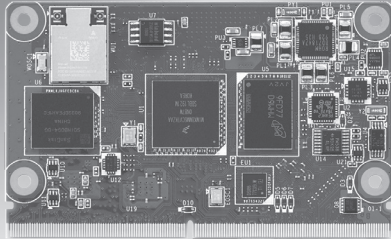


ROM-5722

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

Preliminary



Features

- NXP Arm® Cortex®-A53 i.MX8M Plus Quad/Dual up to 1.8 GHz
- 1 x Arm Cortex-M7 core
- Onboard LPDDR4 6 GB, 4000MT/s memory
- 1 x 4 lane MIPI-DSI, 1 x Single 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 Ycoto Linux and Android



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.

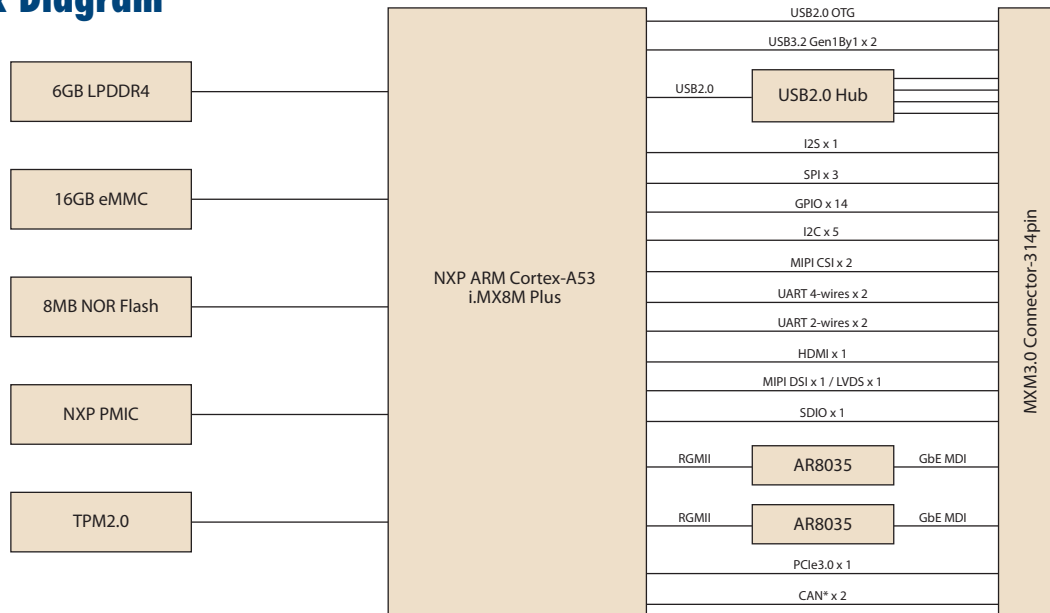
ROM-5722 is paired with Advantech SOM-DB2510 carrier board for faster end product peripheral integration and time-to-market. The reference schematics and layout checklists documentations for carrier board development will be provided along with the open-sourced Linux BSP, test utilities, hardware design 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 6 GB	
	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 1 x 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	
Ethernet	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 ² S	
	SPDIF	-	
	SDIO	1	
	Serial Port	2 x 4-wire UART and 2 x 2-wire UART	
	SPI	3	
	CAN	2 (CANbus for ROM-5722CQ, CAN-FD for ROM-5722WQ)	
	GPIO	14	
	I ² 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	TBD	
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



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

Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB3.2 Gen1By1	USB 2.0	Display	PCIe	SD	I2S	I2C	SPI	WiFi/BT	Size	Power input	Operating Temperature
ROM-5722WQ-REA1E	i.MX8M 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	1	1	2	5	3	-	82 x 50 x 5 mm	3 ~ 5.25V	-40 ~ 85 °C
ROM-5722CQ-REA1E	i.MX8M 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	1	1	2	5	3	-	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C

Development Board

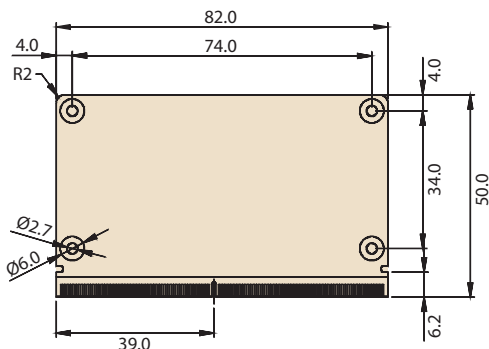
Part No.	Description
SOM-DB2510	SMARC 2.1 Carrier Board

Optional Accessories

Part No.	Description
1701100300	Debug port cable
1700019474	D-SUB 9P(F)/D-SUB 9P(F) RS232/RS485 100c
TBD	Heat Spreader
1960063089N001	Semi Heat Sink
193B021490	Screw for Heat Spreader and Semi Heat Sink
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
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.