

Features

- Onboard 6th Generation Intel® Xeon® / Core™ i7/i5/i3 / Celeron® QC/DC processors, up to 3.7GHz
- 2x DDR4 SO-DIMM, Max. 32GB
- Intel® Processor integrated graphics device, supports DVI-D, HDMI (2.0), DisplayPort and 24-bit dual channel LVDS
- 2x Intel® Gigabit LAN
- 4x USB 2.0, 6x USB 3.0, 6x COM, 4x SATAIII
- 1x PCI-E(x16), 2x Mini PCI-E, 1x M.2
- Watchdog timer, Digital I/O, iAMT (11.0), TPM (2.0), vPro, iSMART 3.0

System

CPU Type	BGA1440 for 6th Generation Intel® Xeon® / Core™ i7/ i5/ i3 / Celeron® QC/ DC processors, up to 3.7GHz
System Memory	2x DDR4 SO-DIMM, Max. 32GB (Support ECC by CPU SKUs)
System Chipset	Intel® CM236 / HM170 PCH
BIOS	AMI
Watchdog Timer	256 levels
SSD	1x mSATA via Mini PCI-E (Thru SATA III) 1x M.2 slot (Thru SATA III & PCI-E)
H/W Monitor	Yes
Expansion Slot	1x PCI-E(x16), 2x Mini PCI-E, 1x M.2

Mechanical and Environmental

Dimensions	170mm x 170mm (6.7" x 6.7")
Max. Power Requirement	Intel® Core™ i5-6400EQ 2.4GHz w/2 x 8GB DDR4-2133 +12V : 2.84A ; +5V : 1.45A +3.3V : 0.52A ; +5VSB : 0.058A
Operating Temperature	0°C~60°C (32°F~140°F)
Storage Temperature	-20°C~80°C (-4°F~176°F)
Relative Humidity	90% (non-condensing @60°C)

Graphics

VGA Controller	6th Generation Intel® Xeon® / Core™ i7/ i5/ i3 / Celeron® processor integrated
VGA Memory	Shared memory
Display Interface	Supports DVI-D, HDMI (2.0), DisplayPort and 24-bit dual channel LVDS

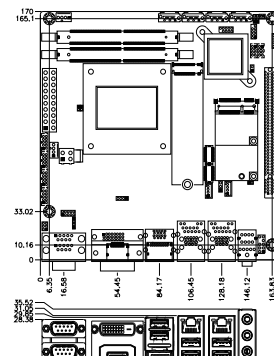
Ordering Information

MI990VF-X28	Intel® CM236/ Xeon® E3-1505M v5(2.8GHz) Mini-ITX motherboard w/ DVI-D, HDMI (2.0), DisplayPort, LVDS, dual Gigabit LAN, RAID, iAMT (1.1.0), TPM (2.0), vPro, iSMART 3.0, CPU cooler on board
MI990VF-6820	Intel® CM236/ Core™ i7-6820EQ(2.8GHz) Mini-ITX motherboard w/ DVI-D, HDMI (2.0), DisplayPort, LVDS, dual Gigabit LAN, RAID, iAMT (1.1.0), TPM (2.0), vPro, iSMART 3.0, CPU cooler on board
MI990VF-6440	Intel® CM236/ Core™ i5-6440EQ(2.7GHz) Mini-ITX motherboard w/ DVI-D, HDMI (2.0), DisplayPort, LVDS, dual Gigabit LAN, RAID, iAMT (1.1.0), TPM (2.0), vPro, iSMART 3.0, CPU cooler on board
MI990EF-6100	Intel® HM170/ Core™ i3-6100E(2.7GHz) Mini-ITX motherboard w/ DVI-D, HDMI (2.0), DisplayPort, LVDS, dual Gigabit LAN, RAID, EUP/ErP compliant, iSMART 3.0, CPU cooler on board

LAN

Controller	MI990VF series: Intel® I219LM Gigabit LAN PHY MI990EF series: Intel® I219V Gigabit LAN PHY Intel® I211AT PCI-E Gigabit LAN (as 2nd LAN)
Connector	2x RJ-45 on board

Dimensions and Drawing



Multi I/O

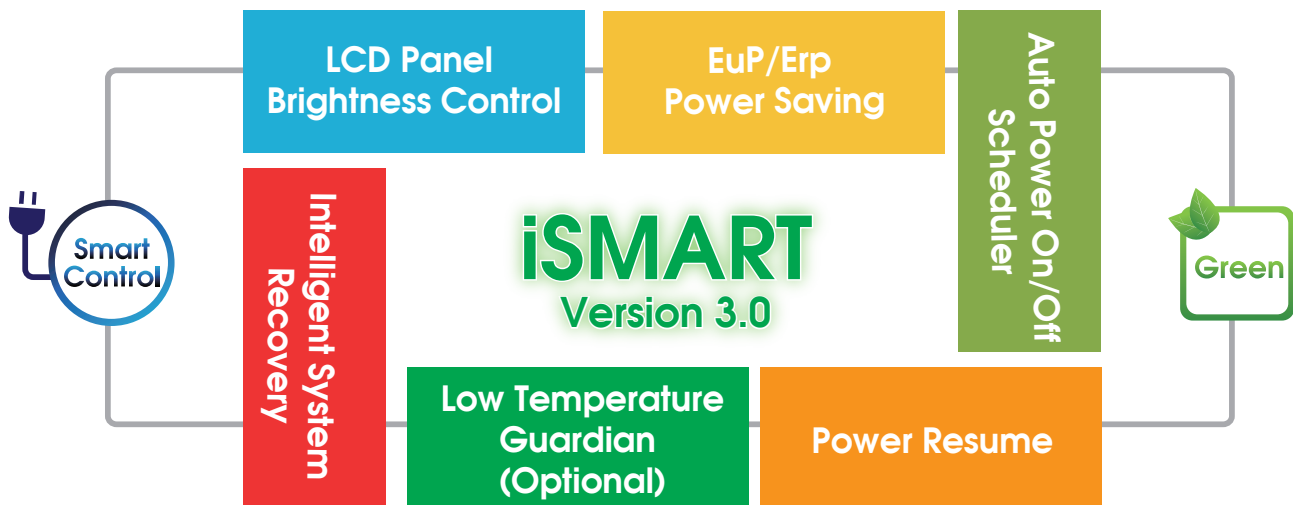
I/O Chipset	Fintek F81866AD-I 5x RS232 1x RS232/422/485(jumperless selection) MI990VF series: 4x SATA III MI990EF series: 2x SATA III
USB	6 ports on board (USB 3.0) 4 ports via pin-header (USB 2.0)
Audio	Intel® CM236 / HM170 PCH built-in HD audio + Realtek ALC892 codec
Others	Digital I/O(4-in/4-out), RAID, TPM(2.0), iAMT(1.1.0), iSMART

Remarks: 1. Specifications are subject to change without prior notice. 2. ODM/OEM is available.

Mobile Processor Reference Table

Processor Number	Base Freq (GHz)	Intel® Turbo Boost Technology 2.0 Max Single Core Turbo Frequency	Last Level Cache	Cores/Threads	Memory Speed Support (DDR3L / DDR4)	ECC Support	TDP	GT Type (GT1, GT1-2000, GT2-3000)	Intel® vPro	Intel Technology ³			
										Intel® AMT	Intel® TXT	Intel® VT-x	Intel® VT-d
Intel® Xeon® Processor E3 Family (Mobile Workstation) - 14nm Skylake Platform													
E3-1505M v5	2.8	3.7	8M	4/8	2133	✓	45W/35W	GT2-P530	✓	AMT 11.0 ^b	✓	✓	✓
E3-1505L v5	2	2.8	8M	4/8	2133	✓	25W	GT2-P530	✓	AMT 11.0 ^b	✓	✓	✓
AVX2.0 6th Generation Intel® Core™ Processors (Mobile) - 14nm or Skylake Platform													
i7-6820EQ	2.8	3.5	8M	4/8	2133		45W/35W	GT2-530	✓	AMT 11.0 ^b	✓	✓	✓
i7-6822EQ	2	2.8	8M	4/8	2133		25W	GT2-530	✓	AMT 11.0 ^b	✓	✓	✓
i5-6440EQ	2.7	3.4	6M	4/4	2133		45W/35W	GT2-530	✓	AMT 11.0 ^b	✓	✓	✓
i5-6442EQ	1.9	2.7	6M	4/4	2133		25W	GT2-530	✓	AMT 11.0 ^b	✓	✓	✓
i3-6100E	2.7		3M	2/4	2133	✓	35W	GT2-530				✓	
i3-6102E	1.9		3M	2/4	2133	✓	25W	GT2-530				✓	

iSMART Technology



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