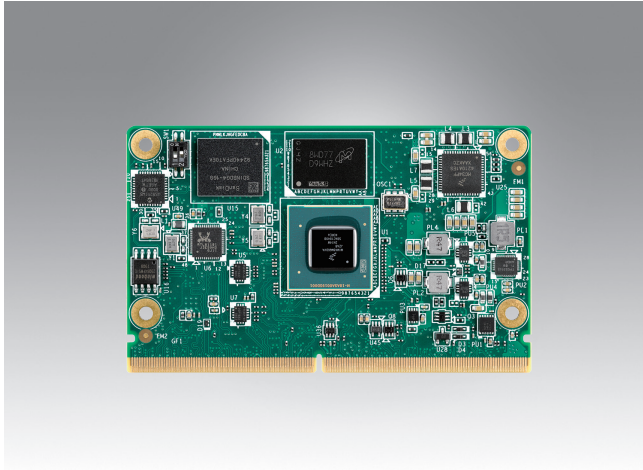


# ROM-5720

## NXP i.MX8M Cortex®-A53 SMARC 2.0/2.1 Computer-on-Module



### Features

- NXP i.MX 8M processor with dual or quad Arm Cortex A53 cores
- 1 x Arm Cortex-M4 core
- Onboard 2GB LPDDR4 memory and eMMC 16GB
- 1 x HDMI2.0 up to 4096 x 2160, 1 x 4-Lane MIPI DSI
- 2 x USB3.0, 4 x USB2.0, 4 x UART, 4 x I2C, 12 x GPIO, 1 x PCIe2.0, 1 x 4-lane MIPI CSI camera input, 1 x 2-lane MIPI CSI camera input and 2 x Gigabit LAN
- Supports OpenGL ES 3.1/3.0/2.0/1.1, Open CL 1.2, and Vulkan hardware accelerators
- Supports 4Kp60 HEVC/H.265 decoding with HDR
- Low power consumption design
- Supports Linux and Android BSP



### Introduction

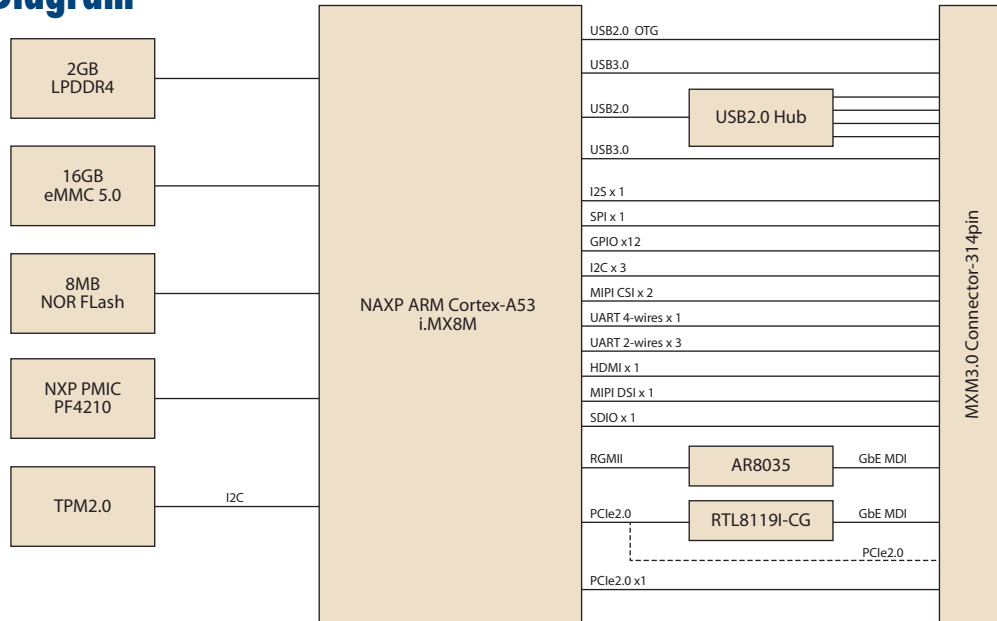
Advantech ROM-5720 SMARC 2.0/2.1 Computer-on-Module is powered by NXP i.MX8M SOC which includes dual and quad-core Arm Cortex-A53 processors in combination with one Cortex-M4 real time processor and the Vivante GC7000 Lite 3D graphics engine. It provides USB3.0, two Gigabit Ethernet, two MIPI-CSI, PCI Express, and HDMI2.0 up to 4096 x 2160 at 60 Hz and MIPI-DSI for embedded applications. It's the ideal solution for transportation, infotainment, vending, Medical.

ROM-5720 is paired with the Advantech ROM-DB5901 SMARC2.0 development board for faster end product peripheral integration and time-to-market. The reference schematics and layout checklist documentations for carrier board development will be provided along with the open-sourced Linux BSP, test utilities, hardware design utilities and reference drivers.

### Specifications

Form Factor		SMARC 2.0 & SMARC 2.1 compliance
Processor System	CPU	NXP i.MX 8M dual or quad Arm Cortex A53 cores, up to 1.5GHz
	MCU	1 x Arm Cortex-M4 core
Memory	Technology	LPDDR4-1866 MHz
	Capacity	Onboard 2GB LPDDR4
	Flash	16 GB eMMC NAND Flash for O.S. and 8 MB QSPI NOR Flash for Advantech boot loader
Graphics	LVDS/MIPI DSI	1 x 4-lane MIPI DSI, up to 1920 x 1080 @ 60Hz
	HDMI	1 x HDMI2.0, up to 4096 x 2160 at 60 Hz
	Parallel RGB	-
	VGA	-
	Graphics Engine	Vivante GC7000 Lite, supports OpenGL ES 1.1, 2.0, 3.0, 3.1, Open CL 1.2, and Vulkan
Ethernet	H/W Video Codec	Decoder: HEVC/H.265(4Kp60), VP9(4Kp60), H.264(4Kp30), MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, H.263
	Chipset	1 x NXP i.MX8M Integrated RGMII; 1 x RTL8119L-CG Giga LAN controller or 1 x PCIe x 1-lane(option)
RTC	Speed	2 x 10/100/1000 Mbps
WatchDog Timer	RTC	Yes
Security		1-6553s, default 60s, power on/off 1s
		TPM 2.0
I/O	PCIe	1 x PCIe 2.0
	SATA	-
	USB	2 USB3.0, 4 USB2.0, 1 USB2.0 OTG
	Audio	1 x I²S
	SPDIF	-
	SDIO	1
	Serial Port	1 x 4-wire UART (H/W flow control) and 3 x 2-wire UART
	SPI	1
	CAN	-
	GPIO	12
	I²C	4 with interrupt
	Camera Input	1 x 4-lane MIPI CSI, 1 x 2-lane MIPI CSI
	System Bus	-
	Touch	-
Keypad	-	
Power	Power Supply Voltage	Fixed 5V ± 5% DC source
	Power Consumption	5.3W (Max)
Environment	Operating Temperature	0 ~ 60 °C/-40 ~ 85 °C
	Operating Humidity	5 ~ 95% 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	USB3.0/2.0	Display	PCle 2.0	SD	CANbus	IC	SPI	Size	Power input	Operating Temperature
ROM-5720CD-PEA1E	i.MX 8M Dual	2 GB	16 GB	4	2	2 USB3.0, 4 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x 4-lane MIPI DSI	1	1	-	4	1	82 x 50 x 5 mm	4.75-5.25V	0 ~ 60 °C
ROM-5720WD-OEA1E	i.MX 8M Dual	2 GB	16 GB	4	2	2 USB3.0, 4 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x 4-lane MIPI DSI	1	1	-	4	1	82 x 50 x 5 mm	4.75-5.25V	-40 ~ 85 °C
ROM-5720CQ-PEA1E	i.MX 8M Quad	2 GB	16 GB	4	2	2 USB3.0, 4 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x 4-lane MIPI DSI	1	1	-	4	1	82 x 50 x 5 mm	4.75-5.25V	0 ~ 60 °C
ROM-5720WQ-OEA1E	i.MX 8M Quad	2 GB	16 GB	4	2	2 USB3.0, 4 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x 4-lane MIPI DSI	1	1	-	4	1	82 x 50 x 5 mm	4.75-5.25V	-40 ~ 85 °C

## Development Board

Part No.	Description
ROM-DB5901-SWA1	Development board for SMARC v2.0 RISC Module series

## Optional Accessories

Part No.	Description
1701100300	Debug port cable for ROM-5720
1970004440T001	Heat spreader for 0 ~ 60°C
1960063089N001	Semi heat sink for 0 ~ 60°C
1930004835	Screws for heat spreader and semi heat sink
1970004595T001	Heat spreader for -40 ~ 85 °C
1970004596T001	Semi Heat sink for -40 ~ 85 °C
96PSA-A36W12R1-3	ADAPTER 100-240V 36W 12V 3A
1700001524	Power cord 3P UL 10A 125V 180cm
170203183C	Power cord 3P Europe (WS-010+WS-083)183cm
1700008921	Power cord 3P PSE 183cm
170203180A	Power cord 3P UK 2.5A/3A 250V 1.83M
SQF-ISDM1-16G-21C	SQ Flash SD card UHS-I MLC 16GB (0 ~ 70 °C)
SQF-ISDM1-16G-21E	SQ Flash SD card UHS-I MLC 16GB (-40 ~ 85 °C)
EWM-W163M201E	802.11 a/b/g/n/ac, QCA6174A-5, 2T2R, with BT4.2, Full size Mini PCIe
1750008717-01	Dipole Ant. D.B 2.4/5G WIFI 3dBd SMA/M-R BLK
1750007965-01	Antenna cable, SMA (M) to MHF4, 300mm
EWM-C117FL06E*	LTE/HSPA+/GPRS module, w/ SIM Slot, for Taiwan
1750007990-01	Antenna 4G/LTE full band L=11 cm 50 Ohm
1750006009	Antenna Cable SMA (F) to MHF 1.32 25cm

\*Please contact us to get suitable cellular module for your region.

## Dimensions

Unit: mm

