

# MVP-5100 Series

*Value Family 9th Generation Intel® Core™ i7/i5/i3 & 8th Gen Celeron® Processor-Based Embedded Fanless Computer*

## Features

- 9th Gen Intel® Core™ i7/i5/i3 & 8th Gen Celeron® LGA processor
- Dual SODIMMs for up to 32GB DDR4 non-ECC/ ECC memory
- Rich I/O: 2x DP++/ DVI/ VGA/ 3x GbE/ 4x COM/ 8-ch DI/ 8-ch DO/ TPM2.0
- 2x USB3.1 Gen2 + 1x USB3.1 Gen1 + 3x USB2.0
- Rich storage: 2x 2.5" SATA, CFast, M.2 2280
- Embedded Expansion: Mini PCIe/ M.2 3042/ 2x USIM
- Front accessible I/O and adaptive Function Module v.2 option



## Software Support

- Win10 IoT Enterprise CBB 64bit
- Linux Ubuntu 18.04

## Optional Accessories

- **Factory Installed 2.5" SATA SSD/HDD/M.2/CFast**
- **Wireless Module**  
Wi-Fi/ BT/ 3G/ 4G LTE/ LoRa wireless kit (w/ antenna)
- **AC/DC Adapter**  
160W (P/N: 31-62120-0010)

## Ordering Information

Model	CPU	PCH
MVP-510A/M4G	Intel® Core™ i7-9700E	H310
MVP-5101/M4G	Intel® Core™ i7-9700TE	H310
MVP-5102/M4G	Intel® Core™ i5-9500TE	H310
MVP-5103/M4G	Intel® Core™ i3-9100TE	H310
MVP-5104/M4G	Intel® Celeron® G4900T	H310

## Specifications

Model Name	MVP-510A	MVP-5101	MVP-5102	MVP-5103	MVP-5104
<b>System Core</b>					
Processor	Intel® Core™ i7-9700E	Intel® Core™ i7-9700TE	Intel® Core™ i5-9500TE	Intel® Core™ i3-9100TE	Intel® Celeron® G4900T
TDP	65W	35W	35W	35W	35W
# of Cores	8	8	6	4	2
Base Freq.	2.6 GHz	1.8 GHz	2.2 GHz	2.2 GHz	2.9 GHz
Max Turbo Freq.	4.4 GHz	3.8 GHz	3.6 GHz	3.2 GHz	-
Chipset	H310 (Optional: C246)				
Memory	4GB DDR4 non-ECC 2400 MHz, dual SODIMMs, up to 32GB (Optional: 4/8/16/32GB ECC, only for Intel® Core™ i3/Celeron w/ C246)				
<b>I/O Interface</b>					
Display	2x DP++ 1.2, DVI-D, VGA (dual independent displays w/ H310, 3 independent displays w/ C246)				
Ethernet	3x Intel® GbE: 2x i211AT + i219 (Support Intel® AMT/vPro™ w/ C246)				
Serial Ports	COM1/2: RS-232/422/485, COM3/4: RS-232 (Optional COM5/6: RS-232, shared w/ DI/O)				
DI/O	8-CH DI and 8-CH DO				
USB	3x USB 3.1 Gen 1 + 3x USB 2.0, 1x internal USB 2.0 dongle (2x USB 3.1 up to Gen 2 w/ C246)				
Audio	Line-out, Mic-in (Optional: speaker-out)				
Mini PCIe	1x Full size (USB2.0 + PCIe)				
M.2	1x socket 2, key B+M or B, 2280/3042 (USB3.1 + SATA III + PCIe1. Up to PCIe2 w/ C246)				
USIM	2				
I <sup>2</sup> C	2 (3.3V/5V)				
TPM	TPM2.0				
<b>Storage Device</b>					
2.5" SATA	2x internal (RAID 0/1 support w/ C246)				
CFast	1 Type II				
<b>Mechanical</b>					
Dimensions	210 (W) x 240 (D) x 86 (H) mm (8.27" x 9.45" x 3.39")				
Weight	4.1 kg (9.0 lbs)				
Mounting	Wall mount				
<b>Power Supply</b>					
DC Input	12-24V (± 10% tolerance)				
AC Input	Optional: 160W AC/DC adapter				
<b>Environmental</b>					
Operating Temperature	Standard: 0°C to 50°C, w/ air flow 0.6 m/s				
	Extended: (w/ air flow 0.6 m/s & Ind. storage)				
	-20°C to 50°C	-20°C to 60°C			
Storage Temperature	-40°C to 85°C (-40°F to 185°F) (excl. storage)				
Humidity	~95% @ 40°C (non-condensing)				
Vibration	Operating: 5 Grms, random, 5-500 Hz, 3 axes (w/ SSD/CFast)				
	Operating: 0.5 Grms, random, 5-500 Hz, 3 axes (w/ HDD)				
Shock	Operating: 100 G, half sine 11ms duration (w/ SSD/CFast)				
ESD	Contact +/-4KV, Air +/-8KV				
EMC	EN61000-6-4/-2, CE & FCC Class A				
Safety	UL/cUL, CB, CCC				

# MVP-6100 Series

Value Family 9th Generation Intel® Xeon®/Core™ i7/i5/i3 & 8th Gen Celeron® Processor-Based Expandable Computer

## Features

- 9th Gen Intel® Xeon®/Core™ i7/i5/i3 & 8th Gen Celeron® LGA processor
- Dual SODIMMs for up to 32GB DDR4 non-ECC/ ECC memory
- Rich I/O: 2x DP++/ DVI/ VGA/ 3x GbE/ 4x COM/ 8-ch DI/ 8-ch DO/TPM2.0
- 2x USB 3.1 Gen2 + 1x USB 3.1 Gen1 + 3x USB 2.0
- Rich storage: up to 4x 2.5" SATA, CFast, M.2 2280
- Embedded Expansion: Mini PCIe/ M.2 3042/ 2x USIM
- Front accessible I/O and adaptive Function Module v.2 option
- Flexible modular expansion with 2 or 4 slots



## Software Support

- Win10 IoT Enterprise CBB 64bit
- Linux Ubuntu 18.04

## Optional Accessories

- **MVP-6100 Fan Kit (P/N: 91-95267-0010)**
- **Factory Installed 2.5" SATA SSD/HDD/M.2/CFast**
- **Wireless Module**  
Wi-Fi/ BT/ 3G/ 4G LTE/ LoRa wireless kit (w/ antenna)
- **Optional 2x 2.5" SATA Kit (w/ Bracket and Cable)**
- **AC/DC Adapter**  
220W (P/N: 31-62149-0000)  
280W (P/N: 31-62162-1010-A0)
- **Internal power cable for add-on card**  
30-21656-0000-A0: for MVP-6120  
30-21655-0000-A0: for MVP-6140

## Ordering Information

Model	CPU	PCH	Slot #
MVP-612X-1E/M4G	Intel® Xeon® E-2278GE	C246	2
MVP-612A-1E/M4G	Intel® Core™ i7-9700E	H310	2
MVP-6121-1E/M4G	Intel® Core™ i7-9700TE	H310	2
MVP-6122-1E/M4G	Intel® Core™ i5-9500TE	H310	2
MVP-6123-1E/M4G	Intel® Core™ i3-9100TE	H310	2
MVP-6124-1E/M4G	Intel® Celeron® G4900T	H310	2
MVP-614X-3E/M4G	Intel® Xeon® E-2278GE	C246	4
MVP-614A-3E/M4G	Intel® Core™ i7-9700E	C246	4
MVP-6141-3E/M4G	Intel® Core™ i7-9700TE	C246	4
MVP-6142-3E/M4G	Intel® Core™ i5-9500TE	C246	4
MVP-6143-3E/M4G	Intel® Core™ i3-9100TE	C246	4
MVP-6144-3E/M4G	Intel® Celeron® G4900T	C246	4

## Specifications

Model Name	MVP-610X	MVP-610A	MVP-6101	MVP-6102	MVP-6103	MVP-6104
<b>System Core</b>						
Processor	Intel® Xeon® E-2278GE	Intel® Core™ i7-9700E	Intel® Core™ i7-9700TE	Intel® Core™ i5-9500TE	Intel® Core™ i3-9100TE	Intel® Celeron® G4900T
TDP	80W	65W	35W	35W	35W	35W
# of Cores	8	8	8	6	4	2
Base Freq.	3.3 GHz	2.6 GHz	1.8 GHz	2.2 GHz	2.2 GHz	2.9 GHz
Max Turbo Freq.	4.7 GHz	4.4 GHz	3.8 GHz	3.6 GHz	3.2 GHz	-
Chipset	C246	MVP-6120 series: H310 MVP-6140 series: C246				
Memory	4GB DDR4 non-ECC 2400 MHz, dual SODIMMs, up to 32GB (Optional: 4/8/16/32GB ECC, only for Intel® Xeon®/Core™ i3/Celeron w/ C246)					
<b>I/O Interface</b>						
Display	2x DP++ 1.2, DVI-D, VGA (dual independent displays w/ H310, 3 independent displays w/ C246)					
Ethernet	3x Intel GbE: 2x i211AT + i219 (Support Intel® AMT/vPro™ w/ C246)					
Serial Ports	COM1/2: RS-232/422/485, COM3/4: RS-232 (Optional COM5/6: RS-232, shared w/ DI/O)					
USB	3x USB 3.1 Gen 1 + 3x USB 2.0, 1x internal USB 2.0 dongle (2x USB 3.1 up to Gen 2 w/ C246)					
Audio	Line-out, Mic-in (Optional: speaker-out)					
Mini PCIe	1x Full size (USB 2.0 + PCIe)					
M.2	1x socket 2, key B+M or B, 2280/3042 (USB3.1 + SATA III + PCIe x1. Up to PCIe x2 w/ C246)					
USIM	2					
DI/O	8-CH DI and 8-CH DO					
I <sup>2</sup> C	2 (3.3V/5V)					
TPM	TPM2.0					
Expansion Slots	MVP-6120 series: PCIe x16 + PCI (total up to 150W) MVP-6140 series: PCIe x16 + 2 PCIe x4 + PCI (total up to 150W with 12V in; total up to 250W with 24V in)					
<b>Storage Device</b>						
2.5" SATA	2x internal (RAID 0/1/5/10 support w/ C246) (Optional: additional 2x internal, w/ C246)					
CFast	1 Type II					
<b>Mechanical</b>						
Dimensions	MVP-6120 series: 165 (W) x 240 (D) x 210 (H) mm (6.5" x 9.45" x 8.27") MVP-6140 series: 206 (W) x 240 (D) x 210 (H) mm (8.11" x 9.45" x 8.27")					
Weight	MVP-6120 series: 4.8 kg (10.6 lbs) MVP-6140 series: 5.1 kg (11.2 lbs)					
Mounting	Wall mount					
Fan	Optional					
<b>Power Supply</b>						
DC Input	12-24V (± 10% tolerance)					
AC Input	Optional: 220W/280W AC/DC adapter					
<b>Environmental</b>						
Operating Temperature	Standard: (w/ air flow 0.6 m/s)					
	0°C to 40°C	0°C to 50°C				
	Extended: (w/ air flow 0.6 m/s & ind. storage)					
Storage Temperature	-20°C to 40°C	-20°C to 50°C	-20°C to 60°C			
	-40°C to 85°C (-40°F to 185°F) (excl. storage)					
Humidity	~95% @ 40°C (non-condensing)					
Vibration	Operating: 5 Grms, random, 5-500 Hz, 3 axes (w/2.5" SSD/CFast, 3 Grms w/ fan)					
	Operating: 0.5 Grms, random, 5-500 Hz, 3 axes (w/ HDD)					
Shock	Operating: 50 G, half sine 11ms duration (w/ 2.5" SSD/CFast)					
ESD	Contact +/-4KV, Air +/-8KV					
EMC	EN61000-6-4/-2, CE & FCC Class A					
Safety	UL/cUL, CB, CCC					