



## Features

- AMD Ryzen™ Embedded R2000 series APU on board
- 2x DDR4 SO-DIMM sockets, Max. 32GB
- Dual Intel® 2.5G LAN
- 2x HDMI + 2x DisplayPort
- 5x USB 3.1, 2x USB 2.0, 4x COM, 1x SATA III
- 1x PCI-E (x8), 3x M.2 (B-Key, E-Key and M-Key)
- Watchdog timer, Digital I/O, TPM (2.0)

## Specifications

CPU Socket	BGA1440
CPU	AMD Ryzen™ Embedded R2000 series APU onboard
PCH	N/A
Memory	2x DDR4-2666/2400 SO-DIMM socket, Max. 32GB, ECC compatible
BIOS	AMI
Watchdog Timer	256 levels
H/W Monitor	Yes
Storage Device Interface	M.2 (M-Key)
Expansion Slots	1x PCI-E (x8) [R2514 & R2314] or 1x PCI-E(x4) [R2312]
Mini Type Slots	1x M.2 (M-Key, type:2280, SATA + PCI-E) 1x M.2 (E-Key, type:2230, USB 2.0 + PCI-E) 1x M.2 (B-Key, type:3052, USB 3.1 + PCI-E + SMBus) [R2514 & R2314]
Graphics Controller	AMD Radeon Graphics
Video Output	2x HDMI + 2x DP (R2514 & R2314) 2x HDMI + DP (R2312)
Ethernet	LAN 1: Intel® I226V LAN 2: Intel® I226V (R2514 & R2314)
I/O Chipset	Nuvoton NCT6116D
Serial Port	4x COM ports: 2x RS232/422/485, 2x RS232
USB 2.0	2x USB 2.0 via pin header
USB 3.X	2x USB 3.2 (10Gbps)@ edge connector; 2x USB 3.1 (5Gbps) via onboard box-header 1x USB 3.1 (5Gbps) thru onboard connector (R2514 & R2314)
Serial ATA	1x SATA III
Audio	Built-in HD Audio controller + Realtek ALC888S w/ 5.1 channels
TPM	2.0
Others	Digital I/O (4-in/4-out) , Watchdog timer, SIM
Dimensions (L x W)	170mm x 170mm (6.7" x 6.7")
Power Consumption	TBD
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)

## Ordering Information

MI993F-2514	AMD Ryzen™ R2514 (2.1GHz~3.7GHz) APU onboard, 2x HDMI, 2x DisplayPort, 1x SATA, 2x 2.5G LAN, TPM (2.0), CPU cooler on board
MI993F-2314	AMD Ryzen™ R2314 (2.1GHz~3.5GHz) APU onboard, 2x HDMI, 2x DisplayPort, 1x SATA, 2x 2.5G LAN, TPM (2.0), CPU cooler on board
MI993F-2312	AMD Ryzen™ R2312 (2.7GHz~3.5GHz) APU onboard, 2x HDMI, 1x DisplayPort, 1x SATA, 1x 2.5G LAN, TPM (2.0), CPU cooler on board

## Dimensions and Drawing

