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# Datasheet

## ADVANTECH

SOM-6869

**COM-Express® Compact Computer-on-Module with Intel® Apollo Lake**

**Atom™ X7-E3950, X5-E3930, X5-E3940 / Pentium® N4200 / Celeron® N3350 Processor,**

**up to -40 ... + 85°C (extended Temperature)**

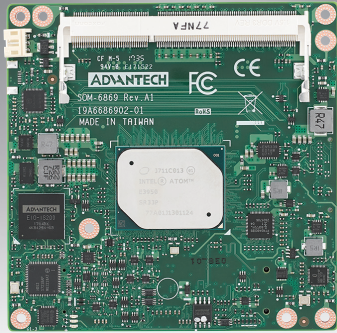
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# SOM-6869

## Intel® Atom™ E3900 & Pentium™ and Celeron™ N Series Processors COM-Express Compact Module

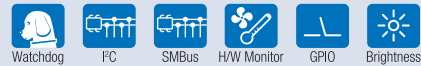
**NEW**



### Features

- COM R2.1 Type 6 Compact Module
- Intel® Atom™ E3900 & Pentium™ and Celeron™ N Series Processors
- Max. 8GB, dual Channel DDR3L memory (A1: non-ECC ; B1: ECC)
- Supports up to 3 simultaneous displays: LVDS/eDP, VGA, HDMI/DisplayPort
- Supports H.264/AVC, H.265/HEVC, VP9, VP8 HW DECODE
- Supports wide operational temperature range
- iManager, WISE-PaaS/RMM, and Embedded Software APIs

#### Software APIs:



#### Utilities:

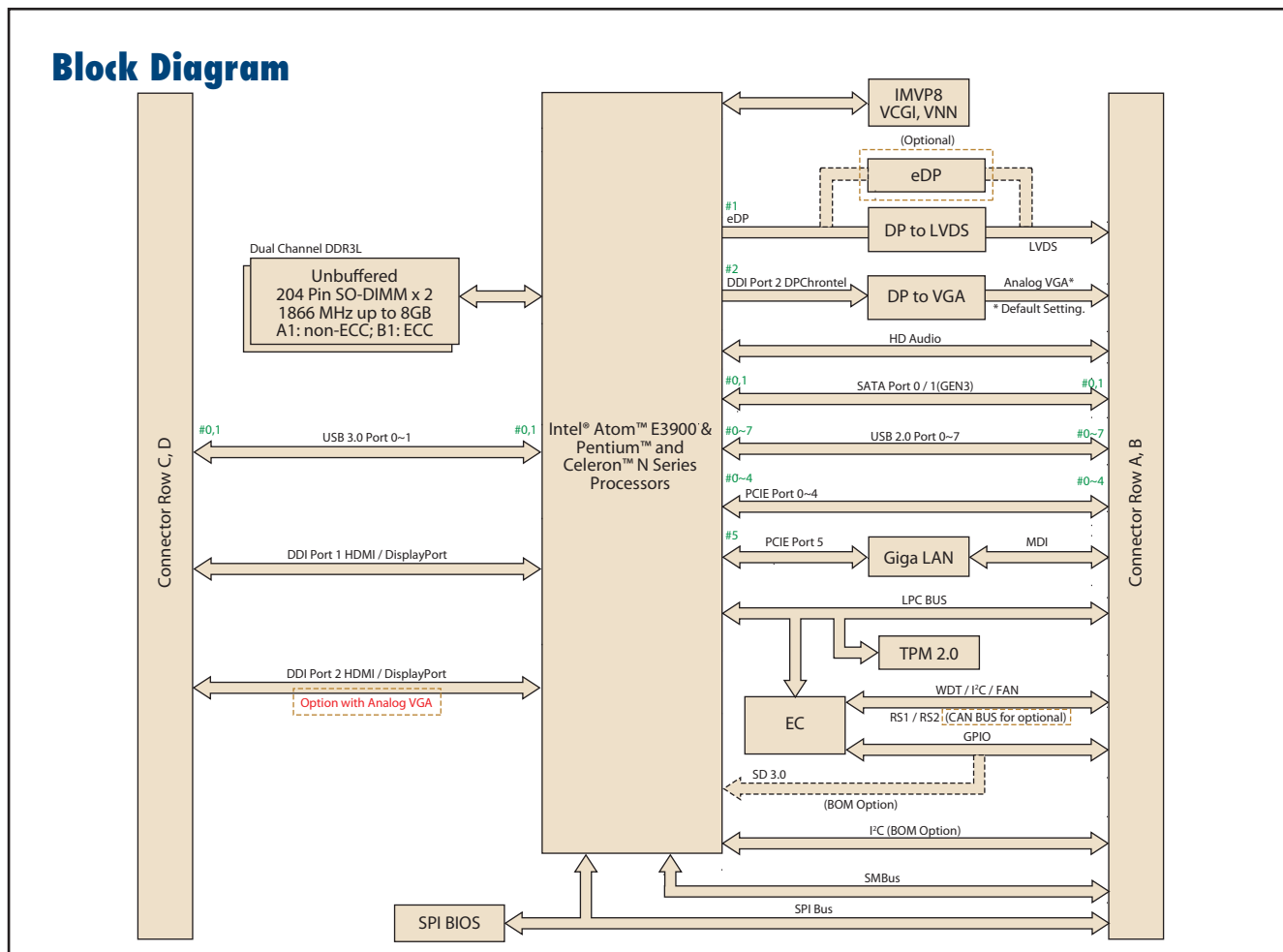


Windows Embedded iManager WISE-PaaS/ DeviceOn CE FC

### Specifications

Compliance	Form-Factor	COM Express Compact Module			
	Pin-Out Type	COM Express R2.1 Type 6 pin out			
Platform	Processor	Atom X7-E3950	Atom X5-E3940	Atom X5-E3930	Pentium® N4200
	Base Frequency	1.6GHz	1.6GHz	1.3GHz	1.1GHz
	Burst Frequency	2GHz	1.8GHz	1.8GHz	2.5GHz
	Core/Thread	4/4	4/4	2/2	4 / 4
	LLC	2 MB	2 MB	2 MB	2MB
	CPU TDP	12 W	9.5 W	6.5 W	6W
Memory	BIOS	AMI UEFI BIOS @ 64 Mb			
	Technology	Dual channel DDR3L, 1866 for non ECC/1600 for ECC			
	ECC Support	A1: non-ECC; B1: ECC (E3900 SKU only)			
	Channel/Socket	Dual channels / 2 sockets			
Graphics	Max. Capacity	Up to 8 GB			
	Controller	Intel® HD Graphics 505	Intel® HD Graphics 500	Intel® HD Graphics 500	Intel® HD Graphics
	Graphics Burst Frequency	650MHz	600MHz	550MHz	750MHz
	Graphics Memory	Intel DMV15.0			
	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	VGA	1 port up to 1920 x 1200			
	LCD (LVDS/DP)	LVDS: Dual channel 18/24-bit, up to 1366 x 768 eDP: Up to 4096 x 2160 @ 60 Hz			
	DDI (HDMI/DisplayPort)	Multi-independent display: Up to 3 simultaneous displays (1 Internal + 2 Externals) Resolution: ▪ HDMI1.4b: 3840 x 2160 @ 30Hz ▪ DP1.2a: 4096 x 2160 @ 60Hz			
	Triple Display	eDP, VGA, HDMI/DisplayPort(DDI1) LVDS, VGA, HDMI/DisplayPort(DDI1) eDP, HDMI/DisplayPort(DDI1), HDMI/DisplayPort(DDI2) LVDS, HDMI/DisplayPort(DDI1), HDMI/DisplayPort(DDI2)			
Expansion	PCI Express x1	5 PCIe x1, 1 PCIe x4 + 1 PCIe x1 (Optional)			
	Audio Interface	Intel HD Audio Interface			
	LPC	Yes (25MHz)			
Serial Bus	SMBus	Yes (Default from CPU; Option from EC)			
	IPC Bus	Yes (Default from EC; Option from CPU)			
Ethernet	Controller	Intel i210IT/i210AT			
	Speed	10/100/1000 Mbps			
I/O	SATA	2 ports, Support Gen 1(1.5 Gb/s) or Gen2 (3 Gb/s) and Gen3.1 (6Gb/s)			
	USB3.0	2 ports			
	USB2.0	8 ports			
	SPI Bus	Support SPI BIOS EEPROM			
	GPIO	8-bit GPIO programmable			
	SDIO	Optional			
	Watchdog	65536 level, 0 – 65535 sec			
	COM Port	2 Ports (2-Wire)			
	Express Card	2			
	TPM	TPM2.0			
Power	CAN Bus	Optional			
	Smart Fan	2 Ports; 1 Port on COM Module, Support 12V Fan, 1 Port on Carrier Board			
	Type	ATX: Vin, VSB; AT: Vin			
Environment	Supply Voltage	ATX (Vin 4.75-20V, Vsb 4.75-5.25V) AT (Vin 4.75-20V)			
	Power Consumption	Max. 14.76Watt.(N4200) Idle 4.46Watt.(N4200)			
Mechanical	Temperature	Operating Standard: 0 – 60° C (32 – 140° F), Extend: -40 – 85° C (-40 – 185° F) (E3900 SKU only) Storage: -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	95 x 95 mm (3.74" x 3.74")			

## Block Diagram



## Ordering Information

Part No.	CPU	Frequency Base/Burst	Core	CPU TDP	ECC	Thermal Solution	Operating Temperature
SOM-6869ACD-S3A1E	Atom x5-E3930	1.3/1.8 GHz	2C	6.5W	No	Passive	0 - 60 °C
SOM-6869ACD-S6A1E	Atom x5-E3940	1.6/1.8 GHz	4C	9.5W	No	Passive	0 - 60 °C
SOM-6869ACD-S7A1E	Atom x7-E3950	1.6/2.0 GHz	4C	12W	No	Passive	0 - 60 °C
SOM-6869ACC-S3B1	Atom x5-E3930	1.3/1.8 GHz	2C	6.5W	Yes	Passive	0 - 60 °C
SOM-6869ACC-S6B1	Atom x5-E3940	1.6/1.8 GHz	4C	9.5W	Yes	Passive	0 - 60 °C
SOM-6869ACC-S7B1	Atom x7-E3950	1.6/2.0 GHz	4C	12W	Yes	Passive	0 - 60 °C
SOM-6869AXD-S3A1E	Atom x5-E3930	1.3/1.8 GHz	2C	6.5W	No	Active	-40 - 85 °C
SOM-6869AXD-S6A1E	Atom x5-E3940	1.6/1.8 GHz	4C	9.5W	No	Active	-40 - 85 °C
SOM-6869AXD-S7A1E	Atom x7-E3950	1.6/2.0 GHz	4C	12W	No	Active	-40 - 85 °C
SOM-6869ACCX-S3B1	Atom x5-E3930	1.3/1.8 GHz	2C	6.5W	Yes	Active	-40 - 85 °C
SOM-6869ACCX-S6B1	Atom x5-E3940	1.6/1.8 GHz	4C	9.5W	Yes	Active	-40 - 85 °C
SOM-6869ACCX-S7B1	Atom x7-E3950	1.6/2.0 GHz	4C	12W	Yes	Active	-40 - 85 °C
SOM-6869PCD-S2A1E	Pentium N4200E	1.1/2.5 GHz	4C	6W	No	Passive	0 - 60 °C

Note: Any other sku or combination has project-based support. Please contact sales for details.

## Packing List

Part No.	Description	Quantity
-	SOM-6869 CPU Module	1
1960080792T000	Heatspreader (for E3900 SKU)	1
1960080793T010	Heat spreader (for N SKU)	1

## Optional Accessories

Part No.	Description
1960048815N001	Semi-Heatsink 95 x 95 x 16.25 mm
1960048819N001	Semi-Cooler 95 x 95 x 33 mm

## Development Board

Part No.	Description
SOM-DB5800-00A2E	COMe Devel. Board Type6 pint-out Rev. A2

## Embedded OS

OS	Part No.	Description
Win10 with DeviceOn	20706WX6ES0040	img W10 16EL SOM-6869 64b 1709 ENU

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