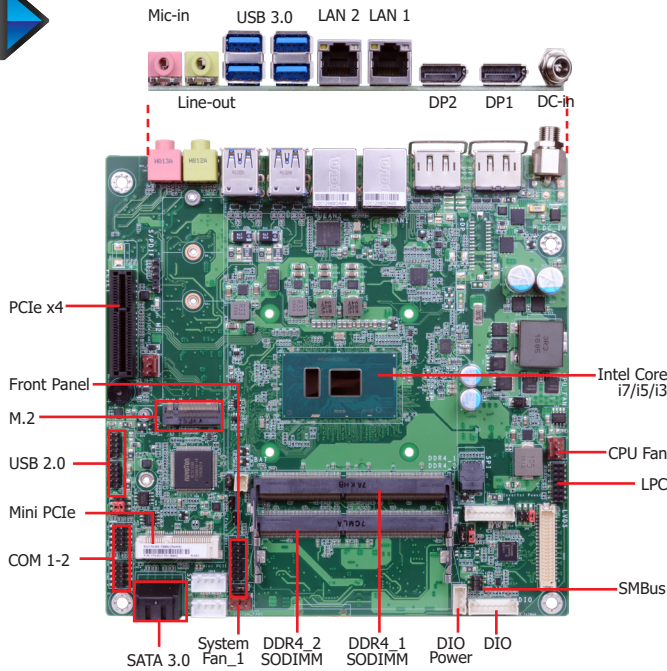


KU171/KU173

ULT



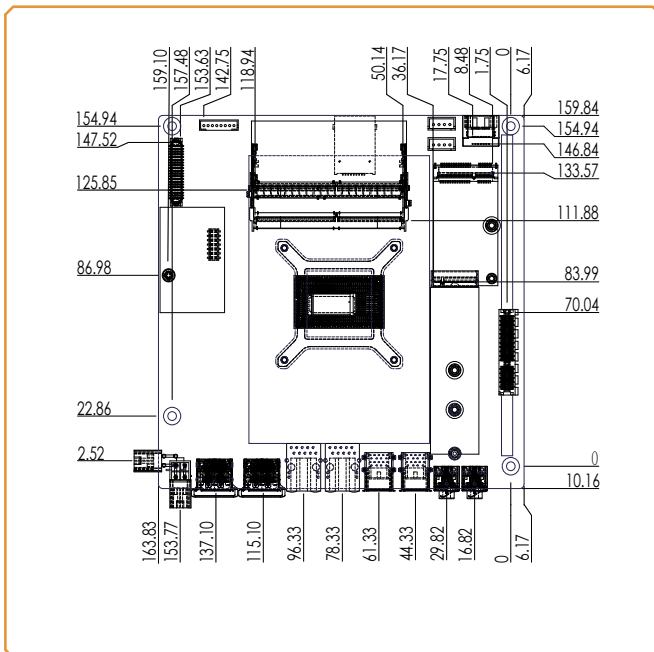
* The photos above refer to KU171.

Ordering Information

Model Name	P/N	Processor	Memory	LVDS/ eDP	HDMI/ DP++	GbE	RS-232 /422/485	RS-232	USB 3.0	USB 2.0	SATA 3.0	Power	Thermal	Temp.
KU171-NE-7300U	770-KU1711-000G	i5-7300U	2 SODIMM	LVDS	DP++	2	1	1	4	4	2	12V DC	Fanless	-20 to 70°C
KU171-NB-7100U	770-KU1711-200G	i3-7100U	2 SODIMM	LVDS	DP++	2	1	1	4	4	2	12V DC	Fanless	0 to 60°C
KU171-NE-7600U	770-KU1711-300G	i7-7600U	2 SODIMM	LVDS	DP++	2	1	1	4	4	2	12V DC	Fanless	-20 to 70°C
KU171-NB-3965U	770-KU1711-400G	3965U	2 SODIMM	LVDS	DP++	2	1	1	4	4	2	12V DC	Fanless	0 to 60°C
KU173-NE-7600U	770-KU1731-000G	i7-7600U	2 SODIMM	LVDS	DP++	2	1	1	4	4	2	9~36V DC	Fanless	-20 to 70°C
KU173-NB-3965U	770-KU1731-200G	3965U	2 SODIMM	LVDS	DP++	2	1	1	4	4	2	9~36V DC	Fanless	0 to 60°C
KU173-NE-7300U	770-KU1731-300G	i5-7300U	2 SODIMM	LVDS	DP++	2	1	1	4	4	2	9~36V DC	Fanless	-20 to 70°C
KU173-NB-7100U	770-KU1731-400G	i3-7100U	2 SODIMM	LVDS	DP++	2	1	1	4	4	2	9~36V DC	Fanless	0 to 60°C

Note: If you would like to have the CPU configuration which is not listed on our ordering, please contact our sales representative.

Mechanical Drawing



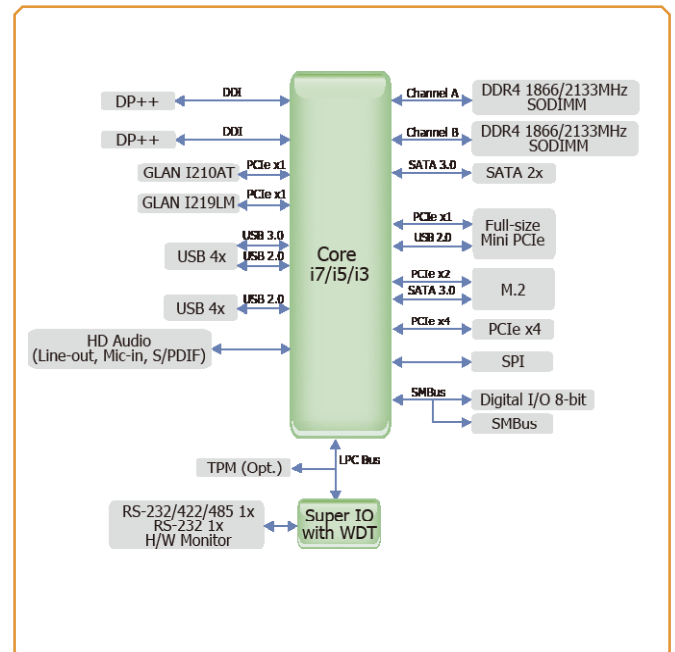
Features

- 2 DDR4 1866/2133MHz SODIMM up to 32GB
- Three independent displays: LVDS*/eDP + DP++ + DP++
- DP++ resolution supports up to 4096x2304 @ 60Hz
- Multiple expansion: 1 PCIe x4, 1 M.2 M Key (SATA/PCIe)
- Storage: 2 SATA 3.0, 1 Mini PCIe
- Rich I/O: 2 Intel GbE, 2 COM, 4 USB 3.0, 4 USB 2.0

* Populated by default



Block Diagram



Specifications

SYSTEM	Processor	7th Generation Intel® Core™ Processors, BGA 1356 Socket Intel® Core™ i7-7600U Processor, Dual Core, 4M Cache, 2.80 GHz (3.90 GHz), 15W Intel® Core™ i5-7300U Processor, Dual Core, 3M Cache, 2.60 GHz (3.50 GHz), 15W Intel® Core™ i3-7100U Processor, Dual Core, 3M Cache, 2.40 GHz, 15W Intel® Celeron® Processor 3965U, Dual Core, 2M Cache, 2.20 GHz, 15W	
	Memory	Two 260-pin SODIMM up to 32GB	Dual Channel DDR4 1866/2133MHz
	BIOS	Insyde SPI 128Mbit	
GRAPHICS	Controller	Intel® HD Graphics GT Series	
	Feature	OpenGL 4.4, 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	
	Display	1 x LVDS/eDP (eDP available upon request) 2 x DP++	LVDS: dual channel 48-bit, resolution up to 1920x1200 @ 60Hz DP: resolution up to 4096x2304 @ 60Hz eDP: resolution up to 4096x2304 @ 60Hz
EXPANSION	Triple Displays	LVDS + DP++ + DP++	eDP + DP++ + DP ++
	Interface	1 x PCIe x4 (Gen 3) 1 x Full-size Mini PCIe (PCIe/USB)	1 x M.2 2242/2260/2280 M key (SATA3.0/PCIe Gen3 x2 NVMe)
AUDIO	Audio Codec	Realtek ALC888S-VD2-GR	
ETHERNET	Controller	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT11.6 (10/100/1000Mbps) (only Core i7/i5 supports iAMT)	
REAR I/O	Ethernet	2 x GbE (RJ-45)	
	USB	4 x USB 3.0	
	Display	2 x DP++	
INTERNAL I/O	Audio	1 x Line-out	1 x Mic-in
	Serial	1 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 1 x RS-232 (2.0mm pitch)	
	USB	4 x USB 2.0 (2.0mm pitch)	
	Display	1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power	1 x eDP LCD Panel Connector (available upon request)
	Audio	1 x S/PDIF	
	SATA	2 x SATA 3.0 (up to 6Gb/s) 2 x SATA Power	RAID 0/1/5
	DIO	1 x 8-bit DIO	
	LPC	1 x LPC	
	SMBus	1 x SMBus	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	TPM 2.0 (Opt.)	
POWER	Type	Single 12V +/-10% DC (KU171)	Wide Range 9~36V (KU173)
	Connector	DC-in Jack	Right Angle Connector (4-pin) (available upon request) Vertical Type Connector (4-pin) (available upon request)
	Consumption	Typical: i7-7600U: 12V @ 0.39A (4.68Watt); 19V @ 2.79A (33.48Watt) Max.: i7-7600U: 12V @ 0.28A (5.32Watt); 19V @ 1.94A (36.86Watt)	
OS SUPPORT	RTC Battery	CR2032 Coin Cell	
	Microsoft/Linux	Windows 10 IoT Enterprise 64-bit	Debian 8 (with VESA graphic driver) CentOS 7 (with VESA graphic driver) Linux
ENVIRONMENT	Temperature	Operating: 0 to 60°C / -20 to 70°C	Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	KU171 : 433,836 hrs @ 25°C; 252,953 hrs @ 45°C ; 161,770 hrs @ 60°C KU173 : 416,214 hrs @ 25°C; 241,863 hrs @ 45°C ; 154,716 hrs @ 60°C Calculation model: Telcordia Issue 2 Environment: GB, GC – Ground Benign, Controlled	
MECHANICAL	Dimensions	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")
	Height	PCB: 1.6mm	Top Side: 16.5mm, Bottom Side: 3.5mm
CERTIFICATION	RoHS, CE, FCC		

Packing List

• 1 KU171/KU173 motherboard	
• 1 COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• 1 Serial ATA data with power cable (Length: 300mm)	A81-002013-000G
• 1 Heat sink (Height: 25mm)	A71-010033-000G (0 to 60°C) A71-010037-000G (-20 to 70°C)

Optional Items

• USB 2.0 port cable (Length: 200mm)	A81-001032-016G
• COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• Serial ATA data with power cable (Length: 300mm)	A81-002013-000G
• Power adapter (100W, 12V, Level 6) (KU171)	671-110002-100G
• Power adapter (120W, 19V) (KU173)	671-112004-100G
• I/O shield	A49-SU1710-000G
• I/O shield (Thin Type)	A49-SU1710-010G
• I/O shield (Thin Type Non Audio)	A49-SU1710-020G
• Heat sink (Height: 32mm)	A71-010037-000G