



### KEY FEATURES

- Intel® 9<sup>th</sup>/ 8<sup>th</sup> Gen (Coffee Lake-S) Core™ Processors with Q370 chipset
- 4 x 288-pin Long-DIMM up to 128GB\* DDR4 2666 MHz
- 1 x PCIe x16 (Gen3), 1 x PCIe x8 (Gen3), 2 x PCIe x4 (Gen3), 6 x USB 3.1 Gen1, 6 x USB 2.0, 1 x M.2 Key E, 1 x mini-PCIe, 1 x M.2 Key M, 6 x COM, 8 x SATA3
- 2 x Intel 1 Gigabit LAN
- Supports triple display, 1 x HDMI 1.4, 1 x DP 1.2, 1 x VGA, 1 x LVDS, 1 x DVI-D
- TPM 2.0 onboard IC
- Supports Intel® vPro, AMT, RAID 0/1/5/10
- ATX PWR

### SPECIFICATIONS

#### Form Factor

Dimensions	Micro ATX (9.6-in x 9.6-in)
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#### Processor System

CPU	Intel® 9 <sup>th</sup> / 8 <sup>th</sup> Gen (Coffee Lake-S) Core™ Processors, up to 95W
Chipset	Intel® Q370
Socket	LGA1151
BIOS	AMI SPI 128 Mbit

#### Memory

Technology	Dual Channel DDR4 2666 MHz
Capacity	128GB* * Intel Core i9/i7/i5 CPUs support up to 128GB (32GB per DIMM) Intel Core i3/Pentium/Celeron CPUs support up to 64GB (16GB per DIMM)
Socket	4 x 288-pin Long-DIMM

#### Graphics

Controller	Coffee Lake integrated graphics
HDMI	HDMI 1.4 Max resolution up to 4096x2160@24Hz
DisplayPort	DisplayPort 1.2, DP++ Max resolution up to 4096x2304@60Hz
VGA	Max resolution up to 1920x1200@60Hz
LVDS	Dual channel 24 bit up to 1920x1200@60Hz
eDP	N/A
DVI-D	Max resolution up to 1920x1200@60Hz
MultiDisplay	Triple Display

#### Expansion Slot

PCIe	- 2 x PCIe 3.0 x16 Slots (PCIe1/PCIe3: single at x16 (PCIe1); dual at x8 (PCIe1) / x8 (PCIe3)) - 2 x PCIe 3.0 x4 Slots (PCIe2) (PCIe4)
PCI	N/A
mini-PCIe	1 x Full/Half size with PCIe x1 and USB 2.0
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless

#### Audio

Interface	Realtek ALC887/ALC897, High Definition Audio. Line-out, Mic-in, Line-in
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#### Ethernet

Controller/ Speed	LAN1: 1 x Intel® I210 with 10/100/1000 Mbps LAN2: 1 x Intel® I219LM with 10/100/1000 Mbps, supports AMT/vPro
Connector	2 x RJ-45

#### Rear I/O

HDMI	1 x HDMI 1.4
DisplayPort	1 x DP 1.2
VGA	1
DVI-D	1
Ethernet	2 x 1 Gigabit LAN
USB	4 x USB 3.1 (Gen1)
Audio	3 (Mic-in, Line-in, Line-out)
COM	COM1(RS-232/422/485)
PS2	1

#### Internal Connector

USB	2 x USB 3.1 (Gen1) (1 x USB3.1 header) 6 x USB 2.0 (3 x 2.54 pitch header)
COM	COM2, 3, 4, 5, 6 (RS-232)
Parallel	1 (shared with GPIO)
GPIO	8 x GPI, 8 x GPO (shared with LPT header)
TPM	TPM 2.0 onboard IC
LVDS	1
eDP	N/A
VGA	N/A
SATA PWR Output	N/A
Speaker Header	1

#### Storage

M.2	1 x M.2 (Key M, 2242/2260/2280) with PCIe x4 and shared SATA3 for SSD
mSATA	N/A
SATA	8 x SATA3 (6Gb/s), SATA3_1 shared with M.2 Key M
RAID	Intel® SATA RAID 0/1/5/10
eMMC	N/A

#### Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

#### Power Requirements

Input PWR	ATX PWR (24+8-pin)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

#### Environment

Operating Temp	0°C ~ 60°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%