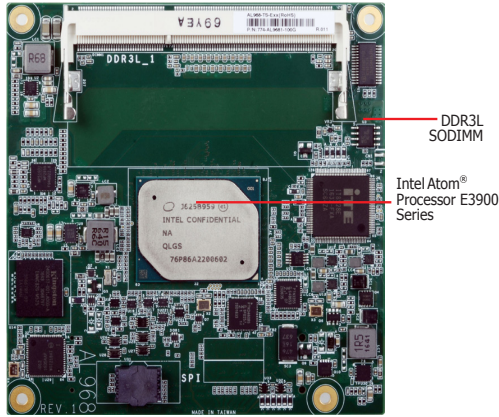




**Intel Atom® Processor E3900 Series
COM Express® Compact**



AL968



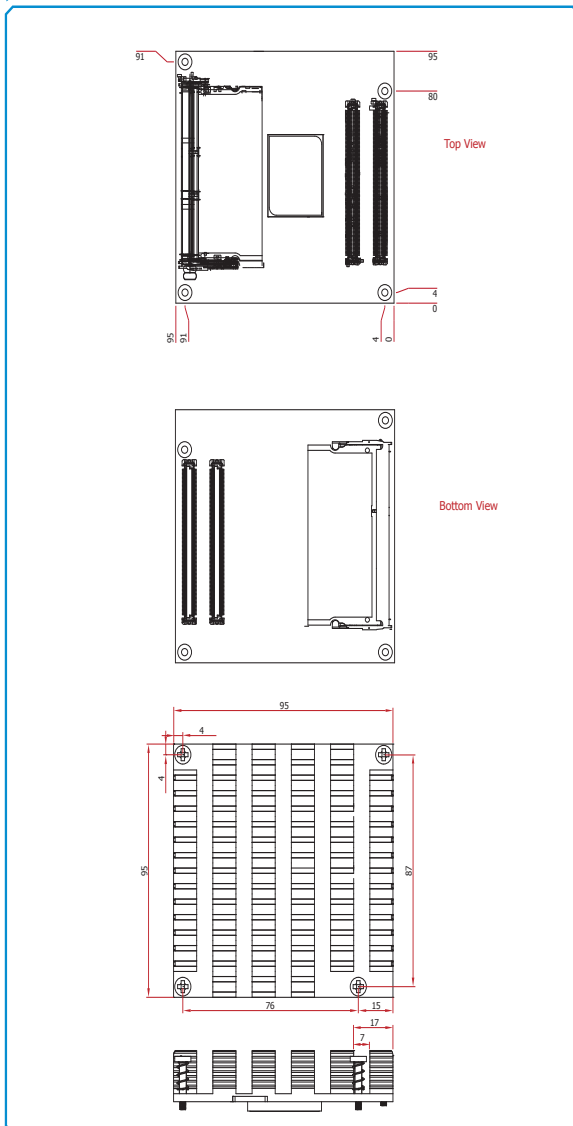
Features

- Dual channel DDR3L 1600MHz SODIMM up to 8GB
- Three independent displays: VGA*/DDI + LVDS*/eDP + DDI
- DP++ resolution supports up to 4096x2160 @ 60Hz
- Multiple expansion: 4 PCIe x1, 1 LPC, 1 I²C, 1 SMBus, eMMC
- Rich I/O: 1 Intel GbE, 4 USB 3.0, 8 USB 2.0, 2 SATA 3.0

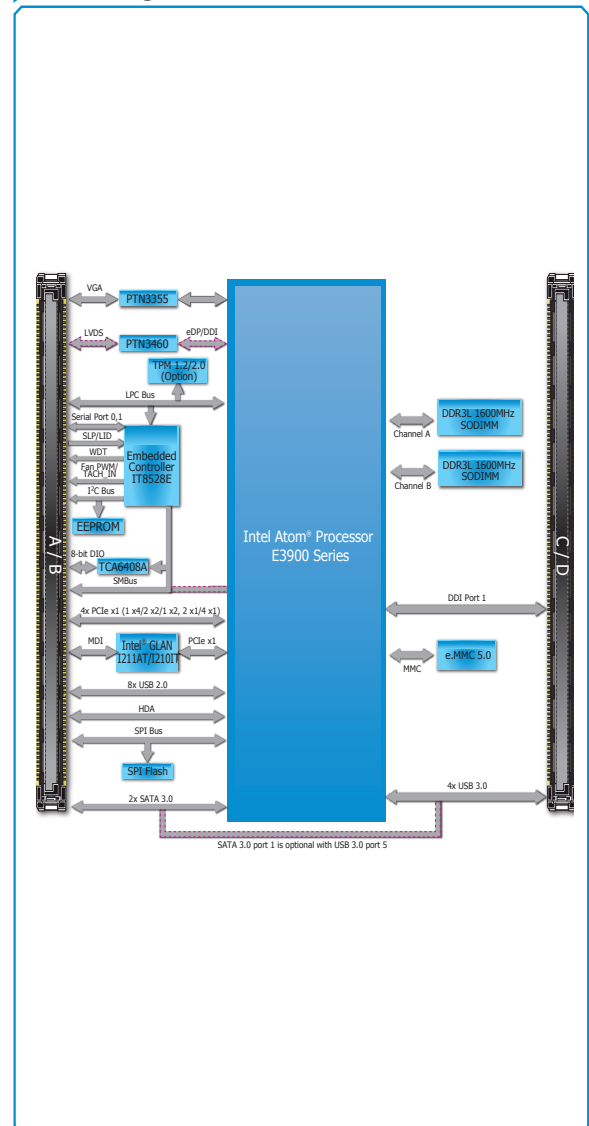
* Populated by default



Mechanical Drawing



Block Diagram





Specifications

SYSTEM	Processor	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 Intel® Celeron® Processor N3350, Dual Core, 2M Cache, 1.1GHz (2.4GHz), 6W	
	Memory	Two 204-pin SODIMM up to 8GB	Dual Channel DDR3L 1600MHz
	BIOS	AMI SPI 128Mbit (supports UEFI boot only)	
	GRAPHICS	Controller	Intel® HD Graphics
	Feature	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	
	Display	1 x VGA/DDI (DDI available upon request) 1 x LVDS/eDP (eDP available upon request) 1 x DDI	VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel 24-bit, resolution up to 1920x1200 @ 60Hz eDP: resolution up to 3840x2160 @ 60Hz HDMI: resolution up to 3840x2160 @ 30Hz DP++: resolution up to 4096x2160 @ 60HZ
	Triple Displays	VGA + LVDS + DDI	DDI + eDP + DDI (available upon request)
EXPANSION	Interface	4 x PCIe x1 (Gen 2) 1 x SDIO (available upon request) 1 x LPC 1 x I ² C 1 x SMBus 1 x SPI 2 x UART (TX/RX)	
	eMMC	1 x 8GB/16GB/32GB eMMC (available upon request)	
AUDIO	Interface	HD Audio	
ETHERNET	Controller	1 x Intel® I211AT (10/100/1000Mbps) (0°C to 60°C) or 1 x Intel® I210IT (10/100/1000Mbps) (-40°C to 85°C)	
I/O	USB	4 x USB 3.0 8 x USB 2.0	
	SATA	2 x SATA 3.0 (up to 6Gb/s)	
	DIO	1 x 8-bit DIO	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	Available Upon Request	
POWER	Type	12V, 5VSB, VCC_RTC (ATX mode)	12V, VCC_RTC (AT mode)
	Consumption	Typical: E3950: 12V @ 0.3551A (4.2612W) Max.: E3950: 12V @ 1.9213A (23.0556W)	
OS SUPPORT (UEFI ONLY)		Windows: Windows 10 IoT Enterprise 64-bit Linux: Ubuntu 15.10 (Intel® graphic driver available)	
ENVIRONMENT	Temperature	Operating: 0 to 60°C -40 to 85°C	Storage: -40 to 85°C
	Humidity	Operating: 10 to 90% RH	Storage: 10 to 90% RH
	MTBF	707,110 hrs @ 25°C; 416,227 hrs @ 45°C; 263,460 hrs @ 60°C Calculation model: Telcordia Issue 2 Environment: GB, GC – Ground Benign, Controlled	
MECHANICAL	Dimensions	COM Express® Compact	95mm (3.74") x 95mm (3.74")
	Compliance	PICMG COM Express® R2.1, Type 6	
STANDARDS AND CERTIFICATIONS	Certification	CE, FCC	

Ordering Information

Model Name	P/N	Processor	Memory	VGA/DVI	LVDS/eDP	GbE	USB 3.0	USB 2.0	Power	Thermal	Temp.
AL968-BS0-E3950	770-AL9681-500G	x7-E3950	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Fanless	0 to 60°C
AL968-TS0-E3940	770-AL9681-600G	x7-E3940	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Fanless	-40 to 85°C
AL968-BS0-E3940	770-AL9681-700G	x7-E3940	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Fanless	0 to 60°C
AL968-BS0-E3930	770-AL9681-800G	x7-E3930	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Fanless	0 to 60°C
AL968-BS0-N4200	770-AL9681-900G	N4200	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Fanless	0 to 60°C

Packing List

• 1 AL968 board	
• 1 DVD	
• 1 Heat sink (Height: 22.6mm)	500G~800G: A71-008104-000G 900G: A71-008104-010G

Optional Items

• COM332-B carrier board kit	770-CM3321-000G
• Heat spreader (Height: 11mm)	A71-808306-000G

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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