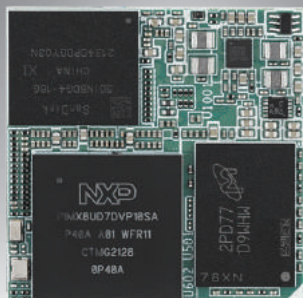


# ROM-2620

## NXP i.MX 8ULP Cortex®-A35 OSM 1.1 Computer-on-Module

Preliminary



### Introduction

Advantech ROM-2620 OSM 1.1 Computer-on-Module is powered by NXP i.MX 8ULP SoC which includes up to 2 Arm Cortex-A35 cores in combination with one Cortex-M33 real time processor and Vivante GC7000 nanoULTRA/GC328 graphics engine. It provides USB2.0, Fast Ethernet, MIPI-CSI, I2C, SPI, GPIO, PWM and MIPI DSI display for embedded applications.

ROM-2620 is paired with Advantech 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, Azure Sphere OS, test utilities, hardware design utilities and reference drivers.



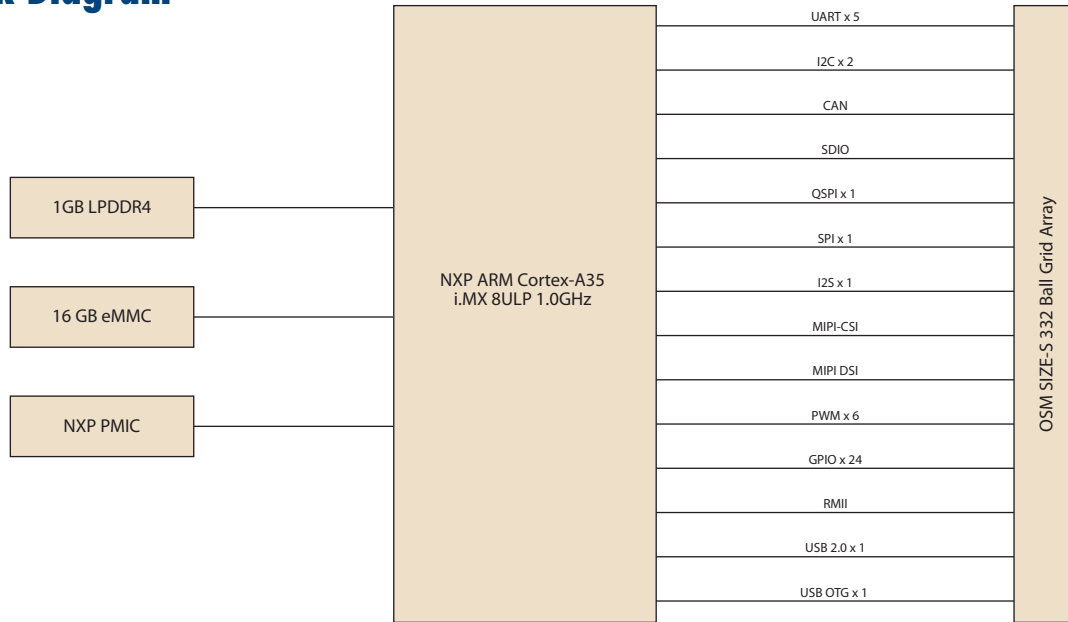
### Features

- NXP Arm® Cortex®-A35 i.MX 8ULP Dual up to 1.0 GHz
- 1 x Arm Cortex-M33 core
- Onboard LPDDR4 1GB, 2000MT/s memory
- 1 x 4 lane MIPI-DSI
- 1 x USB2.0, 1 x USB 2.0 OTG, 5 x UART, 2 x I2C, 24 x GPIO, 6 x PWM, 1 x CAN
- Ultra small size form factor - OSM
- Support Yocto Linux and Microsoft Azure Sphere OS

### Specifications

Form Factor		OSM 1.1
Processor System	CPU	NXP i.MX 8ULP Cortex-A35 Dual core (up to 1.0GHz)
	MCU	1 x Arm Cortex-M33 core
Memory	Technology	LPDDR4 2000MT/s
	Capacity	On-board 1GB
	Flash	16 GB eMMC NAND Flash for O.S.
Graphics	LVDS/MIPI DSI	1 x 4 lane MIPI-DSI
	HDMI	-
	Parallel RGB	-
	VGA	-
	Graphics Engine	GC7000 nanoULTRA/GC328 with 2D/3D Graphic Acceleration supporting 1G Pixel/s, OpenVG 1.1, Open GL ES3.1, Vulkan, and Open CL 1.2 FP.
Ethernet	Chipset	1 x NXP i.MX 8ULP integrated RMII
	Speed	1 x 10/100 Mbps
RTC	RTC	i.MX 8ULP internal RTC
Security		NXP i.MX 8ULP integrated Trust Zone
I/O	PCIe	-
	SATA	-
	USB	1 USB 2.0 1 USB 2.0 OTG by serial download mode
	Audio	1 x I²S
	SPDIF	-
	SDIO	1
	Serial Port	2 x 4-wire UART, 2 x 2-wire UART (1 share with debug port) and 1 console
	SPI	1
	CAN	1
	GPIO	24
	QSPI	1
	I²C	2
	Camera Input	1 x 2-lane MIPI CSI
	PWM	6
	Touch	-
	Keypad	-
Power	Power Supply Voltage	5V
	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)	30 x 30 mm
Operation System		Yocto Linux & Microsoft Azure Sphere
Certifications		CE/FCC Class B

## Block Diagram



## Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB 2.0	Display	SD	I2S	I2C	SPI	Size	Power input	Operating Temperature
ROM-2620WD-MDA1E	i.MX 8ULP	1GB	16GB	5	1	2	1 x MIPI DSI	1	1	2	1	30 x 30 mm	5V	-40 ~ 85 °C
ROM-2620CD-MDA1E	i.MX 8ULP	1GB	16GB	5	1	2	1 x MIPI DSI	1	1	2	1	30 x 30 mm	5V	0 ~ 60 °C

## Development Board

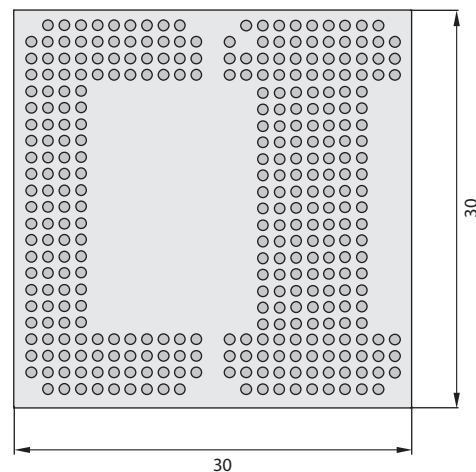
Part No.	Description
TBD	ROM-2620 evaluation kit

## Optional Accessories

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

## 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

Certified OS and BSP	Licensed Services	Numerous AI and Edge Resources	Local Partner Alliance
<ul style="list-style-type: none"><li>Platform compatibility tests</li><li>Preloaded functional driver and software stacks</li></ul>	<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>	<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>	<ul style="list-style-type: none"><li>Embedded Linux and Android Alliance (ELAA)</li></ul>

# 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