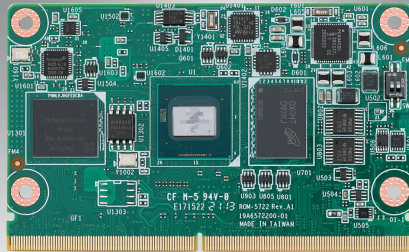


# ROM-5722

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

NEW



### Introduction

Advantech ROM-5722 SMARC 2.1 Computer-on-Module is powered by NXP i.MX8M Plus SOC which includes up to 4 Arm Cortex-A53 cores in combination with one Cortex-M7 real time processor and Vivante GC7000UL graphics engine. It provides USB2.0, USB3.2 Gen1By1, Gigabit Ethernet, MIPI-CSI, PCI Express, Dual channel LVDS shared with MIPI-DSI for embedded applications.

ROM-5722 is paired with Advantech SOM-DB2510 carrier board for faster end product peripheral integration and time-to-market. The reference schematics and layout checklists documentations for carrier board development will be provided along with the open-sourced Linux BSP, test utilities, hardware design utilities and reference drivers.

### Specifications

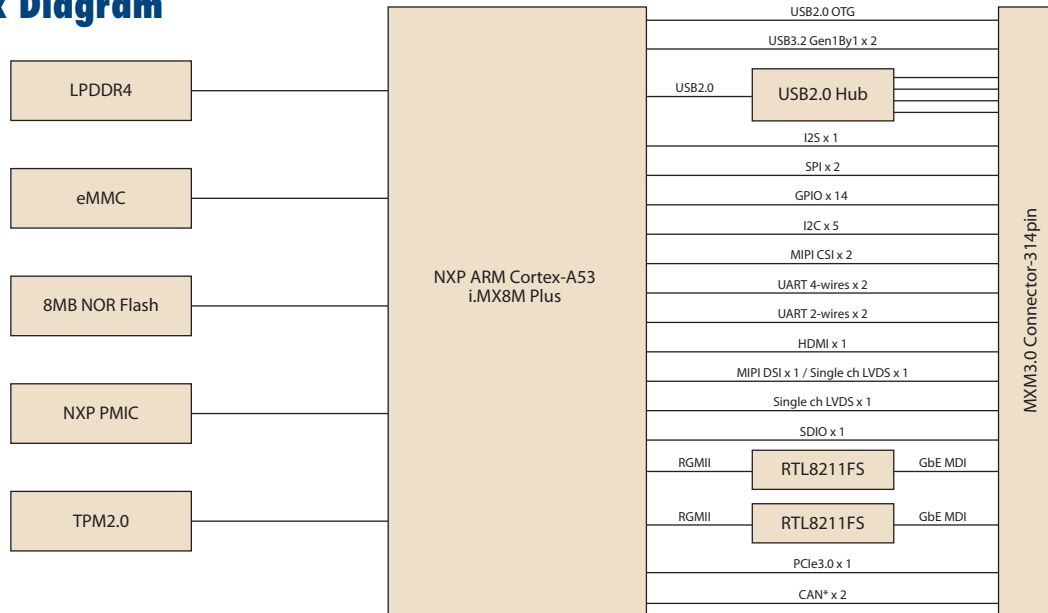
Form Factor		SMARC2.0 & SMARC2.1 compliance
Processor System	CPU	NXP i.MX8M Plus Cortex-A53 Quad/Dual core (up to 1.8GHz)
	MCU	1 x Arm Cortex-M7 core
Memory	Technology	LPDDR4 4000MT/s
	Capacity	On-board 4GB/6GB LPDDR4
	Flash	16 GB eMMC NAND Flash for O.S. and 8 MB QSPI NOR Flash for board information
NPU	NPU	2.3 TOP/s Neural Network performance
Graphics	LVDS/MIPI DSI	1 x 4 lane MIPI-DSI & 1 x Single channel LVDS or 1x Dual channel LVDS
	HDMI	1 x HDMI up to 3840 x 2160 at 30Hz
	Parallel RGB	-
	VGA	-
	Graphics Engine	GC7000UL with 2D/3D Graphic Acceleration supporting 1G Pixel/s, OpenVG 1.1, Open GL ES3.1, Vulkan, and Open CL 1.2 FP.
Ethernet	H/W Video Codec	Decoder: H.265, H.264, VP8/9 1080p Encoder: H.264, VP8 1080p
	Chipset	2 x NXP i.MX8M Plus integrated RGMII
	Speed	2 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		Yes (1-6553s, power on/off 4s)
Security		TPM 2.0
I/O	PCIe	1 x PCIe 3.0
	SATA	-
	USB	2 USB3.2 Gen1By1 4 USB 2.0 1 USB 2.0 OTG
	Audio	2 x I <sup>2</sup> S
	SPDIF	-
	SDIO	1
	Serial Port	2 x 4-wire UART and 2 x 2-wire UART
	SPI	3
	CAN	2 (CANbus for ROM-5722C*, CAN-FD for ROM-5722W*)
	GPIO	14
	I <sup>2</sup> C	5
	Camera Input	1 x 4-lane MIPI CSI, 1 x 2-lane MIPI CSI
	System Bus	-
Touch	-	
Keypad	-	
Power	Power Supply Voltage	Fixed 5V DC source and allow 3.3 V ~ 5.25 V operates directly from single level Lithium Ion cells
	Power Consumption	4W
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		Yocto Linux
Certifications		CE/FCC Class B

### Features

- NXP Arm® Cortex®-A53 i.MX8M Plus Quad/Dual up to 1.8 GHz
- 1 x Arm Cortex-M7 core
- Onboard LPDDR4 4 GB/6 GB, 4000MT/s memory
- 1 x HDMI 2.0, 1 x 4 lane MIPI-DSI, 1 x Dual channel LVDS
- 2 x USB3.2 Gen1By1, 4 x USB2.0, 1 x USB 2.0 OTG, 4 x UART, 5 x I2C, 14 x GPIO, 1 x PCIe3.0, 2 x Gigabit LAN, 2 x CAN (CANBus for CQ, CAN-FD for WQ)
- Neural network accelerator up to 2.3 TOPS
- Supports Yocto Linux



## Block Diagram



\*Support CAN-FD in wide temp. SKU: ROM-5722W\*

## Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB3.2 Gen1By1	USB 2.0	Display	I2S	I2C	SPI	Operating Temperature
ROM-5722WQ-REA1E	i.MX 8M Plus Quad	6GB	16GB	4	2	2	5		2	5	3	-40 ~ 85 °C
ROM-5722CQ-REA1E	i.MX 8M Plus Quad	6GB	16GB	4	2	2	5	1 x HDMI, 1 x MIPI DSI & 1 x Single ch LVDS or 1 x Dual ch LVDS	2	5	3	0 ~ 60 °C
ROM-5722WD-RFA1E	i.MX 8M Plus Dual	4GB	16GB	4	2	2	5		2	5	3	-40 ~ 85 °C
ROM-5722CD-RFA1E	i.MX 8M Plus Dual	4GB	16GB	4	2	2	5		2	5	3	0 ~ 60 °C

\*QUAD-Lite SoC, DRAM and eMMC of other capacity are available through project-based support. Please contact sales for details.

## Development Board

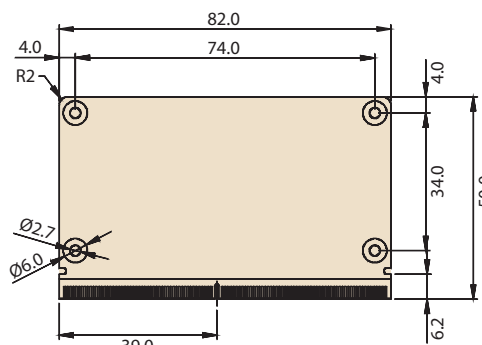
Part No.	Description
SOM-DB2510-ROA1	SMARC 2.1 Carrier Board

## Optional Accessories

Part No.	Description
1701200220	Debug port cable
1700019474	D-SUB 9P(F)/D-SUB 9P(F) RS232/RS485 100c
1970005258N001	Heat Spreader
1970005259T001	Semi Heat Sink (0 ~ 60 °C)
1970005260T001	Semi Heat Sink (-40 ~ 85 °C)
96PSA-A36W12R1-3	ADAPTER 100-240V 36W 12V 3A
1700001524	Power Cord 3P UL 10A 125V 183cm
170203183C	Power Cord 3P Europe (WS-010+WS-083) 183cm
1700019146	Power Cord CCC 3P 10A 250V 183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm
SQF-ISDM1-16G-21C	SQF SD Card I-SD UHS-I MLC 16G (0-70°C)
SQF-ISDM1-16G-21E	SQF I-SD UHS-I MLC 16G (-40-85°C)
EWM-W163M201E	802.11 a/b/g/n/ac, QCA6174A, 2T2R, w/BT4.1, M.2 2230
1750008717-01	Dipole Ant. D.B 2.4/5G WIFI 3dBi SMA/M-R BLK
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300mm
EWM-C117FL06E*	LTE 4G,3G WCDMA/DC-HSPA+, 2G module, MPC1-L280H
1750008303-01	Antenna AN0727-64SP6BSM
1750006009	Antenna Cable SMA (F) to MHF 1.32 25cm

## Dimensions

Unit: mm



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

# Embedded Linux Support and Design-in Services

## Hardware Certified Ubuntu and Yocto with Eco Partner Services

Linux is the most popular embedded OS for transportation, outdoor services, factory automation, and mission critical applications. Its open source and kernel reliability features ease security updates, and make it particularly adaptable to new AI and Edge computing technology. Advantech has cooperated with Canonical and other software partners to provide hardware certified Ubuntu image and Yocto BSP as Linux offerings. The Advantech, Embedded Linux, and Android Alliance (ELAA) delivers local software services and consultation.



### Features

<p><b>Certified OS and BSP</b></p> <ul style="list-style-type: none"> <li>Platform compatibility tests</li> <li>Preloaded functional driver and software stacks</li> </ul>	<p><b>Licensed Services</b></p> <ul style="list-style-type: none"> <li>License authorized Canonical delivers 10-years of bug fixes and security updates</li> <li>In-house bundled service</li> </ul>	<p><b>Numerous AI and Edge Resources</b></p> <ul style="list-style-type: none"> <li>Containerized technology for service provision and deployment</li> <li>AI resources from Caffe, TensorFlow, and mxnet</li> </ul>	<p><b>Local Partner Alliance</b></p> <ul style="list-style-type: none"> <li>Embedded Linux and Android Alliance (ELAA)</li> </ul>
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# WISE-DeviceOn

## Massive IoT Device Management Utility

IoT deployment and management typically involves numerous disparate devices installed on multiple sites. These devices require effective monitoring, managing, and tracking. Advantech's easy-to-use WISE-DeviceOn interface enables users to remotely monitor device health, troubleshoot problems, and send software/firmware updates over-the-air (OTA). In sum, DeviceOn empowers quick real-time responsiveness to emerging problems.



### Features

Comprehensive Management	Remote Access	Efficient Operations
<ul style="list-style-type: none"><li>• Devices status</li><li>• Peripherals/firmware</li><li>• Open for extension</li></ul>	<ul style="list-style-type: none"><li>• Real-time monitoring</li><li>• Remote controls</li><li>• Troubleshooting</li></ul>	<ul style="list-style-type: none"><li>• Zero-touch on-boarding</li><li>• OTA updates</li><li>• Batch control</li></ul>

### Product Highlights



**SOM-6883**

High-performance 11<sup>th</sup> Gen Intel<sup>®</sup> COMe Type 6 Module



**MIO-5375**

Compact 11<sup>th</sup> Gen Intel<sup>®</sup> Outdoor Focused 3.5" SBC



**EPC-B5587**

10<sup>th</sup> Gen Intel<sup>®</sup> Xeon<sup>®</sup> based Edge server



**EPC-R3220**

Arm based IoT Edge Gateway