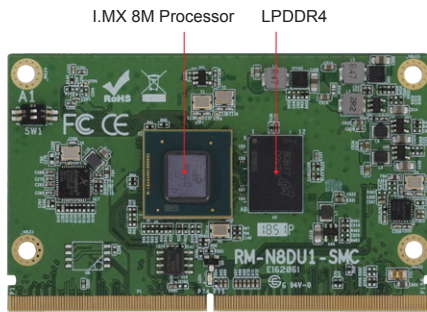


# RM-N8M Series

## SMARC 2.0 CPU Module

Wide-Temperature SMARC™ 2.0 Module with NXP ARM® Cortex-A53/Cortex-M4 i.MX 8M Dual/Quad 1.5GHz Processor



## Features

- With NXP Cortex-A53/Cortex-M4, i.MX 8M Dual/Quad 1.5GHz processor
- 3GB LPDDR4, 8/16/32/64GB eMMC
- Rich peripheral I/O support
- Validated with Yocto v2.5 and Android 9
- Long life time supply with NXP solution
- Compliant with SGeT standard SMARC™ V2.0

## System

|                         |   |
|-------------------------|---|
| Form Factor             | SMARC™ V2.0   |
| Processor               | NXP i.MX 8M Dual/Quad Cortex-A53 and Cortex-M4, 1.5GHz  |
| System Memory           | 3GB LPDDR4 on board   |
| Flash Memory            | 8GB eMMC on board (optional 16/32/64 GB)  |
| Display                 | 1x MIPI-DSI 4-lane up to 1920 x 1080 at 60Hz<br>1x HDMI V2.0a, up to 4K, supports HDCP2.2 and HDCP1.4   |
| Video Codec             | <ul style="list-style-type: none"> <li>• 4Kp60 HEVC/H.265 main, and main 10 decoder</li> <li>• 4Kp60 VP9 decoder</li> <li>• 4Kp30 AVC/H.264 decoder</li> <li>• 1080p60 MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, H.263 decoder</li> </ul> |
| Graphics                | <ul style="list-style-type: none"> <li>• GC7000Lite</li> <li>• OpenGL ES 1.1, 2.0, 3.0, 3.1, Open CL 1.2, and Vulkan</li> </ul>   |
| Audio Interface         | 2x I <sup>2</sup> S, 1x SPDIF   |
| LAN                     | 1x GbE LAN  |
| USB                     | 2x USB3.0/USB2.0 with OTG interface   |
| Image Capture Interface | 2x MIPI-CSI2 4-lane each  |
| Serial Interface        | 4x UART, 2x SPI   |
| Media Interface         | 2x High-speed MMC/SDIO (MMC 8-bit, SDIO 4-bit)  |
| PCI-E                   | 2x PCI-E (x1) Gen2  |
| SATA                    | N/A   |
| GPIO                    | 12x GPIO  |

|                       |   |
|-----------------------|---|
| I <sup>2</sup> C      | 4x I <sup>2</sup> C   |
| CAN Bus               | N/A   |
| Dimensions            | 82mm x 50mm (3.2" x 2")   |
| Environment           | Humidity: 0 % to 90 % RH at 60° C (non-condensing)<br>Shock: Non-operating: 1G, 15 mins (x-, y-, z-axis)<br>Vibration: Non-operating: 3 Hz to 500 Hz, 15 mins |
| Operating Temperature | Consumer Grade : 0°C ~ 70°C<br>Industrial Grade : -40°C ~ 85°C  |
| OS Support            | Yocto 2.5 (Kernel 4.14.62)<br>Android 9 (Kernel 4.14.62)  |
| Certification         | CE/ FCC Class B   |

## Ordering Information

|                            |  |
|----------------------------|--|
| RM-N8M-D308                | SMARC 2.0 CPU module, Cortex-A53 i.MX 8M Dual 1.5GHz, 3GB LPDDR4, 8GB MLC eMMC Art. N° 160746  |
| RM-N8M-D308I               | Industrial grade SMARC 2.0 CPU module, Cortex-A53 i.MX 8M Dual 1.3GHz, 3GB LPDDR4, 8GB MLC eMMC Art. N° 160747   |
| RM-N8M-Q316                | SMARC 2.0 CPU module, Cortex-A53 i.MX 8M Quad 1.5GHz, 3GB LPDDR4, 16GB TLC eMMC Art. N° 160748   |
| RM-N8M-Q316I               | Industrial grade SMARC 2.0 CPU module, Cortex-A53 i.MX 8M Quad 1.3GHz, 3GB LPDDR4, 16GB TLC eMMC Art. N° 160749  |
| RP-103-SMC (Carrier Board) | 3.5" SMARC 2.0 carrier board, 2-CH LVDS, HDMI, 2x CSI, DSI, GbE, RS-234/422/285, USB3.0, M.2 Key-E (2230), Mini PCI-E w/ SIM socket, USB OTG, SATA, CAN, Audio/Speaker out/HP&MIC, MicroSD and 12~24VDC Art. N° 160751 |