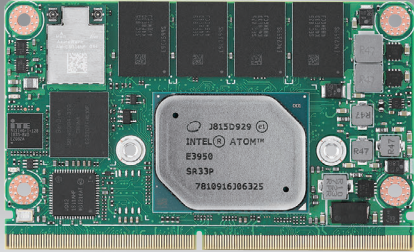


# SOM-2569

## Intel® Atom™ E3900 / Pentium® / Celeron® N Series SMARC Module



### Features

- SMARC2.0 & SMARC2.1 Compliance
- Intel® Atom™ E3900 / Pentium® / Celeron® N Series Processors
- Integrated dual GbE, wireless module on board design
- Dual channel LPDDR4 2/4/8 GB memory down & onboard eMMC
- Triple display (DP++, HDMI, LVDS)
- Supports iManager, WISE-PaaS/DeviceOn and embedded software APIs

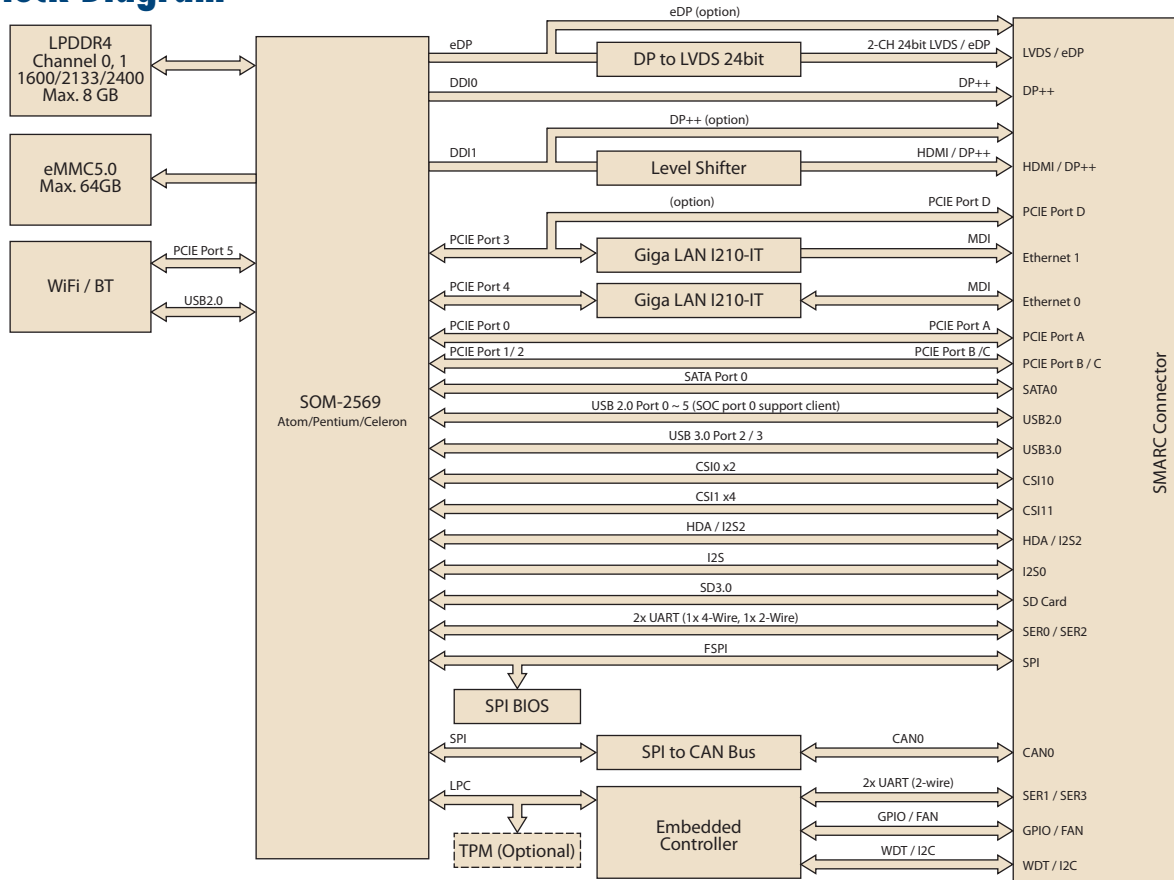
#### Software APIs:



### Specifications

Form Factor	Form Factor	SMARC2.0 & SMARC2.1 Compliance				
	PCB Size	82 mm x 50 mm				
Processor System	CPU	Atom X7-E3950	Atom X5-E3940	Atom X5-E3930	Pentium N4200	Celeron N3350
	Base Frequency	1.6GHz	1.6GHz	1.3GHz	1.1GHz	1.1GHz
	Turbo Boost Frequency	2GHz	1.8GHz	1.8GHz	2.5GHz	2.4GHz
	Core/Thread	4/4	4/4	2/2	4/4	2/2
	LLC	2 MB	2 MB	2 MB	2 MB	2 MB
	CPU TDP	12 W	9.5 W	6.5 W	6 W	6 W
	BIOS	AMI UEFI BIOS @ 64 Mb				
Memory	Technology	LPDDR4 2400MT/s				
	ECC Support	N/A				
	Max. Capacity	8GB				
	Channel / Socket	Dual Channel / On Board Memory				
Graphics	Controller	Intel® HD Graphics 505	Intel® HD Graphics 500	Intel® HD Graphics 500	Intel® HD Graphics 505	Intel® HD Graphics 500
	Max. Frequency	650MHz	600MHz	550MHz	750MHz	650MHz
	Graphic Memory	Intel DVMT5.0				
	3D/HW Acceleration	DX (9.3, 10, 11.3, 12), OpenGL 4.3, OGL ES 3.0, OpenCL 2.0 HEVC (H.265) @ L5, H.264 @ 5.2, MVC, MPEG2, VP8, VP9, VC-1, WMV9, JPEG/MJPEG HW Decode, HEVC (H.265) @ L4, H.264 @ 5.2, MVC, VP8, VP9, JPEG/MJPEG HW Encode				
Display	LCD (LVDS/eDP)	LVDS: Dual-channel 18/24-bit, up to 1920 x 1080 (option support eDP 4096 x 2304@60Hz, 24bpp)				
	DP++	1 Port (up to 4096 x 2160 @ 60Hz)				
	HDMI	1 Port (up to 3840 x 2160 @ 30Hz, option support DP++ up to 4096 x 2160 @ 60Hz)				
	Multiple Display	Triple displays with each display combinations				
Expansion	PCI Express x1 (Gen2)	Up to 4 PCIe x1				
	Audio Interface	1 Intel HD Audio Interface / Up to 2 I2S				
Serial Bus	SMBus	Yes				
	I2C Bus	Yes				
	CAN Bus	Yes (optional)				
	Controller	Intel I210				
Ethernet	Speed	10/100/1000 Mbps				
	Connector (RJ45)	Up to 2 Ports				
I/O	SATA3.0	1 Port (6Gbps)				
	USB3.0	2 Ports				
	USB2.0	6 Ports (480Mbps, include 1 client port)				
	GPIO	12 GPIOs				
	Watchdog	65536 level, 0-65535 sec				
	COM Port	1 Port (4-Wire), 3 Ports (2-Wire)				
	Onboard Storage	Up to 64GB eMMC				
	TPM	TPM2.0 (Infineon SLB9665) (optional)				
	Smart Fan	N/A				
	SPI Bus	Yes				
	SDIO (SD Card)	Yes				
	Wifi / BT Module	1 Wifi / BT Module on Board (Optional)				
	CSI	2 Ports (1 Port 2-lane / 1 Port 4-lane)				
	Power	Type	ATX/AT: Vin			
Supply Voltage		Vin: 4.75-5.25V, RTC Battery: 2.0V ~ 3.3V				
Power Consumption (Max.)		14.11 W				
Power Consumption (Idle)		3.45 W				
Environment	Operating Temperature	Standard: 0 ~ 60 °C (32 ~ 140 °F) Extended: -40 ~ 85 °C (-40 ~ 185 °F)				
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)				
	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing Storage: 60 °C @ 95% relative humidity, non-condensing				
	Vibration Resistance	3.5 Grms				
Mechanical	Dimensions	82 mm x 50 mm				

## Block Diagram



## Ordering Information

P/N	CPU	Freq.	Cores	CPU TDP	Memory	eMMC	Wi-Fi/BT	Thermal Solution	Operating Temperature
SOM-2569CNC-CA-S7A1	Atom x7-E3950	1.6	4	12W	8GB	64GB	-	Passive	0 ~ 60 °C
SOM-2569BNBCA-S7A1	Atom x7-E3950	1.6	4	12W	4GB	32GB	Yes	Passive	0 ~ 60 °C
SOM-2569BNBC-S7A1	Atom x7-E3950	1.6	4	12W	4GB	32GB	-	Passive	0 ~ 60 °C
SOM-2569BNBC-S6A1	Atom x5-E3940	1.6	4	9.5W	4GB	32GB	-	Passive	0 ~ 60 °C
SOM-2569BNBC-S3A1	Atom x5-E3930	1.3	2	6.5W	4GB	-	-	Passive	0 ~ 60 °C
SOM-2569CNC-CA-S2A1	Pentium N4200	1.1	4	6W	8GB	64GB	-	Passive	0 ~ 60 °C
SOM-2569BCBC-S1A1	Celeron N3350	1.1	2	6W	4GB	32GB	-	Passive	0 ~ 60 °C
SOM-2569BNBX-S7A1	Atom x7-E3950	1.6	4	12W	4GB	32GB	-	Passive	-40 ~ 85 °C

\*Any other SKU or combination has project-based support. Please contact sales team for for details.

## Packing List

Part No.	Description	Quantity
-	SOM-2569 SMARC Module	1
1960093125T011	SOM-2569 E3900 SKU heat spreader	1
1970004428N011	SOM-2569 N Series SKU heat spreader	1

## Development Board

Part No.	Description
SOM-DB2500-00A1	Development Board for SMARC 2.0

## Optional Accessories

Part No.	Description
1960093089T001	Semi-Heatsink, 82L x 34W x 18H

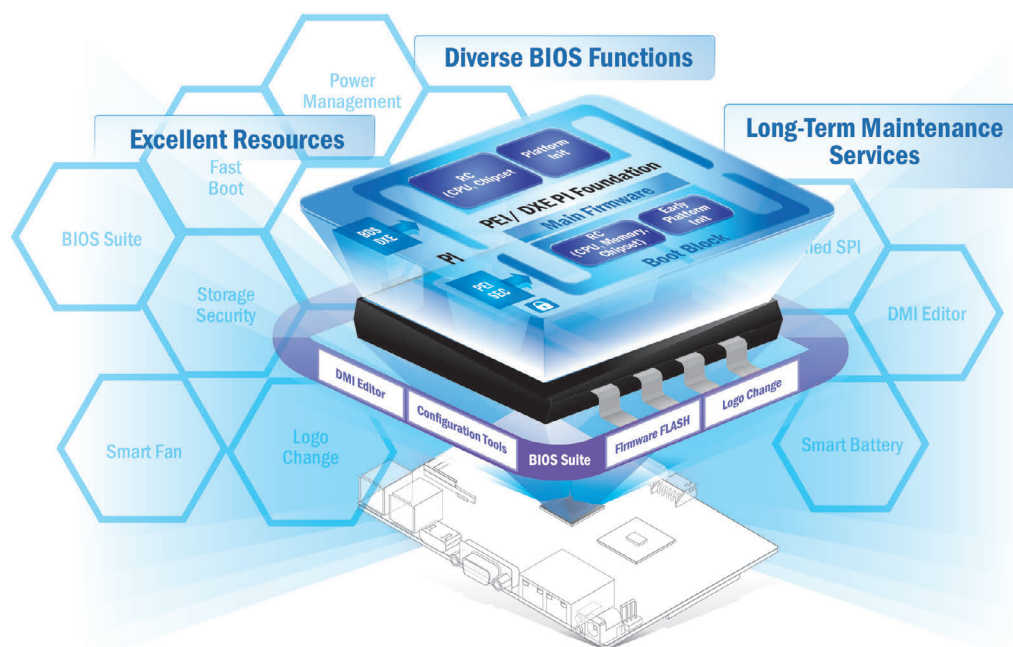
## Embedded OS

OS	P/N	Description
Win10	20706WX9HS0040	Win10 IoT 2019 Enterprise LTSC High End
Win10	20706WX9VS0043	Win10 IoT 2019 Enterprise LTSC Value
Win10	20706WX9ES0053	Win10 IoT 2019 Enterprise LTSC Entry

# Reliable Embedded BIOS Solutions

Custom BIOS services with long-term support

Advantech's high-quality embedded BIOS solutions deliver rapid execution and feature expert BIOS team support. These solutions feature multi-functional designs that ensure security and enable power/boot management. Advantech further provides 10+ years of BIOS version management, internal management, and longevity support for both hardware and BIOS — enhancing application efficiency, diversifying functionality, and optimizing performance.



## Embedded BIOS Solution Advantages

### Sufficient Sources

- Strong partnership with BIOS vendors
- 50+ engineers with extensive industrial BIOS experience

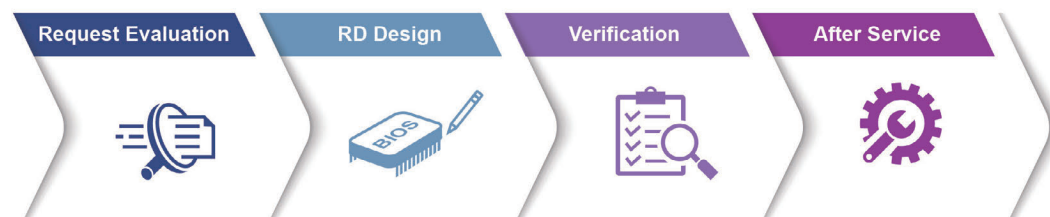
### Diverse BIOS Functions

- Multi-layer security
- 3 second fast boot
- Power management
- BIOS suite utility

### Long-Term Maintenance Services

- Platform longevity support
- 10-year BIOS version control
- BIOS remote backup

## Value-Added Customization Process



# 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

# Edge AI Suite

AI development for diverse application at the Edge

Increasing demand for AI inference/analytic capabilities at the Edge make AI training models, software development environments, and hardware configuration key factors in successful solution deployment. Advantech's Edge AI Suite helps users build AI demo devices quickly and choose optimal hardware solutions easily.



5x Performance Boost	All-in-one Installation	One Click AI Experience	Plug-and-play Environment	Discover Cost-effective Hardware
<ul style="list-style-type: none"> <li>Integrated Intel® OpenVINO™ technology</li> <li>Boost AI using Advantech hardware</li> </ul>	<ul style="list-style-type: none"> <li>Build AI environment in under 5 minutes</li> <li>Ready-to-use configuration</li> </ul>	<ul style="list-style-type: none"> <li>User friendly configuration guidance</li> <li>One-click Benchmark acquisition</li> </ul>	<ul style="list-style-type: none"> <li>Easy access to 100+ AI inference extensions</li> <li>Software development package available</li> </ul>	<ul style="list-style-type: none"> <li>Diverse CPU/RAM options</li> <li>Find hardware solutions for AI development</li> </ul>

# 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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