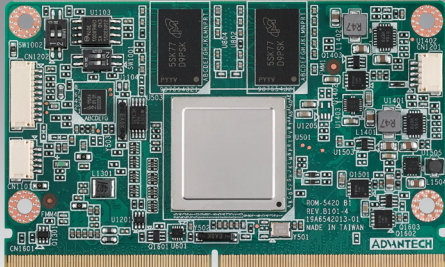


# ROM-5420

## NXP ARM® Cortex®-A9 i.MX6 SMARC v1.1 Module

**NEW**



### Features

- NXP ARM® Cortex® -A9 i.MX6 high performance processor
- Onboard DDR3 memory and eMMC 4GB
- Parallel RGB, HDMI, single channel 18/24-bit LVDS, 1366 x 768
- 2 x CAN, 4 x UART, 5 x I<sup>2</sup>C, 12 x GPIO, 1 x PCIe, 1 x camera input and 1 x Gigabit LAN
- Supports OpenGL ES 2.0 and OpenVG 1.1 hardware accelerators
- Supports full HD hardware encode/decode engine
- Low power consumption, fanless design
- Supports Linux and Android BSP



### Introduction

ROM-5420 B1 compatible with SMARC v1.1 specification and has integrated NXP i.MX6 Cortex-A9 SoC. The i.MX6 supports powerful CPU performance and 2D/3D graphics accelerators. ROM-5420 B1 series supports rich interfaces such as camera, CAN, UART, I<sup>2</sup>C, GPIO and it is specially designed for portable applications.

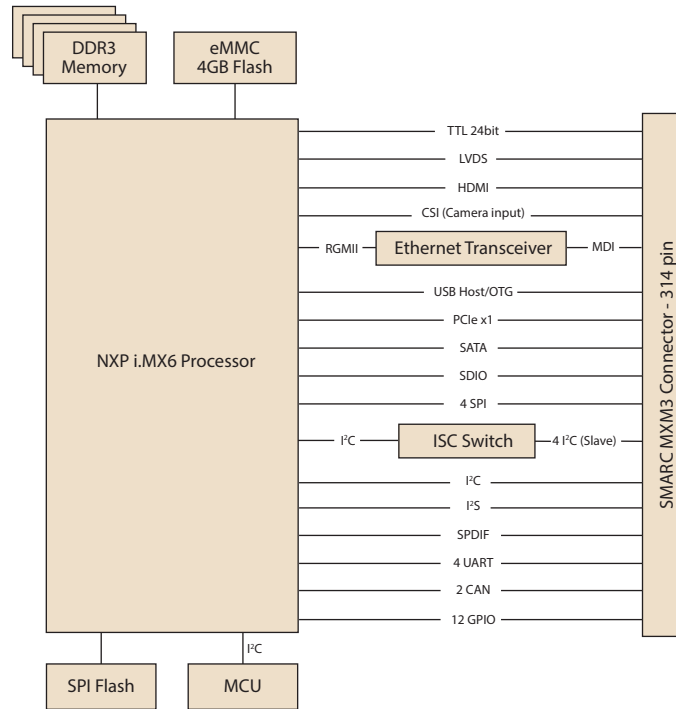
ROM-5420 B1 also offered the optimized OS BSP, images, test utilities, schematic check tool and carrier board design guide for customer for their application development and device integration.



### Specifications

|                  |                       |  |
|------------------|-----------------------|--|
| Form Factor      |                       | SMARC v1.1   |
| Processor System | CPU                   | NXP ARM Cortex-A9 i.MX6 800MHz/1GHz  |
| Memory           | Technology            | DDR3 1066 MHz up to 2GB  |
|                  | Capacity              | On-board DDR3  |
|                  | Flash                 | 4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader                             |
| Graphics         | LVDS                  | 1 Single 24-bit LVDS, 1366 x 768 at 60Hz   |
|                  | HDMI                  | 1920 x 1080 at 60Hz  |
|                  | Parallel RGB          | 1 24-bit TTL, 1920 x 1200 at 60Hz  |
|                  | VGA                   | -  |
|                  | Graphics Engine       | 2 IPUs. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1  |
|                  | H/W Video Codec       | Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP<br>Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP |
| Ethernet         | Chipset               | NXP i.MX6 integrated RGMII   |
|                  | Speed                 | 1 x 10/100/1000 Mbps   |
| RTC              | RTC                   | Yes  |
| WatchDog Timer   |                       | 256-level timer interval, from 0 ~ 128 sec   |
| I/O              | PCIe                  | 1 PCIe x 1   |
|                  | SATA                  | 1 SATA II  |
|                  | USB                   | 1 USB 2.0, 1 USB 2.0 OTG   |
|                  | Audio                 | I <sup>2</sup> S   |
|                  | SPDIF                 | 1  |
|                  | SDIO                  | 1  |
|                  | Serial Port           | 4 UART (2 x 2 wire, 2 x 4 wire w/ 3.3V)  |
|                  | SPI                   | 4  |
|                  | CAN                   | 2 x CAN bus 2.0B   |
|                  | GPIO                  | 12   |
|                  | I <sup>2</sup> C      | 5  |
|                  | Camera Input          | 1 MIPI v1.0, 4x Lane   |
|                  | System Bus            | -  |
| Touch            | -                     |  |
| Keypad           | -                     |  |
| Power            | Power Supply Voltage  | +3 ~ 5.25 V  |
|                  | Power Consumption     | 3.1W (Max)   |
| Environment      | Operating Temperature | 0 ~ 60 °C/ -40 ~ 85 °C   |
|                  | Operating Humidity    | 0% ~ 90% relative humidity, non-condensing   |
| Mechanical       | Dimensions (W x D)    | 82 x 50 mm   |
| Operation System |                       | Linux & Android  |
| Certifications   |                       | CE/FCC Class B   |

### Block Diagram



### Ordering Information

| Part No.         | CPU               | Memory | Flash Memory | UART | LAN | USB Host | USB OTG | Display                                  | SATA | PCIe | HDMI | SD | CANbus | I <sup>2</sup> C | SPI | Size           | Power input | Operating Temperature |
|------------------|-------------------|--------|--------------|------|-----|----------|---------|--|------|------|------|----|--------|------------------|-----|----------------|-------------|-----------------------|
| ROM-5420CD-MDB1E | i.mx6 Dual 1GHz   | 1GB    | 4 GB         | 4    | 1   | 1        | 1       | 1x 24bit LVDS<br>1x 24bit TTL<br>1x HDMI | 1    | 1    | 1    | 1  | 2      | 5                | 4   | 82 x 50 x 5 mm | 3 ~ 5.25V   | 0 ~ 60 °C             |
| ROM-5420CD-MEB1E | i.mx6 Dual 1GHz   | 2GB    | 4 GB         | 4    | 1   | 1        | 1       | 1x 24bit LVDS<br>1x 24bit TTL<br>1x HDMI | 1    | 1    | 1    | 1  | 2      | 5                | 4   | 82 x 50 x 5 mm | 3 ~ 5.25V   | 0 ~ 60 °C             |
| ROM-5420CQ-MEB1E | i.mx6 Quad 1GHz   | 2GB    | 4 GB         | 4    | 1   | 1        | 1       | 1x 24bit LVDS<br>1x 24bit TTL<br>1x HDMI | 1    | 1    | 1    | 1  | 2      | 5                | 4   | 82 x 50 x 5 mm | 3 ~ 5.25V   | 0 ~ 60 °C             |
| ROM-5420WQ-MEB1E | i.mx6 Quad 800MHz | 2GB    | 4 GB         | 4    | 1   | 1        | 1       | 1x 24bit LVDS<br>1x 24bit TTL<br>1x HDMI | 1    | 1    | 1    | 1  | 2      | 5                | 4   | 82 x 50 x 5 mm | 3 ~ 5.25V   | -40 ~ 85 °C           |

### Development Board

| Part No.         | Description                      |
|------------------|----------------------------------|
| ROM-DB5900-SWA2E | Development Board for SMARC v1.1 |

### Optional Accessories

| Part No.       | Description                                 |
|----------------|---|
| 1700022373-01  | Debug port cable for ROM-3420/5420          |
| 9696ED2000E    | Debug adapter board                         |
| 1960075867N001 | Heat spreader                               |
| 1930005215     | Screws for heat spreader                    |
| 1960063089N001 | Semi heat sink                              |
| 1930004835     | Screws for heat spreader and semi heat sink |

### Dimensions

Unit: mm

