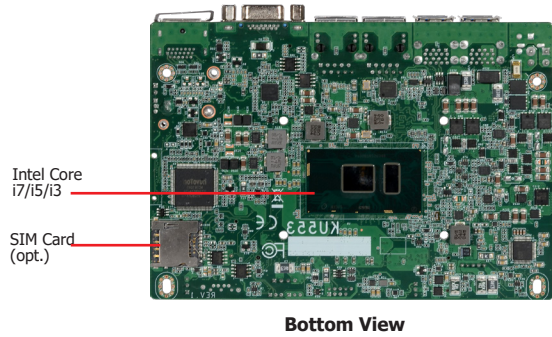
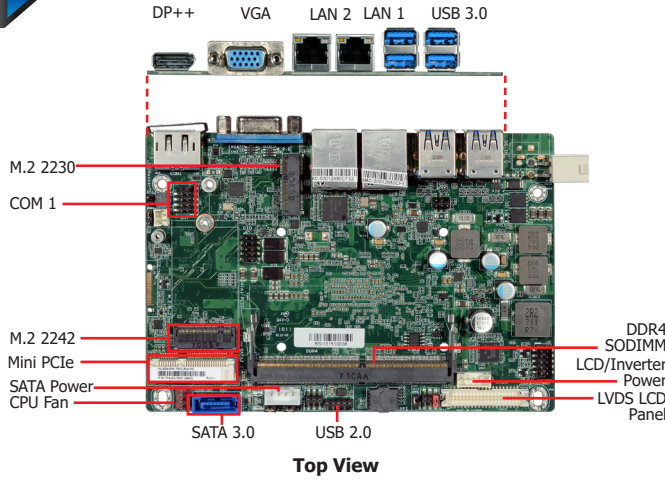


# KU553

ULT

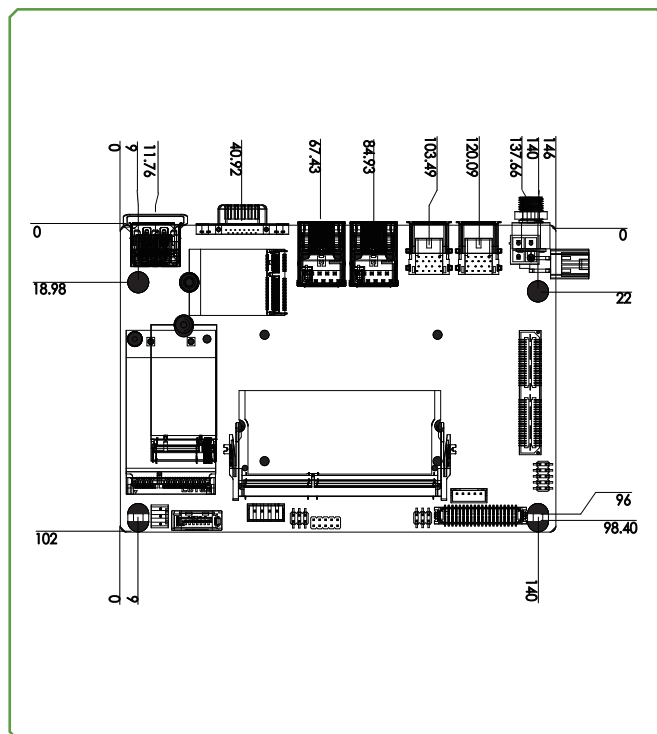


## Features

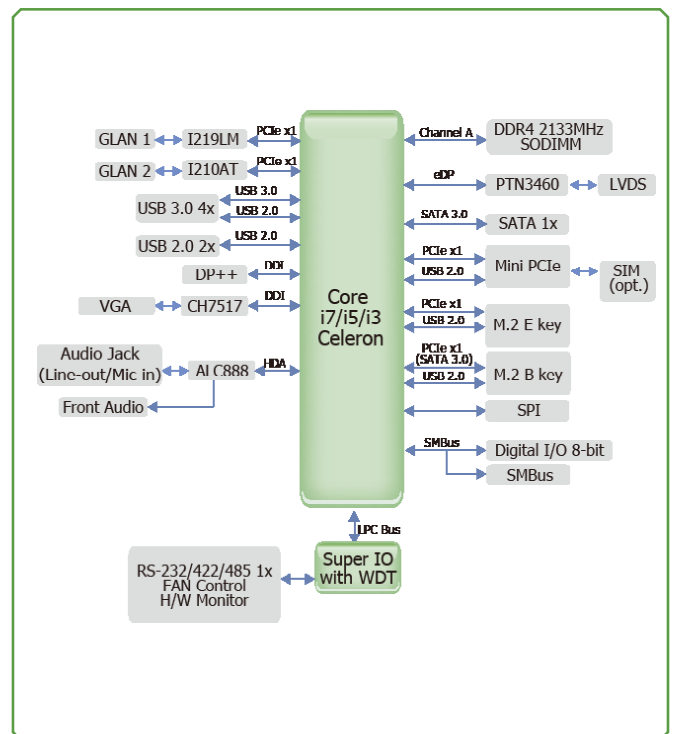
- 1 DDR4 SODIMM up to 16GB
- Three independent displays: VGA + LVDS + DP++
- DP++ resolution up to 4096x2304 @ 60Hz
- Multiple expansion: 1 M.2 B Key, 1 M.2 E Key, 1 Mini PCIe
- Rich I/O: 2 Intel GbE, 4 USB 3.0, 2 USB 2.0



## Mechanical Drawing



## Block Diagram



**Specifications**

<b>SYSTEM</b>	<b>Processor</b>	7th Generation Intel® Core™ Processors, BGA 1356 Intel® Core™ i7-7600U Processor, Dual Core, 4M Cache, 2.8GHz (3.9GHz), 15W Intel® Core™ i5-7300U Processor, Dual Core, 3M Cache, 2.6GHz (3.5GHz), 15W Intel® Core™ i3-7100U Processor, Dual Core, 3M Cache, 2.4GHz, 15W Intel® Celeron® Processor 3965U, Dual Core, 2M Cache, 2.2GHz, 15W	
	<b>Memory</b>	One 260-pin SODIMM up to 16GB	Single Channel DDR4 1866/2133MHz
	<b>BIOS</b>	Insyde SPI 128Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® HD Graphics GT Series	
	<b>Feature</b>	OpenGL 5.0, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC, H265, VP8, VP9	
	<b>Display</b>	1 x VGA 1 x LVDS/eDP 1 x DP++	VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel 48-bit, resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2304 @ 60Hz
	<b>Triple Displays</b>	VGA + LVDS + DP++	
<b>EXPANSION</b>	<b>Interface</b>	1 x Full-size Mini PCIe (PCIe/USB2.0/USB3.1 Gen1 (option)) with SIM slot (option) 1 x M.2 B key 2242 (PCIe Gen3/USB2.0/SATA3.0) 1 x M.2 E key 2230 (PCIe/USB2.0)	
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC888S	
<b>ETHERNET</b>	<b>Controller /Phy</b>	Core™ Processors: 1 x Intel® I210AT PCIe (10/100/1000Mbps) or 1 x Intel® I210IT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT11.6 (10/100/1000Mbps) Celeron® Processor: 1 x Intel® I210AT PCIe (10/100/1000Mbps) or 1 x Intel® I210IT PCIe (10/100/1000Mbps) 1 x Intel® I219V PCIe with iAMT11.6 (10/100/1000Mbps)	
<b>REAR I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45)	
	<b>USB</b>	4 x USB 3.0	
	<b>Display</b>	1 x VGA 1 x DP++	
<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</b>	fTPM 2.0	
<b>POWER</b>	<b>Type</b>	Wide Range 9~36VDC	
	<b>Connector</b>	Right Angle Connector (4-pin)	DC Jack (available upon request) Vertical Type Connector (4-pin) (available upon request)
	<b>Consumption</b>	Idle: i7-7600U: 12V @ 0.43A (5.16W) Max: i7-7600U: 12V @ 3.16A (37.92W)	
	<b>RTC Battery</b>	CR2032 Coin Cell	
<b>OS SUPPORT</b>	<b>Microsoft</b>	Windows 10 IoT Enterprise 64-bit	
	<b>Linux</b>	Linux	
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: 0 to 60°C (Opt. -20 to 70°C)	Storage: -40 to 85°C
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	606, 151 hrs @ 25°C; 394, 265 @ 45°C; 267, 894 @ 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: 16.3mm, Bottom Side: 4.0 mm
<b>CERTIFICATIONS</b>	CE, FCC, RoHS		

**Ordering Information**

Model Name	P/N	Processor	Memory	GbE	RS-232/422/485	USB 3.0	USB 2.0	Power	Thermal	Temp.
<b>KU553-BN-7600U</b>	770-KU5531-000G	i7-7600U	1 SODIMM	2	1	4	2	9~36V (Right Angle)	Fanless	0 to 60°C
<b>KU553-BN-7300U</b>	770-KU5531-100G	i5-7300U	1 SODIMM	2	1	4	2	9~36V (Right Angle)	Fanless	0 to 60°C
<b>KU553-BN-7100U</b>	770-KU5531-200G	i3-7100U	1 SODIMM	2	1	4	2	9~36V (Right Angle)	Fanless	0 to 60°C
<b>KU553-BN-3965U</b>	770-KU5531-300G	3965U	1 SODIMM	2	1	4	2	9~36V (Right Angle)	Fanless	0 to 60°C
<b>KU553-EN-7600U</b>	770-KU5531-400G	i7-7600U	1 SODIMM	2	1	4	2	9~36V (Right Angle)	Fanless	-20 to 70°C

**Packing List**

• 1 KU553 board	
• 1 COM port cable (Length: 300mm)	332-753040-000G
• 1 Serial ATA data cable (Length: 500mm)	332-553001-205G
• 1 Serial ATA power cable (Length: 250mm)	A81-004041-016G
• 1 Heat sink (Height: 26mm) or (Height: 31mm)	A71-011080-010G or A71-011081-010G

**Optional Items**

• USB port cable (Length: 200mm)	A81-001032-016G
• Power adapter (60W, 12V)	671-106012-000G
• 4 pin to DC jack cable	A81-004051-016G
• Heat spreader (Height: 11mm)	A71-011078-000G
• Audio cable (Length: 160mm)	A81-022007-016G