PEB-9783G2AR
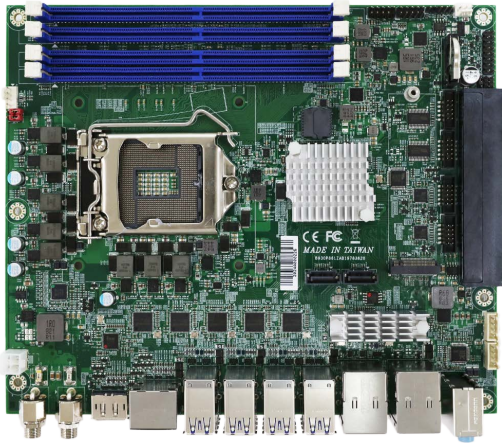
Intel® 10th Gen Xeon/Core™ Processors based FlexATX with DDR4 Long-DIMM up to 128 GB, DP/HDMI, Dual Gigabit Ethernet and 20 USB Ports

PEB-9783G2AR is based on the latest Intel® 10th Gen Xeon®/Core™ processors with W480E/Q470E chipset. This proprietary board supports DDR4 up to 128GB, PCIe Gen 3, twenty USB, four COM, dual Ethernet, two SATA III ports and 4K displays. Those features will help you build high performance and stable system.

FEATURES

- Intel® 10th Gen processors (Comet Lake-S)
- 4x 288-pin Long-DIMM sockets support Dual Channel DDR4 up to 128 GB
- 20x USB ports, Dual Ethernet, 4x Serial ports, 2x SATAIII ports and Audio
- 1x PCIe x16 or 2x PCIe x8 or 2x PCIe x4 and 1x PCIe x8 (Gen 3)
- 1x M.2 Type M 2280
- Triple independent displays
- On board TPM 2.0

GENERAL

Processor	Intel® 10th Gen Xeon® W Family/ Core™ i7/i5/i3/ Pentium®/ Celeron® processors up to 10 cores (35W~80W) in LGA1200 package
Chipset	Intel® W480E / Q470E
BIOS	AMI UEFI BIOS (SPI ROM)
Memory	Dual channel DDR4 2400/2666 ECC/Non-ECC SDRAM on four 288-pin Long-DIMM sockets up to 128GB
Storage Devices	2x SATAIII ports (Supports RAID 0,1)
Watchdog Timer	Programmable by embedded controller
Hardware Monitoring	System monitor (Voltage, Fan Speed and Temperature)
Expansion Interface	- 1x PCIe 3.0 x16 or 2x PCIe 3.0 x8 or 1x PCIe 3.0 x8 + 2x PCIe 3.0 x4 (up to 8GT/s) - 1x M.2 Type M 2280

I/O INTERFACE

Super I/O	NCT5104D
Audio	Audio Jack on rear I/O with Line-out/Mic-in with Realtek ALC888S Audio controller
Ethernet	- Intel® I219LM and Intel® I210AT Ethernet controller - 2x RJ-45+ on rear I/O
Serial Port	- 2x RS232/422/485 ports on10-pin box header (BIOS configurable) - 2x RS232 ports on 10-pin box header
USB	- 6x USB 3.2 Gen 2 on rear I/O - 10x USB 3.2 Gen 1 on rear I/O - 4x USB 2.0 on rear I/O
GPIO	8-bit configurable controlled by embedded controller

DISPLAY

Graphic Controller	- Processor integrated UHD Graphics 630 - Supports DirectX12, OpenGL 4.5, OCL2.1, MPEG-2
Display Interface	- 2x DP 1.4 ports on rear I/O, resolution up to 4096x2304 @60Hz - 1x HDMI port on rear I/O, resolution up to 3200x2000 @60Hz

Mechanical & Environment

Dimension	9"(L) x 7.5"(W) (FlexATX)
Power Supply	Dual DC 12V input / 4-pin 12V connector Supports AT/ATX mode
Environment	- Operating temperature: 0~60°C - Storage temperature: -20~80°C - Relative humidity: 5~95%, non-condensing

PEB-9783G2AR

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BLOCK DIAGRAM

Figure 1: System Board Diagram

DC 12V Input
DC Jack
DC Jack

Up to Ten Core (LGA1200)

PCI–E **3.0** x16 (1)

PCI Express x16

PCIEx16 Slot (90 degree)

Comet Lake - S

DP 1.4 → IT6561 → HDMI 1.4a
DP 1.4 → DP
DP 1.4 → DP

Dual channel DDR4 2400/2666 MHz on four long DIMM

Up to 128GB system memory Support ECC and Non-ECC

4 Lanes DMI Gen 3(Direct Media Interface)

Line in/Line out/Mic in

ALC888S — HDA

SATA 6Gb (2 ports)

RJ45 — WGI219LM — PCI-E x1

SPI Bus — SPI BIOS ROM

USB 2.0
USB 2.0 — USB 2.0 *2

USB 3.2 Gen 2 *6 (10G)
USB 3.2 Gen 2 *6 (10G)

RJ45 — WGI210AT — PCI-E x1
USB 2.0
USB 2.0 — USB 2.0*2

USB 3.2 Gen 2 *4 (5G)
USB 3.2 Gen 1 *4 (5G)

W480E/ Q470E WS/DT (PCH)

Infineon SLB9665 (TPM 2.0)

PCI-E x2 — ASM3142 — USB 3.2 Gen 1 *2 (5G)
PCI-E x2 — ASM3142 — USB 3.2 Gen 1 *2 (5G)
PCI-E x2 — ASM3142 — USB 3.2 Gen 1 *2 (5G)

IT5121E-I — LPC I/F

GPIOx8 — F81216DG

COM port (4)
COM 1: RS-232
COM 2: RS-232
COM 3: RS-232/422/485 selectable
COM 4: RS-232/422/485 selectable
COM port IC: SP339

PCIEx4/SATA — M.2 Type M (2280) (support Intel Optane)

Rear IO connector
On Board connector

AMI BIOS | USB 3.0 | Watch DOG | H/W Monitor | 2 GbE | M2
HDMI | SATA 6Gb | 4 COM | GPIO | DP | Core™ i7/i5/i3

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