2 (4 Lane<br>each)                                                       | 2x MIPI-CSI2 (4 Lane<br>each)                                                       | 2x MIPI-CSI2 (4 Lane<br>each)                                                         |
| <b>PCI-Express 2.0</b>                | 2                                                                                   | 2                                                                                   | 2                                                                                     |
| <b>I2C</b>                            | 2                                                                                   | 2                                                                                   | 2                                                                                     |
| <b>SPI</b>                            | 1                                                                                   | 1                                                                                   | 1                                                                                     |
| <b>PWM</b>                            | 4                                                                                   | 4                                                                                   | 4                                                                                     |
| <b>GPIO</b>                           | 75                                                                                  | 75                                                                                  | 75                                                                                    |
| <b>JTAG</b>                           | Test Point Header                                                                   | Test Point Header                                                                   | Test Point Header                                                                     |
| <b>S/PDIF Input</b>                   |  |  |  |
| <b>S/PDIF Output</b>                  |  |  |  |
| <b>RTC</b>                            |  |  |  |
| <b>Linux Support</b>                  |  |  |  |
| <b>Android Support</b>                |  |  |  |
| <b>Temperature range</b>              | Industrial                                                                          | Industrial                                                                          | Industrial                                                                            |
| <b>Main Voltage</b>                   | 5V                                                                                  | 5V                                                                                  | 5V                                                                                    |
| <b>IO Voltage</b>                     | 3.3V                                                                                | 3.3V                                                                                | 3.3V                                                                                  |
| <b>SOM interface</b>                  | Hirose DF40 connectors<br>1.5mm up to 4.0mm<br>mating height                        | Hirose DF40 connectors<br>1.5mm up to 4.0mm<br>mating height                        | Hirose DF40 connectors<br>1.5mm up to 4.0mm<br>mating height                          |
| <b>Dimensions (W x L)</b>             | 47mm x 30mm                                                                         | 47mm x 30mm                                                                         | 47mm x 30mm                                                                           |

From:

<https://wiki.solid-run.com/> - **Wiki | SolidRun**

Permanent link:

<https://wiki.solid-run.com/doku.php?id=products:imx8:som>

Last update: **2018/05/19 00:58**

