

## Features

- 7th/6th Gen Intel® Core™ i7/i5/i3/ Pentium® / Celeron® QC/DC processors, up to 4.0GHz
- 4x DDR4 DIMM, Max. 64GB, ECC compatible
- Intel® processor integrated graphics supports DVI-D, HDMI and DisplayPort
- Dual Intel® Gigabit LAN
- 4x USB 2.0, 10x USB 3.0, 6x COM, 6x SATA III
- 1x PCI-E (x16), 1x PCI-E (x8) [(x4) Link], 1x PCI-E (x4) [(x1) Link], 1x PCI-E (x1), 3x PCI
- 1x Mini PCI-E
- Watchdog timer, Digital I/O, iAMT (11.0), TPM(1.2), vPro, iSMART

## Specifications

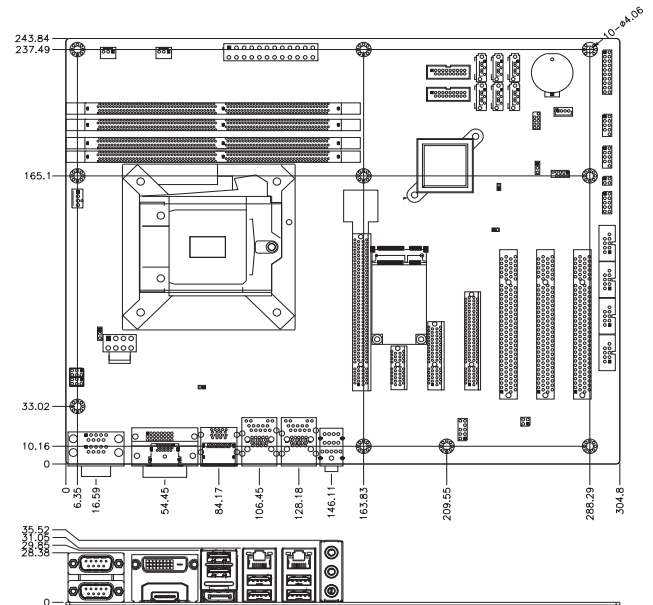
CPU Socket	LGA1151
CPU	7th/6th Gen Intel® Core™ i7/i5/i3/ Pentium® / Celeron® QC/ DC processors, up to 4.0GHz
PCH	Intel® Q170 PCH
Memory Types	4x DDR4 DIMM, Max. 64GB (supports ECC by CPU SKUs)
BIOS	AMI
Watchdog Timer	256 levels
H/W Monitor	Yes
Storage Device Interface	N/A
Expansion Slots	1x PCI-E (x16), 1x PCI-E (x8), 1x PCI-E (x4), 1x PCI-E (x1), 3x PCI
Mini Type Slots	1x Mini PCI-E
Graphics Controller	7th/6th Gen Intel® Core™ i7/i5/i3/ Pentium® / Celeron® QC/ DC processors integrated
Video Output	Supports DVI-D, HDMI and DisplayPort
Ethernet	MB990VF: Intel® I219LM Gigabit LAN PHY Intel® I211AT PCI-E Gigabit LAN (as 2nd LAN)
I/O Chip	Fintek F81866AD-I
Serial Port	5x RS232, 1x RS232/422/485 (jumper-less selection)
USB 2.0	4x USB 2.0 via pin-header
USB 3.0/ 3.1	10x USB 3.0 - 6 ports on board - 4 ports via pin-header
Serial ATA	6x SATA III
Audio	Intel® Q170 PCH built-in HD audio + Realtek ALC888S codec
TPM	TPM (1.2)
Others	Digital I/O (4-in/4-out), RAID, iAMT (11.0), iSMART
Dimensions (L x W)	305mm x 244mm (12" x 9.6")
Power Consumption	Intel® Core™ i7-6700 3.4GHz w/ 4x 4GB DDR4-2133 +12V: 7.12A ; +5V: 1.99A; +5VSB: 0.15A; +3.3V: 0.43A
Operating Temperature	0°C~60°C (32°F~140°F)
Storage Temperature	-20°C~80°C (-4°F~176°F)
Relative Humidity	10% ~ 90% (non-condensing)

## Ordering Information

MB990VFS-A	LGA1151 Q170 ATX motherboard w/ DVI-D, HDMI, DisplayPort, dual Gigabit LAN, RAID, iAMT (11.0), TPM (1.2), vPro, iSMART
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\*(S) means with Realtek ALC888S codec

## Dimensions and Drawing



1 CPU Modules

2 Disk-Size SBCs

3 Motherboards

4 CPUC ards