



Energy

Smart Manufacturing

Intelligent Transportation

Smart Retail

Digital Healthcare

Empowering a  
**SMART FUTURE**  
Avalue IoT Ready



# Transportation

We support our customers with innovative solutions in fields of public transport, first response, logistic and related infrastructure in a smart city. We also help our customers to achieve faster time-to-market within our ideal solutions, how to make this world smarter, at the same time, with the best quality, performance and support.



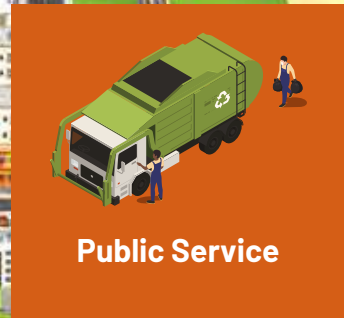
**Wide Range of Product Series Selection**   **Domain Know-How in Transportation Market**   **Solution-Build Thinking**   **Dedicated Teams to Support**

## Transportation Product Highlights

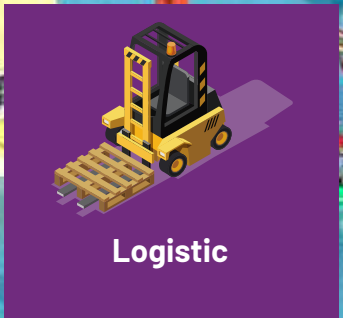
Application Layer			
<b>Computing platform</b>	Industrial-grade Monitor	E Ink	Ruggedized Tablet
	Ruggedized Box PC	Transportation System	Panel PC
<b>Software layer</b>	Remote Management Device	Positioning System	Vehicle Power Management
	OS Build (Win/ Android/ Linux)	API/ SDK	Ignition Control



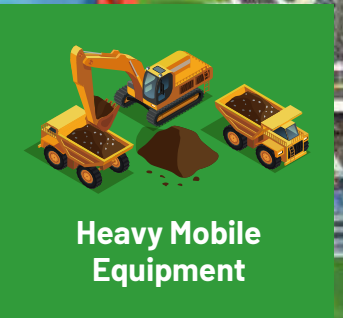
Public Transport



Public Service



Logistic



Heavy Mobile Equipment

### Railway



### Vehicle



Model Number	VMS-EHLR	VMS-CFS	VMS-CFS-PSE	VMS-APL	EMS-TGL-Marine	EMS-SKLU-Marine
<b>Processor</b>	Intel® Atom® x6425E	Intel® Core™ i7-9700TE/ i7-8700T/ i5-9500TE/ i5-8500T/ i3-9100TE/ i3-8100T & Pentium® G5400T & Celeron® G4900T	Intel® Core™ i7-9700TE/ i7-8700T/ i5-9500TE/ i5-8500T/ i3-9100TE/ i3-8100T & Pentium® G5400T & Celeron® G4900T	Intel® Pentium® N4200 Intel® Celeron® N3350/ J3455 Intel Atom® x7-E3950/ x5-E3940/ x5-E3930	Intel® Core™ i7-1185GRE/ i5-1145GRE/ i3-1115GRE (WT) Intel® Core™ i7-1185G7E/ i5-1145G7E/ i3-1115G4E (ST)	Intel® Core™ i7-6600U/ i5-6300U/ i3-6100U & Celeron® 3955U
<b>System Memory</b>	1 x 260-Pin SODIMM DDR4 3200MHz up to 32GB	2x 260-Pin SODIMM DDR4 2400/2666MHz up to 64GB	2x 260-Pin SODIMM DDR4 2400/2666MHz up to 64GB	1 x 204-Pin SODIMM DDR3L 1866MHz up to 8 GB	2 x 260-Pin SODIMM DDR4 3200MHz up to 64GB	1 x 260-Pin SO-DIMM DDR4 2133MHz up to 16 GB
<b>Expansion</b>	1 x M.2 Key-B 2242/ 3042/ 3052 (PCIe/ USB 3.1 Gen.2), w/ SIM slot1 (external) 1 x M.2 Key-E 2230 (PCIe/ USB 2.0) 1 x mPCIe (PCIe/ USB 2.0), w/ SIM slot2 (external)	1 x Avalue 80-Pin IET Interface 1 x mPCIe (PCIe/ USB 2.0), w/ SIM Slot1 (external) 1 x M.2 Key-E 2230 (PCIe/ USB 2.0) 2 x M.2 Key-B 2242/ 3042/ 2280 (PCIe/ USB 3.1/ SATA), w/ SIM Slot2,3 (external) 1 x CANBus Module Interface	1 x mPCIe (PCIe/ USB 2.0), w/ SIM Slot1 (external) 1 x M.2 Key-E 2230 (PCIe/ USB 2.0) 2 x M.2 Key-B 2242/ 3042/ 2280 (PCIe/ USB 3.1/ SATA), w/ SIM Slot2,3 (external) 1 x CANBus Module Interface	1 x Avalue 80-Pin IET Interface 1 x mPCIe (PCIe/ USB2.0), w/ SIM Slot1 (external) 1 x Mini PCIe (PCIe/ USB2.0), w/ SIM Slot2 (external) 1 x CANBus module Interface	1 x M.2 Key-B 2242/3042/3052 (SATA/ PCIe/ USB3.1) w/ SIM slot 1 x M.2 Key-E 2230 for Wi-Fi & BT Module (CNV1)	1 x M.2 Key-B 2242/ 3042 (SATA/ PCIe/ USB 3.0) w/ SIM slot 1 x Mini PCIe (PCIe/ USB 2.0) w/ SIM slot
<b>Storage</b>	1 x 2.5" drive Bay (SATA III) 1 x M.2 key-B 2242 (SATA III)	2 x 2.5" Drive Bay (SATA III) 2 x M.2 Key-B 2242/2280 (SATA III)	2 x 2.5" Drive Bay (SATA III) 2 x M.2 Key-B 2242/2280 (SATA III)	1 x 2.5" Drive Bay (SATA III) 1 x M.2 key-B 2242 (SATA III) 1 x SD (3.0)	1 x M.2 Key-M 2242/2280 (PCIe Gen. III x4) 1 x M.2 Key-B 2242 (SATA), share with expansion slot	2 x 2.5" Drive Bay 1 x M.2 Key-B 2242 (SATA), share with expansion slot
<b>USB</b>	2 x USB 3.2 Gen.2 1 x USB 2.0 (M12 A-coded)	6 x USB 3.1	6 x USB 3.1 2 x USB 2.0	4 x USB 3.0	2 x USB 3.2 Gen.2 2 x USB 3.2 Gen.1 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0
<b>COM Port</b>	2 x RS-232/422/385 (BIOS)	1 x RS232 2 x RS-232/422/485 (BIOS)	1 x RS232 2 x RS-232/422/485 (BIOS)	2 x RS-232/422/485 (Jumper)	2 x RS-232/422/485 (BIOS) 4 x RS-232/422/485 (BIOS), w/ 2.5KV isolation	2 x RS-232/422/485 (Jumper) 4 x RS-232/422/485 (BIOS), w/ 2.5KV isolation
<b>Other</b>	2 x SIM Card Slot (external) 7 x Antenna Mounting w/ Dust Cover 1 x CAN2.0B (DB9), optional	3 x SIM Card Slot (external) 5 x Antenna Mounting w/ Dust Cover	3 x SIM Card Slot (external) 5 x Antenna Mounting w/ Dust Cover	2 x SIM Card Slot (external) 5 x Antenna Mounting w/ Dust Cover	1 x SIM Card Slot (internal) 8 x Antenna Mounting w/ Dust Cover	2 x SIM Card Slot, 1 x SMBus 2 x PS2/ KB & MS 2 x Antenna Mounting w/ Dust Cover
<b>DIO</b>	1 x 8-Bit GPIO (DB9), w/ 2.5KV Isolation	1 x 8-Bit GPIO (DB9), w/ 1.5KV isolation	1 x 8-Bit GPIO (DB9), w/ 1.5KV isolation	1 x 8-Bit GPIO (DB9)	1 x 8-bit GPIO (DB9)	1 x 12-bit GPIO
<b>Display Chipset</b>	Intel® UHD Graphics	Intel® UHD Graphics 630/610	Intel® UHD Graphics 630/610	Intel® HD Graphics 505/500	Intel® Iris® Xe Graphics (Core i7/i5) Intel® UHD Graphics (Core i3)	Intel® HD Graphics 520/ 510
<b>Display Resolution</b>	DP++ 1.4: 4096x2304 @ 60Hz HDMI 2.0 : Max. resolution 4096 x 2304 @ 60Hz VGA: 1920 x 1080 @ 60Hz (optional)	DP 1.2: 4096 x 2160 @ 60Hz w/HDR HDMI 1.4: 4096 x 2160 @ 30Hz LVDS: 1920 x 1200 @ 60Hz	DP 1.2: 4096 x 2160 @ 60Hz w/HDR HDMI 1.4: 4096 x 2160 @ 30Hz LVDS: 1920 x 1200 @ 60Hz	DP: Max. Resolution 4096 x 2160 @ 60Hz LVDS: Max. Resolution 1920 x 1200 @ 60Hz	DP++ 1.4: 4096 x 2304 @ 60Hz HDMI 2.0b: Max. resolution 4096 x 2304 @ 60Hz	DP++ 1.2: Max. resolution 4096 x 2304 @ 60Hz
<b>Audio Interface</b>	Mic-In, Line-Out, Line-in (DB15)	2 x Mic-In, 2 x Line-Out	2 x Mic-In, 2 x Line-Out	2 x Mic-In, 2 x Line-Out	Mic-In, Line-out	Mic-In, Line-In and Line-Out
<b>Ethernet Chipset</b>	2 x Intel® I211-IT	1 x Intel® I211-AT 1 x Intel® I219-LM	1 x Intel® I211-AT 1 x Intel® I219-LM	2 x Intel® I211-AT	1 x Intel® I225-LM 1 x Intel® I219-LM	2 x Intel® I211-AT
<b>Ethernet Interface</b>	2 x M12, X-coded	2 x RJ45; 4 x Port RJ45/ M12, supports 802.3af PoE (optional)	2 x RJ45 (LAN) 4 x RJ45/ M12 (PoE), supports 802.3af PoE	2 x RJ45	2 x RJ45	2 x RJ45
<b>Power Requirement</b>	Typical 24Vdc (+9V ~ +36V), w/ Isolation	Typical 12/24Vdc (+9V ~ +36V)	Typical 12/24Vdc (+9V ~ +36V)	Typical 12/24Vdc (+9V ~ +36V)	Typical 12/24Vdc (+9.9 ~ +25.2V), w/ Isolation	Typical 12/24Vdc (+9V ~ +36V), w/ Isolation
<b>Power Mode</b>	AT/ATX (AT default), w/ignition control and power management	AT/ATX (AT default), w/ignition control and power management	AT/ATX (AT default), w/ignition control and power management	AT/ATX (AT default), w/ignition control and power management	AT/ ATX (ATX is default setting)	AT/ATX (ATX is the default setting)
<b>Dimension (L x W x H)</b>	240 x 150 x 55 mm	240 x 210 x 110 mm	240 x 210 x 110 mm	239 x 186 x 62 mm	240 x 150 x 69 mm	240 x 151.5 x 75 mm
<b>Operating Temperature</b>	-40°C ~ 70°C (w/SSD) ambient w/ air flow. Follow EN50155, Class OT4	-40°C ~ 70°C (w/SSD) ambient w/ air flow	-40°C ~ 60°C (w/SSD) ambient w/ air flow	(w/SSD) ambient w/ air flow N4200/N3350: -20°C ~ 70°C ; E3950/ E3940/E3930: -40°C ~ 70°C	-40°C ~ 70°C (w/SSD) ambient w/ air flow, WT sku 0°C ~ 70°C (w/SSD) ambient w/ air flow, ST sku	-20°C ~ 60°C (w/SSD), ambient w/ air flow
<b>Certification Information</b>	CE, FCC Class A, EN50155, EN50121, EN45545, IP50 Rating	CE, FCC Class A, E13 Mark, ISO7637-2, IP50 Rating	CE, FCC Class A, E13 Mark, ISO7637-2, IP50 Rating	CE, FCC Class B, E13 Mark, ISO7637-2, IP50 Rating	CE, FCC Class A, IEC 60945, IP50 Rating	CE, FCC Class A, IEC60945, IP50 Rating



# Expandable Fanless System



Model Number	EMS-EHL	EMS-TGL	EMS-SKLU
<b>Board</b>	EBM-EHLS	EBM-TGLS	EBM-SKLUS
<b>Processor</b>	Intel® Celeron® J6413 Intel® ATOM® x6425E	Intel® Core™ i7-1185GRE/ i5-1145GRE/ i3-1115GRE (WT) Intel® Core™ i7-1185G7E/ i5-1145G7E/ i3-1115G4E (ST)	Intel® Core™ i7-6600U/ i5-6300U/ i3-6100U & Celeron® 3955U
<b>System Memory</b>	1 x 260-Pin SODIMM DDR4 3200MHz up to 32GB	2 x 260-Pin SODIMM DDR4 3200MHz up to 64GB	1 x 260-Pin SO-DIMM DDR4 2133MHz up to 16 GB
<b>Expansion</b>	1 x IET interface (1 x DDI, 2 x PCIeIII x2, 3 x USB2.0, 1 x Line-Out (R/L), 1 x SMBus, LPC) 1 x M.2 Key-B 2242/3042/3052 (SATA3/ PCIe III/ USB3.2 Gen.1) w/ SIM slot 1 x M.2 Key-E 2230 for Wi-Fi & BT Module (USB2.0/ PCIe III)	1 x Avalue 80-Pin IET Module Interface (1 x DDI, 2 x PCIe3 x2, 3 x USB2.0, 1 x Line-Out (R/L), 1 x SMBus, LPC) 1 x M.2 Key-B 2242/3042/3052 (SATA/ PCIe/ USB3.1) w/ SIM slot 1 x M.2 Key-E 2230 for Wi-Fi & BT Module	1 x Avalue 80-Pin IET Module Interface (1 x DP, 4 x PCIe1, 3 x USB, 1 x LPC, 1 x Line-Out (R/L), 1 x SMBus) 1 x M.2 Key B 2242/ 3042 (SATA/ PCIe/ USB3.0) w/ SIM slot 1 x Mini PCIe (PCIe/ USB 2.0) w/ SIM slot
<b>Storage</b>	1 x M.2 Key-B 2242/2280 (SATA) 1 x M.2 Key-B 2242 (SATA), share with expansion slot	1 x M.2 Key-M 2242/2280 (PCIe Gen. III x 4) 1 x M.2 Key-B 2242 (SATA), share with expansion slot	1 x 2.5" Drive Bay 1 x M.2 Key-B 2242 (SATA), share with expansion slot
<b>USB</b>	2 x USB 3.2 Gen.2 2 x USB 3.2 Gen.1	2 x USB 3.1 Gen.2 2 x USB 3.1 Gen.1	4 x USB 3.0
<b>COM Port</b>	2 x COM RS232/422/485 (BIOS)	2 x RS-232/422/485 (BIOS)	2 x RS-232/422/485 (BIOS + DIP Switch)
<b>Other</b>	1 x SIM Card Slot (internal) 8 x Antenna Mounting w/ Dust Cover	1 x SIM Card Slot (internal) 8 x Antenna Mounting w/ Dust Cover	2 x SIM Card Slot 1 x SMBus 2 x PS2/KB & MS 2 x Antenna Mounting w/ Dust Cover
<b>DIO</b>	1 x 8-bit GPIO (DB9), optional	1 x 8-bit GPIO (DB9)	1 x 12-bit GPIO
<b>Display Chipset</b>	Intel® UHD Graphics	Intel® Iris® Xe Graphics (Core i7/i5) Intel® UHD Graphics (Core i3)	Intel® HD Graphics 520/510
<b>Display Resolution</b>	DP++ 1.4: 4096x2304 @ 60Hz HDMI 2.0b: Max. resolution 4096x2304 @ 60Hz	DP++ 1.4: 4096x2304 @ 60Hz HDMI 2.0b: Max. resolution 4096x2304 @ 60Hz	DP+1.2: Max. resolution 4096x2304 @ 60Hz
<b>Audio Chipset</b>	Realtek Audio code	Realtek Audio code	Realtek Audio code
<b>Audio Interface</b>	Mic-In, Line-Out	Mic-In, Line-out	Mic-In, Line-In, Line-Out
<b>Ethernet Chipset</b>	2 x Intel® I226-IT	1 x Intel® I225-LM 1 x Intel® I219-LM	1 x Intel® I211-AT 1 x Intel® I219-LM
<b>Ethernet Interface</b>	2 x RJ45	2 x RJ45	2 x RJ45
<b>Power Connector</b>	3-Pin Terminal Block	3-Pin Terminal Block	3-Pin Terminal Block
<b>Power Requirement</b>	Typical +12/24 Vdc (+9V ~ +32Vdv)	Typical +12/24 Vdc (+9V ~ +32Vdv)	Typical +12/24 Vdc (+9V ~ +32Vdv)
<b>ACPI</b>	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant
<b>Power Mode</b>	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)
<b>Adapter</b>	Optional AC-DC Adapter (60W)	Optional AC-DC Adapter (60W)	Optional AC-DC Adapter (60W)
<b>Construction</b>	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
<b>Dimension (L x W x H)</b>	240mm x 150mm x 48 mm (Standard) 240mm x 150mm x 69 mm (w/ IET module)	240mm x 150mm x 48mm (Standard) 240mm x 150mm x 69mm (w/ IET module)	240mm x 151.5mm x 45mm (Standard) 240mm x 151.5mm x 60mm (w/ IET module)
<b>Operating Temperature</b>	-40°C ~ 70°C (w/SSD) ambient w/ 0.5 air flow, WT sku -40°C ~ 60°C (w/SSD) ambient w/ 0.2 air flow, WT sku 0°C ~ 70°C (w/SSD) ambient w/ 0.5 air flow, ST sku 0°C ~ 60°C (w/SSD) ambient w/ 0.2 air flow, ST sku	-40°C ~ 70°C (w/SSD) ambient w/ air flow, WT sku 0°C ~ 70°C (w/SSD) ambient w/ air flow, ST sku	-20°C ~ 60°C (w/SSD) ambient w/ air flow
<b>Certification Information</b>	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A



Model Number	SLP-WHG	SLP-RPS
<b>Processor</b>	Onboard 8th Gen Intel® Core™ SoC i7-8665UE/ i5-8365UE/ i3-8145UE & Celeron® 4305UE BGA Processor	Intel® 12/13th Gen Core™ i9/i7/i5/i3/Pentium®/Celeron® Processor
<b>System Chipset</b>	N/A	Intel® Q670E
<b>System Memory</b>	2 x 260-pin SODIMM socket Max. up to 32GB DDR4 2133MT/s	2 x DIMM Up to 64GB Dual Channel DDR5 SO-DIMM 4800MHz
<b>Expansion</b>	1 x PCIe x1 slot 1 x PCIe x4 slot 1 x M.2 Key-E 2230 for Wi-Fi & BT Module	1 x PCIe x16 slot 1 x PCIe x4 slot 1 x M.2 Key-E 2230 for Wi-Fi & BT Module
<b>Storage</b>	1 x M.2 Key-B 3042/2242/2260/2280, support SSD 1 x 2.5" Drive Bay (internal)	1 x M.2 Key-B 3042/2242/2260/2280, support SSD 1 x M.2 Key-M 2242/2280, support SATA/ PCIe Gen IV x 4 (NVMe SSD) 1 x 2.5" Drive Bay (internal)
<b>USB</b>	3 x USB3.1 Gen1 1 x USB Type C w/o ALT mode	4 x USB 3.1 Gen.2 (10Gbps)(under I226-LM) 2 x USB 2.0 (under I219-LM) 2 x USB 2.0 (180-degree type A Internal) (on backplane board)
<b>COM Port</b>	4 x RS-232	2 x RS232 4 x RS232/422/485
<b>Other</b>	1 x Power on/off switch with LED 1 x Reset button 1 x HDD LED 1 x Internal USB 2.0 (Type-A) 1 x PS/2 Keyboard/ Mouse	1 x Power on/off switch with LED 1 x Reset button 1 x HDD LED 1 x Internal USB 2.0 (Type-A) 1 x PS/2 Keyboard/ Mouse
<b>Display</b>	3 x HDMI 1.4b: 3840 x 2160 @ 30 Hz	2 x HDMI 2.0b: Max. resolution 4096x2304 @ 60Hz 1 x VGA: 2048 x 1536 @ 60Hz 1 x DP++ 1.4: 4096x2304 @ 60Hz
<b>Audio</b>	N/A	Mic-In, Line-Out
<b>Ethernet</b>	1 x Intel® I219-LM 1 x Intel® I210-IT	1 x Intel® I219-LM 2 x Intel® I226-LM
<b>Power Connector</b>	Phoenix Connector	Phoenix Connector
<b>Power Requirement</b>	DC in +12V ~ +24V, wide voltage	DC in +12V ~ +24V, wide voltage
<b>Power Mode</b>	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)
<b>Adapter</b>	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 180W Adapter (24V @ 7.5A)	NA
<b>Operating Temperature</b>	-20~50°C (-4°F ~ 122°F) w/WT SSD, ambient w/ 0.5m/s air flow	-10°C ~ 60°C (14°F ~ 140°F) w/SSD, ambient w/ 0.5 air flow
<b>Storage Temperature</b>	-40°C ~ 75°C (-40°F ~ 167°F)	-40°C ~ 75°C (-40°F ~ 167°F)
<b>Construction</b>	Aluminum + Metal	Aluminum + Metal
<b>Mounting Kit</b>	NA	Wall mount kit (standard) DIN RAIL (optional)
<b>Dimension (L x W x H)</b>	217 mm x 115 mm x 220 mm	235 mm x 142mm x 219 mm
<b>Weight</b>	2.6 kg	TBD



## EtherCAT Solution

- Factory Automation
- Throughput enhanced by 20-30%
- Over legacy non-ECAT solution
- Non- stop Producing Factory
- Robotic Production

### Industrial Automation

Challenge	Solution
PCIe Expansion	Barebone System w/PCIe Expansion
Low Cycle Time	Less than 250 µs
High Cost Issue	Low cost of implementation



## Machine Vision Solution

- Factory Automation
- 4 PoE Smart Camera Support
- Din Rail Design Support
- Powerful Edge Computing System

### Industrial Automation

Challenge	Solution
Wide Voltage	9-32V
Harsh Environment	Fanless and Rugged Design
Power Requirement	44-bit GPIO, Supports 1.5KV Isolation



# Fanless Embedded System



Model Number	EPS-ADS	EPS-CFS	EPS-CFS2	ACS10-TGU
<b>Board</b>	ECM-ADS	ECM-CFS	ECM-CFS	ECM-TGUC
<b>Processor</b>	i9-12900TE, i7-12700TE, i5-12500TE, i3-12100TE	i7-8700T, i7-9700TE, i5-8500T, i5-9500TE, i3-8100T, i3-9100TE, G5400T, G4900T	i7-8700T, i7-9700TE, i5-8500T, i5-9500TE, i3-8100T, i3-9100TE, G5400T, G4900T	Intel® Core™ i5-1135G7 Intel® Core™ i3-1115G4
<b>System Chipset</b>	Intel® H610E Express Chipset Intel® 0670E Express Chipset	Intel® Q370 Express Chipset Intel® H310 Express Chipset	Intel® Q370 Express Chipset Intel® H310 Express Chipset	
<b>System Memory</b>	2 DIMM Dual Channel DDR5 4800MHz Up to 64GB	1 x 260-Pin DDR4 2400/2666MHz SO-DIMM up to 32 GB	1 x 260-Pin DDR4 2400/2666MHz SO-DIMM up to 32 GB	1 x 260-Pin SO-DIMM Socket, up to 32GB DDR4 3200MHz
<b>Expansion</b>	1 x mPCIe (default) 1 x M.2 Key-B 2242/3042/3052 support SATA3/PCIeIII x1/ USB 2.0/USB3.2 Gen. 1 and internal nano SIM slot1 (support 5G Module 3.3V & 3.8V) 1 x M.2 Key-E 2230 PCIeIII x 1/USB2.0 for Wi-Fi & BT Modules	1 x mPCIe (default) (Q370 - PCIe/SATA/USB 2.0) (H310 - SATA/USB 2.0) 1 x mPCIe, support USB 2.0 (factory option)	1 x mPCIe (default) (Q370 - PCIe/SATA/USB 2.0) (H310 - SATA/USB 2.0)	1 x M.2 Key-E 2230 (PCIe, USB 2.0) 1 x M.2 Key-B 2242/3052 with 1 x SIM Slot (SATA, USB3.2, USB 2.0)
<b>Storage</b>	1 x 2.5" Drive Bay 1 x M.2 Key-M 2242/2280, support PCIe Gen IV x4 (NVMe SSD), RAID 0/1 (0670 only) 1 x M.2 Key-B 2242, support SATA (share with expansion slot)	2 x 2.5" Drive Bay 1 x mSATA	2 x 2.5" Drive Bay 1 x mSATA	1 x M.2 Key-B 2242 (SATA3) 1 x M.2 Key-M 2280 NVMe (PCIe Gen4 x 4)
<b>USB</b>	2 x USB 2.0, 6 x USB 3.2	2 x USB 2.0, 4 x USB 3.1	2 x USB 2.0, 4 x USB 3.1	3 x USB 3.2 Gen.2 3 x USB 2.0
<b>COM Port</b>	2 x RS232 4 x RS232/422/485	2 x RS-232	2 x RS-232	1 x RS-232/422/485 1 x RS-232
<b>Display Chipset</b>	Intel® 12th Generation CPU integrated	Intel® UHD Graphics 630/610	Intel® UHD Graphics 630/610	Intel® Iris® Xe Graphics (i5-1135G7) Intel® UHD Graphics for 11th Gen Intel® Processors (i3-1115G4)
<b>Display Resolution</b>	HDMI 2.0b: Max. resolution 4096 x 2304 @ 60Hz DP++ 1.4: 4096 x 2304 @ 60Hz	HDMI: Max. resolution 4096 x 2304 @ 30Hz	HDMI: Max. resolution 4096 x 2304 @ 30Hz	DP++ 1.4: 4096 x 2304 @ 60Hz
<b>Audio Chipset</b>	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code
<b>Audio Interface</b>	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In and Line-Out	Mic-In and Line-Out
<b>Ethernet Chipset</b>	1 x Intel® I219-LM 1 x Intel® I226-LM	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I211AT 1 x Intel® I219LM	1 x Intel® I219LM 1 x Intel® I225-V
<b>Ethernet Interface</b>	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45
<b>Power Connector</b>	3-Pin Terminal Block	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
<b>Power Requirement</b>	DC in typical 12/24V, wide voltage	+12V	+12V	+12V
<b>ACPI</b>	Single Power ATX Support S0, S1, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S1, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S1, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S1, S3, S4, S5; ACPI 5.0 Compliant
<b>Power Mode</b>	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)
<b>Dimension (L x W x H)</b>	215.8 x 202.5 x 75 mm	212 x 240 x 85 mm	170 x 195 x 85 mm	188 x 120 x 48mm
<b>Operating Temperature</b>	With extended temperature peripherals w/ air flow: -10°C ~ 50°C (32°F ~ 122°F)	With extended temperature peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)	With extended temperature peripherals w/ air flow: -10°C ~ 45°C (14°F ~ 113°F)	0°C ~ 50°C (32°F ~ 122°F) with 0.5m/s air flow
<b>Certification</b>	CE, FCC Class A (DC-in)	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A, UKCA



Model Number	NUC-TGU	NUC-EHL	NUC-APL	NUC-APL-Slim
<b>Processor</b>	11th Generation Intel® Core™ i7/ i5/ i3 BGA Processor	Intel® Celeron® J6412 Processor	Intel® Celeron® J3455/ N3350 Processor	Intel® Celeron® J3455/ N3350 Processor
<b>System Memory</b>	1 x 260-pin SODIMM socket Max. up to 64GB DDR4 3200 MT/s	1 x 260-pin SODIMM socket Max. up to 64GB DDR4 3200 MT/s	1 x 204-pin SO-DIMM Socket, Max. Up to 8GB DDR3L 1866MHz	1 x 204-pin SO-DIMM Socket, Max. Up to 8GB DDR3L 1866MHz
<b>Expansion</b>	1 x M.2 (Key-M, 2280) 1 x M.2 (Key-B, 2242/3024/3052, w/SIM Slot) 1 x M.2 (Key-E 2230)	1 x M.2 (Key-B, 2242/3042, w/SIM Slot) 1 x M.2 (Key-B, 2242) 1 x M.2 (Key-E, 2230)	1 x M.2 (Key-B, 2242/3042, w/ SIM Slot) 1 x M.2 (Key-E, 2230)	1 x M.2 (Key-B, 2242/3042) 1 x M.2 (Key-E, 2230)
<b>Storage</b>	1 x M.2 (Key-M, 2280, NVMe) 1 x M.2 (Key-B, 2242)	1 x M.2 (Key-B, 2242)	1 x 2.5" Drive Bay (7mm) 1 x M.2 (Key-B, 2242)	1 x M.2 (Key-B, 2242)
<b>USB</b>	4 x USB 3.2 Gen.2, 2 x USB 2.0	4 x USB 3.2 Gen.2, 2 x USB 2.0	4 x USB 3.0 (5Gbps)	4 x USB 3.0 (5Gbps)
<b>COM Port</b>	2 x RS-232/422/485 (BIOS)	2 x RS-232/422/485 (BIOS)	1 x RS-232/422/485 (BIOS & Cable) 1 x RS-232	1 x RS-232/422/485 (BIOS&Cable)
<b>Other</b>	1 x Power on/off Button w/ LED 1 x LED for Storage/ WLAN/ WWLAN 4 x Antenna Mounting with Dust Cover 1 x Kensington Lock	1 x Power on/off Button w/ LED 1 x Storage LED 4 x Antenna Mounting with Dust Cover 1 x Kensington Lock 1 x Micro SD Slot	1 x Power on/off Button w/ LED 1 x Storage LED 2 x Antenna Mounting w/ Dust Cover	1 x Power on/off Button w/ LED 1 x Storage LED 2 x Antenna Mounting w/ Dust Cover
<b>Display</b>	2 x HDMI 2.0b: Max. Resolution 4096 x 2304 @ 60Hz	2 x HDMI 2.0b: 4096 x 2304 @ 60Hz	2 x HDMI 1.4b: Max. Resolution 3840 x 2160 @ 30Hz 1 x DP (DVI-I/ VGA Factory Option): Max. Resolution 1920 x 1080 @ 60Hz	2 x HDMI 1.4b: Max. Resolution 3840 x 2160 @ 30Hz *1 x DP/ DVI-I/ VGA (Factory Option): Max. Resolution 1920 x 1080 @ 60Hz *DP/ DVI-I/ VGA is an option which will replace the location of COM
<b>Audio</b>	Realtek Audio code 1 x Mic-in, 1 x Line-out	Realtek Audio code 1 x Mic-in, 1 x Line-out	Realtek Audio code 1 x Audio Jack (Mic-in + Line-out Combo)	Realtek Audio code 1 x Audio Jack (Mic-in + Line-out Combo)
<b>Ethernet</b>	1 x Intel I225LM, 1 x Intel I219LM	2 x Intel I225LM	2 x Realtek RTL8111E Gigabit	2 x Realtek RTL8111E Gigabit
<b>Power Connector</b>	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
<b>Power Requirement</b>	+12V	+12V	+12V	+12V
<b>Power Mode</b>	ATX	ATX	ATX	ATX
<b>Adapter</b>	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 120W Adapter (12V @ 10A)	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 120W Adapter (12V @ 10A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A)
<b>Operating Temperature</b>	With extended temperature peripherals w/ air flow: 0°C ~ 50°C (32°F ~ 122°F)	With extended temperature peripherals w/ air flow: 0°C ~ 60°C (14°F ~ 122°F)	With extended temperature peripherals w/ air flow: -10°C ~ 60°C (14°F ~ 140°F)	With extended temperature peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)
<b>Construction</b>	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
<b>Mounting Kit</b>	Stand/ Din Rail/ VESA	Stand/ Din Rail/ VESA	VESA/ Din rail	VESA/ Din rail
<b>Dimension (L x W x H)</b>	6.69" x 4.92" x 1.42" (170 x 125 x 36 mm)	6.69" x 4.92" x 1.42" (170 x 125 x 36 mm)	4.53" x 4.37" x 2.28" (115 x 111 x 58 mm)	4.53" x 4.37" x 1.77" (115 x 111 x 45 mm)
<b>Weight</b>	1 kg	1 kg	0.85 kg	0.72kg
<b>Certification</b>	CE, FCC Class B	CE, FCC Class B	CE, FCC Class A	CE, FCC Class A





## Fanless Embedded System



Model Number	EPC-TGU	EPC-EHL	EPC-WHL	EPC-SKLU	EPC-APL
<b>Board</b>	ECM-TGU	ECM-EHL	ECM-WHL	ECM-SKLU	ECM-APL2
<b>Processor</b>	11th Generation Intel® Core™ i7/ i5/ i3/ Celeron® Processor	Intel® ATOM® Processor x643E Processor	8th Generation Intel® Core™ i7/ i5/ i3/ Celeron® Processor	6th Generation Intel® Core™ i7/ i5/ i3/ Celeron® Processor	Intel® Pentium® N4200 Processor Intel® Celeron® J3455/ N3350 Processor
<b>System Memory</b>	1x 260-Pin SO-DIMM Socket, Max. Up to 32GB DDR4 3200MHz	1x 260-Pin SO-DIMM Socket, Max. Up to 32GB DDR4 3200MHz	2x 260-Pin DDR4 2400MHz SO-DIMM Socket Up to 64GB	1x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	1x 204-Pin DDR3L 1866MHz SO-DIMM up to 8 GB
<b>Expansion</b>	1x M.2 (Key-M, 2242) 1x M.2 (Key-B, 2242/3042/3052, w/ SIM Slot) 1x M.2 (Key-E, 2230)	1x M.2 (Key-B, 2242/3042, w/ SIM Slot) 1x M.2 (Key-E, 2230)	1x M.2 (Key-B, 2242/3042, w/ SIM Slot) 1x M.2 (Key-E, 2230, CNVi)	1x Full Size Mini PCIe (mSATA) 1x M.2 (Key-B, 2242, w/SIM Slot)	1x Full size Mini PCIe Supports mSATA 1x Half size Mini PCIe Supports Wi-Fi Module
<b>Storage</b>	1x 2.5" Drive Bay (7mm) 1x M.2 (Key-M, 2242, NVMe) 1x M.2 (Key-B, 2242)	1x 2.5" Drive Bay (7mm) 1x M.2 (Key-B, 2242)	1x 2.5" Drive Bay (7mm) 1x M.2 (Key-B, 2242)	1x 2.5" Drive Bay (7mm) 1x M.2 (Key-B, 2242) 1x mSATA	1x 2.5" Drive Bay 1x mSATA
<b>USB</b>	4x USB 3.1 Gen.2 2x USB 2.0	2x USB 3.1, 2x USB 2.0	4x USB 3.1	2x USB 2.0, 4x USB 3.0	4x USB 3.0
<b>COM Port</b>	2x RS232/422/485 (BIOS)	4x RS232	1x RS232 (Factory Option)	1x RS-232 1x RS-232/422/485 (Cable & BIOS)	1x RS-232/422/485 (Jumper)
<b>Other</b>	2x Antenna Mounting with Dust Protection Cover	2x Antenna Mounting with Dust Protection Cover	2x Antenna Mounting with Dust Protection Cover	2x Antenna Mounting with Dust Protection Cover	2x Antenna Mounting with Dust Protection Cover
<b>Display Chipset</b>	Intel® Iris® Xe Graphics (i7/ i5) Intel® Iris® UHD Graphics (i3/Celeron)	Intel® UHD Graphics for 10th Gen Intel® Processors	Intel® UHD Graphics 620 (i7/ i5/ i3) Intel® UHD Graphics 610 (Celeron)	Intel® HD Graphics 520/ 510	Intel® HD Graphics 505/500
<b>Resolution</b>	DP++ 1.4a: 4096 x 2304 @ 60Hz	1x HDMI 2.0b Max resolution 4096 x 2160 @ 60Hz 1x DP 1.4a Max resolution 4096 x 2160 @ 60Hz	2x HDMI 1.4: Max. Resolution 4096 x 2160 @ 24Hz	2x HDMI: Max. Resolution 4096 x 2160 @ 24Hz	1x VGA: Max. resolution 1920 x 1200 @ 60Hz 1x HDMI: Max. resolution 3840 x 2160 @ 30Hz
<b>Audio Chipset</b>	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code	Realtek Audio code
<b>Audio Interface</b>	1x Combo Jack (Mic-In + Line-Out)	1x Line-Out 1x Mic-In	1x Line-Out 1x Mic-In	Mic-in/ Line-out (Factory Option)	Mic-in/ Line-out (Factory Option)
<b>Ethernet Chipset</b>	2x Intel® I226-LM	2x Intel® I226-IT	1x Intel® I211AT 1x Intel® I219LM	1x Intel® I211AT 1x Intel® I219LM	2x Intel® I211AT
<b>Ethernet Interface</b>	2x RJ45	2x RJ45	2x RJ45	2x RJ45	2x RJ45
<b>Power Connector</b>	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
<b>Power Requirement</b>	+12V	+12V/ +24V	+12V	+12V ~ +26V	+12V ~ +26V
<b>ACPI</b>	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant	Single Power ATX Support S0, S3, S4, S5; ACPI 5.0 Compliant
<b>Power Mode</b>	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)	AT/ ATX (ATX is default setting)
<b>Adapter</b>	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 120W Adapter (12V @ 10A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 120W Adapter (12V @ 10A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter
<b>Construction</b>	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal	Aluminum + Metal
<b>Dimension (L x W x H)</b>	6.97" x 4.84" x 2.17" (177mm x 123mm x 55mm)	6.97" x 4.84" x 2.2" (177mm x 123mm x 65mm)	6.97" x 4.84" x 2.17" (177mm x 123mm x 55mm)	7" x 4.8" x 2.0" (177mm x 123mm x 50mm)	6.97" x 4.84" x 1.77" (177mm x 123mm x 45mm)
<b>Operating Temperature</b>	With extended temp. peripherals w/ air flow: -10°C ~ 50°C (32°F ~ 122°F) with air flow	With extended temp. peripherals w/ air flow: -40°C ~ 70°C (-40°F ~ 158°F)	With extended temp. peripherals w/ air flow: -10°C ~ 40°C (14°F ~ 104°F)	With extended temp. peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)	With extended temp. peripherals w/ air flow: -10°C ~ 50°C (14°F ~ 122°F)
<b>Certification</b>	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B



## ARM-based System/ Wireless Sensor Node



Model Number	AIB-IMX6	AIB-IMX6A	AIB-IMX8M
<b>Processor</b>	NXP i.MX6 Cortex-A9 Dual Lite/ Quad 1GHz CPU	NXP i.MX6 Cortex-A9 Quad 1GHz CPU	NXP i.MX8M Cortex-A53 Quad Core 1.3GHz; Cortex-M4 core processor
<b>System Memory</b>	Onboard DDR3 1GB	Onboard DDR3 1GB	Onboard DDR4 2GB
<b>Storage</b>	1x On board 4GB eMMC	1x On board 8GB eMMC	1x On board 8GB eMMC
<b>External I/O Connector</b>	1x USB2.0 Type A (Double deck) 1x HDMI 1x 10/100/1000 LAN RJ45 Optional Powered LAN support (IEEE 802.3at) 1x Micro SD socket	2x USB 2.0 (Double deck) 1x Mini-USB Connector 4x COM Port COM1/2 on board-DB9 (RS232/422/485) COM3 Cable-DB9 (RS232) Debug Port 1x HDMI 2x Gigabit LAN 1x Micro SD socket	1x USB 3.0 Type A (Vertical type) 1x USB 3.0 Type C 2x Gigabit LAN 1x HDMI (Vertical type) 1x Micro SD socket 1x Hand Phone 1x Reset 1x Power LED (Green)
<b>Power Requirement</b>	12 ~ 26V DC input, 2.5mm DC Jack, typical 19V input With brownout detection or Powered LAN (optional)	12 ~ 24V DC input, 2.5mm DC Jack, typical 19V input With brownout detection	12 ~ 24V DC input, Terminal block
<b>Operating Temperature</b>	-20°C ~ 70°C (-4°F ~ 158°F)	-20°C ~ 50°C (-4°F ~ 122°F)	-40°C ~ 85°C (-40°F ~ 185°F)
<b>Storage Temperature</b>	-40°C ~ 70°C (-40°F ~ 158°F)	-20°C ~ 70°C (-4°F ~ 158°F)	-40°C ~ 85°C (-40°F ~ 185°F)
<b>Dimension (L x W x H)</b>	153 mm x 107.8 mm x 30 mm	186 mm x 121.35 mm x 37 mm	177 mm x 112 mm x 53.5 mm
<b>Weight</b>	1.5 kg	1.0 kg	2.0 kg
<b>Certification</b>	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
<b>Software Support</b>	Android 4.4 or 6.0 Yocto 2.1	Yocto 1.7 / 2.5	Android 9.0 Linux Yocto 2.5

Model Number	ASN-NBIOT
<b>Processor</b>	STMicroelectronics STM32L-476ZGT6
<b>Flash Memory</b>	1MB Flash Memory
<b>SRAM</b>	128KB SRAM
<b>LPWAN Module</b>	Quectel BC95-G Support LTE Band : 1/3/5/8/20/28
<b>GPS Module</b>	Quectel L70B-M39
<b>Indicate LED</b>	LED for Power & NBIOT connection status Power: Green OK; Orange Charging; Red Lower battery NBIOT: Green Connected; Red Disconnected
<b>Battery</b>	1S2P 18650 Rechargeable Battery
<b>External I/O Connector</b>	1x IP65 M12 connector for power input and sensors I/O interface include with UART/SPI/I2C/ADC/DAC
<b>Internal I/O Connector</b>	Micro USB : Firmware update interface for STM32L476ZGT6 Micro SD : Micro SD socket for storage extension Micro Sim : Micro Sim socket for NBIOT JI01 : 20 Pins I/O interface for sensors, include with UART/SPI/I2C/ ADC signals Antenna 1 : Antenna connector for NBIOT module Antenna 2 : Antenna connector for GPS module
<b>Power Requirement</b>	8V ~ 18V Wide Range DC IN (Typical : 12V DC IN)
<b>IP Level</b>	IP65
<b>Mounting Method</b>	DIN 35 rail or wall mount
<b>Operating Temperature</b>	-20°C ~ 60°C (-4°F ~ 140°F) w/o battery 15°C ~ 40°C (59°F ~ 104°F) w/ battery
<b>Storage Temperature</b>	-40°C ~ 85°C (-40°F ~ 185°F) w/o battery -20°C ~ 20°C (-4°F ~ 68°F) w/ battery
<b>Dimension (L x W x H)</b>	38.7 mm x 94 mm x 148 mm
<b>Weight</b>	w/o Battery: 0.23 KG w/ Battery: 0.33 KG



# High Performance Computing Solution

HPC stands for High Performance Computing. Avalue's HPC products are with the highly ability to process data and perform complex calculations at high speed. HPC series are the next era of computing products that brings lightning-fast, real-time analysis & extreme reliability performance. And it's optimized for AI, 5G, IoT, ML (machine learning), edge computing, medical precision computing and other applications requiring real-time and faster performance and high reliability.



## Time-to-solutions

Painless upgrades in the existing server rack, cabinet, or inside the system chassis with limited space



## IPMI 2.0 Supported

With built-in onboard BMC/IPMI technology with real-time system monitoring and provide preventive maintenance to minimize system downtime and field service cost



## Extended Lifecycle

Intel® extends the product availability for IOTG roadmap products to 10 years to respond to the IoT market demand (Based on Intel® IOTG Roadmap)

## All standard models for High Performance Computing



### Mainboard

- Complete design verification including SI, power, and thermal measurement.
- IPMI-enabled server board with server-grade manageability.



### Barebone System

- Key parts selection flexibility on customers' requirements.
- 100% MP test coverage and traceability.



### Fully Integrated System

- Fully tested system.
- Ready-made system for customer's direct deployment, quicker time-to-market.

### Healthcare

- Precision Diagnosis/  
Life Science

### Medical

- Advanced Medical  
Imaging Technology

### Communication

- Superior Accelerated  
Workstation

### Smart Manufacturing

- Visualization Machine Vision/  
Transformative Analytics

### Smart City

- Smart Public Safety and  
Enforcement Technology



Model Number	HPM-246UA	HPM-621DE	HPM-621UA	HPM-SRSUA	HPM-SRSD
<b>Processor</b>	Intel® LGA1151 Socket supports 8th/9th Gen. Core i7/i5/i3/Pentium/Celeron/Xeon E Processors (Max. TDP at 95W)	Dual Intel® FCLGA3647 Sockets support 1st and 2nd Gen. Intel® Xeon Scalable Processors (Max. TDP at 150W each)	Intel® FCLGA3647 Socket supports 1st and 2nd Gen. Intel® Xeon Scalable Processors (Max. TDP at 150W)	Intel® LGA4677 Socket supports 4th Gen. Intel® Xeon® Scalable Processor (Max. TDP at 250W)	Dual Intel® LGA4677 Sockets support 4th Gen. Intel® Xeon® Scalable Processor (Max. TDP at 250W each)
<b>System Chipset</b>	Intel® C246 Chipset	Intel® C621 Chipset	Intel® C621 Chipset	Intel® C741 Chipset	Intel® C741 Chipset
<b>System Memory</b>	4 x DDR4 2666MHz ECC and Non-ECC DIMM support up to 128GB (ECC memory supported by specific CPU SKUs)	12 x DDR4 2933/ 2666/ 2400/ 2133 MHz RDIMM/ LRDIMM up to 1.5TB	6 x DDR4 2933/ 2666/ 2400/ 2133 MHz RDIMM/ LRDIMM up to 768GB	6 x DDR5 4800/ 4400 MHz RDIMM up to 1.5TB	12 x DDR5 4800/ 4400 MHz RDIMM up to 3TB
<b>Expansion</b>	1 x PCIe Gen 3.0 x16 slot 1 x PCIe Gen 2.0 x 8 slot 1 x PCIe Gen 3.0 x 4 slot 1 x PCIe Gen 3.0 x 1 slot 1 x PCI 3.0 slot	Slot 1, PCIe 3.0 x16 from CPU1 Slot 2, PCI 3.0 Slot 3, PCIe 3.0 x16 from CPU1 Slot 4, PCIe 3.0 x16 from CPU2 Slot 5, PCIe 3.0 x16 from CPU2 Slot 6, PCIe 3.0 x8 from CPU1 Slot 7, PCIe 3.0 x8 from CPU1 (Slot 7 is the slot closest to CPU)	Slot 1, PCI 3.0 slot Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 Slot 6, PCIe 3.0 x8 Slot 7, PCIe 3.0 x16 (Slot 7 is the slot closest to CPU, x16 will switch to x8 automatically when Slot 6 is used)	Slot 1, PCIe 5.0 x16 Slot 2, PCIe 5.0 x4 Slot 3, PCIe 5.0 x16 Slot 4, PCIe 5.0 x4 Slot 5, PCIe 5.0 x16 Slot 6, PCIe 5.0 x4 Slot 7, PCIe 5.0 x16 (Slot 7 is the slot closest to CPU)	Slot 1, PCIe 5.0 x16 from CPU2 Slot 2, PCIe 5.0 x16 from CPU1 Slot 3, PCIe 5.0 x16 from CPU2 Slot 4, PCIe 5.0 x16 from CPU1 Slot 5, PCIe 5.0 x16 from CPU2 Slot 6, PCIe 5.0 x16 from CPU1 Slot 7, PCIe 5.0 x16 from CPU2 (Slot 7 is the slot closest to CPU)
<b>Display</b>	Intel® 8/9th Gen. CPU Integrated AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2600 BMC Controller	AST 2600 BMC Controller
<b>Resolution</b>	3 x DP++ port DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz 1 x VGA port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA port VGA: 1920 x 1200 @ 60Hz 32bpp
<b>Ethernet</b>	7 x Intel® I210AT Giga-bit Ethernet	4 x Intel® I210AT Giga-bit Ethernet	4 x Intel® I210AT Giga-bit Ethernet	1 x Intel® I210AT 1Giga-bit Ethernet 1 x Intel® I226-LM 2.5Giga-bit Ethernet 1 x Intel® X550-AT2 10Giga-bit Ethernet (Option)	1 x Intel® I210AT 1Giga-bit Ethernet 1 x Intel® I226-LM 2.5Giga-bit Ethernet 1 x Intel® X550-AT2 10Giga-bit Ethernet (Option)
<b>USB/SATA/COM/LAN</b>	8/4/2/7	8/10/2/4	8/9/2/4	12/5/2/5	12/5/2/5
<b>Power Requirement</b>	1 x Std. 24 pin ATX Connector 1 x 8 Pin SSI 12V Connector	1 x Std. 24 Pin ATX Connector 2 x 8 Pin SSI 12V Connectors	1 x Std. 24 Pin ATX Connector 2 x 8 Pin SSI 12V Connectors	1 x Std. 24 Pin ATX Connector 3 x 8 Pin SSI 12V Connector	1 x Std. 24 Pin ATX Connector 5 x 8 Pin SSI 12V Connector
<b>IPMI</b>	IPMI 2.0	IPMI 2.0	IPMI 2.0	IPMI 2.0	IPMI 2.0
<b>Operating Temp.</b>	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F) (without Intel X550) 0°C ~ 55°C (32°F ~ 131°F) (with Intel X550)	0°C ~ 60°C (32°F ~ 140°F) (without Intel X550) 0°C ~ 55°C (32°F ~ 131°F) (with Intel X550)
<b>Dimension (L x W)</b>	12" x 9.6" (304.8 mm x 243.84 mm) PCB thickness is 2.0mm	12" x 13" (304.8mm x 330.2mm) PCB thickness is 2.0mm	12" x 9.6" (304.8mm x 243.84mm) PCB thickness is 2.0mm	12" x 9.6" (304.8mm x 243.84mm) PCB thickness is 2.54mm	12" x 16.452" (304.8mm x 417.88mm) PCB thickness is 2.86mm
<b>Weight</b>	1.54 lbs (0.7 kg)	3.96 lbs (1.8 kg)	2.14 lbs (0.97 kg)	2.62 lbs (1.19 kg)	TBD



# High Performance Computing Solution



Model Number	HPS-246U4A	HPS-246UTA	HPS-SRSU4A	HPS-SRSUTA	HPS-621D4A	HPS-621U4A	HPS-621DTA	HPS-621UTA	HPS-621U2A	
<b>Processor (CPU Type)</b>	Intel® LGA1151 Socket supports 8th/9th Gen. Core i7/i5/i3/Pentium/Celeron/Xeon E Processors (Max. TDP at 95W)	Intel® LGA1151 Socket supports 8th/9th Gen. Core i7/i5/i3/Pentium/Celeron/Xeon E Processors (Max. TDP at 95W)	Intel® LGA4677 Socket supports 4th Gen. Intel® Xeon® Scalable Processor (Max. TDP at 250W)	Intel® LGA4677 Socket supports 4th Gen. Intel® Xeon® Scalable Processor (Max. TDP at 250W)	Dual Intel® FCLGA3647 Sockets support 1st and 2nd Gen. Intel® Xeon Scalable Processors (Max. TDP at 150W each)	Intel® FCLGA3647 Sockets supports 1st and 2nd Gen. Intel® Xeon Scalable Processors (Max. TDP at 150W)	Dual Intel® FCLGA3647 Sockets support 1st and 2nd Gen. Intel Xeon Scalable Processors (Max. TDP at 150W each)	Intel® FCLGA3647 Sockets supports 1st and 2nd Gen. Intel® Xeon Scalable processors (Max. TDP at 150W)	Intel® FCLGA3647 Sockets supports 1st and 2nd Gen. Intel® Xeon Scalable Processors (Max. TDP at 150W)	
<b>Chipset</b>	Intel® C246 Chipset	Intel® C246 Chipset	Intel® C741 Chipset	Intel® C741 Chipset	Intel® C621 Chipset	Intel® C621 Chipset	Intel® C621 Chipset	Intel® C621 Chipset	Intel® C621 Chipset	
<b>Memory</b>	4 x DDR4 2666MHz ECC and Non-ECC DIMM support up to 128GB (ECC memory supported by specific CPU SKUs)	4 x DDR4 2666MHz ECC and Non-ECC DIMM support up to 128GB (ECC memory supported by specific CPU SKUs)	6 x DDR5 4800/ 4400 MHz RDIMM up to 1.5TB	6 x DDR5 4800/ 4400 MHz RDIMM up to 1.5TB	12 x DDR4 2933/ 2666/ 2400/ 2133 MHz RDIMM/ LRDIMM up to 1.5TB	6 x DDR4 2933/ 2666/ 2400/ 2133 MHz RDIMM/ LRDIMM up to 768GB	12 x DDR4 2933/ 2666/ 2400/ 2133 MHz RDIMM/ LRDIMM up to 1.5TB	6 x DDR4 2933/ 2666/ 2400/ 2133 MHz RDIMM/ LRDIMM up to 768GB	6 x DDR4 2933/ 2666/ 2400/ 2133 MHz RDIMM/ LRDIMM up to 768GB	
<b>Storage</b>	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 1 x 5.25" storage bay 3 x Front accessible 2.5" storage bay	External: 4 x 5.25" storage bay Internal: 2x 3.5" drive bay
<b>IPMI</b>	IPMI 2.0	IPMI 2.0	IPMI 2.0	IPMI 2.0	IPMI 2.0	IPMI 2.0	IPMI 2.0	IPMI 2.0	IPMI 2.0	
<b>Expansion Slots</b>	1 x PCIe Gen 3.0 x16 slot 1 x PCIe Gen 2.0 x 8 slot 1 x PCIe Gen 3.0 x 4 slot 1 x PCIe Gen 3.0 x 1 slot 1 x PCI 3.0 slot	1 x PCIe Gen 3.0 x16 slot 1 x PCIe Gen 2.0 x 8 slot 1 x PCIe Gen 3.0 x 4 slot 1 x PCIe Gen 3.0 x 1 slot 1 x PCI 3.0 slot	Slot 1, PCIe 5.0 x16 Slot 2, PCIe 5.0 x4 Slot 3, PCIe 5.0 x16 Slot 4, PCIe 5.0 x4 Slot 5, PCIe 5.0 x16 Slot 6, PCIe 5.0 x4 Slot 7, PCIe 5.0 x16 (Slot 7 is the slot closest to CPU)	Slot 1, PCIe 5.0 x16 Slot 2, PCIe 5.0 x4 Slot 3, PCIe 5.0 x16 Slot 4, PCIe 5.0 x4 Slot 5, PCIe 5.0 x16 Slot 6, PCIe 5.0 x4 Slot 7, PCIe 5.0 x16 (Slot 7 is the slot closest to CPU)	Slot 1, PCIe 3.0 x16 from CPU1 Slot 2, PCI 3.0 Slot 3, PCIe 3.0 x16 from CPU1 Slot 4, PCIe 3.0 x16 from CPU2 Slot 5, PCIe 3.0 x16 from CPU2 Slot 6, PCIe 3.0 x8 from CPU1 Slot 7, PCIe 3.0 x8 from CPU1 (Slot 7 is the slot closest to CPU)	Slot 1, PCI 3.0 slot Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 Slot 6, PCIe 3.0 x8 Slot 7, PCIe 3.0 x16 (Slot 7 is the slot closest to CPU, x16 will switch to x8 automatically when Slot 6 is used)	Slot 1, PCIe 3.0 x16 from CPU1 Slot 2, PCI 3.0 Slot 3, PCIe 3.0 x16 from CPU1 Slot 4, PCIe 3.0 x16 from CPU2 Slot 5, PCIe 3.0 x16 from CPU2 Slot 6, PCIe 3.0 x8 from CPU1 Slot 7, PCIe 3.0 x8 from CPU1 (Slot 7 is the slot closest to CPU)	Slot 1, PCI 3.0 slot Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 Slot 6, PCIe 3.0 x8 Slot 7, PCIe 3.0 x16 (Slot 7 is the slot closest to CPU, x16 will switch to x8 automatically when Slot 6 is used)	Slot 1, PCI 3.0 slot Slot 2, PCIe 3.0 x8 Slot 3, PCIe 3.0 x16 Slot 4, PCIe 3.0 x8 Slot 5, PCIe 3.0 x16 Slot 6, PCIe 3.0 x8 Slot 7, PCIe 3.0 x16 (Slot 7 is the slot closest to CPU, x16 will switch to x8 automatically when Slot 6 is used)	
<b>LAN</b>	7 x RJ45 Gigabit Ethernet Ports, IPMI shared LAN1 Port	7 x RJ45 Gigabit Ethernet Ports, IPMI shared LAN1 Port	5 x RJ45 MGMT port for dedicated IPMI access only. LAN1 port for 1GbE shared with IPMI access. LAN2 port for 2.5GbE LAN3 and 4 ports for 10GbE (Option)	5 x RJ45 MGMT port for dedicated IPMI access only. LAN1 port for 1GbE shared with IPMI access. LAN2 port for 2.5GbE LAN3 and 4 ports for 10GbE (Option)	4 x RJ45 Gigabit Ethernet Ports, IPMI shared LAN1 Port	4 x RJ45 Gigabit Ethernet Ports, IPMI shared LAN1 Port	4 x RJ45 Gigabit Ethernet Ports, IPMI shared LAN1 Port	4 x RJ45 Gigabit Ethernet Ports, IPMI shared LAN1 Port	4 x RJ45 Gigabit Ethernet Ports, IPMI shared LAN1 Port	
<b>USB</b>	Front: 2 x USB 3.2 Gen1 Port Rear: 2 x USB 3.2 Gen2 Port	Front: 2 x USB 3.2 Gen1 Port Rear: 2 x USB 3.2 Gen2 Port	Front: 2x USB 3.2 Gen1 Port Rear: 4x USB 3.2 Gen1 Port + 2x USB 2.0 type A Port	Front: 2x USB 3.2 Gen1 Port Rear: 4x USB 3.2 Gen1 Port + 2x USB 2.0 type A Port	Front: 2 x USB 3.2 Gen1 Port Rear: 4 x USB 3.2 Gen1 Port	Front: 2 x USB 3.2 Gen1 Port Rear: 4 x USB 3.2 Gen1 Port	Front: 2 x USB 3.2 Gen1 Port Rear: 4 x USB 3.2 Gen1 Port	Front: 2 x USB 3.2 Gen1 port Rear: 4 x USB 3.2 Gen1 Port	Front: 2x USB 2.0 type A Port Rear: 4x USB 3.2 Gen1 Port	
<b>Display</b>	Intel® 8/9th Gen. CPU Integrated AST 2500 BMC Controller	Intel® 8/9th Gen. CPU Integrated AST 2500 BMC Controller	AST 2600 BMC Controller	AST 2600 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller	AST 2500 BMC Controller	
<b>Display Resolution</b>	3 x DP++ Port DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz VGA: 1920 x 1200 @ 60Hz 32bpp	3 x DP++ Port DP: 4096 x 2304 @ 60Hz HDMI : 4096 x 2160 @ 30Hz VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA Port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA Port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA Port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA Port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA Port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA Port VGA: 1920 x 1200 @ 60Hz 32bpp	1 x VGA Port VGA: 1920 x 1200 @ 60Hz 32bpp	
<b>Cooling Fan</b>	2x 80 x 25mm Rear Fan	2x 80 x 25mm Rear Fan	1x 120 x 25mm Front Fan 2x 80 x 25mm Rear Fan	1x 120 x 25mm Front Fan 2x 80 x 25mm Rear Fan	1x 120 x 25mm Front Fan 2x 80 x 25mm Rear Fan	1x 120 x 25mm Front Fan 2x 80 x 25mm Rear Fan	1x 120 x 25mm Front Fan 2x 80 x 25mm Rear Fan	1x 120 x 25mm Front Fan 2x 80 x 25mm Rear Fan	4x 80 x 25mm Middle Fan	
<b>Power Supply</b>	1 x 500W PS2 ATX PSU	1 x 500W PS2 ATX PSU	1 x 1300W PS2 ATX PSU	1 x 1300W PS2 ATX PSU	1 x 1300W PS2 ATX PSU	1 x 1300W PS2 ATX PSU	1 x 1300W PS2 ATX PSU	1 x 1300W PS2 ATX PSU	1x 1U 80plus Gold 500W PSU	
<b>Operating Temp.</b>	0°C ~ 45°C (32°F ~ 113°F)	0°C ~ 45°C (32°F ~ 113°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	
<b>Dimension (W x H x D)</b>	482.6mm x 174.8mm x 528mm with ear mount	340mm x 488mm x 528mm with external handles & pedestal stand	482.6mm x 174.8mm x 528mm with ear mount	340mm x 488mm x 528mm with external handles & pedestal stand	482.6mm x 174.8mm x 528mm with ear mount	482.6mm x 174.8mm x 528mm with ear mount	340mm x 488mm x 528mm with external handles & pedestal stand	340mm x 488mm x 528mm with external handles & pedestal stand	483mm x 88mm x 650mm	
<b>Form Factor</b>	19" 4U Rackmount	Tower Chassis	19" 4U Rackmount	Tower Chassis	19" 4U Rackmount	19" 4U Rackmount	Tower Chassis	Tower Chassis	19" 2U Rackmount	
<b>OS</b>	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019	Windows 10 IoT Enterprise LTSC 2021. Windows 11 IoT Enterprise. Windows Server IoT 2019 with VT-d disabled. Windows Server IoT 2022. Ubuntu 20.04 LTS or later Red Hat Enterprise Linux (RHEL) 8.2 & later	Windows 10 IoT Enterprise LTSC 2021. Windows 11 IoT Enterprise. Windows Server IoT 2019 with VT-d disabled. Windows Server IoT 2022. Ubuntu 20.04 LTS or later Red Hat Enterprise Linux (RHEL) 8.2 & later	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019	Windows 10 IoT Enterprise 64-bit Windows Server 2016 Windows Server 2019	



## Barebone System

### Desktop Chassis

Avalue offers several different kinds of desktop chassis to create custom-made products according to exact specifications of clients for mother boards, PSUs, coolers, add on cards and accessories. Most of our chassis may provide enclosure for Mini-ITX form factor and even Micro ATX Motherboard. We also provides relatively internal AC/DC power supply which have standard ATX power output interface. Customer may choose suitable one to fulfill the application.

### Essential Professional Capabilities and Key Attributes



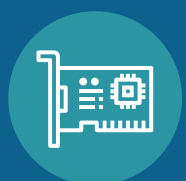
Configure to order



Flexible customer service



Multiple combination



PCIe Expansion



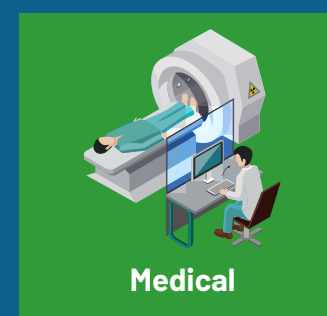
Supplier	Desktop Chassis	Desktop Chassis	Medical Box	
	<b>BMX-T550</b>	<b>BMX-T540</b>	<b>MAB-T600</b>	<b>ACS40-ADP</b>
<b>Model name</b>	<b>BMX-T550</b>	<b>BMX-T540</b>	<b>MAB-T600</b>	<b>ACS40-ADP</b>
<b>M/B Form Factor</b>	Up to 6.7" (W) x 6.7" (D) Mini ITX compliant MB	Up to 6.7" (W) x 6.7" (D) Mini ITX compliant MB	Up to 9.6" (W) x 9.6" (D) Micro ATX and Mini ITX compliant MB	Up to 6.7" (W) x 6.7" (D) Thin Mini ITX compliant MB
<b>Color</b>	Black	Black	White	Black
<b>Dimension (W x D x H)</b>	280 x 75 x 265 mm	372 x 307 x 107 mm	330.2 x 341 x 160 mm	210 x 206 x 55 mm
<b>Drive Bay</b>	Internal 2 x 2.5"	Internal 2 x 2.5"	Internal 2 x 2.5"	Internal 1 x 2.5"
<b>Expansion Slot</b>	1 full height via riser card	2 full height via riser card	4 full height expansion	NA
<b>System Cooling</b>	60 x 60 x 25mm fan	70 x 70 x 15mm fan	70 x 70 x 15mm fan (TBD)	40 x 40 x 20mm fan
<b>Front I/O</b>	2 x USB ports	2 x USB ports	2 x USB ports	2 x USB ports
<b>Button</b>	System power on/off System reset	System power on/off	System power on/off	System power on/off System reset
<b>LED</b>	Power LED HDD LED	Power LED HDD LED LAN LED	Power LED	Power LED HDD LED
<b>Security</b>	Depend on M/B	Depend on M/B	Depend on M/B	Depend on M/B
<b>Limitation of CPU Cooler</b>	Depend on CPU TDP	Depend on CPU TDP	Depend on CPU TDP	Depend on CPU TDP
<b>Power Supply</b>	220W 1U Flex ATX Power Supply	400W ATX Power Supply	500W ATX Power Supply (Medical grade)	500W ATX Power Supply (Medical grade)
<b>Operating Temperature</b>	0 ~ 50°C (32°F ~ 122°F) w/ SSD, ambient w/ 0.5m/s air flow	0 ~ 40°C (32°F ~ 104°F) w/ SSD, ambient w/ 0.5m/s air flow	0 ~ 40°C (32°F ~ 104°F) w/ SSD, ambient w/ 0.5m/s air flow	0°C ~ 50°C (32°F ~ 104°F), ambient w/ 0.5m/s air flow
<b>Gross Weight</b>	3.5kg	6.4kg	TBD	TBD



## Rackmount System

### Rackmount Chassis

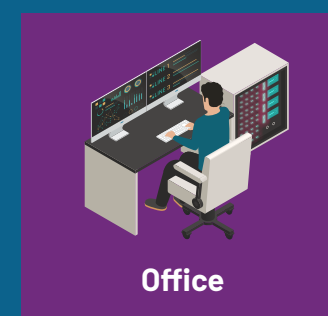
Avalue can provide several standard chassis including rackmount series such as 1U, 1U, 4U etc. for customer to choose. We offer many different features. Such as 5.25" bays allows user to install CDs, DVDs and drive bays as well as full length cards supported even at shortened depth for performance demanding application. Since the configure to order process is fully customizable, it creates products that are tailored exactly to customer requirements.



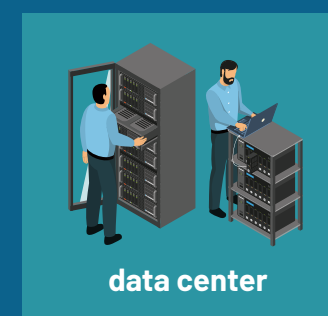
Medical



Smart Factory



Office



data center



Supplier	1U Racmount Chassis	2U Racmount Chassis	4U Racmount Chassis
	<b>BCC-CASE-R1U0-01R</b>	<b>BCC-CASE-R2U0-01R</b>	<b>BCC-CASE-R4U0-02R</b>
<b>Model name</b>	<b>BCC-CASE-R1U0-01R</b>	<b>BCC-CASE-R2U0-01R</b>	<b>BCC-CASE-R4U0-02R</b>
<b>M/B Form Factor</b>	Up to 12" (W) x 9.6" (D) ATX compliant MB	Up to 12" (W) x 9.6" (D) ATX compliant MB	Up to 12" (W) x 9.6" (D) ATX compliant MB
<b>Color</b>	Black	Black	Black
<b>Dimension (W x D x H)</b>	381 x 482.6 x 44.4 mm	504 x 482.6 x 88.9 mm	504 x 482.6 x 88.9 mm
<b>Drive Bay</b>	2 x 3.5" Drive Bay	2 x 5.25" + 4 x 3.5" Drive Bay	2 x 5.25" + 4 x 3.5" Drive Bay
<b>Expansion Slot</b>	1 full height via riser card	7 low profile	7 full profile
<b>System Cooling</b>	2 x 40 x 28mm fans	2 x 80x25mm fans 1 x 97mm blower (rear)	2 x 80x25mm fans 1 x 97mm blower (rear)
<b>Front I/O</b>	2 x USB ports	2 x USB ports	2 x USB ports
<b>Button</b>	System power on/off System reset	System power on/off System reset	System power on/off System reset
<b>LED</b>	Power LED HDD LED LAN 1 LAN 2	Power status LAN activity Drive activity	Power status LAN activity
<b>Security</b>	Depend on M/B	Depend on M/B	Depend on M/B
<b>Limitation of CPU Cooler</b>	Depend on CPU TDP	Depend on CPU TDP	Depend on CPU TDP
<b>Power Supply</b>	315W 1U Flex 100-240Vac (included)	500W PS2 100-240Vac Power Supply	500W PS2 100-240Vac Power Supply
<b>Operating Temperature</b>	0°C ~ 35°C (32°F ~ 95°F), (w/HDD), ambient w/ air flow	0°C ~ 35°C (32°F ~ 95°F), (w/HDD), ambient w/ air flow	0 ~ 40°C (32°F ~ 104°F) w/ SSD, ambient w/ 0.5m/s air flow
<b>Gross Weight</b>	7.5kg	18kg	20kg