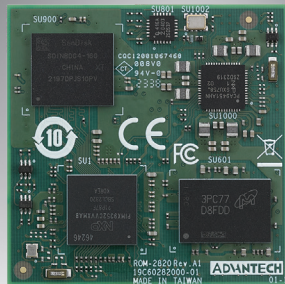


ROM-2820

NXP i.MX 93 Cortex®-A55 OSM 1.1 Computer-on-Module



Introduction

ROM-2820 OSM 1.1 Computer-on-Module is powered by NXP i.MX 93 SoC which includes Cortex-A55 Dual-core in combination with one Cortex-M33 real time processor, Ethos®-U65 Neural Processing Unit (NPU) and 2D graphics engine. It provides USB2.0, Gigabit Ethernet, MIPI-CSI, I2C, SPI, GPIO, CAN-FD and MIPI DSI display for embedded applications.

ROM-2820 is paired with OSM 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

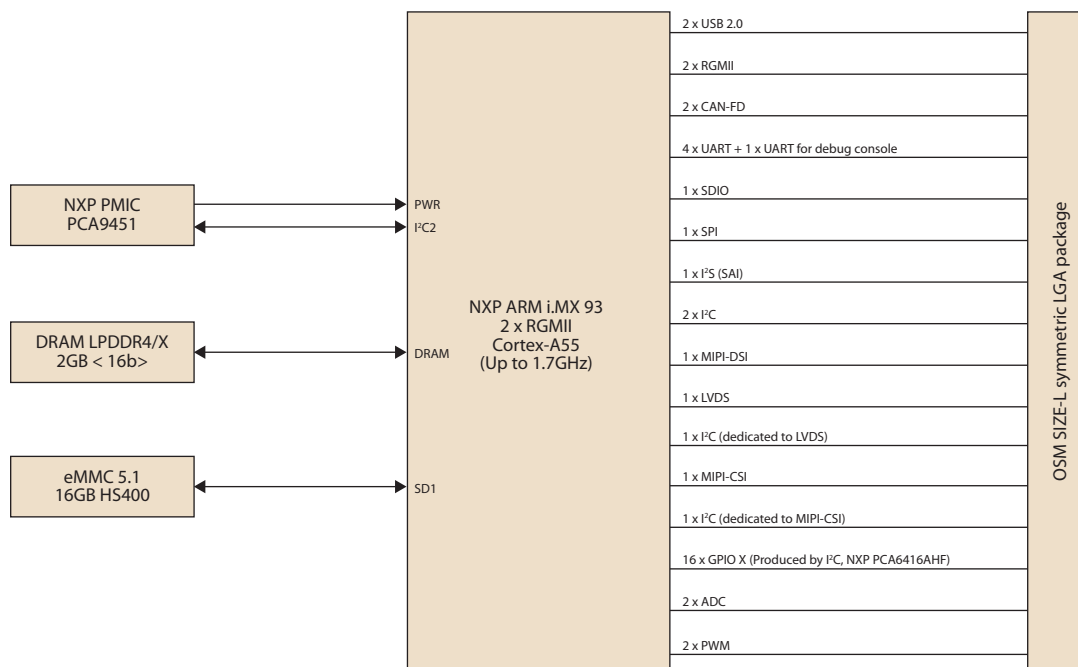
Form Factor		OSM 1.1
Processor System	CPU	NXP i.MX 93 Cortex-A55 Dual-core (up to 1.7GHz)
	MCU	1 x Arm Cortex-M33 core
Memory	Technology	1 x 2GB LPDDR4X up to 3733MT/s
	Capacity	1 x On-board 2GB
	Flash	1 x 16 GB eMMC NAND Flash for O.S
Graphics	LVDS/MIPI DSI	1 x 4 lane MIPI-DSI, 1 x single channel LVDS (Display Output, either one)
	HDMI	-
	Parallel RGB	-
	VGA	-
	Graphics Engine	NXP integrated 2D Graphic Acceleration
Ethernet	Chipset	2 x NXP i.MX 93 integrated RGMII
	Speed	2 x 10/100/1000 Mbps
RTC	RTC	External RTC
Security		NXP i.MX 93 integrated Trust Zone
I/O	PCIe	-
	SATA	-
	USB	2 x USB 2.0
	Audio	1 x I ² S
	SPDIF	-
	SDIO	1
	Serial Port	2 x 4-wire UART; 2 x 2-wire UART; 1 x 2-wire UART for debug console
	SPI	1
	CAN-FD	2
	GPIO	16
	QSPI	N/A
	I ² C	2 + 2 (dedicated to LVDS/MIPI-CSI)
	Camera Input	1 x 2-lane MIPI-CSI
	PWM	2
	Touch	-
ADC	2	
Power	Power Supply Voltage	5V
	Power Consumption	Max. Load: 2.1 watt; Idle mode: 0.03 watt
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	45 x 45 mm
Operation System		Yocto Linux
Certifications		CE/FCC Class B

Features

- NXP i.MX 93 Cortex-A55 Dual-core (up to 1.7GHz)
- 1 x Arm Cortex-M33 core
- 1 x Ethos®-U65 microNPU
- 1 x 2GB LPDDR4X up to 3733MT/s
- 1 x 4 lane MIPI-DSI
- 2 x USB 2.0, 5 x UART, 4 x I²C, 16 x GPIO, 2 x PWM, 2 x CAN-FD
- Compact size form factor - OSM Size L (45 x 45 mm)
- Support Yocto Linux



Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB 2.0	Display	Size	Power input	Operating Temperature
ROM-2820WD-REA1E	i.MX 93 Dual Core	2GB	16GB	5	2	2	1 x MIPI-DSI or LVDS	45 x 45 mm	5V	-40 ~ 85 °C
ROM-2820CD-REA1E	i.MX 93 Dual Core	2GB	16GB	5	2	2	1 x MIPI-DSI or LVDS	45 x 45 mm	5V	0 ~ 60 °C

Development Board

Part No.	Description
ROM-DK2820-REA1E	ROM-2820 evaluation kit

Optional Accessories

Part No.	Description
1701100300	Debug port cable
1700019474	D-SUB 9P(F)/D-SUB 9P(F) RS232/RS485 100c
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)

Dimensions

Unit: mm

