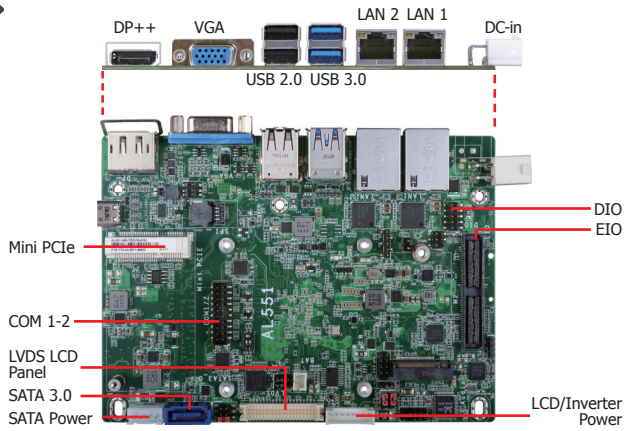
Intel Atom® Processor E3900 Series 3.5"

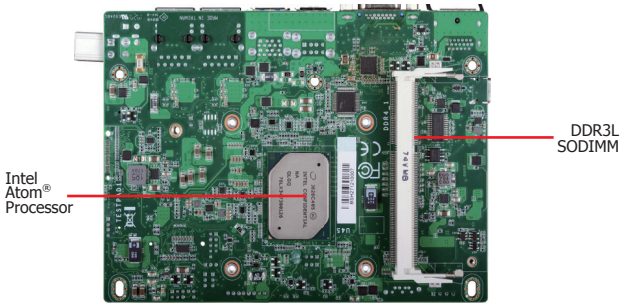
IoT Solutions Alliance

AL551

Atom



Top View

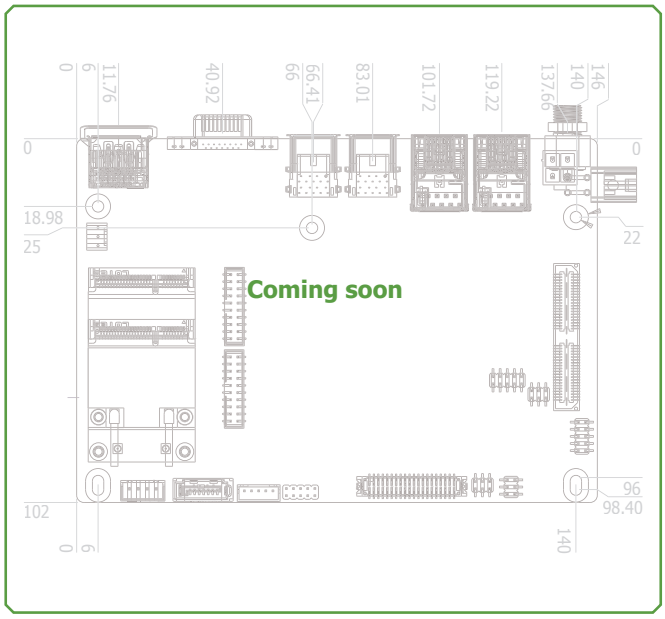


Bottom View

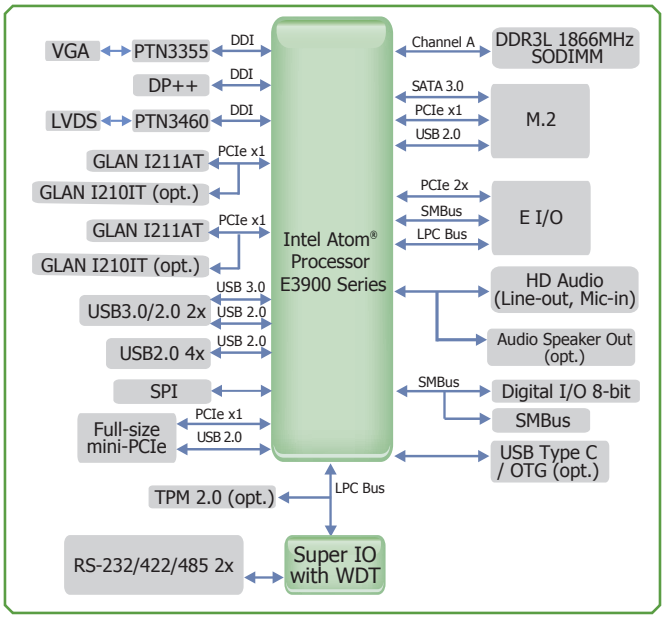
Features

- 1 DDR3L SODIMM up to 8GB
- Three independent displays: VGA + LVDS + DP++
- DP++ resolution up to 4096x2160 @ 60Hz
  Dual Channel LVDS resolution up to 1920x1200 @ 60Hz
- Wireless communication: mini PCIe
- Rich I/O: 2 Intel GbE, 2 COM, 2 USB 3.0, 4 USB 2.0

Mechanical Drawing



Block Diagram



Specifications

SYSTEM	**Processor**	Intel Atom® Processor E3900 Family, 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	One 204-pin SODIMM up to 8GB Single Channel DDR3L 1866MHz
	BIOS	Insyde SPI 128Mbit
GRAPHICS	**Controller**	Intel® HD Graphics
	Feature	OpenGL 4.2, Direct X 11.1, OpenCL 1.2, OGL ES 3.0 HW Decode: H.264, MPEG2, VC1, VP8, H.265, MPEG4 HW Encode: H.264, MPEG2, MPEG4
	Display	1 x VGA VGA: resolution up to 2048x1536 @ 50Hz 1 x LVDS LVDS: dual channel 48-bit, resolution up to 1920x1200 @ 60Hz 1 x DP++ DP++: resolution up to 4096x2160 @ 60Hz
	Triple Displays	VGA + LVDS + DP++
EXPANSION	**Interface**	1 x Full-size mini-PCIe (USB/PCIe) 1 x Extension I/O connector (available upon request) 1 x M.2 B key 2242 (PCIe/USB 2.0/SATA 3.0)
AUDIO	**Audio Codec**	Realtek ALC262
ETHERNET	**Controller**	2 x Intel® I211AT PCIe (10/100/1000Mbps) 2 x Intel® I210IT PCIe (10/100/1000Mbps) (available upon request)
REAR I/O	**Ethernet**	2 x GbE (RJ-45)
	USB	2 x USB 3.0 1 x USB Type C OTG (Linux only, available upon request) 2 x USB 2.0
	Display	1 x VGA 1 x DP++ 1 x LVDS
INTERNAL I/O	**Serial**	2 x RS-232/422/485 (2.0mm pitch)
	USB	2 x USB 2.0 (2.0mm pitch)
	Display	1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power
	Audio	1 x Audio (Line-out/Mic-in) Audio Speaker Out, Support 2 x 3W Speaker (available upon request)
	SATA	1 x SATA 3.0 (up to 6Gb/s) 1 x SATA Power
	DIO	1 x 8-bit DIO
	SMBus	1 x SMBus
WATCHDOG TIMER	**Output & Interval**	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	**TPM 2.0**	Available Upon Request
POWER	**Type**	Single 12V +/-10% DC
	Connector	Right Angle Connector (4-pin) DC-in Jack (available upon request) Vertical Type Connector (4-pin) (available upon request)
	Consumption	TBD
	RTC Battery	Lithium 3V (210mAH)
OS SUPPORT		Windows 10 64-bit Ubuntu 16.04
ENVIRONMENT	**Temperature**	Operating: 0 to 60°C (Option: -20 to 70°C / -40 to 85 °C) Storage: -40 to 85°C
	Humidity	Operating: 10 to 90% RH Storage: 10 to 90% RH
	MTBF	TBD
MECHANICAL	**Dimensions**	3.5" SBC Form Factor 146mm (5.75") x 102mm (4.02")
	Height	PCB: 1.6mm Top Side: TBD, Bottom Side: TBD
CERTIFICATIONS		TBD

Ordering Information

Model Name	P/N	Processor	Memory	Display	RS-232/422/485	GbE	USB 3.0	USB 2.0	Power	Thermal	Temp.
AL551-BN-E3950	TBD	X7-E3950	1 SODIMM	VGA + LVDS + DP++	2	2	2	4	12VDC	Fanless	0 to 60°C
AL551-BN-E3940	TBD	X5-E3940	1 SODIMM	VGA + LVDS + DP++	2	2	2	4	12VDC	Fanless	0 to 60°C
AL551-BN-E3930	TBD	X5-E3930	1 SODIMM	VGA + LVDS + DP++	2	2	2	4	12VDC	Fanless	0 to 60°C
AL551-BN-N4200	TBD	N4200	1 SODIMM	VGA + LVDS + DP++	2	2	2	4	12VDC	Fanless	0 to 60°C
AL551-BN-N3350	TBD	N3350	1 SODIMM	VGA + LVDS + DP++	2	2	2	4	12VDC	Fanless	0 to 60°C
AL551-EN-E3950	TBD	X7-E3950	1 SODIMM	VGA + LVDS + DP++	2	2	2	4	12VDC	Fanless	-20 to 70°C
AL551-TN-E3950	TBD	X7-E3950	1 SODIMM	VGA + LVDS + DP++	2	2	2	4	12VDC	Fanless	-40 to 85°C

Packing List

• 1 AL551 board	
• 1 COM port cable (Length: 300mm, 2 x COM ports)	TBD
• 1 Serial ATA data cable (Length: 500mm)	TBD
• 1 Serial ATA power cable (Length: 250mm)	TBD
• 1 Heat sink (Height: TBD)	TBD

Optional Items

• USB port cable (Length: 200mm)	TBD
• COM port cable (Length: 300mm, 2 x COM ports)	TBD
• Power adapter (60W, 12V, DC Jack)	TBD
• Heat spreader (Height: 8mm)	TBD
• 1 Audio cable (Length: 160mm)	TBD

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