

# 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:**

- Watchdog
- IPC
- SMBus
- H/W Monitor
- GPIO
- Brightness Control

**Utilities:**

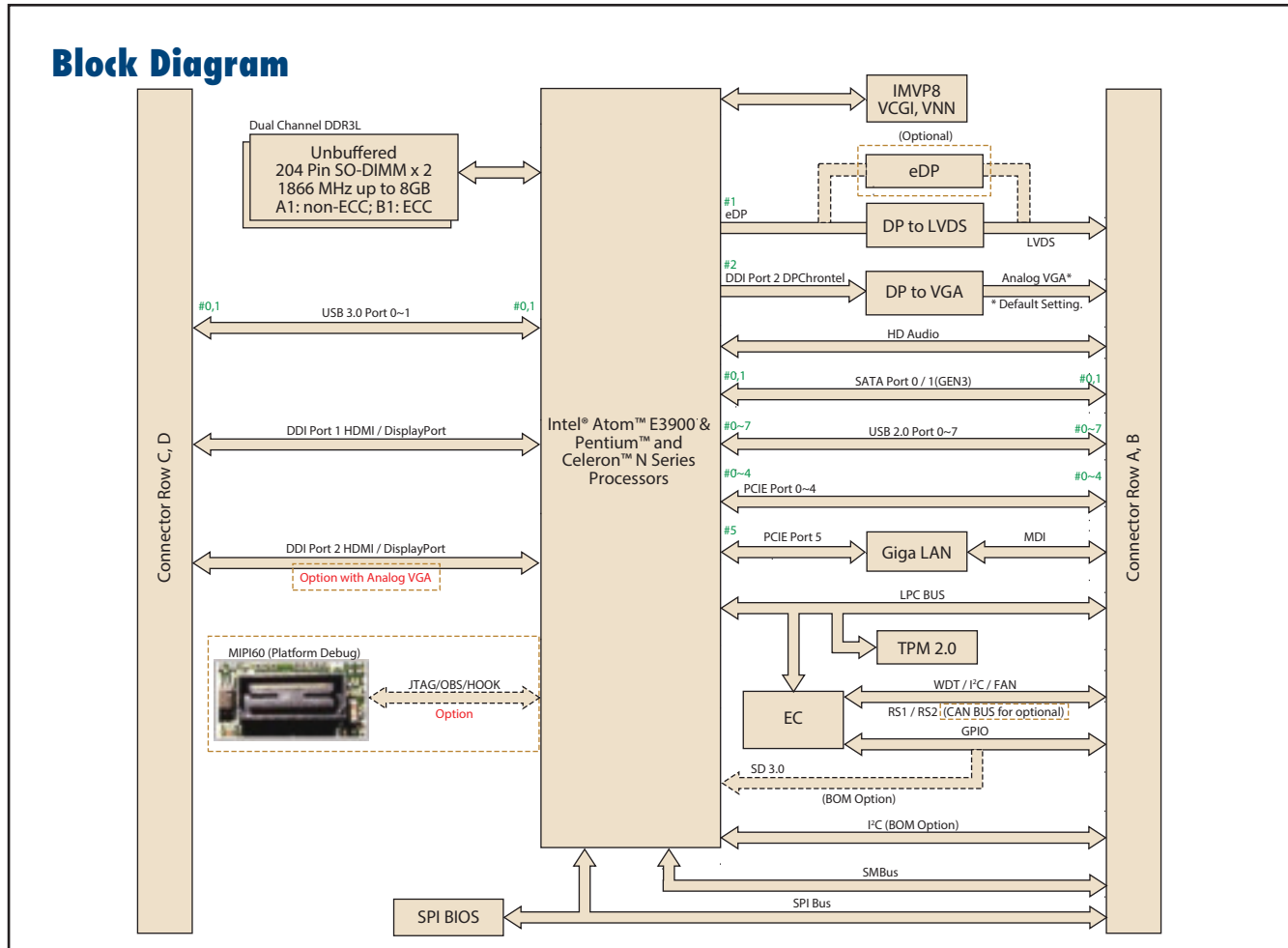
- BIOS flash
- Monitoring
- Embedded Security ID



### 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
	Base Frequency	1.6GHz	1.6GHz	1.3GHz
	Burst Frequency	2GHz	1.8GHz	1.8GHz
	Core/Thread	4/4	4/4	2/2
	LLC	2 MB	2 MB	2 MB
	CPU TDP	12 W	9.5 W	6.5 W
	BIOS	AMI UEFI BIOS @ 64 Mb		
Memory	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		
	Max. Capacity	Up to 8 GB		
Graphics	Controller	Intel® HD Graphics 505	Intel® HD Graphics 500	Intel® HD Graphics 500
	Graphics Burst Frequency	650MHz	600MHz	550MHz
	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 display (1 Internal + 2 Externals) Resolution: <ul style="list-style-type: none"> <li>HDMI1.4b: 3840 x 2160 @ 30Hz</li> <li>DP1.2a: 4096 x 2160 @ 60Hz</li> </ul>		
	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)	
Serial Bus	Audio Interface	Intel HD Audio Interface		
	LPC	Yes (25MHz)		
Ethernet	SMBus	Yes (Default from CPU; Option from EC)		
	PC Bus	Yes (Default from EC; Option from CPU)		
I/O	Controller	Intel i210IT/i210AT		
	Speed	10/100/1000 Mbps		
	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		
	CAN Bus	Optional		
	Smart Fan	2 Ports; 1 Port on COM Module, Support 12V Fan, 1 Port on Carrier Board		
Power	Type	ATX: Vin, VSB; AT: Vin		
	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)		
Environment	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	DDR3L Memory	ECC	LVDS	VGA	DDI	Giga LAN	HD Audio	PCIe x 1	USB 2.0	USB 3.0	SATAIII	LPC	Power	Thermal Solution	Operating Temperature
SOM-6869ACD-S3A1E	Atom x5-E3930	1.3/1.8 GHz	2C	6.5W	DDR3L-1866 MHz	No	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	Passive	0 - 60 °C
SOM-6869ACD-S6A1E	Atom x5-E3940	1.6/1.8 GHz	4C	9.5W	DDR3L-1866 MHz	No	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	Passive	0 - 60 °C
SOM-6869ACD-S7A1E	Atom x7-E3950	1.6/2.0 GHz	4C	12W	DDR3L-1866 MHz	No	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	Passive	0 - 60 °C
SOM-6869ACC-S3B1	Atom x5-E3930	1.3/1.8 GHz	2C	6.5W	DDR3L-1600 MHz	Yes	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	Passive	0 - 60 °C
SOM-6869ACC-S6B1	Atom x5-E3940	1.6/1.8 GHz	4C	9.5W	DDR3L-1600 MHz	Yes	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	Passive	0 - 60 °C
SOM-6869ACC-S7B1	Atom x7-E3950	1.6/2.0 GHz	4C	12W	DDR3L-1600 MHz	Yes	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	Passive	0 - 60 °C
SOM-6869AXD-S3A1E	Atom x5-E3930	1.3/1.8 GHz	2C	6.5W	DDR3L-1866 MHz	No	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	TBC	-40 - 85 °C
SOM-6869AXD-S6A1E	Atom x5-E3940	1.6/1.8 GHz	4C	9.5W	DDR3L-1866 MHz	No	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	TBC	-40 - 85 °C
SOM-6869AXD-S7A1E	Atom x7-E3950	1.6/2.0 GHz	4C	12W	DDR3L-1866 MHz	No	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	TBC	-40 - 85 °C
SOM-6869ACCX-S3B1	Atom x5-E3930	1.3/1.8 GHz	2C	6.5W	DDR3L-1600 MHz	Yes	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	TBC	-40 - 85 °C
SOM-6869ACCX-S6B1	Atom x5-E3940	1.6/1.8 GHz	4C	9.5W	DDR3L-1600 MHz	Yes	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	TBC	-40 - 85 °C
SOM-6869ACCX-S7B1	Atom x7-E3950	1.6/2.0 GHz	4C	12W	DDR3L-1600 MHz	Yes	18/24-bit	1	2	1	Yes	5	8	2	2	Yes	AT/ATX	TBC	-40 - 85 °C

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

## Packing List

Part No.	Description	Quantity
-	SOM-6869 CPU Module (N4200, N3350 CPU SKU)	1
1960080793T000	Heatspreader * For N4200, N3350 CPU SKU	1
Part No.	Description	Quantity
-	SOM-6869 CPU Module	1
1960080792T000	Heatspreader (for E3900 SKU)	1
1960080793T000	Heat spreader (for N SKU)	1

## Development Board

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

## Optional Accessories

Part No.	Description
1960048815N001	Semi-Heatsink 95 x 95 x 16.25 mm
1960048819N001	Semi-Cooler 95 x 95 x 33 mm
96LEDK-I057VG50NA1	5.7" LED PANEL 500N 640X480(G)
96LEDK-A084SV45NB2	8.4" LED PANEL 450N 800X600(G) G084SN05 V9
96LEDK-C150XG40NG1	15" LED PANEL 400N 1024X768(G) G150XGE-L04
96LEDK-A170SX35NF1	17" LED 350N 1280X1024(G) G170EG01 V1

## Embedded OS

OS	Part No.	Description
Win10	2070015008	img W10 16EL SOM-6869 64bit 1701 Eng