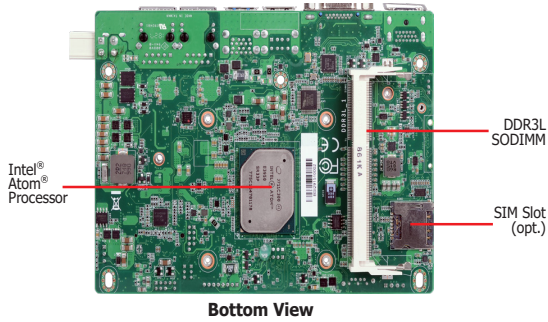
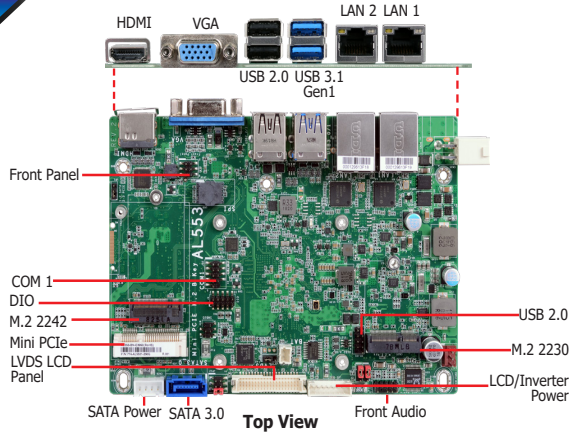




**Intel® Atom® Processor E3900 Series**  
**3.5" SBC**



**AL553**

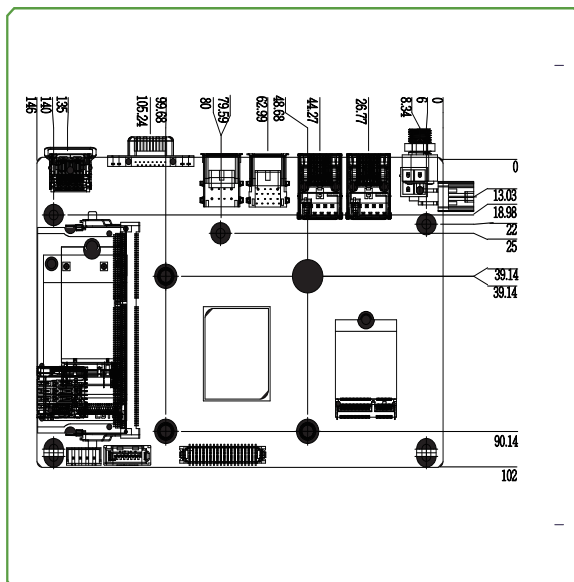


**Features**

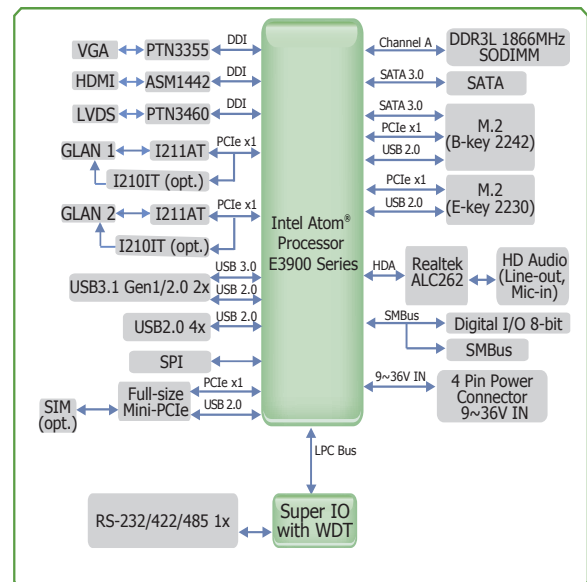
- 1 DDR3L SODIMM up to 8GB
- Three independent displays: VGA + LVDS + HDMI
- HDMI resolution up to 3840x2160 @ 30Hz  
VGA resolution up to 1920x1200 @ 60Hz  
LVDS resolution up to 1920x1200 @ 60Hz
- Multiple expansion: 1 M.2 B Key, 1 M.2 E Key, Mini PCIe
- Rich I/O: 2 Intel GbE, 1 COM, 2 USB 3.1 Gen1, 4 USB 2.0



**Mechanical Drawing**



**Block Diagram**





**Specifications**

<b>SYSTEM</b>	<b>Processor</b>	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
	<b>Memory</b>	One 204-pin SODIMM up to 8GB Single Channel DDR3L 1866MHz
	<b>BIOS</b>	Insyde SPI 128Mbit (supports UEFI boot only)
	<b>GRAPHICS</b>	<b>Controller</b> Intel® HD Graphics
<b>GRAPHICS</b>	<b>Feature</b>	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
	<b>Display</b>	1 x VGA 1 x LVDS 1 x HDMI VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel 24-bit, resolution up to 1920x1200 @ 60Hz HDMI: resolution up to 3840x2160 @ 30Hz
	<b>Triple Displays</b>	VGA + LVDS + HDMI
<b>EXPANSION</b>	<b>Interface</b>	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)
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC262
<b>ETHERNET</b>	<b>Controller</b>	2 x Intel® I211AT PCIe (10/100/1000Mbps) 2 x Intel® I210IT PCIe (10/100/1000Mbps) (available upon request)
<b>REAR I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45)
	<b>USB</b>	2 x USB 3.1 Gen1 2 x USB 2.0
	<b>Display</b>	1 x VGA 1 x HDMI 1 x LVDS
<b>INTERNAL I/O</b>	<b>Serial</b>	1 x RS-232/422/485 (2.0mm pitch)
	<b>USB</b>	2 x USB 2.0 (2.0mm pitch)
	<b>Display</b>	1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power
	<b>Audio</b>	1 x Audio (Line-out/Mic-in)
	<b>SATA</b>	1 x SATA 3.0 (up to 6Gb/s) 1 x SATA Power
	<b>DIO</b>	1 x 8-bit DIO
	<b>SMBus</b>	1 x SMBus
<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds
<b>SECURITY</b>	<b>TPM 2.0</b>	fTPM2.0
<b>POWER</b>	<b>Type</b>	Wide Range 9~36V DC
	<b>Connector</b>	Right Angle Connector (4-pin) DC-in Jack (available upon request) Vertical Type Connector (4-pin) (available upon request)
	<b>Consumption</b>	Typical: 7W, Max : 24W.
	<b>RTC Battery</b>	CR2032 Coin Cell
<b>OS SUPPORT (UEFI Only)</b>		Windows 10 IoT Enterprise (64-bit) Linux
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: 0 to 60°C, -20 to 70°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>	618,325 hrs @ 25°C; 396,245 hrs @ 45°C ; 267,106 hrs @ 60°C
<b>MECHANICAL</b>	<b>Dimensions</b>	3.5" SBC Form Factor 146mm (5.75") x 102mm (4.02")
	<b>Height</b>	PCB: 1.6mm Top Side: 15.5mm, Bottom Side: 8.0mm
<b>CERTIFICATIONS</b>		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

## 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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