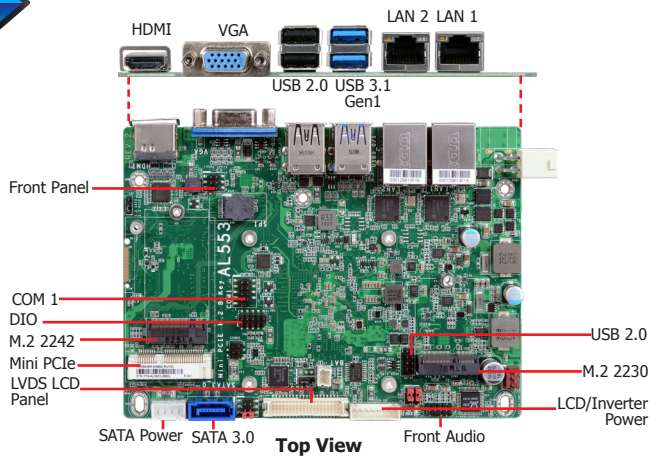
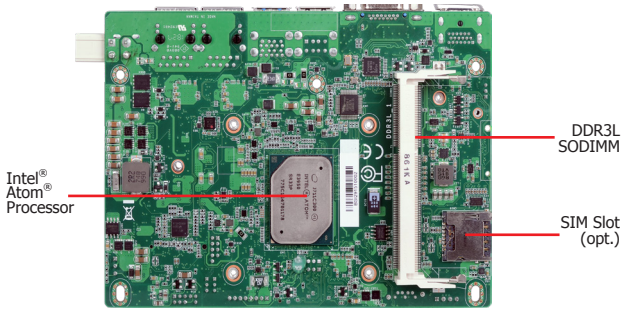
Intel® Atom® Processor E3900 Series 3.5" SBC

AL553

Atom



Top View



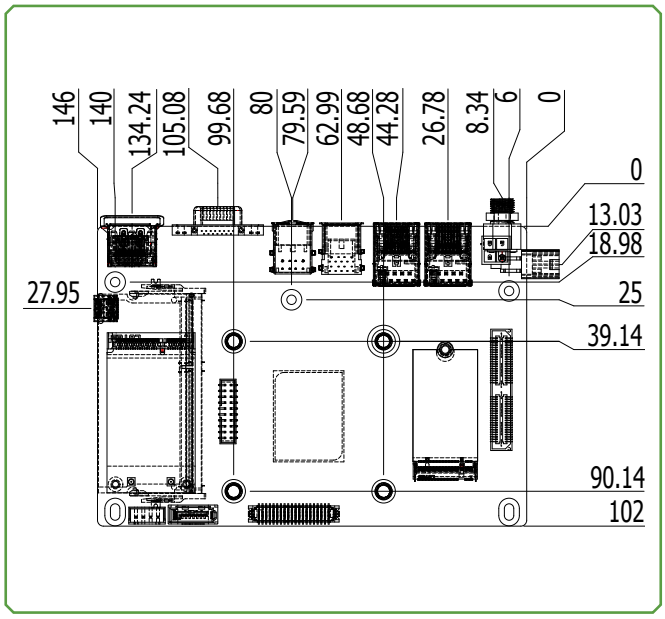
Bottom View

Features

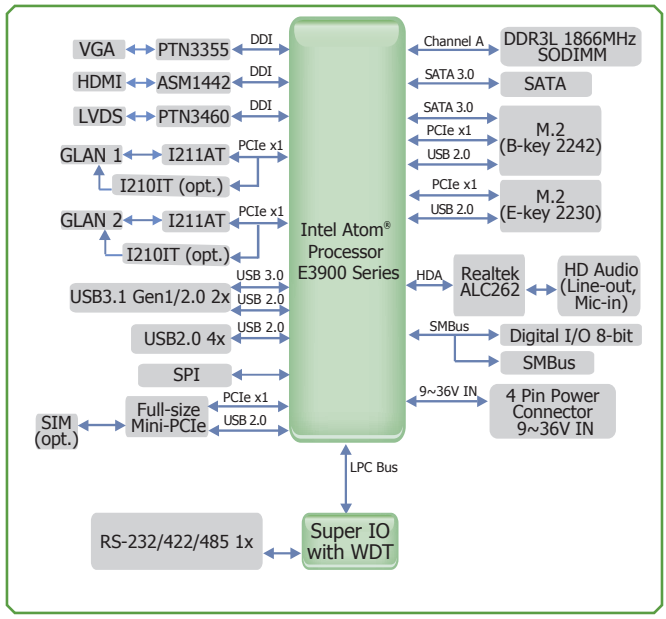
- 1 DDR3L SODIMM up to 8GB
- Three independent displays: VGA + LVDS + HDMI
- HDMI resolution up to 3840x2160 @ 30Hz
  VGA resolution up to 1920x1200 @ 60Hz
  LVDS resolution up to 1920x1200 @ 60Hz
- Multiple expansion: 1 M.2 B Key, 1 M.2 E Key, Mini PCIe
- Rich I/O: 2 Intel GbE, 1 COM, 2 USB 3.1 Gen1, 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 Intel® Celeron® Processor J3455, Quad Core, 2M Cache, 1.5GHz (2.3GHz), 10W
	Memory	One 204-pin SODIMM up to 8GB Single Channel DDR3L 1866MHz
	BIOS	Insyde SPI 128Mbit (supports UEFI boot only)
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 1920x1200 @ 60Hz 1 x LVDS — LVDS: dual channel 24-bit, resolution up to 1920x1200 @ 60Hz 1 x HDMI — HDMI: resolution up to 3840x2160 @ 30Hz
	Triple Displays	VGA + LVDS + HDMI
EXPANSION	**Interface**	1 x Full-size mini-PCIe (USB/PCIe) with SIM slot (option) 1 x M.2 B key 2242 (PCIe/USB 2.0/SATA 3.0) 1 x M.2 E key 2230 (USB/PCIe)
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 3.1 Gen1 2 x USB 2.0
	Display	1 x VGA 1 x HDMI 1 x LVDS
INTERNAL I/O	**Serial**	1 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)
	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**	fTPM2.0
POWER	**Type**	Wide Range 9~36V DC
	Connector	Right Angle Connector (4-pin) DC-in Jack (available upon request) Vertical Type Connector (4-pin) (available upon request)
	Consumption	Typical: 7W, Max : 24W.
	RTC Battery	CR2032 Coin Cell
OS SUPPORT (UEFI Only)		Windows 10 IoT Enterprise (64-bit) Linux
ENVIRONMENT	**Temperature**	Operating: 0 to 60°C, -20 to 70°C, -40 to 85 °C Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH Storage: 5 to 90% RH
	MTBF	618,325 hrs @ 25°C; 396,245 hrs @ 45°C ; 267,106 hrs @ 60°C
MECHANICAL	**Dimensions**	3.5" SBC Form Factor 146mm (5.75") x 102mm (4.02")
	Height	PCB: 1.6mm Top Side: 15.5mm, Bottom Side: 8.0mm
CERTIFICATIONS		CE, FCC Class B, RoHS

Ordering Information

Model Name	P/N	Processor	Memory	Display	RS-232/422/485	GbE	USB 3.1 Gen1	USB 2.0	Power	Thermal	Temp.
AL553-BN-E3950	770-AL5531-200G	x7-E3950	1 SODIMM	VGA+LVDS+HDMI	1	2	2	4	9-36VDC	Fanless	0~60C
AL553-BN-E3940	770-AL5531-100G	x5-E3940	1 SODIMM	VGA+LVDS+HDMI	1	2	2	4	9-36VDC	Fanless	0~60C
AL553-BN-E3930	770-AL5531-000G	x5-E3930	1 SODIMM	VGA+LVDS+HDMI	1	2	2	4	9-36VDC	Fanless	0~60C
AL553-BN-N4200	770-AL5531-400G	N4200	1 SODIMM	VGA+LVDS+HDMI	1	2	2	4	9-36VDC	Fanless	0~60C
AL553-BN-N3350	770-AL5531-300G	N3350	1 SODIMM	VGA+LVDS+HDMI	1	2	2	4	9-36VDC	Fanless	0~60C
AL553-EN-E3950	770-AL5531-500G	x7-E3950	1 SODIMM	VGA+LVDS+HDMI	1	2	2	4	9-36VDC	Fanless	-20~70C
AL553-TN-E3950	770-AL5531-600G	x7-E3950	1 SODIMM	VGA+LVDS+HDMI	1	2	2	4	9-36VDC	Fanless	-40~85C

Packing List

• 1 AL553 board	
• COM port cable(Length: 250mm, 1x COM port)	332-753040-000G
• SATA data cable (Length : 500mm)	332-553001-205G
• SATA power cable (Length: 250mm)	A81-004041-016G
• Heat sink(Height: 35mm)	N series CPU A71-008119-000G E series CPU A71-010038-010G

Optional Items

• COM cable (Length: 250mm, 1x COM)	332-753040-000G
• Power adapter (60W, 12V)	671-106012-000G
• Heatspreader for AL55x E-Serial CPU	A71-808312-000G
• Heatspreader for AL55x N-Serial CPU	A71-808313-000G
• Audio cable(Length: 160mm)	A81-022007-016G
• USB cable (Length: 200mm)	A81-001032-016G

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