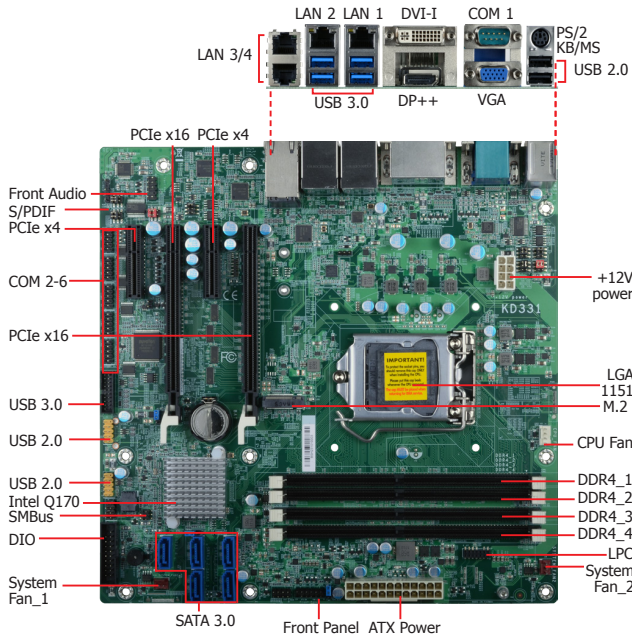


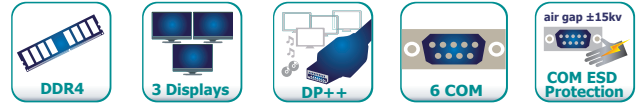
KD331-Q170

Micro-ATX Board



Features

- 4 DDR4 DIMM up to 64GB
- Three independent displays: VGA + DVI-I + DP++
- DP++ resolution up to 4096x2304 @ 60Hz
- Multiple expansion: 2 PCIe x16 (1 x16 or 2 x8 signal), 2 PCIe x4, 1 M.2, 1 LPC
- Rich I/O: 4 Intel GbE, 6 COM, 6 USB 3.0, 6 USB 2.0
- LPC EXT-RS232/485 module extends additional 4 COM ports



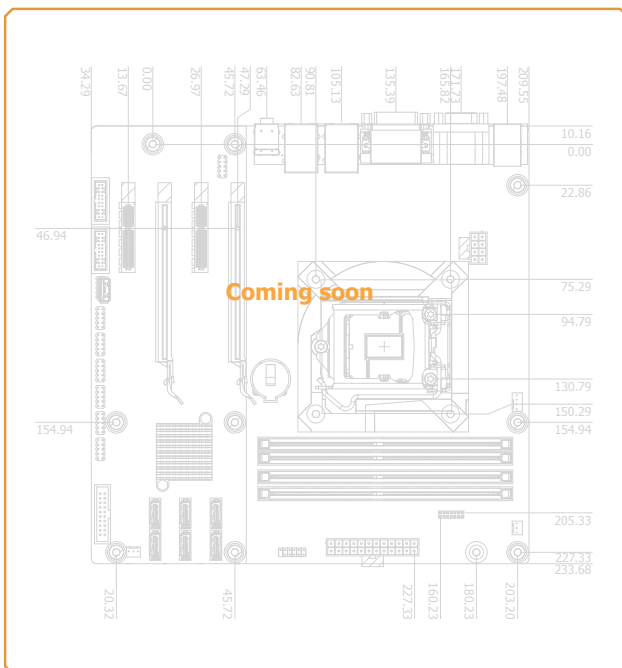
2 Extension Modules for Additional 4 COM Ports (via the LPC connector)



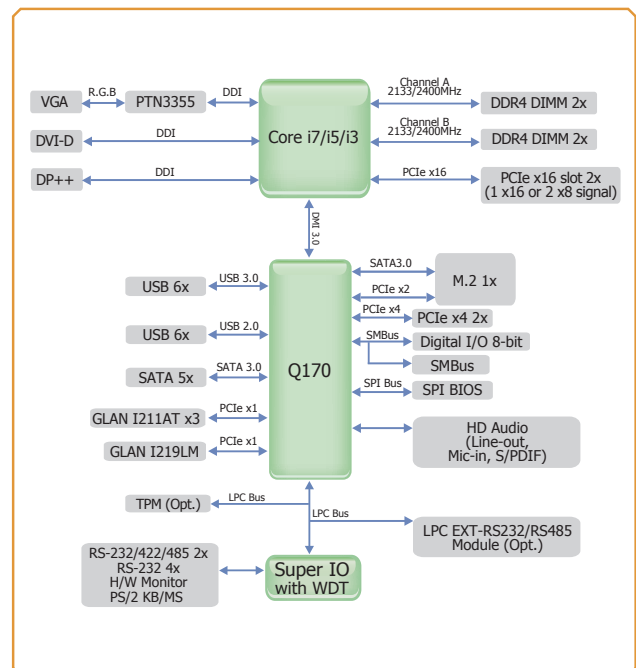
Ordering Information

Model Name	P/N	Memory	GbE	RS-232/422/485	RS-232	USB 3.0	USB 2.0	Power	Thermal	Temp.
KD331-Q170	TBD	4 DIMM	4	2	4	6	6	24-pin ATX	Active	0 to 60°C

Mechanical Drawing



Block Diagram



Micro-ATX Board

Specifications

SYSTEM	Processor	7th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core™ i7-7700 Processor, Quad Core, 8M Cache, 3.6GHz (4.2GHz), 65W Intel® Core™ i5-7500 Processor, Quad Core, 6M Cache, 3.4GHz (3.8GHz), 65W Intel® Core™ i3-7101E Processor, Dual Core, 3M Cache, 3.9GHz, 65W	
	Chipset	Intel® Q170 Chipset	
	Memory	Four 288-pin DIMM up to 64GB	Dual Channel DDR4 2133/2400 MHz
	BIOS	Insyde SPI 128Mbit	
GRAPHICS	Controller	Intel® HD Gen 9 Graphics	
	Feature	OpenGL 5.0, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9	
	Display	1 x VGA 1 x DVI-I (DVI-I-D signal) 1 x DP++	VGA: resolution up to 1920x1200 @ 60Hz DVI-I: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2304 @ 60Hz
Triple Displays	VGA + DVI-I (DVI-D signal) + DP++		
EXPANSION	Interface	2 x PCIe x16 (1 x16 or 2 x8 signal) (Gen 3) 2 x PCIe x4 (Gen 3) 1 x M.2 M Key (2260/2280)	
AUDIO	Audio Codec	Realtek ALC888S-VD2-GR	
ETHERNET	Controller	3 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe (10/100/1000Mbps) (only Core™ i7/i5 supports iAMT)	
REAR I/O	Ethernet	4 x GbE (RJ-45)	
	USB	4 x USB 3.0 2 x USB 2.0	
	Serial	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	
	PS/2	1 x PS/2 (mini-DIN-6)	
	Display	1 x VGA 1 x DVI-I (DVI-D signal) 1 x DP++	
INTERNAL I/O	Serial	1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)	
	USB	2 x USB 3.0 (2.00mm pitch) 4 x USB 2.0 (2.54mm pitch) or 2 x USB2.0 (2.54mm pitch) +1 x Vertical USB 2.0 (opt.)	
	Audio	1 x Audio (Line-out/Mic-in) 1 x S/PDIF	
	SATA	5 x SATA 3.0 (up to 6Gb/s)	RAID 0/1/5/10
	DIO	1 x 8-bit DIO	
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module)	
	SMBus	1 x SMBus	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	Infineon TPM2.0/1.2 (optional)	
POWER	Type	ATX	
	Connector	8-pin ATX 12V power	24-pin ATX power
	Consumption	TBD	
	RTC Battery	CR2032 Coin Cell	
OS SUPPORT	Windows 10 IoT Enterprise 64-bit		
ENVIRONMENT	Temperature	Operating: 0 to 60°C	Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	TBD	
MECHANICAL	Dimensions	microATX form factor	244mm (9.6") x 244mm (9.6")
	Height	PCB: TBD	Top Side: TBD, Bottom Side: TBD

Packing List

• 1 KD331-Q170 motherboard	
• 1 COM port cables (Length: 300mm, 2 x COM ports)	TBD
• 1 Serial ATA data cable (Length: 500mm)	TBD
• 1 I/O shield	TBD
• 1 DVD	

Optional Items

• USB 2.0 port cable (Length: 350/398mm)	TBD
• USB 3.0 port cable (Length: 320mm)	TBD
• COM port cable (Length: 300mm, 2 x COM ports)	TBD
• Serial ATA data cable (Length: 500mm)	TBD
• Thermal solution (For 35W, Height: 37.3mm)	TBD
• Thermal solution (For 65W, Height: 72.8mm)	TBD
• Thermal solution (For 95W, Height: 69.3mm)	TBD
• LPC EXT-RS232 module (4 x RS232 ports)	TBD
• LPC EXT-RS485 module (4 x RS485 ports)	TBD