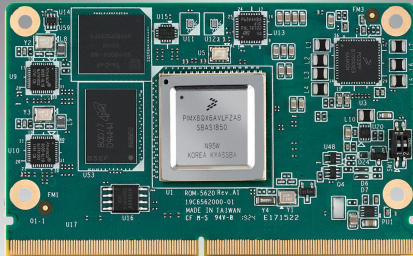


ROM-5620

NXP i.MX8X Cortex®-A35 SMARC 2.0/2.1 Computer-on-Module

NEW



Introduction

Advantech ROM-5620 SMARC2.0/2.1 Computer-on-Module is powered by NXP i.MX 8X SoC which includes two to four Arm Cortex-A35 cores for mid-range automotive and industrial market segments, one Cortex-M4F core for real-time processing, and one Tensilica Hi-Fi 4 DSP for efficient audio and voice codec execution. It also escalates its graphic performance by Vivante GC7000 Lite, 4K H.265 capable decoder, and dual 1080P60 display controller.

ROM-5620 is paired with Advantech ROM-DB5901 Evaluation 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.



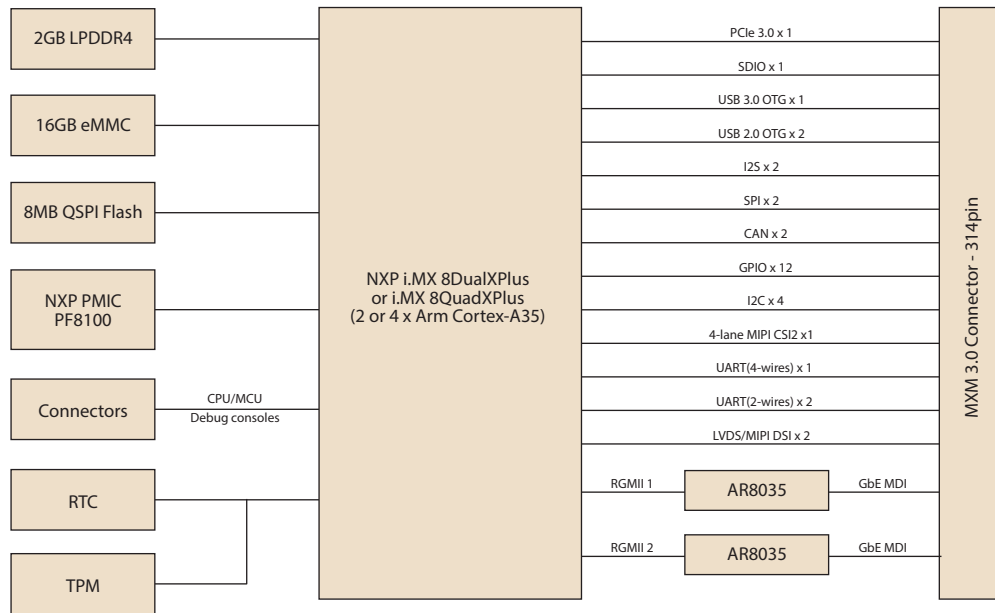
Features

- NXP i.MX 8X processor with 2-4 x Arm Cortex-A35 cores
- 1 x Arm Cortex-M4F core and 1x Tensilica® HiFi 4 DSP
- Onboard 2GB LPDDR4 memory and eMMC 16GB
- 2 x single channel LVDS or 2 x 4-LANE MIPI DSI
- 1 x USB 3.0, 1 x USB 2.0 Host, 1 x USB2.0 OTG, 2 x CAN, 3 x UART, 4 x I2C, 12 x GPIO, 1 x PCIe 3.0, 1 x 4-lane MIPI CSI camera input and 2 x Gigabit LAN
- Supports OpenGL 3.0/2.1 ; OpenGL ES 3.1/3.0/2.0/1.1 and OpenCL 2.0 hardware accelerators
- Supports 4K hardware decode engine
- Low power consumption design
- Supports Linux and Android BSP

Specifications

Form Factor		SMARC2.0 & SMARC2.1 compliance
Processor System	CPU	NXP i.MX 8DualXPlus (2 x Arm Cortex-A35) or 8QuadXPlus (4 x Arm Cortex-A35) 1.2GHz
	MCU	1 x Arm Cortex-M4F core
	DSP	1 x Tensilica® HiFi 4 DSP
Memory	Technology	LPDDR4 2400 MT/s
	Capacity	Onboard 2GB LPDDR4
	Flash	16 GB eMMC NAND Flash for O.S. and 8 MB QSPI NOR Flash for board information
Graphics	LVDS/MIPI DSI	2 x 24-bit single channel LVDS 1080p or 2 x 4-LANE MIPI DSI
	HDMI	-
	Parallel RGB	-
	VGA	-
	Graphics Engine	Vivante GC7000 Lite
	H/W Video Codec	Supports H.265/H.264(4Kp30), WMV9/VC-1 imple, MPEG-1, MPEG-2, AVS, MPEG4.2 ASP, H.263 decode and H.264(1080p30) encode
Ethernet	Chipset	2 x NXP i.MX8X integrated RGMII
	Speed	2 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		1-6553s, default 60s, power on/off 1s
Security		TPM 2.0
I/O	PCIe	1 x PCIe 3.0
	SATA	-
	USB	1 x USB 3.0, 1 USB 2.0 Host, 1 USB 2.0 OTG
	Audio	2 x I ² S
	SPDIF	-
	SDIO	1
	Serial Port	1 x 4-wire UART and 2 x 2-wire UART
	SPI	2
	CAN	2 x CAN bus 2.0 A/B
	GPIO	12
	I ² C	4 with interrupt
	Camera Input	1 x 4-lane MIPI CSI-2
	System Bus	-
	Touch	-
Keypad	-	
Power	Power Supply Voltage	4.75-5.25V
	Power Consumption	3.832W (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	USB 3.0	USB 2.0	Display	PCIe 3.0	SD	CANbus	I ² C	SPI	Size	Power input	Operating Temperature
ROM-5620CE-OEA1E	i.MX 8DualXPlus	2 GB	16 GB	3	2	1	2	2x single channel 24-bit, 1x dual channel 48-bit LVDS	1	1	2	4	2	82 x 50 mm	4.75 ~ 5.25V	0 ~ 60 °C
ROM-5620WE-OEA1E	i.MX 8DualXPlus	2 GB	16 GB	3	2	1	2	or 2x 4-Lane MIPI-DSI by S/W Configuration	1	1	2	4	2	82 x 50 mm	4.75 ~ 5.25V	-40 ~ 85 °C
ROM-5620CU-OEA1E	i.MX 8QuadXPlus	2 GB	16 GB	3	2	1	2		1	1	2	4	2	82 x 50 mm	4.75 ~ 5.25V	0 ~ 60 °C
ROM-5620WU-OEA1E	i.MX 8QuadXPlus	2 GB	16 GB	3	2	1	2		1	1	2	4	2	82 x 50 mm	4.75 ~ 5.25V	-40 ~ 85 °C

Development Board

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

Optional Accessories

Part No.	Description
1701100300	Debug port cable for ROM-5620
1700019474	D-SUB 9P(F)/D-SUB 9P(F) RS232/RS485 100c
1970004483T001	Heat Spreader for -40~85°C
1960063089N001	Semi Heat Sink for -40~85°C
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
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, MPCI-L280H
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 for suggesting suitable cellular module for your region.

Dimensions

Unit: mm

