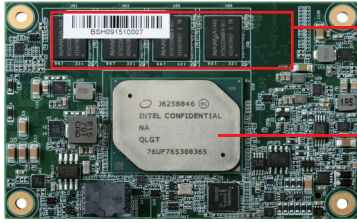


# AL9A2

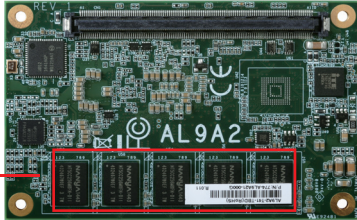
Atom



DDR3L

Intel® Atom™ Processor E3900 Series

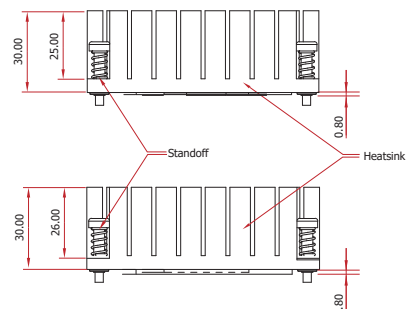
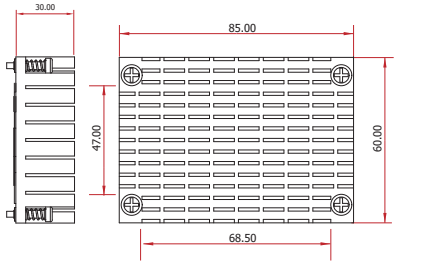
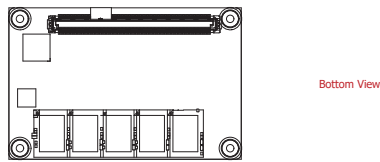
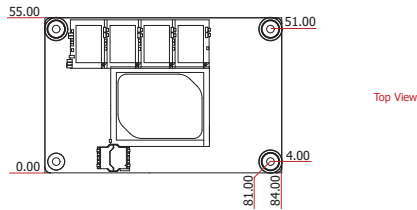
TOP



DDR3L

BOTTOM

## Mechanical Drawing

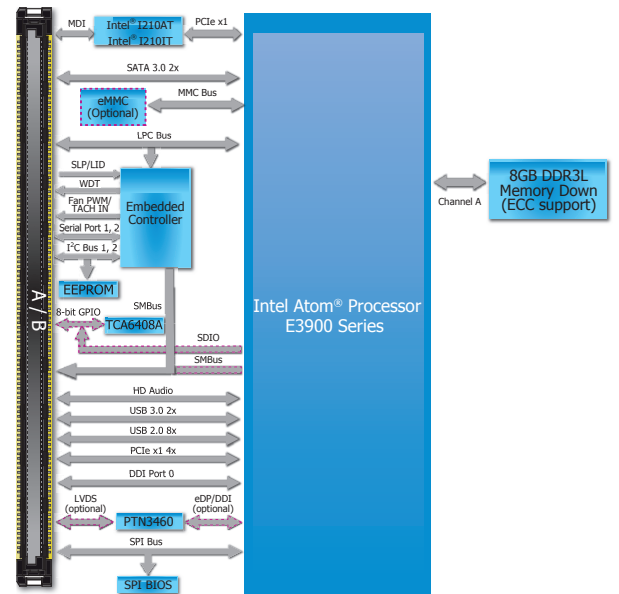


## Features

- Single Channel DDR3L 1600MHz Memory Down to 8GB
- 1 LVDS/eDP, 1 DDI (HDMI/DVI/DP)  
Supports dual displays: DDI + LVDS/eDP
- DP++ resolution supports up to 4096x2160 @ 60Hz
- Multiple expansions: 4 PCIe x1
- Rich I/O: 1 Intel GbE, 2 USB 3.0, 8 USB 2.0



## Block Diagram



## ► Specifications

<b>SYSTEM</b>	<b>Processor</b>	Intel® Atom™ Processor E3900 Series, BGA 1296 Intel® Atom™ x7-E3950 Processor, Quad Core, 2M Cache, 1.6GHz (2.0GHz), 12W Intel® Atom™ x5-E3940 Processor, Quad Core, 2M Cache, 1.6GHz (1.8GHz), 9.5W Intel® Atom™ x5-E3930 Processor, Dual Core, 2M Cache, 1.3GHz (1.8GHz), 6.5W Intel® Pentium® Processor N4200, Quad Core, 2M Cache, 1.1GHz (2.5GHz), 6W (without ECC function) Intel® Celeron® Processor N3350, Dual Core, 2M Cache, 1.1GHz (2.4GHz), 6W (without ECC function)	
	<b>Memory</b>	4GB/8GB DDR3L Memory Down (ECC support only for 8GB)	Single Channel DDR3L 1600MHz
	<b>BIOS</b>	AMI SPI 128Mbit (supports UEFI boot only)	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® HD Graphics	
	<b>Feature</b>	OpenGL 5.0, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1, WMV9, JPEG/MJPEG, HEVC/H.265, VP8, VP9, MVC HW Encode: AVC/H.264, JPEG/MJPEG, HEVC/H.265, VP8, VP9, MVC	
	<b>Display</b>	1 x DDI (HDMI/DVI/DP) 1 x LVDS/eDP	LVDS: single channel 24-bit, resolution up to 1366x768 @ 60Hz HDMI: resolution up to 3840 x 2160 @ 30Hz DP++: resolution up to 4096x2160 @ 60Hz eDP: resolution up to 3840x2160 @ 60Hz
	<b>Dual Display</b>	DDI + LVDS	DDI + eDP
<b>EXPANSION</b>	<b>Interface</b>	4 x PCIe x1 (Gen 2) 1 x SDIO (available upon request) 1 x LPC 2 x I <sup>2</sup> C 1 x SMBus 1 x SPI 2 x UART (TX/RX)	
<b>AUDIO</b>	<b>Interface</b>	HD Audio	
<b>ETHERNET</b>	<b>Controller</b>	1 x Intel® I210AT (10/100/1000Mbps) (0°C to 60°C) 1 x Intel® I210IT (10/100/1000Mbps) (-40°C to 85°C)	
<b>I/O</b>	<b>USB</b>	2 x USB 3.0 8 x USB 2.0	
	<b>SATA</b>	2 x SATA 3.0 (up to 6Gb/s)	
	<b>eMMC</b>	1 x 8GB/16GB/32GB/64GB eMMC (available upon request)	
	<b>GPIO</b>	1 x 8-bit GPIO	
<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds	
<b>POWER</b>	<b>Type</b>	4.75V~20V, 5VSB, VCC_RTC (ATX mode)	4.75V~20V, VCC_RTC (AT mode)
	<b>Consumption</b>	Typical: E3950: 12V @ 0.44A (5.28W) Max.: E3950: 12V @ 1.89A (22.68W)	
<b>OS SUPPORT (UEFI ONLY)</b>		Windows 10 IoT Enterprise 64-bit	Fedora 24 (Intel® graphic driver available) Linux Yocto Project v2.0
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: 0 to 60°C -40 to 85°C	Storage: -40 to 85°C
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	2,230,979 hrs @ 25°C; 1,334,511 hrs @ 45°C; 862,577 hrs @ 60°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled	
<b>MECHANICAL</b>	<b>Dimensions</b>	COM Express® Mini	84mm (3.30") x 55mm (2.16")
	<b>Compliance</b>	PICMG COM Express® R2.1, Type 10	

## ► Ordering Information

Model Name	P/N	Processor	Memory	eMMC	DIO/SDIO	LVDS/eDP	GbE	USB 3.0	USB 2.0	Power	Thermal	Temp.
AL9A2-T80-E3940	770-AL9A21-000G	E3940	8 GB ECC	N/A	DIO	LVDS	1	2	8	ATX/AT	Fanless	-40 to 85°C
AL9A2-B80-E3950	770-AL9A21-100G	E3950	8 GB ECC	N/A	DIO	LVDS	1	2	8	ATX/AT	Fanless	0 to 60°C
AL9A2-T40-E3930	770-AL9A21-200G	E3930	4 GB / non-ECC	N/A	DIO	LVDS	1	2	8	ATX/AT	Fanless	-40 to 85°C
AL9A2-B40-N4200	770-AL9A21-300G	N4200	4 GB / non-ECC	N/A	DIO	LVDS	1	2	8	ATX/AT	Fanless	0 to 60°C

Note: N4200 is supported upon request with MOQ requirement.

## ► Packing List

• 1 AL9A2 board	
• 1 Heat sink	A71-008114-000G (E Series) A71-008114-010G (N Series)

## ► Optional Items

• COM100-B carrier board kit	770-COM104-000G
• Heat spreader	A71-808304-000G (E Series) A71-808305-000G (N Series)